

**Trouble at the Interface,
or the Identity Crisis of Interactive Art**

**Erkki Huhtamo
University of California Los Angeles**

I encountered - “hands-on” - an emerging phenomenon called “interactive art” on my very first visit to the Ars Electronica (Linz, Austria) in 1989. One of the works on display was *Deep Contact*, a laserdisc installation by the American artist Lynn Hershman. Sitting in front of a display, the user was invited by (the image of) a seductive young lady to “reach through the screen” and touch her. By means of a touchscreen interface, the spectator-turned-into-user then entered a kind of garden of earthly delights, choosing forking paths and encountering erotically loaded incidents along the way. Another installation was *The Legible City* by Jeffrey Shaw. By means of a stationary bicycle the visitor entered a virtual city consisting of letters, words and sentences. Choosing one’s routes through the spatialized database, one engaged in simultaneous acts of reading and writing with the combined efforts of one’s eyes, hands, and feet. I still remember the intoxicating feeling of diving under a giant letter “A”, as well as the questions it raised in the mind afterwards: what does cruising between and under letters, and even penetrating them, mean? What is the ontology of such an experience? Confronted with such uncanny issues, I had a feeling that something “new”, perhaps even the much anticipated (or feared) “rupture”, was in the making.

In the years to come I had an opportunity to experience a whole line-up of ‘interactive’ works, many of which have since been canonized – at venues like Ars Electronica and Siggraph, although hardly in the ‘Art World’ - as ‘classics’ of interactive art: Myron Krueger’s *Videoplacement*, David Rokeby’s *Very Nervous System*, Ken Feingold’s *The Surprising Spiral*, Agnes Hegedues’ *Handsight*, Grahame Weinbren’s *The Erl King* and *Sonata*, Luc Courchesne’s *Portrait One: Marie*, Christa Sommerer’s and Laurent Mignonneau’s *Interactive Plant Growing* and *A-Volve*, Perry Hoberman’s *Bar Code Hotel*, Paul Sermon’s *Telematic Dreaming*, Toshio Iwai’s *Piano as Image Media*, and so on. The list could easily be considerably extended, although many of the names probably say little to the critics, curators and audiences operating within the established museum and gallery circuit.

As different as these works were, they had things in common: they were publicly exhibited as installations, used computer technology, images and sounds, and were supposed to be ‘activated’ by the user - they required a physical effort from the part of the visitor to function and to reveal their meanings. By clicking a mouse, rolling a trackball, waving one’s hand, jumping, shouting or pedalling a bicycle the user was asked to “realize” or “complete” the work that “would not exist” without his/her actions. The active role of the spectator, turned into a ‘user’ or an ‘interactor’, was essential. The aim was to empower and challenge the visitor to go beyond the modes of usual spectatorship – the contemplating and “passive” attitude of the art lover standing in front of a painting or a statue. Of course, the reception of art itself can always be claimed to be “active” (an argument frequently used by traditional art critics in their invectives against interactive

art). However, interactive art added to the mental activity a haptic dimension: the visitor was not only allowed, but required to touch the work. The touch – often physical, but sometimes “virtualized”, mediated by a videocamera or a microphone, was essential. Whether stated explicitly or merely implied, “Please Touch” – an echo of Duchamp’s “Prière de toucher” - became the cornerstone of the aesthetics of interactive art. The “user interface” was where the encounter between the work and the user took place.(1)

In retrospect it is easy to see the line of development that connected these works to the idea of “interactive computing” that began to form itself in the 1960s. Innovations like time-sharing, artificial intelligence, interactive computer graphics, visual displays and new interface devices like light-pens, joysticks and the mouse inspired visionaries like Alan Kay, Nicholas Negroponte and Ted Nelson to see the relationship between the user and the computer as an increasingly symbiotic affair: both shared a “common ground” and would eventually be learning from each other as the interaction continued, deepened and smartened. Artists like the ones mentioned above were inspired by such prophecies, taking the human-computer interaction to higher and more adventurous levels. However, they hardly took it at face value, often deliberately adding complications, limitations, disturbances and ‘noise’ to the system. Some of them questioned the over-emphasis on the virtual, stressing the physical component of the interaction process, the body that was not quite left behind, at least yet. Some criticized the ideal of simplified one-to-one interaction often found in commercial and industrial applications. Many of the early works could be characterized as ‘metacommentaries’ on interactivity, as I proposed years ago.(2) The early “interactive artists” made critical contributions to the emerging discourse on interactivity. Although for many observers it was unknown before it was picked up by the mainstream media as a new buzzword, it had in fact already been a force in Western culture for some time on various levels from military applications to entertainment.

But this is not the whole story. The genealogy of interactive art is much more complex, although it can only be touched upon briefly here. In the widest sense “interactive media” is an outcome of the history of the human / machine relationship that goes back to the industrial revolutions that began in the second half of the eighteenth century. Partly to compensate for the monotony of work with office and factory machines, partly to profit from their “attraction value” as tokens of a new era, scores of “proto-interactive” devices were introduced for both public and private use in the nineteenth century.(3) At homes, philosophical toys like zoetropes and praxinoscopes encouraged the user to develop a playful and intimate relationship with optical technology. At public places, vending machines, strength testers, mutoscope-like peep viewers and arcade games provided a tempting and pleasurable way of interacting with machines.

Artists like Toshio Iwai, Mike Naimark, Ken Feingold, Heidi Kumao and Ellen Zweig have been highly conscious of this lineage, frequently referring to it in their works. Interactive art has also numerous precedents in the history of experimental art from Marcel Duchamp’s Bicycle Wheel and Rotoreliefs, Thomas Wilfred’s Lumia machines (such as his Clavilux Junior) and Frederick Kiesler’s radical exhibition designs to Fluxus happenings, Jean Tinguely’s La Rotozaza I, Nam June Paik’s Participation TV, responsive “cybernetic” sculptures and closed circuit video-installations. Often the artists involved in “proto-interactive” developments have been influenced by popular cultural

forms at fairgrounds and amusement arcades (indeed, these have provided favourite references for conservative critics writing about interactive art – the gallery has been “turned into a playground”, etc.). The invitation to touch has connoted disrespect and reckless pranksterism, but also a critique of culturally and institutionally sanctioned ‘high art’. This was playfully expressed in the installation *Zerseher* (Iconoclast) by Joachim Sauter and Dirk Lüsebrink (awarded at Prix Ars Electronica 1992): by means of state-of-the-art eye-tracking technology, the user’s gaze was empowered to destroy a classical painting (actually, its digital replica).

Such genealogies apply well to the ‘interactive classics’ listed above. Visiting Ars Electronica again this year (as I have done, with only one exception, since 1989) it was easy to see that things have changed. Interactive Art has been a category of the Prix Ars Electronica competition since 1990, and many of the artists mentioned so far have walked to the podium to claim their Golden Nicas (or one of the lesser distinctions). This year, however, the top award went to a work that - at first look at least - had little, if anything, to do with interactive art and interactivity as we have come to know them. Ben Rubin’s and Mark Hansen’s *Listening Post* is an ambitious and impressive installation that has been shown at prestigious art institutions like The Whitney Museum and lauded by critics. It is certainly a work that deserved a prize, but did it deserve it in the Interactive Art category? That is the question. The answer may have consequences for the very definition of interactive art, and perhaps even to its *raison d’être*. For compared with the ‘interactive classics’, there is nothing interactive in *Listening Post*: the audience stands, sits or lies in front of a large curved grid supporting 231 little electronic text displays.⁽⁴⁾ Various text fragments, captured from the innumerable chat rooms of the Internet, keep on appearing on the displays, selected by a computer program written by the artists. Words are also enunciated by a synthetic voice, and occasional musical accents are provided.

Many people I talked to described their experience of *Listening Post* in near-religious terms as meditative, sublime and elevating – watching the words endlessly appear and disappear and listening to the subtle declamation of the synthetic voice was hypnotic and captivating. It was easy to be lulled into a trance-like state, forgetting the passage of time and the surroundings – in spite of the fact that Rubin and Hansen emphasized in their talk the reality effect brought by the soundbites (references to the on-going Beslan hostage crisis kept on appearing from time to time during the showing at Ars). Someone compared the experience to the cinema – facing the luminous wall of displays, many visitors chose to sit and watch in silence. Although some people did approach the work and even went behind it, there was no way of effecting the unfolding of the text. Indeed, even the artists’ control was limited to writing the computer program and setting up the system. Like a *deus otiosus*, the idle god, they left the work to evolve on its own. This being the situation, it is quite legitimate to ask: where is the interactivity? In which sense can this work be classified as interactive art?

One way to start looking for an answer is to read the jury’s statement. According to it, “[u]nlike many works which could be classified as ‘interactive art’ or ‘net art’, in which the human interaction often perpetuates an isolated interface, namely where it occurs, classically, between the user and a computer screen, *Listening Post* allows us to experience the totality of technology and Internet communication in a simultaneously

immersive and humanizing way.” The jury points out that the work “makes manifest our [the jury’s] expanded definition of interactivity and criteria in that the reception and contemplation of this work does not require the active audience participation that was so crucial in the early stages of the development of the genre. Finally, the jury admits that while “‘system interaction’ with varying degrees of audience involvement was part of the definition of possible interactive works in prior years”, giving the Golden Nica to a work like *Listening Post* is something unprecedented and “suggests productive alignments of interactive work with other arts traditions in the future.”(5)

The jury defines its “expanded definition of interactivity” by formulating three criteria: (1) mediation by computer is not a requirement, (2) constraints of “real-time” and directness of interaction should be relaxed, and (3) passive interaction will be allowed. As a consequence, the “reception and contemplation of an ‘interactive work’ may not require the ‘active participation’ that was so crucial to the earlier stages of the development of the genre.”(6) The jury had reviewed the earlier jury statements, noting the broadening of the field and its changing definitions. It seems, however, that the criteria proposed by the 2004 jury present the most radical challenge to the “old school” of interactive art. Not only is using digital technology no longer a requirement. The need for real-time interaction between the user and the system has been “relaxed” and the idea of “passive interaction” (a contradiction in terms) enforced. Taken together, these amendments may easily lead to the conviction that “old school” interactive art has had its day and is in the process of being replaced by something else, the outlines of which we don’t yet quite perceive. If this is so, wouldn’t it be best to give up the label of interactive art altogether – or save it to the “old school” work emphasizing direct active interaction between the user and the piece - and replace it with something else?

However, the situation may not be quite as dramatic as it seems. First of all, as already explained, the ‘roots’ of interactive media and interactive art go back far beyond the era of digital technology. It is quite possible to conceive complex user-activated interactive artworks that don’t require computers at all. The richly imaginative, too little noted works by the San Francisco –based artist Bernie Lubell provide a good example. Lubell’s wooden (!) interactive installations are activated by complex systems of cranks, pulleys gears, ropes and diaphragms. One of them, *Etiology of Innocence*, got its inspiration from the artificial heart invented by Étienne-Jules Marey in the 19th century; another one is effectively a large-scale wooden collectively operated computer! When it comes to the second criterion, although achieving real-time interaction may have been a goal for some interactive artists, it has also been questioned for years. In most of his interactive works ever since *The Surprising Spiral* (1991), Ken Feingold has deliberately disturbed the potential one-to-one relationship between the user and the work by introducing time-delayed responses from the system or by creating programs that ‘misunderstand’ the user’s actions, but only to a degree. The users have frequently felt puzzled and frustrated, which is one of Feingold’s goals – his works investigate the different uses and meanings of interactivity, including those concocted by the military and the entertainment world, where “control” and “mastery” are self-evident goals. Feingold’s works show that something that is ‘interactive’ is not automatically liberating or empowering – interactive media can be used to alienate and control users like any other medium, producing

'automated' reactions and responses. Its liberating potential needs to be discovered and defended.(7)

When it comes to the final criterion, the "passive interaction", one could point to the development of David Rokeby, whose *Very Nervous System* figures prominently on the 'classics' list. While the *Very Nervous System* (like Krueger's *Videoplace*) aimed at creating a tight and continuous feedback loop between the user's body motions and the system's responses, Rokeby's more recent works have often emphasized the role and functioning of the digital system and left the user in a more passive role. In *The Giver of Names* the user's contribution is limited to selecting objects and placing them on a pedestal, to be analyzed by the work; the user then reads and listens to the work's enunciations, turned back into an observer. In *(n)Chant*, another Golden Nica winner (2003), the user may actually talk to a network of "givers of names", but the most important developments happen within the system itself. In another series of works Rokeby has pointed his video camera to unsuspecting passers-by, analyzing the implications of the rampant surveillance in Western society and investigating its potential artistic uses. As always, Rokeby uses technology tactfully, hinting at rather than committing breaches of privacy. Still, there is a long, albeit logical journey from the bodily *jouissance* of *Very Nervous System* (now acted out by the extatic players of the popular arcade game *Dance Dance Revolution*) to the more restrained, analytic, observing or even unaware participant of Rokeby's later works.(8)

As all this shows, the "expanded definition of interactivity" formulated by the Prix Ars Electronica 2004 jury was not totally unprecedented. Then why did I, as well as a number of other seasoned festival participants, react so strongly against giving *Listening Post* an award in the Interactive Art category? Because the work excludes the problematic of the user interaction over an interface altogether. The interaction with this work is entirely mental, like the experiences of a cinema spectator or an art lover meditating in front of Leonardo's *Last Supper* or Giorgione's *The Tempest*. Of course, the *Listening Post* is an 'alive', constantly metamorphosing multimedia environment, but one might argue that this does not dramatically change the constitution of its observer. There is nothing else to do beside watching, listening, and immersing oneself into the experience. The automated, predefined functions of the software analyzing the elusive network traffic have been given center stage. The outcome is displayed in a highly "aesthetized" form. Of course, there are other humans present beside the spectators: the anonymous subjects occupying Internet's countless chat rooms at any moment. However, their input is treated merely as raw material for a manifestation of database aesthetics, in its programmed basis a statistical operation. The individual voices are not singled out, nor are their originators made aware of their participation in the artwork. Indeed, this work could perhaps be read as a contribution to the controversial discourse on "collective intelligence" developed by Pierre Lévi for years.

Of course, as the jury attempts, one may look for a way out by talking about "system interaction". Indeed, "system interaction" has been a prominent feature of such important recent works as Ken Rinaldo's *Autopoiesis* and Rokeby's *(n)Chant*. Although these works accept input from human participants, the processes happening internally between the various network 'nodes' within these works (in Rinaldo's case, a flock of robotic creatures able to sense each other's presence and reactions, as well as to receive stimuli

from the outside) are at least as interesting and challenging. However, when the active human input is totally lacking, as in the case of *Listening Post*, the work constitutes a system that could be characterized as autonomous. A bit like antique automata – even while it incorporates unpredictable elements from the Internet - the work performs certain pre-choreographed actions to the enchanted spectators kept at a distance. In the field of the media arts we have encountered numerous works that have functioned like this, from László Moholy-Nagy's *Licht-Raum Modulator* to Jean Tinguely's motorized sculptures and Harold Cohen's *Aaron*, an expert system creating drawings and paintings at least semi-autonomously.(9) All these, and many other works, have been based on the principle of "system interaction", but until now labeling them as interactive art hasn't been even proposed. Indeed, system interaction as such could be claimed to be the *opposite* of user interaction. It deliberately marginalizes the active participation of the user, placing the machine and its operations in the centre.(10)

In fact, "system interaction" may be just a new label for a phenomenon that used to be known as the functioning of a "cybernetic organism". Cybernetics, of course, refers to the modes of communication and feedback within complex systems, both human and technological. Autonomous cybernetic operations have become part of the functioning of any digital system, including interactive ones. That, one could claim, does not warrant calling any cybernetic system interactive. If the word interactive is to retain anything about its former distinctiveness, it should, perhaps, be after all reserved to cases where active and repeated user-intervention plays a significant role in the functioning of the system. From such a perspective, computer and video games are clearly an interactive medium; games relying entirely on "system interaction" would be an absurd idea, while system interaction is always an essential element of their architecture. Of course, interactive art can – and should - stretch the definition of interactivity and explore its limits, but I still feel that the issue of user interaction should remain an essential part of its territory. In this sense another of this year's award winners at Ars, Osman Khan's and Daniel Sauter's *We interrupt your regularly scheduled program*, was an interesting test case. The work transforms the television program flow to an abstracted digital stream of pixels (seen as if emanating from a TV set facing the wall). The user's role is limited to switching TV channels with a remote controller. In spite of its minimal and 'banal' character, this is a meaningful – and interactive - gesture within the aims and thematic concerns of the work.

Sure enough, this does not solve all our problems. There are problematic cases, like Ken Rinaldo's *Augmented Fish Reality* that received the jury's distinction. Two Siamese fighting fishes inhabiting separate fish bowls placed on motorized platforms with wheels. By interrupting laser beams crossing the bowls the fishes can "drive" their bowl-worlds around the room. Amazing, but is it interactive art? One might reason that the fishes are surrogates for human interactors, which would qualify the work at least as a "meta-interactive" piece. Much the same could be said about interactive performances, like Golan Levin's and Zachary Lieberman's *Messa di Voce* (Honorary Mention 2004). The audience of this work, which was performed as a stage performance at Ars Electronica 2003, is merely observing the actors using their voices to create and manipulate visuals, empowered by a dedicated software written by Levin and Lieberman. However, unlike Rinaldo's *Augmented Fish Reality*, *Messa di Voce* can also be turned into an "old school" style interactive installation, where the audience takes the place of the professional

actors. The work was successfully shown in this form as part of this year's Ars Electronica exhibition. Are these two different works based on the same software, or just two variations of the same? What is the role of the context and the role of the observer/interactor? I will leave these questions deliberately open.

Another factor that complicated things is the Internet. Interactive installation art got started as a genre before the Internet made its breakthrough as a "universal" medium in the second half of the 1990s. The modes and definitions of interactivity in network communication seem quite different, and possibly more complex, than those explored by the early "interactive artists". Network interaction combines features from modes of human-machine interaction, as well as from discourses and traditions of social interaction. How these merge with each other into a 'network-specific' mode of interaction (and whether this happens) is current far from clear. So far there have been relatively few works that have successfully managed to combine "remote interaction" on the Internet and "local interaction" within a physical space. Rafael Lozano-Hemmer's *Vectorial Elevation* (Golden Nica 2001) attempted to do this on an extraordinarily ambitious scale, empowering the Internet users to control a cluster of robotic searchlights around Mexico City's main Zocalo Square. However, while the Internet part was truly innovative and interactive, the audience on the site was offered an ephemeral but nevertheless a spectacular lightshow, with practically no control mechanisms or feedback channels at hand.⁽¹¹⁾ Although a remarkable *tour de force*, the gap between "those who have and have not access" was not bridged satisfactorily.

At Prix Ars Electronica, Internet-based projects have usually been separated from the interactive art category, reflecting the difficulties of creating and maintaining definitions. *Listening Post* clearly deserved an award, but not the one it got. Perhaps "net vision" would have been a better category – if only the net vision jury had not had a totally different agenda in which 'art' had a relatively peripheral role, compared with socially and ideologically oriented 'applications'. It looks like it is time again to re-define categories. Stretching the definition of interactive art in the manner of this year's jury causes more confusion than clarity. As already stated, it might be suggested that "interactive art" as a category would be reserved for works where the issue of user interaction plays a significant role. Perhaps a new category should be created for works like *Listening Post*. "Cybernetic art" it cannot be, "system art" it should not be. "Intra-active art" would sound too hermetic. "Database aesthetics" might be a viable candidate, as it would by-pass the difficulties associated with concepts like user interaction, passive interaction and system interaction - and more database-related work is certainly on the way.

© Erkki Huhtamo 2004

This text is a revised version of an essay first published in *Framework, The Finnish Art Review*, 2/2004 (Helsinki: FRAME Finnish Fund for Art Exchange). It appears on the REFRESH! site with the kind permission of FRAME.

Notes:

1 Duchamp used the text "Prière de Toucher" on the inner cover of the exhibition catalogue *Le surrealisme en 1947* which he designed. On the cover of the catalogue there was a foam-rubber breast. See *Marcel Duchamp*, edited by the Museum Jean Tinguely Basel, Ostfildern-Ruit: Hatje-Cantz, 2002, 134-135. Ken Feingold referred to Duchamp's work in the book-looking touch-screen interface of his installation *The Surprising Spiral* (1991). The on back of 'the book' there was the name "Pierre de Toucher", supposedly its 'author'.

2 See my "Seeking Deeper Contact. Interactive Art as Metacommentary", *Convergence*, Vol.1, N:o 2 (Autumn 1995), pp. 81-104 (University of Luton & John Libbey, U.K.).

3 See my "Slots of Fun, Slots of Trouble. Toward an Archaeology of Electronic Gaming", in *Handbook of Computer Games Studies*, edited by Joost Raessens & Jeffrey Goldstein, Cambridge, Mass.: The MIT Press (forthcoming 2005).

4 At Whitney Museum it was also possible to walk around the structure, I was told by Mark Hansen. The lighting in the room at Ars Electronica was darker than in some other venues, making the effect of the work more dramatic.

5 "Rearview Mirror: 1990-2004" (the statement of the interactive art jury), in *Cyberarts 2004*, edited by Hannes Leopoldseder, Christine Schöpf and Gerfried Stocker, Ostfildern-Ruit: Hatje-Cantz, 2004, 110. (The jury members were Scott deLahunta, Peter Higgins, Hiroshi Ishii, Tomoe Moriyama and Elaine Ng.)

6 Ibid., 106.

7 About Feingold's art, see my "Surreal-time Interaction, or How to Talk to a Dummy in a Magnetic Mirror?", *ArtIntact 3. CD-ROMMagazin interaktiver Kunst*, Karlsruhe: Zentrum für Kunst und Medientechnologie and Cantz Verlag, 1996, 30-55.

8 I have written about Rokeby's art in two articles: "Silicon Remembers Ideology, or David Rokeby's meta-interactive art", teoksessa *David Rokeby: The Giver of Names*, edited by Anne McPherson and Debarah Esch, Guelph, Ontario: MacDonald Stewart Art Centre, 1998, 16-30; "Adventures in Middle Space", *Horizon Zero*, Issue 3: Invent (Autumn 2002), Banff: The Banff Center for the Arts, 2002, available on-line at www.horizonzero.ca/flashindex.html

9 Cohen has created the system and written the AI-influenced software. He sets the parameters and starts the painting process that continues from then on autonomously. Cohen claims that he cannot control the outcome of the painting process in advance. In a sense, Cohen's role is not different from that of the mainframe computer operator of the early times. He sets the problem, starts the operation and inspects the result. He does not interact continuously with the system while it is functioning.

10 A classic discussion of these issues is Jack Burnham's *Beyond Modern Sculpture*, New York: George Braziller, 1968.

11 See my “Re-Positioning Vectorial Elevation. Media Archaeological Considerations”, in Rafael Lozano-Hemmer: *Alzado Vectorial. Relational Architecture No.4*, Mexico City: Publications Department, National Council for Culture and the Arts (Mexico), and Impresiones y Ediciones San Jorge, S.A. de C.V., 2000, 98-113. Lozano-Hemmer was aware of the issue, and tried to solve it by installing public Internet terminals in some public spaces.