

Ten Dreams of Technology

STEVE DIETZ

ABSTRACT

This article presents the ten dreams of technology that frame the author/curator's selection of ten new media artworks. The "dreams" or themes presented by the author have been developed and/or questioned by artists throughout the history of the intersection of art and technology. This history emerges through artworks that the author describes as containing a "compelling vitality that we must admire." The collection of dreams includes: Symbiosis, Emergence, Immersion, World Peace, Transparency, Flows, Open Work, Other, New Art, and Hacking. The author notes that these dreams of technology have a future, even if it is not yet determined.

Tom Stoppard, in his play *Arcadia*, states, "The future is disorder. . . . It's the best possible time to be alive, when almost everything you thought you knew is wrong." From Richard Wagner's *gesamtkunstwerk* and Marinetti's Futurist Manifesto to Nam June Paik's "electronic highway" and Jaron Lanier's virtual reality universe to Roy Ascott's "vegetal reality," the history of the intersection of art and technology is one of the prognostications of an irrefutable, inevitable, and even immanent future that never comes to pass—at least not exactly as we thought it might [1].

This is not to deny that Douglas Engelbart or Alan Kay or Marc Weiser, or even Brenda Laurel and Purple Moon "predict the future by inventing it" [2]. Arguably, however, "technological art" is always less fulfilling than when the technology on which it is based becomes more or less invisible—a tool like a pencil, as John Baldessari would have it. The ultimate demonstration may have been Engelbart's mouse—a spellbinding vision of a future few others could even imagine at the time. But it is Perry Hoberman's Cathartic User Interface that is the most compelling and cathartic

statement of where that future has dumped us [3].

In between the invention of a technology and its quotidian disappearance are the manifestoes, declaimed and implicit. Janet Murray has suggested the notion of "incunabular" media. In this stage we can imagine the outlines of Shakespeare and the very idea of a written literature in the magical, mechanical reproductions of the early printing press. We can also imagine something beyond the incunabular RPG and shooter video games.

In either case, these dreams of a certain future have such compelling vitality that we must admire them, even as we quibble about their navel-gazing mediumness and complain about how simplistic and complex they are. We must then acknowledge their inability to change humankind into the likeness of their vision.

Here, in no particular order, are ten dreams of technology that have a future, even if we do not yet know what it is and despite the certainty with which it is predicted [4].

1. The Dream of Symbiosis

The hope is that, in not too many years, human brains and computing machines will be coupled together very tightly, and that the resulting partnership will think as no human brain has ever thought and process data in a way not approached by the information-handling machines we know today.

—J.C.R. Licklider, 1960 [5]

Norbert Wiener is credited with coining the term "cybernetics" from the Greek word "kybernetes," or steersman. This research on controlled feedback loops—interaction between humans and machines—postulated that by allowing each to learn from the interaction with the other, both could evolve to higher levels of functioning. Many artists have dreamed the dream of what Wiener's younger contemporary, J.C.R. Licklider, referred to as

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man-machine symbiosis, from Joseph Weizenbaum's *Eliza* (1966) to Ken Rinaldo's *Autopoiesis* (2000) [6].

At the same time, as David Rokeby suggests, "Interaction is banal. We talk to each other on the street. We breathe in air, modify it chemically, then breathe it back out to be breathed in by others. We drive cars. We make love. We walk through a forest and scare a squirrel. I am looking forward to a time when interaction in art becomes as banal and unremarkable . . . merely another tool in the artistic palette, to be used when appropriate" [7].

Rokeby's *Giver of Names* (1990-present) is one of the most profoundly engaging dreams of cybernetic symbiosis, in part because of his disinterest in a simplistic "click and response" notion of the interactive feedback loop [8]. There is a great deal of computer research on issues of accurate visual identification, but *Giver of Names* has no such agenda. It is a metaphor producer, which invokes the awe of naming and the power of the word to create universes. The *Giver of Names* does not provide a literal description of the object. At the same time, it clearly does not generate random phrases. As Rokeby writes, his intent is that "sufficient tension exist between the object and the name given to challenge the viewers' preconceptions of the objects, and draw them into speculative exploration" [9]. The symbiotic feedback loop infers that over the course of more than a decade, the computer "learns" more and more about the world, and its oblique, almost Delphic utterances of our mundane combinations of boot and rubber-duck-and-ball objects also causes us to perceive the world differently. Not a bad definition of art-or of a "partnership that will think as no human brain has ever thought."

2. The Dream of Emergence

Teilhard de Chardin. Marshall McLuhan. Pierre Levy. George Dyson. Arnold Schwarzenegger's character in *Terminator*. There is a veritable academy based on the notion of networks as an extended or augmented nervous system out of which intelligence eventually and inevitably, emerges. Even Nathaniel Hawthorne saw this coming.

By means of electricity, the world of matter has become a great nerve, vibrating thousands of miles in a breathless point of time...The round globe is a vast...brain, instinct with intelligence!

—*The House of Seven Gables*, 1851

As mysteriously and magically "intelligent" as networks can seem, however, the critical, common denominator of emergent systems is, as Steven Johnson puts it, that "agents residing on one scale start producing behavior that lies one scale above them: ants create colonies; urbanites create neighborhoods; simple pattern-recognition software learns how to recommend new books. The movement from low-level rules to higher-level sophistication is what we call emergence" [10].

Artists have long created works out emergent, simple, rule-based systems: Paul Vanouse's *Personal Data Confidante*, Jane Prophet's *Technosphere*, Ken Goldberg's *Jester*, and John Klima's forthcoming Rhizome interface, to name just a few [11]. The role of the network in these projects is essentially to create an open system of input to promote adaptation, without which complexity is "like the intricate crystals formed by a snowflake: it's a beautiful pattern, but it has no function" [12].

Christa Sommerer and Laurent Mignonneau are two of the most influential artists working consistently with emergent systems: *A-Volve* (1994-95), *Life Species* (1997), *Life Species II* (1999), and *Verbarium* (1999) [13]. With all of these works, relatively simple rules govern which virtual creatures will "a-volve," and the input for behaviors is provided by viewer-participants both at the physical installation of the project and via the Internet.

With *A-Volve*, for example, visitor input creates the initial shape of a virtual creature, and the longer that shape can survive the more likely it is to be able to mate and reproduce. There is no directly discernible correlation, however, between a visitor's actions and the evolution of the creatures.

Importantly, Sommerer and Mignonneau are not simply illustrating their ability to write algorithms. *A-Volve* and later projects engage in issues of human-machine intercourse as well as the intersection of

the physical and virtual worlds.

3. The Dream of Immersion

Whereas the public, that representative of daily life, forgets the confines of the auditorium, and lives and breathes now only in the artwork which seems the wide expanse of the whole World.

—Richard Wagner, Outlines of the Artwork of the Future [14]

From Wagner to Daguerre's panoramic dioramas to James Turrell's *Roden Crater*, artists have dreamed of artworks in which the viewer is totally immersed. So-called virtual reality is one technological manifestation of this dream. One of the earliest pioneers in this regard was Myron Krueger, who created what he called "responsive environments" and coined the term "artificial reality." Regarding the efficacy of what came to be called virtual reality, Krueger had this to say in an interview:

It is true that today's virtual reality provides very limited tactile feedback, almost no proprioceptive feedback (as would be provided by walking on a sandy beach or on rough terrain), rare opportunities to smell, and little mobility. However, it is just getting started. Criticizing a new idea because it is not yet fully realized seems unreasonably impatient. On that basis, the caves at Lascaux would never have been painted because we did not have a full palette and could not animate in three dimensions. Give us a few centuries and then revisit this complaint [15].

Not quite a few centuries later, one of the most important and successful heirs working with immersive environments is Char Davies and her works *Osmose* (1995) and *Éphémère* (1998) [16]. For her, envelopment is core and at the same time anti-Cartesian:

For a long time, I have been interested in conveying a sense of being enveloped in an all-encompassing, all-surrounding space, a subjective embodied experience that is very different from the Cartesian notion of absolute, empty, abstract, xyz space [17].

In a sense, Davies is attempting to create completely non-technical feeling spaces and experiences with some of the highest technology available [18]. One way she does this is to use breath and balance as a means of navigation. It is not about gesturing or tracking or manipulating input devices. One uses one's whole body to float through the worlds of *Osmose*. Davies' dream of immersion is an almost literal one—dreamlike and enveloping—with no pretense at simulation and no mimetic worries about the computer's ability to render polygons in order to create photorealistic environments.

4. The Dream of World Peace

An ocean cable is . . . a living fleshy bond between severed portions of the human family, along which pulses of love and tenderness will run backward and forward forever. By such strong ties does it tend to bind the human race in unity, peace and concord.

—Henry Field [19]

There is no communication technology that assures world peace. The rhetoric goes that the ability to communicate quickly and easily leads to greater understanding, which then leads to tolerance and the certainty of harmony. Demonstrably, this is not true, and arguably whether it is the goal of prosecuting war without casualties by remote communication with munitions or networks of terrorist “sleepers” that are also remotely activated, the communications network and technologies have not had any calculable effect on humanity's penchant for destruction.

Nevertheless, the dream remains powerful. As Kit Galloway and Sherrie Rabinowitz put it: “We must create at the same scale as we can destroy. The counterforce to the scale of destruction is the scale of communication, and . . . our legacy or epitaph will be determined in many ways by our ability to creatively employ informal, multimedia, multicultural, conversational, telecommunications and information technologies” [20].

Galloway and Rabinowitz, pioneers of seminal projects such as the *Satellite Arts Project* (1977) and *Hole In Space* (1980),

instigated a network of electronic cafés at the time of the 1984 Olympics, which had nodes in five Los Angeles neighborhoods, as well as in the Museum of Contemporary Art. In many ways, this was a harbinger of the Internet cafés to come. But Galloway and Rabinowitz's electronic café was explicitly community-based, providing channels of exploration between groups and geographical locales that did not usually connect despite being in the same city. In addition, they were visionary about creating multi-modal tools, with which one could write, draw, and share images without much prior computer knowledge and not solely through a standard-issue keyboard and mouse. These ideas of physical computing are only now coming into the mainstream.

Galloway and Rabinowitz went on to create a permanent *Electronic Café International* on 18th Street in Santa Monica in 1989, which actively programmed global tele-events for over a decade, most of it prior to the popular explosion of the World Wide Web. Contemporary engaged projects such as the Sarai New Media Initiative in New Delhi, India, are an important continuation of dreams first glimpsed at the *Electronic Café*.

5. The Dream of Transparency

A corollary to issues of communications is transparency. The modernist ethics of form follows function without camouflaging artifice, or the contemporary open source movement and general public license, which require software code to be accessible and modifications to be returned to the community of users for further iteration. Transparency also has tendrils in events like Happenings or cinema vérité, which break down the codes of theater and film to transparently present life as art.

01.org's *life_sharing* project is not exactly like the joke where two behavioral psychologists meet on the street and say, “You're fine; how am I?” But it dreams of a transparency that exposes their life to the outside world almost as clearly as to themselves. 01.org have set up their computer's file sharing system so that anyone with an Internet connection can access their files

equally as well as they can. I have had the experience of e-mailing 01.org about a meeting and having a stranger from Boston reply whether he should come to New York to meet me then also. *life_sharing* has little to do with the idea of exposure and voyeurism per se, although it does have an element of durational performance, which is as much about perception—recognizing life as art—as spectacle. Crucial to the project, however, is its central tenet, the equation “file sharing = life sharing.” In part, this is simply the reality of the contemporary fulfillment of Licklider's dream of human-computer symbiosis. 01.org writes:

Whoever works with a computer on a daily basis, at least for a few years, will soon realize that his own computer resembles more and more to its owner. You share everything with your computer: your time (often even for 13 hours a day), your space (desktop), your culture (bookmarks), your personal relationships (e-mails), your memories (photo archives), your ideas, your projects, etc. To sum up, a computer, with the passing of time, ends up looking like its owner's brain [21].

Most importantly, via transparency, 01.org suggests that not only has the contemporary Frankenstein come to pass, but that we are also part machine with a much more tenuous yet stronger bond than mere mechanical or bioengineered implants.

6. The Dream of Flows

“Utopia is not the construction of a new city; utopia is the movement towards the potential of working together with the complexity of an existing big city in order to develop new forms of urban agencies” [22].

Even if postmodernism has come to be seen as a failed pastiche of styles and an uncritical refusal of commitment to any original ideas, “anything goes,” the dream of unfixedness, of multiplicity, and of hybridity, recurs [23]. Einstein's relativity and Heisenberg's uncertainty have become our own. Even if we do not understand the science, we experience the reality.

Artists have always tried to capture the

dynamic nature of the universe, from Cubist fracturing to Rashomonic indeterminacy. Computational media can begin to model it.

One of the places where process is most apparent is the constantly morphing city. Knowbotic Research's *IO_dencies* project "combines physical, local urban dynamics . . . with virtual network flows (the activities of the participants in the net). The movements towards 'an other city' [is] generated by manipulating, operating and modifying the urban flows" [24].

Ultimately, *IO_dencies*' questioning of urbanity is an experiment to "develop new forms of urban agency." But underlying this is the hypothesis that "contemporary cities are being transformed by the[ir] informational fluxes," and *IO_dencies* is both a tool to dynamically map these flows and to affect them.

Borges's fable of a 1:1 map [25] is a cartography of uselessness, but with computational media, Knowbotic attempts a cartography of flows that is dynamic, much like what it is representing. If malleable it can be affected by input from viewer-participants (the I or input of IO). If it has agency its cybernetic flow of feedback (the O or output of IO) affects the original input as well as the city itself. As Andreas Broeckmann writes in a slightly different context, for Knowbotic "the notion of permanent and uncontrollable change, multiple influences, complex sets of parameters, etc., are fundamental parameters of their practice" [26].

7. The Dream of the Open Work

[A work of art is] a complete and closed form in its uniqueness as a balanced organic whole, while at the same time constituting an open product on account of its susceptibility to countless different interpretations which do not impinge upon its unadulterated specificity. Hence, every reception of a work of art is both an interpretation and a performance of it, because in every reception the work takes on a fresh perspective.

—Umberto Eco [27]

Eco argues that the reception of a work

of art makes it both performative and open. One of the strongest shifts of emphasis in the digital age has been on the production side and on the movement from creating finished works of art to creating systems for the production of art. Muntadas's *The File Room* (1994) is a progenitor in this regard and particularly important for its explicit agenda, using the combination of the database and the network to allow any viewer-user to add comments or new information about issues of censorship. This is a notoriously fraught issue regarding coverage—or lack thereof—by mainstream media.

Many other significant projects that use an open database have followed, but not only was *The File Room* one of the earliest of these projects, but in its installation form, with a single computer on a desk in a room lined with rows of filing cabinets, it was visually stunning and a proto-example of net.installation—works for which the open access of the Internet are integral and for which the artist specifies at least one physical interaction modality.

8. The Dream of the Other

From Frankenstein to Eduardo Kac's *GFP Bunny*, the technological *other* is often perceived as some kind of mutant. Even the "good" mutants—Wonder Woman, Spiderman, et al.—are portrayed as practically human despite their techno-biological deformities. The dream of the *other*, however, is to somehow inhabit the psyche of an *other*—to not merely deduce their feelings but to experience them.

Lynn Herschman's *Lorna* was the first artist-produced interactive laser disc. It was a kind of turning point for Herschman, moving from her own performative inhabitation of her alter ego, *Roberta Breitmore*, to understanding the power of interactivity and its sense of agency to allow others to "be" Lorna.

Lorna is a middle-aged agoraphobic, fearful of leaving her tiny apartment dominated by a television, which is the site of Herschman's installation. Viewer-participants can use a remote control to access chapters of a branching narrative of Lorna's life, based on the artifacts in the room. It is a simple structure, where the ability to pick and

chose how to proceed allows the viewer-participant a sense of self-directed exploration that mutates into a kind of bonding/understanding of Lorna.

9. The Dream of a New Art

One of the most persistent tropes of the intersection of technology and art is that it will lead to a whole new art form, just as moving images eventually created cinema. This may be particularly true of Internet-based art. By creating a site explicitly dedicated to purely virtual art, *äda'web* pursued this dream vigorously with a remarkable series of projects by Jenny Holzer, Julia Scher, Muntadas, Lawrence Wiener, and Doug Aitken, among others.

Curated by Benjamin Weil, *äda'web* was specifically conceived along the lines of an atelier, generally pairing established artists with a remarkable team of digital artists, led by Vivian Selbo, to workshop a project over a number of months.

Yet *äda'web* is truly a case where the whole is greater than the sum of its parts. The interface that interconnects the various elements, projects, contexts, links to other works, commentary, creation of community, self-archiving, balance between practical usability and encouraging exploration, and even the attempts at e-commerce, all combine to powerfully imagine the contours of a new art form where it is not easy to point to a pre-existing model.

10. Hacking the Dream

Artists were among the earliest and most active participants to recognize the potential of the Internet—certainly long before most institutions and corporations. One result was to hack its capabilities for alternative purposes. From Rachel Baker's *Sainsbury TM* to Electronic Disturbance Theater's *Floodnet*, there is a long history of active contingents hacking the dreams of e-commerce and universal surveillance. Mongrel's *Natural Selection* was set up as an alternative search engine. Most of its queries simply passed to a commercial search engine such as Google or AltaVista, and then presented the results as its own. If, however, certain keywords were input—

generally to do with race—*Natural Selection* would create a result set that linked to artist Web sites about that keyword. Often, a casual browser might not realize that a site presented a very different worldview than he or she had been looking for.

Many of these tactical media projects get shut down by “legal bugs” [28] or stepped-up security features, but as long as the basic protocols of the Internet remain open, hacking the dream—artistically and politically—will remain viable. Unfortunately, continued openness is not a foregone conclusion and future dreams of technology may be only what the corporations and institutions can imagine, which would be the biggest failure of all.

REFERENCES

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2. See <http://www.smalltalk.org/alankay.html> for context of this oft quoted remark by Kay.
3. Perry Hoberman, *Cathartic User Interface*, 1995. <http://www.hoberman.com/perry>.
4. Ten is an arbitrary number, and it should be clear that every referred project exceeds its particular category.
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10. Steven Johnson, *Emergence: The Connected Lives of Ants, Brains, Cities, and Software* (New York: Scribner, 2001) p. 18.
11. Paul Vanouse, *Persistent Data Confidante*, <http://pdc.walkerart.org>, Jane Prophet, *Technosphere*, <http://www.technosphere.org.uk/>, Ken Goldberg, *Jester*, <http://shadow.ieor.berkeley.edu/humor/>, John Klima, *Context Breeder*, <http://www.cityarts.com/rhizome/>.

12. Johnson, p. 20.

13. <http://www.mic.atr.co.jp/~christa/WORKS/index.html>.

14. Richard Wagner, “Outlines of the Artwork of the Future,” in *Multimedia* [1].

15. Myron Krueger *Live*, Interview with Jeremy Turner, CTheory, ARTICLES: A104, January 23, 2002; http://www.ctheory.net/text_file?pick=328.

16. http://www.immersence.com/immersence_home.htm.

17. Char Davies, *Interview with Carol Gigliotti*; <http://www.immersence.com/publications/nparadoxa-F.html>.

18. Davies is currently in the process of porting *Osmose* and *Éphémère* from high-end Silicon Graphics computers to the Playstation 2 platform.

19. Quoted in Tom Standage, *The Victorian* (New York: Berkely Books, 1998) p. 104.

20. Kit Galloway and Sherrie Rabinowitz, *Ecafé Manifesto*; <http://www.ecafe.com>.

21. <http://www.walkerart.org/gallery9/lifesharing/>.

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23. See Georgia O’Keeffe Museum online symposium, 2001, http://www.okeeffemuseum.org/center/online_symposium.html.

24. http://prixars.aec.at/history/net/1998/E98net_1.html.

25. Jorge Luis Borges, “Of Exactitude in Science,” in *A Universal History of Infamy*.

26. Andreas Broeckmann, *Topologies in Networks*, Lecture for Recycling the Future: Kunstrado Wien <http://thing.at/orfkunstrado/>, pp. 4-7, December 1997. <http://www.v.nl/~andreas/texts/1997/net-topology/net-topology.html>.

27. Umberto Eco, *The Poetics of the Open Work* (1987) pp. 48-50.

28. Knowbotic Research, *Minds of Concern: Break* <http://www.netartcommons.net/article.pl?sid=02/04/26/0311201&mode=thread> and <http://united-hack.homeunix.net/minds3/>.

Steve Dietz is the Director of New Media Initiatives at the Walker Art Center, where he is also responsible for the programming of the online “Gallery 9.” He is the principal of YProductions, which works with museums to architect digitally based cultural programming. He was formerly the head of publications and new media initiatives at the National Museum of American Art, where he established one of the earli-

est extensive museum Web sites on the Internet and co-produced the CD-ROM “National Museum of American Art,” which won the first prize in Arts and Culture at the 1997 International MILIA Festival. He was also a member of the executive committee of the Coalition for the Computer Interchange of Museum Information (CIMI) and project coordinator for the museum’s participation in the Museum Educational Site Licensing Project (MESL). He is currently on the board of the Museum Computer Network (MCN).

STEVE DIETZ'S SELECTIONS

Char Davies, Canada
Osmose, 1995

Kit Galloway and Sherrie Rabinowitz, United States
Electronic Café, 1984

Christa Sommerer and Laurent Mignonneau
A-Volve, 1994-1995

David Rokeby, Canada
Giver of Names, 1991-present

01.org
life_sharing

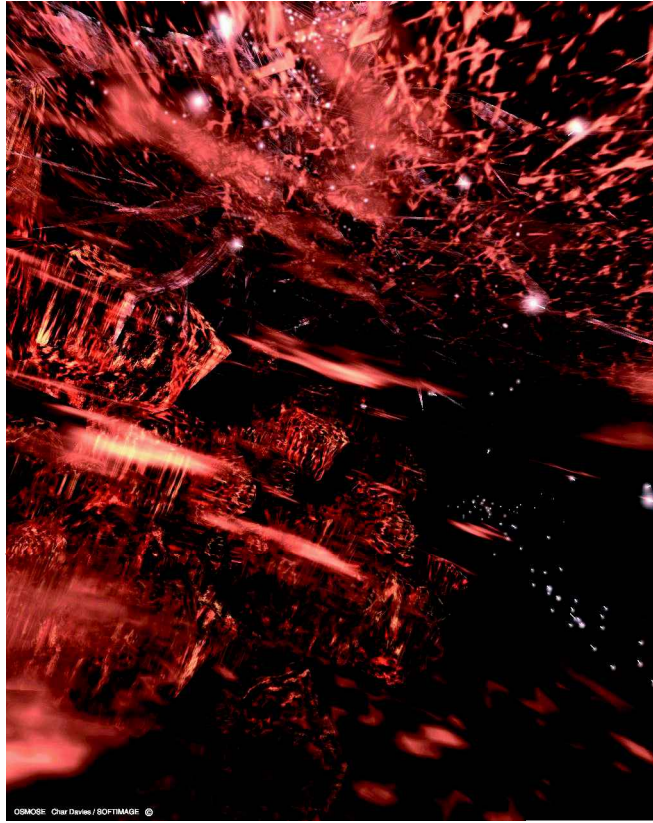
Knowbotic Research, Switzerland
IO_dencies, 1996-1998

Antonio Muntadas, Spain
The File Room, 1994

Lynn Hershman, United States
Lorna, 1979-1982

Mongrel, Netherlands
Natural Selection, 1998

Benjamin Weil, Vivian Selbo, and Andrea Scott, United States
äda'web, 1996-1999



Char Davies, Canada

Osmose, 1995

3D virtual reality immersive environment

"Rocks." Digital frame captures in real-time through HMD (Head-Mounted Display) during live performance of an immersive virtual environment.

Osmose (1995) is an immersive interactive virtual-reality environment installation with 3D computer graphics and interactive 3D sound, a head-mounted display and real-time motion tracking based on breathing and balance. Osmose is a space for exploring the perceptual interplay between self and world, i.e. a place for facilitating awareness of one's own self as consciousness embodied in enveloping space.

—Char Davies

–www.ecafe.com

Electronic Cafe
1984

A COMPUTER AND MULTI-MEDIA
TELECOMMUNICATIONS NETWORK
BRINGING TOGETHER
FIVE CULTURALLY DIVERCE
LOS ANGELES CAFES
IN A VISUAL DIALOGUE

ARTS
Olympic Arts Festival Los Angeles 1984

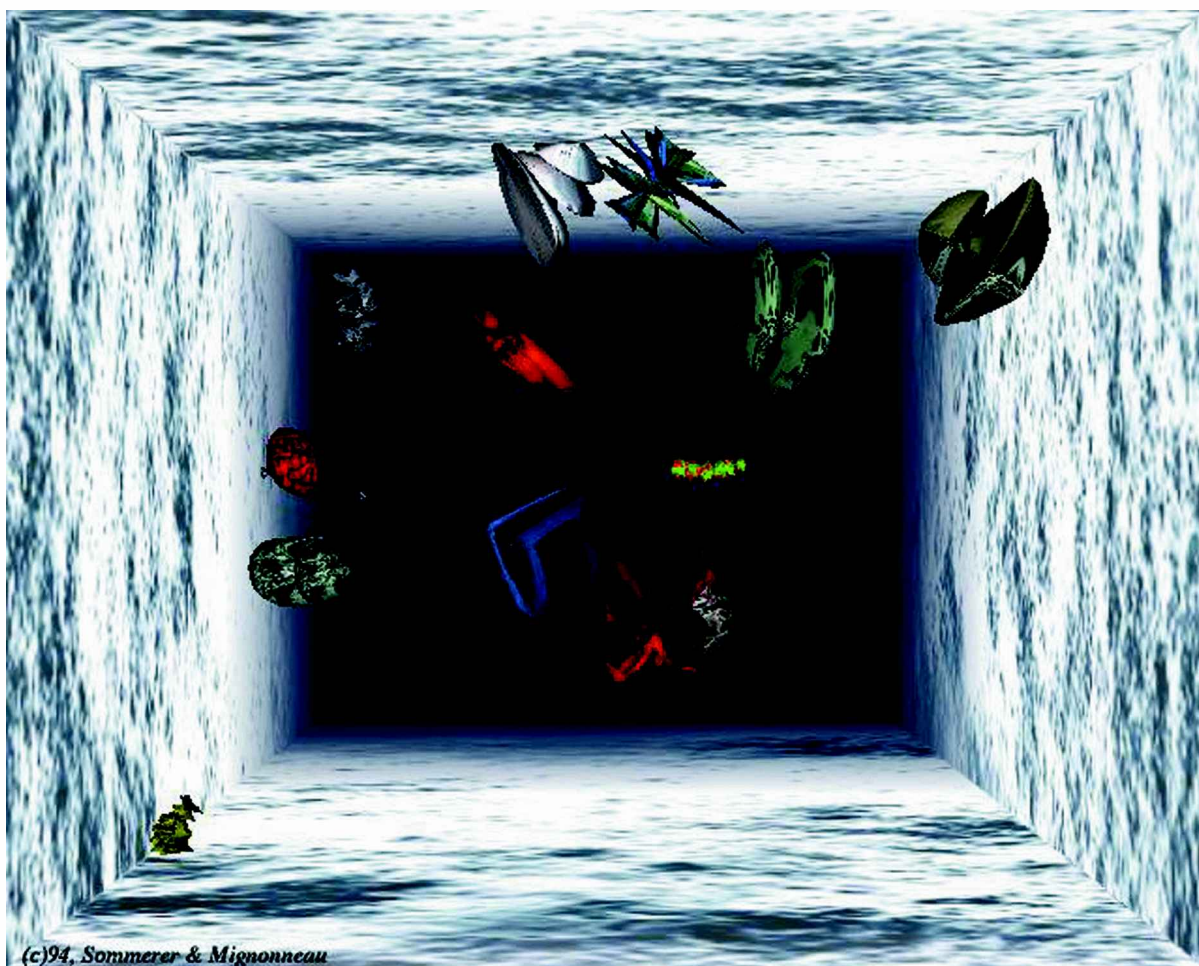
Electronic Cafe
NEW ORANGE ST.

RESTAURANT
Anamora

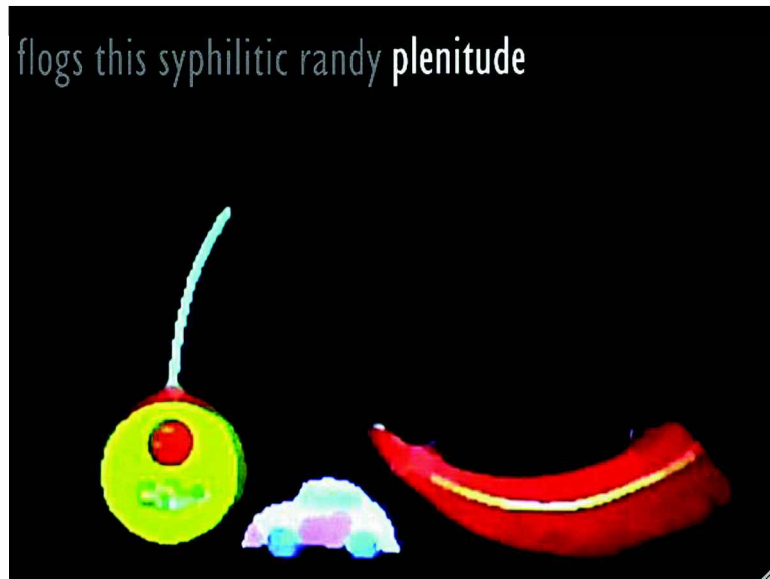
What do you think??

**나는 오늘 싸움과
함께 말리부로
수명을 하려했**

**TRY ELECTRONIC CAFE
YOU'LL LIKE IT**



Christa Sommerer and Laurent Mignonneau
A-Volve, 1994-1995
Interactive computer installation



David Rokeby, Canada

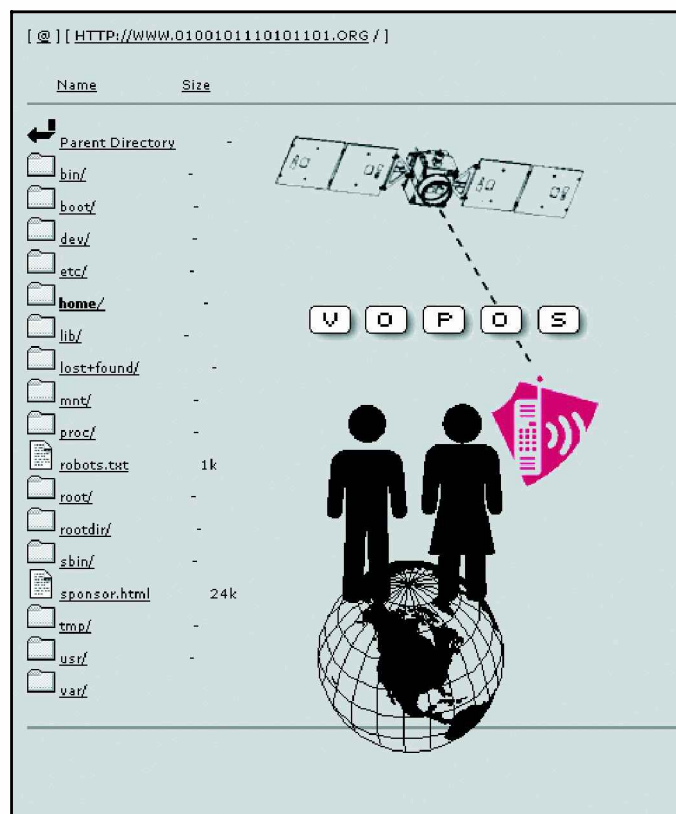
Giver of Names, 1991-present

Installation

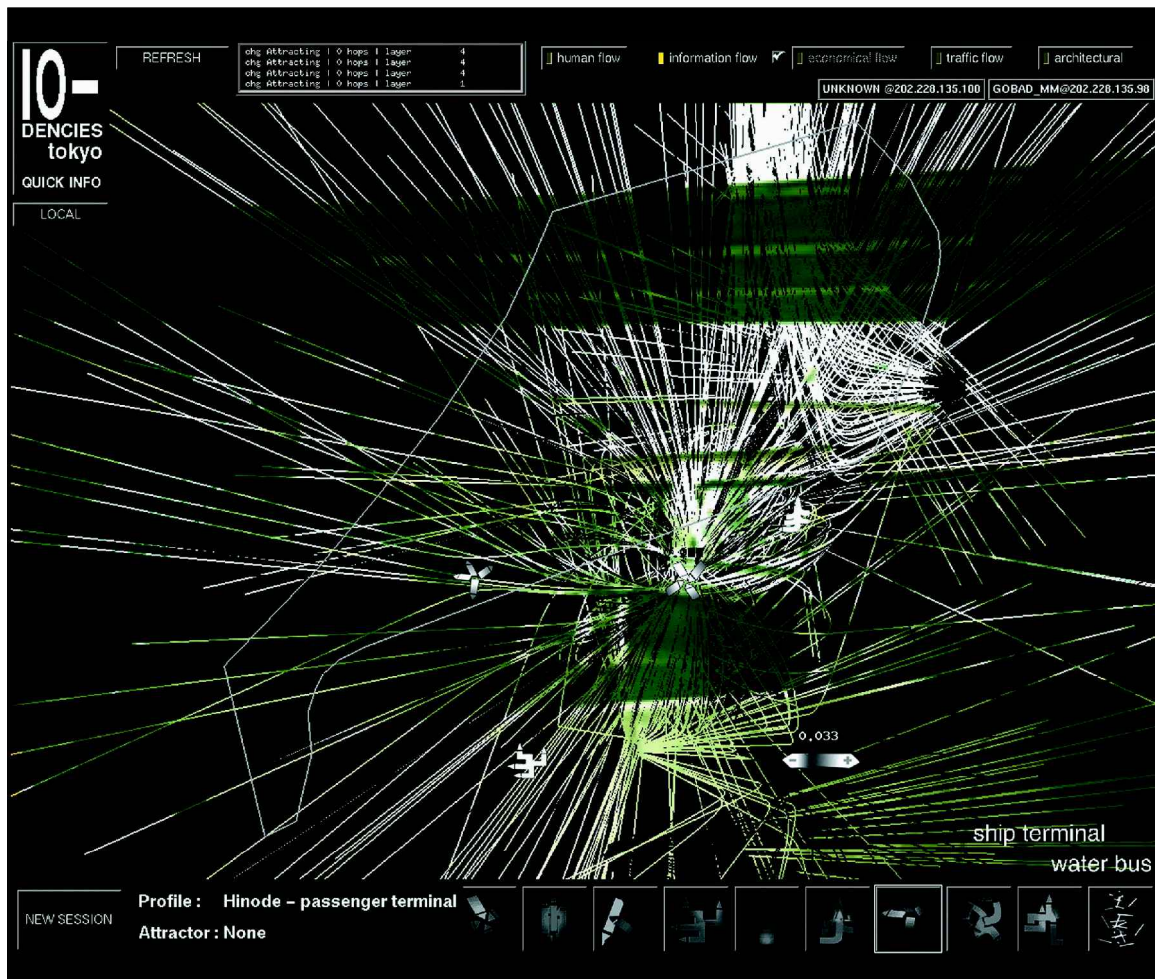
"A steadfastly orange-yellow bomb flag this syphilitic randy plenitude"

Courtesy of David Rokeby

The projects by the “activists” behind [0100101110101101.org](http://www.0100101110101101.org) are focused on data access, document and archiving models and explore the political and cultural context of networked communication. The projects include the cloning and remixing of other artists’ and organizations’ Web sites as well as the mapping, tracking, and surveillance of access logs. With the project *life_sharing*, [0100101110101101.org](http://www.0100101110101101.org) turned its site into public property: The site consisted of the organization’s hard disk, published in its entirety in html format, where it was visible and reproducible by anybody. Issues of restricted and open access to data are still a core element of this site and point to the complex politics behind any form of data management.



01.org
life_sharing
 Web site
<http://www.0100101110101101.org>
 no copyright



Knowbotic Research, Switzerland
IO_dencies Tokyo, 1996-1998
 Interactive Installation

IO_dencies looks at urban environments, analyzes the forces present in particular urban situations, and offers experimental collaborative interfaces for dealing with these force fields. The aim, however, is not to develop advanced tools for architectural and urban design, but to create events through which it becomes possible to rethink urban planning and construction. *IO_dencies* unfolds the potentials that digital technologies might offer towards connective, participatory models of planning processes and of public agency. The challenge is to understand not only the new topologies of form and of presence, but to tackle the problems of agency and events in connective and translocal environments.

—Knowbotic Research

Antonio Muntadas, Spain

The File Room, 1994

Social sculpture

<http://www.thefileroom.org>

Produced by Randolph Street Gallery

The File Room began as an idea—an abstract construction which developed into a prototype of an interactive and open system, locating and addressing the concept of cultural censorship. *The File Room* is a social sculpture, first physically installed at the Chicago Cultural Center, but remains an open interactive system on the Internet for people to contribute information and dialogue as well as research censorship cases.



Lynn Hershman, United States

Lorna, 1979-1982

Interactive videodisk installation

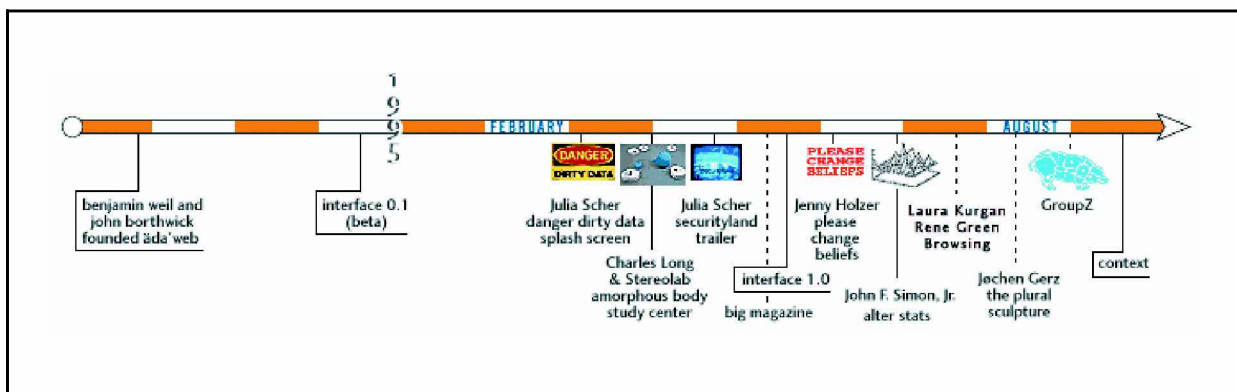
<http://www.lynnhershman.com>

Lorna was the first interactive laser art disk and told the story of an agoraphobic woman. Viewers have the option of directing her life into several possible plots and endings. Music by Terry Allen.



Mongrel, Netherlands
Natural Selection, 1998
 Web site
<http://www.mongrelx.org/Project/Natural>
 Image above of Mongrel National Heritage
 Courtesy of Mongrel NH

Natural Selection was developed in April 1994 by Matthew Filofax and Graham Wang, Ph.D. candidates in Social Engineering at Tirana University. The Web site started as a guide to replace all documents on the Internet promoting racism, nationalism, and eugenics with “mongrelised” copies that would delete the originals.



Benjamin Weil, Vivian Selbo, and Andrea Scott, United States
äda'web, 1996-1999
 Web site
<http://www.adaweb.walkerart.org>
 Image of äda'web (timeline)
 Courtesy of the Walker Art Center

äda'web released its first online project in May 1995. It set out to offer an opportunity for artists to address the new medium. Involved artists had an interest in the public space and experience working with numerous media to produce their work. It was an online art site alternative to the “online galleries” and “virtual museums” that were popping up in the mid-1990s. *äda'web* presented and produced more than two dozen interactive Internet artworks and projects designed for World Wide Web viewing. Founded by Benjamin Weil, *äda'web* was headquartered in New York. When it closed in 1998, *äda'web* was regarded as one of the premier sites for online art.