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Ten Myths of Internet Art

Jon Ippolito

ABSTRACT

This article identifies ten myths about Internet Art, and explains the difficulties museums and others have understanding what it means to make art for the Internet. In identifying these common misconceptions, the author offers insight on successful online works, provides inspiration to Internet artists, and explains that geographical location does not measure success when making art for the Internet. The article also mentions that the World Wide Web is only one of the many parts that make up the Internet. Other online protocols include e-mail, peer-to-peer instant messaging, video-conferencing software, MP3 audio files, and text-only environments like MUDs and MOOs. The author concludes his list of myths with the idea that surfing the Internet is not a solitary experience. Online communities and listservers, along with interactive Internet artworks that trace viewers and integrate their actions into respective interfaces, prove that the Internet is a social mechanism.

By the time the mainstream art world awakened to the telecommunications revolution of the 1990s, a new landscape of exploration and experimentation had already dawned outside its window. Art on this electronic frontier–known variously as Internet art, online art, or Net art–matured at the same breakneck pace with which digital technology itself has expanded. Less than a decade after the introduction of the first image-capable browser for the World Wide Web, online art has become a major movement with a global audience. It took twenty years after the introduction of television for video artists such as Nam June Paik to access the technology required to produce art for broadcast television. Online artists, by comparison, were already exchanging text-based projects and criticism before the Internet became a visual medium with the introduction of the Mosaic browser in 1993. By 1995, eight percent of all Web sites were produced by artists, giving them an unprecedented opportunity to shape a new medium at its very inception. Since that time, art on the Internet has spawned countless critical discussions on e-mail-based communities such as the Thing, Nettime, 7-11, and Rhizome.org. Encouraged by a growing excitement over the Internet as a social and economic phenomenon, proliferating news articles and museum exhibitions have brought online art to the forefront of the discussion on art's future in the 21st century.

One of the reasons for the difficulty of adapting a museum to networked culture is that numerous misconceptions persist about that culture–even those who are savvy about art or the Internet do not often understand what it means to make art for the Internet. The following are ten myths about Internet art worth dispelling.

Myth Number 1: The Internet is a medium for delivering miniature forms of other art mediums.

Though you might never know it from browsing many of the forty million Web sites listed in an online search for the word "art," the Internet is more than a newfangled outlet for selling paintings. Granted, searching Yahoo for "Visual Art" is just as likely to turn up alt.airbrush.art as *äda'web*, but that's because Internet art tends to make its cultural waves outside of art-world enclaves, surfacing on media venues like CNN and the *Wall Street Journal* as well as on museum Web sites. More importantly, this art exploits the inherent capabilities of the Internet, making both more participatory, connective, or dynamic. Online renditions of paintings or films are limited not only by the fact that most people cannot afford the bandwidth required to view these works at their original resolution, but also because painting and cinema do not benefit from the Internet's inherent strengths: You would expect more art made for television than a still image. So when surfing the Web, why settle for a scanned-in Picasso or a 150-by-200 pixel *Gone with the Wind?* Successful online works can offer diverse paths to navigate, recombine images from different servers on the same Web page, or create unique forms of community consisting of people scattered across the globe.

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Myth Number 2: Internet art is appreciated only by an arcane subculture.

Museum curators are sometimes surprised to discover that more people surf prominent Internet art sites than attend their own brick-and-mortar museums. To be sure, the online art community has developed almost entirely outside the purview of galleries, auction houses, and printed art magazines. Ironically, however, online art's disconnect from the mainstream art world has actually contributed to its broad appeal and international following. The absence of a gallery shingle, a museum lintel, or even a "dot-art" domain suffix that flags art Web sites means that many people who would never set foot in a gallery stumble across works of Internet art by following a fortuitous link. Without a Duchampian frame to fall back on, most online artworks look outside of inbred references to art history or institutions for their meaning. For these reasons, the Guggenheim's acquisition of online works into its collection is less a radical experiment in evaluating a new medium than a recognition of the importance of this decade-old movement.

Myth Number 3: To make Internet art requires expensive equipment and special training.

One of the reasons network culture spreads so quickly is that advances don't come exclusively from Big Science or Big Industry. Individual artists and programmers can make a difference just by finding the right cultural need and fulfilling it through the philosophy of "DIY: Do It Yourself." In the right hands, homespun html can be just as powerful as elaborate vrml environments. And thanks to View Source–the browser feature that allows surfers to see how a Web page is built and reappropriate the code for their own means–online artists do not need residencies in research universities or high technological firms to acquire the necessary skills. The requirement that online artworks must squeeze through the 14.4 kbs modems of dairy farmers and den mothers forces online

artists to forgo the sensory immersion of IMAX or the processing power of Silicon Graphics. However, constraints on bandwidth and processor speed can actually work to the advantage of Internet artists, encouraging them to strive for distributed content rather than linear narrative, and to seek conceptual elegance rather than theatrical overkill. Making successful art for the Internet is not just a matter of learning the right tools, but also of learning the right attitude.

Myth Number 4: Internet art contributes to the "digital divide."

The widening gap between digital haves and have-nots is a serious concern in many public spheres, from education to employment. But this bias is reversed for art. While it is true that artists in Ljubljana or Seoul have to invest in a computer and Internet access, finding tubes of cadmium red or a bronze foundry in those locales is even more challenging and much more expensive. Even in Manhattan, an artist can buy an iMac for less than the oils and large stretcher bars needed to make a single "New York-sized" painting. And when it comes to distributing finished works, there is no comparison between the democratizing contact made possible by the Internet and the geographic exclusivity of the analog art world. Only an extreme combination of luck and persistence will grant an artist entrance to gallery openings and cocktail parties that can make or break careers in the New York art world. But artists in Slovenia and Korea–outside of what are considered the mainstream geographic channels of the art world–have had notable success in making art for the Internet, where anyone who signs up for a free e-mail account can debate Internet aesthetics with curators on Nettime or take advantage of free Web hosting and post art for all to see.

Myth Number 5: Internet art = Web art.

The World Wide Web is only one of the media that make up the Internet. Internet artists have exploited plenty of other online protocols, including e-mail, peer-to-peer

instant messaging, videoconference software, MP3 audio files, and text-only environments like MUDs and MOOs. It's tempting to segregate these practices according to traditional categories, such as calling e-mail art and other ephemeral formats "performance art." Yet the interchangeability of these formats defies categorization, as when, for example, the transcript of improvisational theater conducted via a chat interface ends up on someone's Web page as a static text file. Internet mediums tend to be technologically promiscuous: Video can be streamed from within a Web page, Web pages can be sent via e-mail, and it's possible to rearrange and re-present images and text from several different sites on a new Web page. These artist-made mutations are not just stunts performed by mischievous hackers; they serve as vivid reminders that the Internet has evolved far beyond the print metaphors of its youth.

Myth Number 6: Internet art is a form of Web design.

It may be fashionable to view artists as "experienced designers," but there is more to art than design. The distinction between the two does not lie in differences in subject matter or context as much as in the fact that design serves recognized objectives, while art creates its objectives in the act of accomplishing them. The online portfolios of Web design firms may contain dazzling graphics, splashy Flash movies, and other attractions, but to qualify as art such projects must go beyond just visual appeal. Design creates a matrix of expectations into which the artist throws monkey wrenches. Just as a painter plays off pictorial design, a Net artist may play off software design. Design is a necessary, but not sufficient, condition for art.

Myth Number 7: Internet art is a form of technological innovation.

Internet artists spend much of their time innovating: custom writing Java applets or experimenting with new plug-ins. But innovation in and of itself is not art. Plenty of nonartists discover unique or novel

ways to use technology. What sets art apart from other technological endeavors is not the innovative use of technology, but a creative misuse of it. To use a tool as it was intended, whether a screwdriver or spreadsheet, is simply to fulfill its potential. By misusing that tool—that is, by peeling off its ideological wrapper and applying it to a purpose or effect that was not its maker's intention—artists can exploit a technology's hidden potential in an intelligent and revelatory way. And so when Nam June Paik lugs a magnet onto a television, he violates not only the printed instructions that came with the set, but also the assumption that networks control the broadcast signal. Today's technological innovation may be tomorrow's cliché, but the creative misuse of technology still feels fresh even if the medium might be stale. The combined megahertz deployed by George Lucas in his digitally composited *Star Wars* series only makes more impressive—and equally surprising—the effects Charlie Chaplin achieved simply by cranking film backwards through his camera. In a similar vein, the online artists JODI.org exploited a bug in Netscape 1.1 that allows an "improper" form of animation that predated Flash technology by half a decade.

Myth Number 8: Internet art is impossible to collect.

Although the "outside the mainstream" stance taken by many online artists contributes to this impression, the most daunting obstacle in collecting Internet art is the ferocious pace of Internet evolution. Online art is far more vulnerable to technological obsolescence than its precedents of film or video: In one example, works created for Netscape 1.1 became unreadable when Netscape 2 was released in the mid-1990s. Yet the Guggenheim is bringing a particularly long-term vision to collecting online art, acquiring commissions directly into its permanent collection alongside painting and sculpture rather than into ancillary special Internet art collections as other museums have done. The logic behind the Guggenheim's approach, known as the "Variable Media Initiative," is to prepare for the obsolescence of

ephemeral technology by encouraging artists to envision the possible acceptable forms their work might take in the future. It may seem risky to commit to preserving art based on such evanescent technologies, but the Guggenheim has faced similar issues with other contemporary acquisitions, such as Meg Webster's spirals made of leafy branches, Dan Flavin's installations of fluorescent light fixtures, and Robert Morris's temporary plywood structures that are built from blueprints. Preserving those works requires more than simply storing them in crates—so too immortalizing online art demands more than archiving Web files on a server or CD-ROM. Along with the digital files corresponding to each piece, the Guggenheim compiles data for each artist on how the artwork is to be translated into new mediums once its original hardware and software are obsolete. To prepare for such future re-creations, the Guggenheim has started a variable media endowment, where work of interest is earmarked for future data migration, emulation, and reprogramming costs.

Myth Number 9: Internet art will never be important because you can't sell a Web site.

It is true that the same market that so insouciantly banged gavels for artworks comprised of pickled sharks and other unexpected materials has yet to figure out how to squeeze out more than the cost of dinner for two from the sale of an artist's Web site. The reason artists' Web sites have not made it to the auction block is not their substance or lack thereof, but their very origin (equally immaterial forms of art have been sold via certificates of authenticity since the 1970s). The Internet of the early 1990s, and the art made for it, was nourished not by venture capital or gallery advances but by the free circulation of ideas. Exploiting network protocols subsidized by the US government, academics e-mailed research and programmers ftp'd code into the communal ether, expecting no immediate reward but taking advantage nevertheless of the wealth of information this shared ethic placed at their fingertips. Online artists followed suit, posting art

and criticism with no promise of reward but the opportunity to contribute to a new artmaking paradigm. Indeed, many artists who made the leap to cyberspace claimed to do so in reaction to the exclusivity and greed of the art market. It's not clear whether online art can retain its youthful allegiance to this gift economy in the profit-driven world. It is possible, however, to hypothesize a Web site's putative value independent of its price tag in an exchange economy. That value would be the sum total of money a museum would be willing to spend over time to reprogram the site to ward off obsolescence (see Myth Number 8).

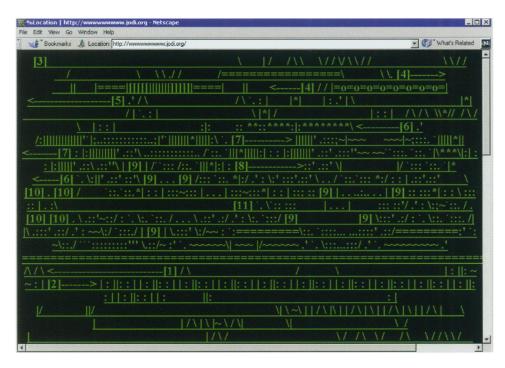## Myth Number 10: Looking at Internet art is a solitary experience.

The Internet may be a valuable tool for individual use, but it is far more important as a social mechanism. Beyond the numerous online communities and listservs dedicated to discussing art, many of the best Internet artists reckon success not by the number of technical innovations, but by the number of people plugged in. The hacktivist clearinghouse ®™ark, for example, connects sponsors who donate money or resources for anticorporate protest with activists who promote those agendas. In online art, works as visually dissimilar as Mark Napier's *net.flag* and John F. Simon, Jr.'s *Unfolding Object* capture the traces of many viewers' interactions and integrate them into their respective interfaces. In some cases, viewers can see the effects of other participants reflected in the artwork in real-time. In most online art, however, as in most online communication, viewers' interactions are asynchronous—as though an empty gallery could somehow preserve the footprints of previous visitors, their words still ringing in the air.

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Nam June Paik, Korea
Random Access, 1963
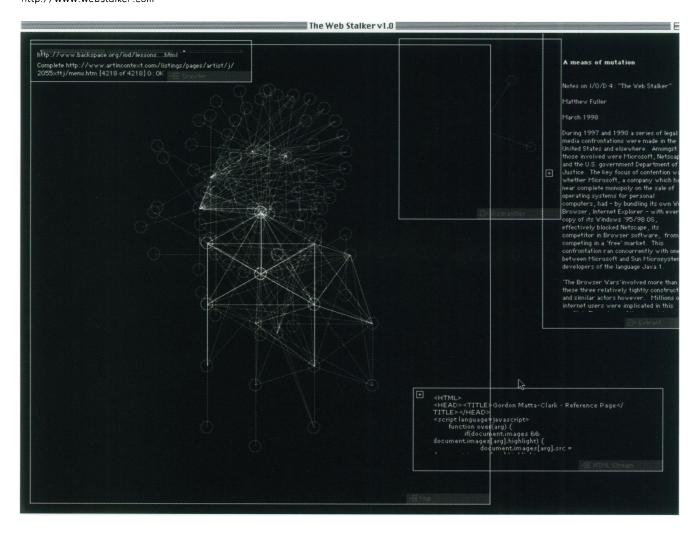Installation
Photo by Manfred Montwé

Random Access was the first artist's Web browser. Of course, Paik built *Random Access* two decades before TCP/IP and three decades before Mosaic—but then Paik has made a career of being ahead of his time. He co-developed the first video synthesizer in 1970, coined the term "electronic superhighway" in 1976, and veejayed a live global videocast in 1984, which he did the old-fashioned way—via satellite. (Not to mention that anyone who has ever seen one of his videotapes knows where MTV got the idea of rapid-fire video editing.) In 1963 the closest thing to creating art for the Web was writing electronic music for 1/4-inch magnetic tape. The Korean-born Paik had studied 20th-century music in Japan and Germany, but it was a revelatory meeting with American composer John Cage in 1958 that opened his mind to the possibilities of combining music, performance, and electronics. For his first solo show, at a gallery in Wuppertal, Germany, Paik tacked fifty-odd strips of prerecorded audiotape to the wall and invited visitors to run a handheld playback head wired to speakers along the strips at whatever speed or direction they desired. Unlike some of today's closed formats like Java or Flash, *Random Access* was no black box; on the contrary, Paik exposed the guts of a tape player to his viewers, offering a hands-on feeling (quite literally) for how audio technology worked and what it was capable of. While even the most advanced reel-to-reel player of the day presumed the listener would want to hear a piece of music from beginning to end, *Random Access* showed that a linear medium could be sliced up and scattered across a spatial expanse.
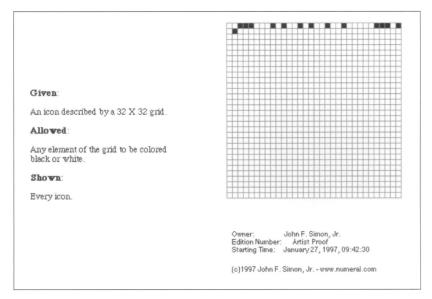
JODI
www.jodi.org, 2000
Web site

"JODI" have already been proposed by other curators, but rather than aim to represent a single (uncharacteristically) self-contained work, I would like to see if the institutional setting can accommodate the fluid and fragmentary nature of their best-known body of work, JODI.org.

I/O/D, United Kingdom
I/O/D 4: The Web Stalker, 1997
Software
http://www.webstalker.com

Given:

An icon described by a 32 X 32 grid.

Allowed:

Any element of the grid to be colored black or white.

Shown:

Every icon.

Owner: John F. Simon, Jr.
Edition Number: Artist Proof
Starting Time: January 27, 1997, 09:42:30

(c)1997 John F. Simon, Jr. - www.numeral.com

John F. Simon, Jr., United States
Every Icon, 1997
Web site
http://www.numeral.com

Simon's *Every Icon* reveals the power and limitations of the computer's ability to generate a wealth of images from a few lines of code. Simon's definition of the project couldn't be simpler:
Given: a 32 x 32 grid
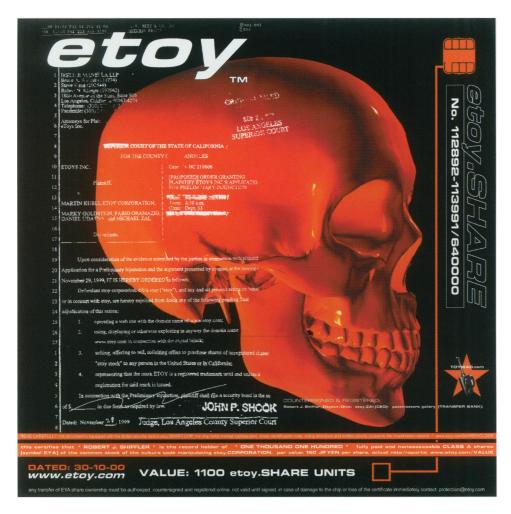Allowed: any element of the grid to be black or white
Shown: Every Icon

The word "shown" is somewhat misleading. Once triggered by the user, Simon's applet will in good faith begin to display every possible combination of black and white elements; yet even at a typical desktop computer's rate of 100 new icons per second, it would take over 10,298 years to draw every icon. Like Borges' fabled library, there is always the potential of finding a meaningful artifact, but in practical terms the user is likely to be exhausted long before the icons are. In fact, Simon estimates that the first recognizable image won't appear for several hundred trillion years. Eventually, *Every Icon* will generate a pixilated version of every possible image, from the Coca-Cola™ logo to the Mona Lisa to a picture of the viewer's own face. In doing this, the applet will transgress countless individual and corporate copyrights simply because Simon's visual invention is so fundamental that it spans an entire visual domain. The basic level at which *Every Icon* operates means that it can be effectively viewed on a ten-foot high videowall or on a handheld palm pilot. In its adapability to new platforms, *Every Icon* has inspired preservation strategies like the variable paradigm, which suggests fluidity rather than fixity as the solution to the specter of technological obsolescence haunting digital art.

Mark Napier, United States
RIOT, 1999
Web site
http://www.potatoland.com/riot/

RIOT allows viewers to superimpose elements from Web sites of their choosing onto a single window. While Napier's Feed combines maximum number-crunching with minimum viewer input (e.g., the viewer can only choose from a predetermined selection of URLs), *RIOT* with a modicum of code stimulates viewers to engage in a truly collaborative performance. Unlike Napier's collaborative tools that emphasize pure visual dazzle—*Ripple and p-Soup*, for example—*RIOT* emphasizes the social dynamics of the participants. Sometimes they trade URLs in a sympathetic dialogue; other times they compete for visual or thematic dominance. My favorite *RIOT* experience was trying to blot out pornography shots with baby pictures.

etoy.Corporation, Switzerland
Toywar, 1999
Web site
http://www.etoy.com

In November of 1999 the online toy retailer etoys.com managed to shut down the Web site of the venerable artist collective etoy.com. Although the artists had registered their domain name two years before the trinket salesmen registered theirs, the corporation happened to register their "trademark" first. Ignoring the fact that US trademarks don't have automatic jurisdiction over an international territory like cyberspace, a California judge granted a temporary injunction blocking public access to the artists' domain. The timing of this action occurred a few months before the Christmas that many predicted would be the first real moneymaking season for e-commerce. This seemed to confirm that corporate giants would soon overpower grass-roots collectives encouraged by the democratic protocols that spurred innovation in the early Internet.

Responding to a call for a campaign against the toy giant orchestrated by the hacktivist clearinghouse ®™ark, online artists and hackers e-mailed journalists, posted exhortations to disinvest on electronic bulletin boards frequented by etoys' stockholders, and used virtual sit-in software to tie up the toy purveyor's server with random subscribers and counterfeit shopping carts. The spurious visitors automatically generated by the FloodNet-style software cast into doubt etoys' hit counts, which just happen to be one of the benchmarks by which investors valued etoys' stock. That stock tumbled 70% off its original value over the course of ®™ark's "toywar," and etoys.com formally withdrew their suit in January 2000. If hacktivists are artists, then *Toywar* was their way of looking after their own.

494   *Jon Ippolito,* Selections

Gallery of CSS Descramblers

On January 20, 2000, United States District Judge Lewis A. Kaplan of the Southern District of New York issued a preliminary injunction in Universal City Studios et al. v. Reimerdes et al., prohibiting the defendants from distributing computer code for reading encrypted DVDs. The defendants had been sued under 17 USC 1201(a)(2), also known as section 1201(a)(2) of the Digital Millenium Copyright Act.

Judge Kaplan subsequently issued a memorandum order in which he indicated that executable source code was not subject to First Amendment protection against prior restraint of speech. This finding is contrary to that of the 9th Circuit US Court of Appeals, who ruled in the Bernstein cryptography case that source code is indeed protected speech. In their decision, The 9th Circuit even quoted some Scheme code from the declaration of MIT Professor Harold Abelson, explaining why source code is an effective and sometimes preferred means of human communication. Professor Andrew Appel of Princeton University also filed a declaration explaining the importance for computer science of being able to publish source code. More recently, the 6th Circuit US Court of Appeals ruled in the Junger cryptography case that, independent of its functional significance, the expressive nature of source code affords it First Amendment protection.

If code that can be directly compiled and executed may be suppressed under the DMCA, as Judge Kaplan asserts in his preliminary ruling, but a textual description of the same algorithm may not be suppressed, then where exactly should the line be drawn? This web site was created to explore this issue, and point out the absurdity of Judge Kaplan's position that source code can be legally differentiated from other forms of written expression.
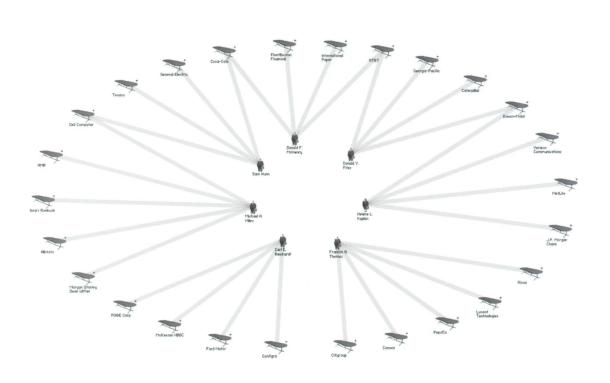
David S. Touretzky, United States
Gallery of CSS Descramblers, 2000
Web site
http://www-2.cs.cmu.edu/~dst/DeCSS/Gallery/

David S. Touretzky's *Gallery of CSS Descramblers* aims to debunk a particular myth about computers—and in the process overturn a legal judgment that he believes abrogates the free speech guaranteed by the US Constitution. The judgment in question, *Universal v. Reimerdes,* challenged the right of online magazines and Web site operators to publish or link to a computer program that the plaintiff claimed was "illegal" according to the Digital Millennium Copyright Act. Against the defendants' argument that censoring the DeCSS software was akin to stifling free speech, Judge Kaplan contended that computer code was unlike speech because it was executable. As a practicing programmer, however, Touretzky believed that there was a slippery slope between software and speech, and he set out to prove it. Touretzky's call for variations on the "illegal" DeCSS code generated a vast array of responses on the spectrum between execution and expression. Some of the variations are utter geekhood: Professional programmers translated DeCSS into numerous computer languages (C source code, Perl code, and Standard ML). Those with a more a "artistic" bend embedded the code in familiar artistic mediums, such as a GIF image, a movie, a T-shirt, a Yahoo greeting card, a song, and even a haiku. While Touretzky's gallery has influenced the course of legal history, it wasn't meant to prove a case, but to disprove one by demonstrating inherent ambiguities in a seemingly black and white situation. The fact that it asks rather than answers questions is what makes Touretzky's gallery, together with the artifacts it contains, an important work of art.

One of the best examples of an artwork that uses Internet technology to make visible the hidden structures of social power, *They Rule* is an expandable diagram of the most influential American corporations' board members. Unlike organizational charts and annual reports, which only indicate the members of any given board, *They Rule* traces the hidden connections between corporate power brokers. Using this interface, for example, it's possible to discover that members of the boards for the so-called competitors Coke™ and Pepsi™ actually sit together on the board of a third corporation, Bristol-Myers Squibb™. *They Rule* sits at the intersection of political design and hacktivism. Athough it derives from available public information rather than private testimonies, the database underlying the scripted interface exploits the same principle as Patrick Ball's databases used against Slobodan Milosevic at the Hague: Once you get enough information in one place, you can draw connections you might not otherwise apprehend. *They Rule* also demonstrates how an artist–someone experienced in making the obscure visible–can render information in a legible, and hence instructive, form.

Josh On, United States
They Rule, 2001
Web site
http://www.theyrule.net
Image created by an anonymous user of site using data
from the interlocking boards of the Fortune 100.

Char Davies, Canada
Éphémère, 1998
3D virtual reality immersive environment
"Seeds." Digital frame captured in real-time through HMD (head-mounted
display) during live performance of immersive environment.

There are both technical and cultural reasons why the hype about virtual reality has diminished since its peak in 1993. The technical problem was that advances in eyepiece resolution couldn't keep up with accelerating microprocessor speeds: No matter how advanced the software, virtual reality headsets were just too blurry to convey the illusion of another world. The cultural problem was that virtual reality's promise of constructing a ghostly realm that consciousness could explore without the constraints of flesh had become obsolete. Gawky virtual reality helmets have now given way to scarlet Nokia phones and burnished Palm Vs, and people use these stylish wireless devices not to escape bodies, but to find them. Given this historical context, it's not hard to see why *Osmose* and *Éphémère* have more staying power than most experiments in virtual reality. The realm Davies creates is deliberately watery and out-of-focus, and her breath-activated interface makes viewers more conscious of their bodies.

John Cage, United States
Imaginary Landscapes, 1939, 1942, 1951, 1952
Electronic music and performance

Cage is the most under-recognized pioneer in electronic and variable media of the 20th century. As an artist and teacher he had a critical impact on the development of electronic music and performance; as a thinker he anticipated a wide range of new media innovations, from deejay culture to artificial life to "collider" Internet art to open source programming. Many of the techniques he pioneered, such as chance, recombination, and indeterminacy, are reflected in his scores for the *Imaginary Landscapes* created between 1939 and 1952. A simple list of the instrumentation gives a glimpse into the fertile imagination of this prophetic artist:

Imaginary Landscape No. 1, 1939, two variable-speed phono-turntables, frequency recordings, muted piano, and cymbal

Imaginary Landscape No. 2 [March No. 1], 1942, percussion quintet

Imaginary Landscape No. 3, 1942, percussion sextet

Imaginary Landscape No. 4 [March No. 2], 1951, twelve radios

Imaginary Landscape No. 5, 1952, any forty-two recordings