Leonardo Electronic Almanac Volume 2, No. 6

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INTRODUCTION

< The Leonardo Electronic Almanac Gallery >
Craig Harris

In previous issues of LEA I requested that contributors consider including examples of work for the LEA Gallery, in support of their articles and reviews. This month we launch the gallery with two Hypercard interactive works: Eduardo Kac's hyperpoem "Storms", and Mike Mosher's hypernovella "Hucklefine". Readers will need to have access to Macintosh computers and Hypercard in order to view them. Thanks to the authors for this contribution. Specifics about what there is and how to get it appear with their articles. Authors/Artists retain complete onwership of their works, so please retrict use of these works to the permissions and policies stated in LEA.

The Profiles section introduces "The File Room", a Mosaic-based work on censorship by Muntadas and produced by Randolph Street Gallery in Chicago, Illinois, USA. A new installment of Leonardo Digital Reviews provides insights and critical perspectives about current works and events. The issue also includes a collection of announcements and opportunities which have not been widely distributed in other electronic resources which LEA readers peruse.

As you will read in the following statements from The MIT Press and Computer Music Journal, the resources at the ftp site continue to evolve. I hope to be able to offer a Leonardo Electronic Almanac "home page" for World-Wide Web and Mosaic access in the near future. We will continue to distribute the text-based LEA for the 1995 issues.

Next month LEA will feature Greg Garvey's article discussing his "Automatic Confession Machine" and Stephen Bell's article "Participatory Art and Computers", in which he presents a list of characteristics designed to facilitate analysis and creation

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of participatory art works.

Many thanks to all contributors. Keep the material coming!

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< The MIT Press Worldwide Web site evolves >

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The MIT Press is pleased to announce that its Web server is now up and running and, although still under construction, is available for browsing. We currently have the complete Journals 1994 Catalog and Recent Books (Fall 93 and Spring 94) loaded, with index tags and keyword searching built in but not yet enabled. (Give it a couple of weeks more.) We have a Mosaic order form available for journals subscriptions and will have one for books by the end of the month. Other forthcoming enhancements: tables of contents and introductions for books, TOCs for journals, calls for papers, submission information, etc. We have built in links to the Artificial Life BBS and the Presence home page. Please let us know if there are other links appropriate for other journals.

URL: http://www-mitpress.mit.edu/

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< The Computer Music Journal Internet Archive and World-Wide Web Home Page >

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This archive is a set of files that are stored on two Internet-accessible servers -- one at MIT and one at Stanford -- for the use of CMJ readers and members of the computer music community in general. The two URLs for the Computer Music Journal WWW home page are:
“file://mitpress.mit.edu/pub/Computer-Music-Journal/CMJ.html”
and
“file://ccrma-ftp.stanford.edu/pub/Publications/cmj/CMJ.html”.

The archive includes the tables of contents, abstracts, and editor’s notes for the last several volumes of CMJ (including the recent bibliography, diskography, and taxonomy of the field), a number of useful CM-related documents such as the full MIDI and AIFF format specifications, a lengthy reference list, the guidelines for manuscript submission, and the full text of several recent articles.

The files in these directories can be copied via anonymous Internet ftp file transfer, and there also is a World-Wide Web (WWW) “home page” in the file named “CMJ.html” that contains useful pointers into the archive (and elsewhere) and provides hypertext access for users of web browsers such as the NCSA’s Mosaic.

A README document mitpress.mit.edu:/pub/Computer-Music-Journal/README describes the archive contents in more detail. Comments and suggestions are invited from readers/users about what if of use to you and what should be stored here.

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< Letters to the Editor >

Sonya Rapoport

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Dear Editor,
I recently read in the June issue of 'The Art Newspaper", a London publication, that Jan Hoet announced his candidacy as a Christian Democrat in the June 12 European Parliamentary elections. Although the political party is not considered progressive on culture and the arts, Hoet justified his position by his attachment to democratic principles, and felt obliged to take a responsibility in widening the political debate. He claimed, "Art has given me an understanding of what politics should be." Readers may or may not recall the discussion in LEA vol. 1, No. 3 (November, 1993) regarding Hoet's plenary lecture in Minneapolis at the FISEA symposium. Hoet could not see any art exhibited in the galleries there; nor could he envision the use of technology in the future of art. He stated that he is "more often annoyed by the use of electronic media in art." Now he feels, "My mandate in the art world is drawing to a end. There are plenty of intelligent dynamic youngsters who could take my place, if I were elected." I do not know if he was elected.

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< LEA Subscription Update >

As many of our Leonardo Electronic Almanac readers know, LEA is a grand experiment in establishing a self-supporting, internet-based journal. The period from September 1993 through December 1994 has been made possible through a grant from Mrs. E. Maxwell, through support in the form of computer resources, subscription management and promotion activities from the MIT Press, and through the commitment of the people at Leonardo, the International Society for the Arts, Sciences and Technology. We all feel strongly about the value of an internet-accessible journal, and have been working arduously to ensure that LEA will be able to continue.

It is now time to move to the next phase in LEA's development. Beginning on July 1, 1994 Leonardo Electronic Almanac is moving to a new price structure. As we promised, Leonardo/ISAST and The MIT Press are offering LEA gratis to current subscribers of the hardcopy journal Leonardo for the rest of 1994. Current paid subscribers will also receive LEA for the duration of calendar year 1994. The rates for individuals and institutions subscribing to LEA after June 30, 1994 are $15 a year for subscribers to the hardcopy journal Leonardo, and $25 a year for others. Subscription at these rates will provide LEA throughout 1995, providing as many as 18 issues for the 12-month annual subscription price. 1995 renewal subscriptions for the hardcopy journal will not include LEA gratis, but will be subject to the annual $15 LEA subscription rate.

The price for individuals and institutions remains the same at this time. We recognize that several institutions do now or would like to post LEA using local gopher and mosaic services, and Leonardo/ISAST along with the MIT Press give institutions permission to offer access to LEA within the organization. Open access to other individuals and organizations is not permitted.

The quality and development rate for Leonardo Electronic Almanac is directly related to our ability to establish its financial foundation. We currently have 230 "subscribers", including over 25 libraries, universities and art centers. Many of these are current Leonardo journal subscribers. If all of

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our current subscribers renewed, we can establish a modest budget to produce LEA (Do the math, and you'll see what I mean!).

Leonardo/ISAST also gratefully accepts donations in support of LEA. Donations should be sent directly to the Leonardo/ISAST editorial address, listed at the end of LEA, and should be clearly marked as support for LEA. Donations are tax-deductible in the USA according to the regulations of the IRS.

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< Errata >

In the May compilation of Leonardo Digital Reviews (LEA 2:5) Axel Mulder's address was incorrectly listed. Axel's correct address follows:

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We apologize for the error.

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FEATURE ARTICLES

< Hucklefine Defined and Literary Cyberspaces >

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[Editor's Note: Though this essay dates back to 1990, it contains information and opinions still of interest to Leonardo readers. Readers with ftp access should go to the directory pub/Leonardo/Leonardo-Elec-Almanac/Gallery at mitpress.mit.edu. These files are all Macintosh binhexed binaries:

Hucklefine.password1972.hqx: This is the Hypercard stack for Hucklefine. This requires HyperCard 1.25 or later to operate. You will need to enter the password "1972" to begin the program.
HucklefineSampleScreen.hqx: This is a sample screen for Hucklefine.]

Abstract:
The author's HyperCard document "Hucklefine" has a direct literary prototype in the content of Huckleberry Finn. Yet its formal characteristics, and those of hypermedia literature, have other historical prototypes as well, and the author discusses other creative works composed in HyperCard. There are also visual issues to this medium, and these tie into further extensions of hypermedia into real-time multidimensional cyberspaces. Yet it is a figure from poetry who suggested one approach to navigating new and difficult electronic spaces.

1. Hucklefine.

In 1990 I completed a "hypernovella", executed in HyperCard (TM) by Apple Computer, Inc. for the Macintosh (R) personal

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computer, as one more contribution to the artistic exploration of desktop hypermedia. "Hucklefine" is a reworking of Mark Twain's 1885 novel "Huckleberry Finn", in what seemed a proper form a hundred and five years later - to play with the interface of language and image.

Huckleberry Finn has been long regarded by the academic canon as America's greatest novel, but at the same time a rather strange yarn of escape from drunken fathers, fake disappearances of children, traveling confidence men, talentless tent shows, cross-dressing, clan feuds and a near-lynching. In distillation of its content one realizes just how weird Huckleberry Finn is, more disturbing than morbidity of Poe or the obsessions of Melville. Besides all that, the work is irradiated by its hero Huck's growing conscious distrust of America's "peculiar institution" of slavery, as others are of the peculiar race relations that have followed it. The American road epic tradition beginning in this book continued through another century's works, through Jack Kerouac's books and through many, many movies. Like films "The Blues Brothers" or "Purple Rain", I have set my "Hucklefine" lightly into an interracial landscape of pop musicians, an arena black and white have both defined themselves with arresting sound and image, intermingling in American culture. Jim becomes James, father of the narrator Hucklefine and traveling companion rather than, like Huck Finn's father, a cruel distant figure to escape.(1) Travel far and wide down the Mississippi River might be a metaphor for travel through the work.

A reading of Huckleberry Finn extracted a few words or motifs from each chapter, and produced a thoroughly subjective aide-memoire - a sort of Cliff's Notes in a funhouse-mirror. These motifs or phrases were used or updated through contemporary analogies to be developed into single-paragraph "Hucklefine" chapters occupying half of a single card (a card is a Macintosh screen running HyperCard). The prose was shaped into episodic chunks to fit the field. The 44 cards, following a title card and introduction, maintain a 1-to-1 correspondence with the chapters of Huckleberry Finn.

I chose to experiment with chapters in this work appearing before the reader at random, at first content with the randomness of a "Go Any Card" button after the title card. Upon showing my work to the best hacker I knew in HyperTalk (HyperCard's programming language), Mike Larkin offered a script (code) that also added randomness of the illustration that appeared with any text. His script for Hucklefine randomly displays a single chapter upon the card paired in juxtaposition with an equally random illustration, so the experience of each single-screen chapter is never the same twice. It might be thought of as two decks of cards, side by side, one of text and one of pictures, that with every reading are both thoroughly shuffled. Larkin proposed that the method of entry to each chapter -- the visual effects -- be random as well. He also suggested the "mileage" indicator, consisting of dots approaching a candle, by which the reader knows by a proportionate scale how far into the stack she is; the candle that leads you through the obscurity of the story. All these additions created a much richer work than my original conception, for which I am grateful.

2. Literary Prototypes.

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Mathematics is one rich source of organizing principles for literature, whether numerical Fibonacci series (2), Reimann's curved space and Klein bottles, mobius strips or randomness. For literary form I looked back to the use of randomness in the cut-up novels and writing by William Burroughs, Kathy Acker and Harold Nourse, and to Marcel Duchamp's visual and Brian Eno's compositional theories and experiments with randomness in the arts. I recalled the highly-choreographed novel Hopscotch by Nobel laureate Julio Cortazar, who claimed its 155 chapters could be read in linear order, or in the alternate one he provided. The phrase "hyper novel" was used by Italo Calvino(3) to describe a form with multiple, short, densely concentrated narratives that emerge from multiple beginnings, which he also summed up in the contradictory image of "the open encyclopedia".

Yet Hypermedia is always a filter, shaping the choices however many. There is always an unseen hand restricting the domain. The task of the artist may be to recognize the "resonance" of the right choices, the subjective peal of meaning, akin to the moment of epiphany that motivated James Joyce. In trying to digitally do that which is province of the analog -- the analogy -- computers can seemingly make only choices at both ends of the spectrum, intelligently logical or programmatically random, pushing the artist's envelope of exhaustion and eventual disinterest from combining all recombinant possibilities. The insightful artist provides the links, the webs of association, in epiphanies of juxtaposition, straining to connect the unconnected and philosophically unconnectible, every scripted stitch in the potential fabric of meaning.

3. HyperCard Literature/Art.
There is already a substantial and growing body of interactive creative works utilizing the personal computer. There have been interactive installations where computers access videodisks by artists Lynn Hershman, Stephen Wilson, Michael Naimark and Abbe Don, and all these artists have used a HyperCard front end to run their works and access segments of video.(4) Rachel Leventhal's "Kiosk" allowed the viewer to activate with HyperTalk-programmed videodisk segments of women speaking by standing upon the Nintendo Power Pad on the floor. In 1992 Judson Rosebush, publisher of PIXEL magazine, was developing a HyperCard-driven multimedia piece about the first Atom Bomb test at Los Alamos, New Mexico that incorporated personal photographs and memoirs of the site, seeking a balance of both factual information and subjectivity.(5)

Yet there are also many works of interactive fiction designed directly in HyperCard, their creators willing to trade the program's restrictions of black-and-white imagery, limited animation and sound capabilities for its ease in programming. Some of its first hyperliterary works were wordless stories for children by Amanda Goodenough (6). Ellen Chait's "By Love Insured (Chapter One)" (7) played with popular soap opera and romance-novel conventions carried over into innovative electronic form. Mary Beams' "Aging at the Speed of Light", interweaves branched stories told from the viewpoints of three characters who are depicted onscreen in line drawings created in HyperCard's own Paint tools. Colette Gaiter's "The Pyramid" links a number of animated segments of sound and imagery to question racism and sexism prevalent in politics and society, and effectively uses scanner-appropriated imagery from American

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history and contemporary print media with a cinematic sense of timing and design.(8)

William Dickey, a mature poet retired from a long university career, published interactive poems in HyperCard, each 800k disk holding a self-contained interactive experience of text, sound and skilled graphic design honed in years of book publishing. The bodily actions of desktop interactivity, seeking and finding the hot buttons and clicking the mouse to proceed, enhance the experience of "unlocking" the meaning(s) of the poems.(9) Eastgate Systems, Inc. has published several titles of interactive fiction for the Macintosh -- including an issue of a literary review in electronic form -- as well as educational hypermedia software (10). Activity in HyperCard fiction is not only restricted to the United States, as interactive works were demonstrated by Harry McMahon and Bill O'Neill of Ulster in 1989.(11)

4. Visual Issues.
Artists in our time often choose their imagery by getting things free, appropriating cut-and-paste information (Punk collage, Rap sampling). The digitizable world is not one of scarcity. In digitized onscreen information text and image ultimately become one. In low-tech form, text and image combine in the comics, the Japanese manga and the misplaced "realism' of the fotonovela popular in Mexico. The illustrations to "Hucklefine" are collages of imagery digitized with the Apple (R). Scanner before any further manipulation. Some are more like Jim Dine's savvy offhand book illustrations(12) -- where the artist's Duchampian hand often selects a readymade image -- than the careful and ornate collages of Max Ernst's "The Hundred-Headed Woman" or those of Ernst's follower, the late San Franciscan Wilfred Satty. "Hucklefine"'s visual imagery sometimes relies on its own randomness for the connections, the reverberations of meaning, even before that of its relation to the text.

All electronic literature expects much of its graphic interface. One formal problem of hyperliterature is that it's difficult to ask someone to read any text onscreen, an unnatural experience somewhat like looking into a flashlight. Yet the perception of text must be different from conventional viewer attention to television. NASA found out that the eyes were best at scanning a whole arc, not just twenty-four inches in front of the face, quotes interface designer Michael Kalil, who complains how "the energy patterns of electronics have been locked in the familiar forms of the typewriter and TV."(13)

5. Hypermedia as Cyberspace.
Literature often works to prototype the world. A HyperLiterature -- an artist-generated graphic hypermedia -- might also prototype some of the problems that will be encountered in participatory real-time three-dimensional cyberspaces, called Virtual Realities. A HyperLiterature would be a logical step in the tradition of the lineage of the all-encompassing "total" multisensory work of art that began with ritualized pageants, carried through ornate Wagnerian operas(14), then manifested in this century -- at great corporate cost -- in the cinema. Many choices of the cinematic auteur were democratized in the 1970's and 80's and put in the hands of the spectator in numerous gallery installations of interactive art.

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The Virtual Reality generator that will descend from this history has to be "desktop" as well, cheap and democratic, networked for multiuser consensual realities but self-supporting when the user wishes to traverse a reality solo. The cyberspace vision of William Gibson rests on the assumption of networked, total connectedness. You jump, and a circuit is there to support you. In an Eighteenth-century engraving of one recommended treatment of the insane in asylums, a box placed over eyes an immobile figure in a chair to induce restfulness. In the 1975 movie directed by Nicholas Roeg, "The Man Who Fell to Earth" is shown watching multiple television screens simultaneously in a memorable image that immediately conveys his alien-ness. In 1990 the experimental voyager in virtual reality isolates himself with eyephones, and multiple screen-within-a-screen television is the choice of the up-to-date information consumer in the last decade of the 20th century. Notions of "interaction" with multisensory information change rapidly.

HyperCard may also visually prototype developments in Virtual Reality. HyperCard has limitations in its sensual quality but is strong in linkage and structure, often the most important part of the participatory software experience. A 72 dots-per-inch (dpi) digitized image conveys its information much as a grainy black-and-white film can. There are many satisfied power users of HyperScan, the product Bill Atkinson designed (apocryphally, over a weekend) to ship with the Apple Scanner, offering sixteen different 72 dpi dithers. A mind like Atkinson's might create a "dirty" black-and-white real-time virtual world replacing the cool poster-color arenas of some current Virtual Reality systems. Rather than flat color surfaces I'd like to enter a "dirty and dark" room generated in the bitmapped 72 dpi. of HyperScan. How little resolution in black and white is required for the convincing depiction of moving surfaces? The murkiness of the peppery dither might simulate the shifting haziness and lack of hue the human eye experiences in low-light conditions. Like the monochromatic etchings of Goya or lithographs of Redon, it could be very evocative indeed.

6. The Wanderer in Literary Cyberspace.

Imagery upon interactive real-time geometric surfaces is only a problem of rendering and processing time. Elliot Soloway points out that the advances of the 1980's were made in the realm of hardware, but those of the 1990's will be in software, and the curve of computing power climbs so exponentially over time that the resolution of issues now stymied by lack of computing power will soon be moot.(15) What is the human image processing equivalent of MIPS? Conspicuous erudition and allusions in a work such as T. S. Eliot's "The Waste Land" could be fulfilled in Hypermedia, where a work of art could annex its own contextualizing library. I predict some hyperliterature will demand the research intensity of massive late-nineteenth-century novels,(16) or will bury within itself the rich surface detailing of fin-de-siecle examples like the cluttered panoply of Gustave Flaubert's "Temptation of Saint Anthony" and Aubrey Beardsley's "Under the Hill". (17) Excess of imagery might lead to the detachment and quasi-weightlessness felt in a museum. Perhaps "Stendhal's Syndrome", the anxiety one feels upon being overwhelmed by too many works of art, is a desirable one? Discussing a browse

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through the hypermedia of Compton's Encyclopedia CD, Soloway found himself "lost in the hyperspace"(18), something now defined as the space between usefully-linked contextualized electronic information. In this realm I return to notions of a randomness more like Sunday afternoon in a public library, finding what you didn't know you were looking for, a useful enough mode of choice when intuition becomes overwhelmed, the opening up within the cyberspace of some ambiguity and unplanned action.

A model for the subjective experience of unstructured navigation in structured hypermedia or a rich and content-populous Virtual Reality might be found in one Nineteenth century artistic model -- not that of the aesthetic totalist Wagner but the poet Charles Baudelaire. Walter Benjamin notes in Baudelaire's writing a new kind of urbanite, the flaneur, the dawdling(19) public man reading and watching in the cafe, melancholy and witty, urban and urbane. Moving among the crowd at once detached and part of it, Baudelaire's hero "becomes their accomplice even as he disassociates himself from them. He becomes deeply involved with them, only to relegate them to oblivion with a single glance of contempt".(20) "...Neither engulfed nor at home in the city...He seeks refuge in the crowd...The crowd is the veil through which the familiar city lures the flaneur like a phantasmagoria. In it the city is now a landscape, now a room."(21)

I too am a flaneur in electronic media, for as an artist, I continue to wander. I performed(22) a HyperCard-assisted piece "Christopher Cumulonimbus", where musicians and a vocalist followed motifs in its self-running slide show projection for stage direction; Taylorism applied to performance art, with the timing of the humans set by the machine. Meanwhile I currently have other literary HyperCard pieces in progress, developing incrementally -- in "crystallizing" accretions of linked imagery and text -- as well as by design. Rather than simply publish artist's software in the tradition of artists' books, I am also designing accompanying artistic electronic kiosks for their display, a large wall painting or free-standing sculpture containing a Macintosh and touch screen. None of these works are planned to incorporate the randomness of "Hucklefine".

My own education has always been one form or another of juggling and manipulating vast imagery, the accretion of information and creation of lists, concerns dating back to the cluttered family house and parental Care Packages of textual and pictorial clippings (sometimes as a substitute for personal conversation). Other media in which I have searched for this totality include stylized literature, community murals -- collaborative public environments with a high level of surface detail(23) -- and a biographical gallery installation in a form parodying a Natural History museum(24). HyperLiterature, the muralized surface, the museum of fact and artifact; all should soon combine in sizeless cyberspace corridors of the variegated, decorated museum within the properly equipped personal computer. Attendance will be high in the desktop museum, where all participants are designers dancing through their virtual dioramas as insouciantly as they used to flip through books. I intend to be there painting vast virtual murals, writing on its walls or drawing and pasting up the illustrations filling the cyberspaces, where the self is the vanishing point in virtual fictions of public and private

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scale.

-Notes:

(1) As James is heavily inspired by James Brown, "Hucklefine" recalls my 1988 unpublished HyperCard stack, "The Trial of James Brown". In this stack a click upon a button played a digitized sample of James' Brown's vocals in response to each of the prosecution's questions in the courtroom. I also worked with the theme of the musical father and groupie mother in "Those Dovish TuttiFruittiVoodooChill'n Secrets of Love" a privately published comic strip (1984) where Little Richard begets Jimi Hendrix begets Prince.

(2) Silliman, Ron, Ketjak, This Press, San Francisco CA, 1978. A book-length poem by a Language Poet.

(3) Calvino, Italo, "Multiplicity", Six Memos for the Next Millennium, Harvard Univ. Press, Cambridge MA, 1988.

(4) Wilson, Stephen , Multimedia Design With HyperCard, Prentice Hall, Englewood Cliffs, NJ, 1990.

(5) Discussed at SCAN '91, the Eleventh Annual Symposium on Small Computers in the Arts, University of the Arts, Philadelphia PA, November 15-17, 1991.

(6) Chris Crawford, designer and programmer of the computer game "Balance of Power" cited the stacks about Inigo the Cat that Amanda had originally designed for her child (now published by Voyager Company) as an example of power within the computer industry shifting from programmers to content authors with the rise of user-friendly software tools. Lecture at Apple Computer, Inc., Cupertino CA, 1988.

(7) Chait, Ellen, "By Love Insured", HyperAge Media, Berkeley CA, 1989. (415) 549-3867.

(8) Gaiter, Colette "The Pyramid: A HyperCard Book" and Beams, Mary "1D and 2D Stories: Aging at the Speed of Light" in Small Computers in the Arts Network SCAN: Proceedings of the Eleventh Annual Symposium on Small Computers in the Arts, University of the Arts, Philadelphia PA 1991.

(9) Dickey, William, "Statue Music", Senex Press, 1476 Willard St., San Francisco CA 94117.

(10) Eastgate Systems, Inc., Box 1307, Cambridge MA 02238. (800) 562-1638.

(11) Nielsen, Jakob, "Trip Report: Hypertext II", on the conference at York, U.K., in June, 1989. I believe this report was published in the Journal of the ACM though I, regrettably, have only an uncited photocopy.

(12) Padgett, Ron and Dine, Jim, Adventures of Mr & Mrs Jim and Ron, Cape Goliard Press, London, in association with Grossman Publishers, New York NY 1970.

(13) Kalil, Michael, interview in the San Francisco Chronicle, San Francisco CA, March 27, 1990.

(14) In our time, the rock n' roll spectacle.

(15) Soloway, Elliott (Professor of Engineering, University of Michigan), from his presentation at CHI 1990, conference of the Special Interest Group in Computer-Human Interface, Association for Computing Machinery.

(16) The magnitude of its literary research is discussed in Wolfe, Tom, "Stalking the Billion-Footed Beast: A Literary Manifesto for the New Social Novel", Harper's, November 1989.

(17) As he lay dying before he could ever successfully bridge image and text, Beardsley expressed sadness that he wouldn't be remembered as a great novelist, only for his drawings (Weintraub, Stanley, Aubrey Beardsley, Crown, New York NY, 1968).

(18) Soloway, Elliott, lecture at SIGCHI 1990, Ibid.

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(19) Benjamin, Walter, Illuminations, Shocken, New York, 1969, "On Some Motifs in Baudelaire", p.197. Around 1840 aesthetes would take turtles on a leash for a walk in the public arcades in order to set a proper leisurely pace.
(20) Benjamin, Walter, Ibid., p.172.
(21) Benjamin, Walter, Reflections, New York, Harcourt Brace Jovanovich, 1978, "Paris, Capital of the Nineteenth Century", p.156. Benjamin goes on to criticize the flaneur's sort of bohemianism as that of a shopper without political consciousness, evidently drifting through department stores like suburban teenagers yet without their enthusiasm. And in the electronic realm, is cable TV channel-flipping the meandering stroll of today's flaneur, aimlessly trying to lose his conscious self in the malls of media...?
(22) Performed at SCAN, University of the Arts, Philadelphia PA, November 16, 1991, and at the Exploratorium, San Francisco CA, September 2, 1992.
(23) Over a dozen murals painted in San Francisco, mostly destroyed, and "The City's Music" at Laguna Honda Hospital in 1990. See Finley, Elizabeth, "Mike Mosher On and Off the Wall", San Francisco Chronicle, May 8, 1990.
(24) Mosher, Mike, "The SelfReferenteum", installation at Southern Exposure Gallery, San Francisco, April, 1988. Document The SelfReferenteum, M.F.A. thesis, Conceptual Design Program, San Francisco State University, 1988.

An earlier version of this essay was displayed at the Poster Session at Hypertext '91: Third ACM Conference on Hypertext, San Antonio TX, December 15-18, 1991.

About the author: Artist and consultant in multimedia & interface design, Mike Mosher teaches at Canada College, Redwood City CA. He has exhibited multimedia & hypermedia artwork at the Franklin Institute (Philadelphia PA), FISEA 93 (Minneapolis, MN) & the Exploratorium (San Francisco CA). His article "Art & Technology: Innovations" appeared in Leonardo, vol. 17 no 1, 1984.

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< Storms, a hyperpoem >

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[Editor's Note: Readers with ftp access should go to the directory pub/Leonardo/Leonardo-Elec-Almanac/Gallery at mitpress.mit.edu. These files are all Macintosh binhexed binaries:

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STORMS.hqx: This is the Hypercard stack for Storms.
STORMSReadme.hqx: This is a summary about STORMS.
AboutSTORMS+images.hqx: This is a Macintosh PageMaker 4.2 file of the LEA 2:6 article by Eduardo Kac. The reason for including it here is that the document includes diagrams.
linkStructureSTORMS.hqx: This is a diagram file linked to the Pagemaker file AboutSTORMS+images.hqx.]

Looking closely at the cultural dimensions of hypertext, it strikes me that in many ways the discontinuous and metamorphing poetry I've been developing since 1983 with holography shares with hypertext, and with the hyperpoetry created by myself and by others, the same interest for the model of the network, for the readerly interactivity, and for the giving up of absolute textual control on the part of the author. I ask myself, however: if holopoetry promotes a disengagement of the linearity typical of traditional poetry and of the graphic simultaneity of visual poetry, can or should it be considered a kind of hypertext? Holopoetry, which links one letter, 3D graphic fragment, or behavior of a text to myriad others, questions the motionless structure of print-based visual poetry, just as it also questions the authorship and readership created by it.

In 1993 I finished "Storms", my first hyperpoem. It is organized in vocalic and consonantal bifurcations. To navigate through the poem one is invited to click on a letter at any given time. In some instances, navigation can also take place by clicking outside the word. If the reader does not make a choice, that is, if he or she does not click on a vowel or consonant, or in some instances also on empty space, the reader will remain stationary. The poem does not have an ending. This means that one can continue to explore different textual navigation possibilities or quit at anytime by pressing the Command key and the Q key.

After I finished the first draft of this hyperpoem, I noticed that its structure was very similar to the diagram of sefirotic systems typical of the Kabbalah. This made me realize that I could push it further, by borrowing some links I observed in a particular sefirotic system. Kabbalistic writing and mysticism have always had a formal influence in my work, and this influence has resulted in holopoems such as "Abracadabra" (1984/85), "Shema" (1989), and "Multiple" (1989). But the difference is that this time there is a remarkable similarity between the actual structure of my hyperpoem, which promotes the branching from one textual unit to another, and the structure of this metaphysical tree.

In poetry words are not used, as in ordinary discourse, just to make a point, but to craft a verbal composition. In linear poetry the presence or absence of accent in a word is like the presence or absence of accent in another word. Syllables become units of measurement. Verbal messages are works of art because poets of all eras and nations have always carefully selected and arranged words in a particular way, so that their qualities (aural properties, connotative or denotative meanings, graphic form) can resonate within the poet's particular system. As wrote Louis Zukofsky, "condensed speech is most of the method of poetry (as distinguished from the essentially discursive art of prose)". While this is still true in hyperpoetry, what seems to be at stake now is a disengagement of the textual

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distribution characteristic of print. The node - and not the syllable - from which links irradiate is the new unit of measurement. The writer now defines the work as crisscrossing axes of combination. The reader has to make selections in a way that is similar, albeit not identical, to the way the writer has. The reader is now presented not with one narrowed-down selection of words in strings or in graphic layouts, but with an electronic field that is a complex network. In each node the poet will deploy text or add sound and moving images to it. In "Storms" I decided to work with text alone.

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PROFILES

< The File Room - an Interactive Computer Project addressing Cultural Censorship >

Initiated by Muntadas and produced by Randolph Street Gallery

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Chicago Cultural Center
78 East Washington Street, Chicago
Michigan Avenue Galleries, 1st Floor
May 20 - September 4, 1994

Randolph Street Gallery (RSG) joins internationally renowned artist Muntadas to present the debut of The File Room, his new project that expands our understanding of cultural censorship. The File Room utilizes the latest communications technology to document numerous individual cases of censorship around the world and throughout history with an easy-to-use, interactive computer archive.

The File Room is an illustrated, on-line archive of cases of cultural censorship which you can browse as well as add cases. It is accessible via the Internet and World Wide Web through Mosaic. An introduction and instructions are provided on line.

URL:

http://fileroom.aaup.uic.edu/FileRoom/documents/homepage.html

The Development of The File Room

Conceived by Muntadas close to 10 years ago, The File Room is the latest project in a series of works that address power relations in society. The series has included his internationally-presented installations The Board Room and The Stadium. Born in Spain and based in New York since 1971, Antonio Muntadas' artworks take form in video, multi-media and installation. In the past three years his projects have been exhibited in New York, Tokyo, Stuttgart, Jerusalem, Winnipeg and many other cities. He has recently completed a ten year video study of the art world entitled "Between the Frames" which will be presented in 1994 in Bordeaux, France and at the Wexner Center in Columbus, Ohio.

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In producing The File Room, RSG continues its commitment to generating activities and exploring issues that probe the intersections of art and society. Two and one-half years ago, Muntadas and Randolph Street Gallery began developing The File Room for public presentation in Chicago. As the archive is symbolic of the need for free and open communication, and because its format employs the latest in telecommunications technology, Muntadas created a collaborative forum for developing The File Room. Over a series of visits by Muntadas to Chicago, The File Room has developed as a collaboration drawing upon the resources and expertise of many organizations and individuals.

At an artist residency in September 1993 at the University of Illinois at Chicago, Muntadas publicly introduced the project and began working with its School of Art and Design to develop the technical elements of a hypertext, multi-media database which will be accessible through Internet. Northwestern University has provided an Internet connection and technical support for the development of the project. The Banff Centre for the Arts (Alberta, Canada) awarded The File Room a working residency as part of this year's Nomad Networks program, for the research and development of global networking art projects. Muntadas was an artist in residence at the School of the Art Institute in February 1994 where he lectured on his previous work, putting The File Room in the context of his public installations. Student researchers in New York, Paris, and Chicago have been contacting information sources, researching, soliciting submissions from individuals and entering information on censorship which has come from existing resources such as People for the American Way's ArtSave project, the ACLU, the American Library Association's Office of Intellectual Freedom, the Chicago Artists Coalition's archive on censorship and many other organizations and individuals. Through mailings and postings on the Internet, censorship information has come to RSG from around the world and as The File Room will remain an open system, users will be able to continually submit cases as the archive grows.

A bibliography citing source material dealing with censorship in the cultural sphere will be part of the archive, along with a list of anti-censorship resources. A publication on The File Room will be available later this summer. It will include essays by Rachel Weiss, Herbert Schiller, Robert Atkins, Carol Becker, Judith Kirshner and others.

Experiencing The File Room

The File Room challenges existing definitions of what constitutes censorship, and creates a forum for discussion and exploration of the many issues surrounding acts of cultural censorship. Presented by the Department of Cultural Affairs at the Chicago Cultural Center, the physical design of The File Room installation symbolizes information control. The walls of the space are lined from floor to ceiling with metal filing cabinets. Ten computer terminals accessing the archive will replace file drawers in the cabinets. The archive opens with definitions of censorship gathered from a number of different sources. These divergent opinions establish a wide range of what constitutes an act of censorship and introduce the subjective nature of the concept.

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As Robert Atkins of The Village Voice has written: "What's censorship and who's a censor? For some of us, moving a controversial artwork from a prominent to an obscure place in an exhibition hall fits the bill. But what about a juried show at a mall that excludes nudes? Or an art institution that never shows the work of artists of color? And let's not even mention self-censorship. Antonio Muntadas' The File Room may be the first artwork-cum-exhibition to grapple systematically with such matters, while documenting 500 years of arts censorship and human rights violations."

The project will include cases of censorship in the areas of visual art, music, dance, theatre, performance, literature etc. and will not be limited to cases of censorship of individual artworks. Included among the instances of cultural censorship are the suppression of artists' careers; bans on entire media or subject matters at various times in history; self-suppression by those in fear of reprisals; denied or limited access to information on cultural achievements by entire groups or non-inclusion of such information in "authoritative" sources compiled by majority representatives. The continually growing archive will begin as a prototype, to be shaped by ongoing research and by submissions from around the world.

In addition to the Cultural Center, RSG's Projects Space housed The File Room office from May 20 - June 18, where visitors had access to the archive from an on-line terminal which also allowed browsing through other Internet resources. The electronic archive of The File Room is accessible internationally to users of the Internet by way of Mosaic. This program allows easy access to text, images and sound housed in computers worldwide.

The Information Superhighway (e.g. the Internet) holds immense power for the future of worldwide communication and resource accessibility. The File Room intends to use this Superhighway to demonstrate its capabilities to bypass more traditional means of broadcasting and its potential for grassroots activism. Yet these capabilities are threatened now by the mega-mergers in telecommunications and the federal policies that are in formation. It is hoped that projects like The File Room will interest more people in the fate of the Information Superhighway, and activating the role in its development.

Financial support for The File Room has been provided in part by the National Endowment for the Arts, the Richard H. Driehaus Foundation and the Playboy Foundation. Randolph Street Gallery is a nonprofit artist-run center, celebrating 15 years of supporting and generating activities at the intersection of art and society.

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LEONARDO DIGITAL REVIEWS
JUNE 1994

Editor: Roger Malina
Editorial Coordinators: Mason Wong and Geoff Gaines
Editorial Intern: Susanna Camp
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Review Panel (includes): Rudolf Arnheim, Simon Penny, Sonya Rapoport Mason Wong, Stephen Wilson, Robert Coburn, Marc Battier, Thom Gillespie, Jason Vantomme, Geoff Gaines, Clifford Pickover, Axel Mulder, Francesco Giomi, Richard Land

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< EXHIBITION REVIEW: A review of some recent interactive art: keep it out of art museums! >

Reviewed by Roger F. Malina.
Email: davinci@uclink.berkeley.edu

I am gradually forming the opinion that shows of interactive art in art museums are generally such a disaster, that they are antithetical to the development of these new exciting computer mediated art forms. This view crystallized for me during a recent viewing of Patrice Caire's virtual reality work "Cyberhead... Am I Really Existing?" at the San Francisco Center for the Visual Arts.

I went to the art gallery, delighted to see a city-sponsored gallery displaying virtual reality work, only to find that the work was out of order. The stereoscopic viewer was down. All that was showing on the wall of the dark installation space was a linear film of the computer animation videotape of the source material used to create the artist's virtual world. That the work was out of order on a weekend, when the gallery's audience is at its largest, is a reminder of how ill-equipped art museums are for this type of medium. Most museums seem to have systematically resisted every technical innovation introduced by artists, and in so doing have failed to keep up with the high-technology requirements of these new kinds of art forms.

Patrice Caire's visual material is intriguing in its presentation. The artist has compiled a number of Magnetic Resonance Imaging scans of her entire body. These scans were combined with separate scans of the artist's hand, to create animations on videotape. As computer animation however, the work did not succeed in capturing my attention . As a scientist I have seen many MRI images, and as a juror at computer animation competitions, I am familiar with work which consists of the morphing of successive images into each other. (I admit to having a low tolerance for novelty in computer animation, since most of this kind of work was explored by experimental film artists in the first half of this century.) In any case, I am intrigued by artists' use of visual material derived from extra-sensory examination of the human body.

According to the leaflet distributed at the exhibit, Caire's work lets the viewer enter into a reconstructed model of the artist's head: first into the eye, then the optic nerve, different parts of the brain and auditory system, and finally exiting through the ear. The visual experience is enhanced by a three-dimensional soundscape by the composer Pierre Vasseur. [The real-time computations are carried out on an Onyx (TM) Reality Engine (TM) from Silicon Graphics, Inc.; the real-time sound spatialization is effected by four Beachtrons from Crystal River. The World Toolkit Virtual Reality Software is from Sense8, and the stereoscopic boom is a BOOM2C from Fakespace (TM).]

The work itself is staged in a darkened gallery with the

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stereoscopic boom viewer dramatically located in the center of the room, almost sculptural in its mounting. Chairs are located around the room so that while one viewer explores the virtual world through the stereoscopic boom, the remaining viewers become an audience, watching both the linear videotape run on the wall, and the chosen viewer looking through the boom. The whole physical context of the work harks back to 1970s and 1980s gallery art installations, and privileges real physical accoutrements irrelevant to the piece. However, the artist has had access to the best technical systems and I look forward to seeing the piece fully on a later visit.

Since I could not view Caire's work, I wandered into a screening room where Anne McGuire's "experimental" film "Strain, Andromeda, The" was screening continuously. This film consists of a re-editing of the 1970s science fiction melodrama "The Andromeda Strain". McGuire cuts the movie apart scene by scene, and rearranges it again backwards, from end to beginning. This one editing device is the whole contribution of the artist to the work. I could only reflect that this was an linear film work which should really have been created as an interactive one. The artist's selection of a new ordering of the filmic material was only one of many possible re-edited interpretations. As a viewer, I was left passive witness to the artist's interaction with the original film. New interactive media are inherently suited to this kind of non-linear, viewer-selective, re-ordering of the artist's source material. A recent commercial example of this media is Todd Rundgren's CD-ROM rock music piece, "No World Order," which allows the listener to follow a viewer-determined path through the artist's sound sequences. Another example is the artist Kevin Ruston's piece "Digital Rear Window" (for which he received an Honorable Mention at the Prix Ars Electronica for Interactive Art in 1993), which used Hitchcock's film "Rear Window" as the raw material for a viewer-driven exploration of conceptual space.

Earlier this year I viewed another interactive work at the San Francisco Center for The Visual Arts. This was George Legrady and Rosemary Comella's work "An Anecdoted Archive from the Cold War." (This work received an Honorable Mention at the Prix Ars Electronica for Interactive Art in 1994.) The piece is an interactive presentation of a visual and sound archive of material from Budapest, as the artists' family recounts their escape across the Iron Curtain during the Cold War. The work is presented as a computer screen with a mouse interface allowing the viewer to explore the material at will. The material is also presented conceptually through the floor plan of a non-existent museum. Legrady and Comella's work is an intimate one, notable for the discipline with which material has been selected for inclusion (and exclusion), for its successful non-narrative structure (this is not a documentary, but rather a space of memories), and for the straightforwardness of the viewer's entry into the artist-created world. The artwork was displayed on a table against a large white wall, in the large high-ceilinged central gallery of the Visual Art Center. In this context, the architect triumphed totally over the artist, dwarfing completely the small computer screen (with its paradoxically secret entry into an intimate and private virtual museum of painful memories).

My conclusion from these experiences, and others, is that new

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interactive artworks of this type can rarely be displayed successfully in contemporary art museums. The physical and social context of these museums and galleries is antithetical to the artists' creation of interactive virtual worlds. Thus the museum curator is driven, and drives the artist, to create an ahistorical gallery installation context for works which in themselves do not require physical accoutrements. The intimacy of single-viewer, screen-, eye- or headphone-based works cannot compete with the interest of museums in large physical works, which can accommodate viewers with attention spans ranging from ten seconds to twenty minutes.

Where have I seen this kind of interactive work successfully displayed? In science museums such as San Francisco's Exploratorium, where a trained technical staff is available, and the visiting public is prepared to invest some investigation time. In airports, where interactive works can be located in waiting spaces (or rooms normally reserved for computer and video game arcades). At computer trade-shows such as SIGGRAPH, in Festivals such as Cyberarts, Ars Electronica and ISEA. However, the best way to display on-line or screen-based work is in the privacy of one's home, or in the artist's studio. The recent explosion of new work, using the World Wide Web and MOSAIC multimedia software, promises to lead to real virtual galleries such as those pioneered by on-line spaces such as The Well's Art Com Electronic Network. One of the benefits of high bandwidth interactive links to the home is that in this context interactive art work can be appropriately viewed . In the meantime, we will have to endure what art museums and galleries do to interactive art, if only because the existing Salons Des Refuses are not numerous enough and the interfaces not ubiquitous enough.

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< EXHIBITION REVIEW: Arte VirtuaL: Doce Propuestas de Arte Reactivo >

Metro Opera, Madrid, Spain, April 24 - May 8, 1994

Reviewed by Sonya Rapoport
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In this exhibition, which took place in a Madrid subway, the curator Rafael Lozano-Hemmer presented state-of-the-art technology in a variety of interactive modes. The show was both gender-balanced and international in scope.

Artists included were: Mario Canali and Marcello Campione; Daniel Canogar; Monicka Fleischmann, Christian Bonn, and Wolfgang Strauss; Pedro Garhel; Myron Krueger; Esther Mera; Jeffrey Shaw; Christa Sommerer and Laurent Mignonneau; Nell Tenhaaf; and Trimpin. (Sharon Grace's and Catherine Richards' works were not exhibited, due to installation difficulties).

This must be the YEAR OF THE CAVE. In Paris, the French are creating caverns for new underground transportation links. In the shadow of the Acropolis, the Greeks are unearthing ancient cultural excavation sites, to be replaced by a new subway system. This spring, the opening of the EuroTunnel under the English Channel will be celebrated by "commissioned" art events, curated by Alanna Heiss of the P.S.1 Museum in Long Island. In Madrid, the Metro Opera, a subway station under the

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old opera house, was transformed into a challenging art exhibition venue.

The Madrid show had an unusual entrance: passing through a turnstile, visitors shuffled down a ramp in a semi-dark tunnel, permeated with slightly choking train fumes. On the walls were Daniel Canogar's "Cubos", reflections through film negatives of images of disembodied arms and hands. Essentially, these projections illuminated the path to virtual space. Canogar was one of three artists at the show to exhibit site-specific work. The other two were also Spaniards, so I assume they were acquainted with the setting beforehand, and thus created works especially for this space.

Farther into the cavern, as if dropped down from outer space, was Jeffrey Shaw's surreal "Virtual Museum". The work was encased in hurricane fence, the same partitioning used throughout the rest of the exhibition. I entered the open cage and sat down in an elegant black leather chair, where I proceeded to play a version of high-tech dodge 'em" around the three-dimensional virtual space that was projected onto the screen in front of me. My visits to the rooms of the "Virtual Museum" were controlled by "driving" the robotic chair. The rooms offered fleeting sights of beautifully rendered architecture, and were filled with word sculptures. However, I never quite penetrated as deeply as I could go within these walls; after a while, I felt I had seen all there was to see.

Farther up the tracks, at Myron Krueger's station, Canoger's "post-fotografia" images came alive in simulated flight motions by visitors interacting with Krueger's "Videoplace". The participants stood in front of a white backdrop and watched their gestures control their own viewing perspectives of our planet. Lush birds'-eye or worms'-eye view visuals of the turning planet were projected onto a huge screen. This screen recalls a provocative parallel between art critic Harold Rosenberg's reference to the large abstract expressionist canvases of the 60's as "arenas for action," and Krueger's own discussion on artificial reality, in which he focuses on a new aesthetic arising from interactivity.* Rosenberg wrote that the aesthetic had been subordinated by the artistic expression, and that what mattered was the revelation contained in that act. He continued, however, to say that in the final effect, in the image (whatever the image may or may not be), there will always be a tension. Since Krueger feels that the computer must determine the consequences of the interactions and therefore initiate responses of its own, I wonder if we should look elsewhere for Rosenberg's frisson.

Outside of Krueger's arena, the environment once again took on an eerie shade. Sommerer and Mignonneau's "Interactive Plant Growing" installation projected virtual plants growing on a screen. The projection was activated when a participant touched real plants on display in the installation. In this climate, I felt even the virtual plants were (virtually) alive.

Walking across subway tracks and through car-wash-style slit projection screens, I experienced in video format Pedro Garbel's passage through life. At the other end of the tracks, Esther Mera's tour de force video installation synchronized the subway train schedule with her video clips. Small monitors framing a large observation window became alive with hands

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cackling in sign language when the trains passed by.

Perhaps for me the most thoughtful piece was Nell Tenbaaf's "Horror Autotoxicus", a viewer-activated animated cartoon of a double helix accompanied by a reading of the Oedipus myth. In this setting, I interpreted the separating and adhering bases of the helix as broken subway tracks, alternating positions at different junctures. As a metaphor for a scientific oracle, it was a somber warning of our predestiny. Perhaps we will eventually resettle in the cave.

Note:
*DER PRIX ARS ELECTRONICA/International Compendium of the Computer Arts, 1990.

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< CONFERENCE REVIEW: "Music & Multimedia '94" >
Castro Theater, San Francisco, May 7, 1994

Presented by the San Francisco Chapter of the National Academy of Recording Arts & Sciences, Inc. Held in association with the 37th San Francisco International Film Festival. Co-sponsored by Mix Magazine, Interactive Records, and the Multimedia Development Group.

Reviewed by Mason Wong,
Email: mas@cea.berkeley.edu)
*** This is the first installment in a three-part series review of the conference. ***

At this marathon conference -- which began at 9:30 am and continued for over 13 hours -- some leaders of today's music-based multimedia industry gathered in full force, within the elegant surroundings of San Francisco's Castro Theater. During the morning and afternoon sessions, an audience of roughly two-thirds musicians and one-third computer programmers and designers attended a variety of panel discussions and case studies. In the evening, an excited, full house audience of music fans and industry reps cheered at the premieres of eight music multimedia programs.

The event's premiere was hosted by Mix Magazine's indeterminate-decade-throwback, Mr. Bonzai, and his real time computer-generated side kick, Mipsy, a cartoonish, anthropomorphized computer terminal superimposed on the theater screen's video projection of Mr. Bonzai. The resulting character speaks in an exaggerated female voice.

The panel discussions were led by multimedia experts and revolutionists, all of whom had arisen from roots in either the traditional music industry or the computer software realm. At the heart of all concerns put forth by the panels and the audience was a nagging desire to solidify a future form of music in the multimedia world. Of all the twisted, unnecessarily lengthy and meandering predictions on this subject, only Todd Rundgren's oddly concise prophecy regarding the future price ($24.95) of CD-ROM titles stood out. The industry is self-admittedly in its infancy, lacking direction and focus at this time. What makes this technological revolution in media different from that of other media is that "this is the first time a new technology has come into being at a [relatively] affordable level, unlike [the introduction of] television and vinyl records," as stated by the

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independent producer Jeff Baxter. However, as Electronic Entertainment Magazine's Editor-in-Chief Gina Smith points out, the lack of focus has left "multimedia [still] in search of a market, but rock and roll will save it, as it has before."

Through this industrial haze, some artistic and commercial leadership clearly stood out throughout the conference. This leadership, comprised of a few musicians, software producers, and proactive music publishers (a.k.a. record producers), all recognize certain key aspects of the growing presence of multimedia: (1) the CD-ROM is a temporary medium, to be made obsolete in the next 5 to 10 years, with the inevitable availability of on-line, on-demand programming and services provided by the information superhighway of the future; (2) the concept of mixing audio, video, music, data, and other media will become so pervasive that the actual word, "multimedia" will be eventually forgotten; and (3) a strong lesson is to be learned from the video game industry, which, though less than 20 years old, has an annual gross earning greater than that of the music industry.

Interspersed between the various panel discussions were in-depth case studies of available titles. Reviews of those presentations follow in this and the next sections of this report.

REVIEWS OF INDIVIDUAL WORKS

"The Residents' Freak Show," presented by Jim Ludtke (The Cryptic Corporation), is an explorational program based on The Residents' early album, "Freak Show." The program brings to life various characters within the big-top setting of the music, in a sophisticated, surrealistic portrayal of circus show freaks. The setting of the program's interactive world is, appropriately, a circus tent, which you as a viewer are invited to explore. Upon entering the tent, you are greeted by Tex, a megaphone-wielding clown, who entices you to visit the handful of freaks waiting to strut their stuff. At the conference, Ludtke's tour of this extremely odd virtual world included encounters with Herman the Human Mole, Wanda the Worm Woman, and Jelly the Boneless Boy, each with their own acts and their own live-in trailer carts behind the tent. There are also a number of in-depth mazes of rooms and caverns filled with delightful tidbits of colorful and musical entertainment. After taking 18 months to produce this work, Ludtke emphasized, "The story is the most important element of the program, not the user interface, not the computer . . . . An attempt was made to betray the user, to ask back, 'Why are you looking?'" Perhaps the hidden freak within each of us finds an unexpected degree of comfort in such voyeurism, as well as a sense of community in interacting with these fictional outcasts who have been eternally exploited and degraded.

In the next issue of Leonardo Digital Reviews I will describe and review the following works which were presented at the conference:

CDROM: "Substance Digizine," presented by Eddie Bellinaso (Substance Interactive) was previously released only in Japan, until its US opening at this show.

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"Heart: 20 Years of Rock and Roll," was presented by Bob Hamilton (New CD Music Show). Available as of mid-April, 1994.

CDI: "No World Order," presented by the artist Todd Rundgren, was released a few months ago in conjunction with his traditional-format music CD of the same title.

-"Xplora 1: Peter Gabriel's Secret World," presented by James Johnson (Brilliant Media).
-"David Bowie: Jump," presented by Ty Roberts (ION).
-"The 'Tommy' CD-ROM," presented by Pete Townsend, with Greg G. Smith (RoundBook Publishing Group, Kardana Production Group). (Work in progress.)
-"AVRe," presented by Thomas Dolby (Headspace).
-"What's That Song?," presented by Steven Rappaport (Interactive Records). (Work in progress.)
-"Haight-Ashbury In The 60's," presented by Tony Bove, (Bove/Rhodes Multimedia). (Work in progress.)
-"Interactive [symbol] (formerly known as Prince)," presented by Charles Cortright (Graphix Zone, Inc.). (Soon to be released.)
-"John Lennon's Imagine," presented by Norm Bastin (Compton's New Media). (Work in progress.)
-"Total Distortion: Music Video Adventure Game," presented by Joe Sparks (Pop Rocket). (Work in progress.)
-"Grammy's Interactive," presented by Chris Andrews (UniDisc).

Advance copies of these reviews can be obtained by sending email to Mason Wong at davinci@uclink.berkeley.edu

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< LEONARDO MUSIC JOURNAL WELCOMES NEW EDITORIAL BOARD MEMBER DOUGLAS KAHN >

We are pleased to welcome Douglas Kahn to the Leonardo Music Journal Editorial Board. Douglas Kahn is a multi-media artist, writer, and co-editor of _Wireless Imagination: Sound, Radio and the Avant-garde_ (M.I.T. Press, 1992). He currently resides in Wollongong, N.S.W., Australia. His email address is c/o Frances_Dyson@ms-gw.uow.edu.au

The new issue of Leonardo Music Journal is about to be printed and includes a CD of contemporary computer and electroaccoustic music from south and central America. Leonardo Music Journal can be ordered from journals-orders@mit.edu

< END LEONARDO DIGITAL REVIEW JUNE 1994 >

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ANNOUNCEMENTS

< Cybernetics Exhibition - Saskatoon, Saskatchewan >

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The cybernetics exhibition "The Uncanny" (working title) is being held at the Mendel Art Gallery in Saskatoon, Saskatchewan on July 6 - August 27, 1995. "The Uncanny" will be a wide-ranging survey exhibition that explores contemporary representations of the cybernetic body in popular culture and the visual arts. Physically, the cybernetic body may be identified as a sentient entity which is composed of organic and inorganic matter, creating a hybrid form. But the cybernetic body is also a cultural construct, a representation of being -- and it is this representation of being, real and imagined, that will be the primary subject of this exhibition.

The exhibition will examine the cybernetic body as manifest in contemporary visual arts and popular culture. It will include work by local, national and international artists in a wide variety of media, including performance, installation, videotape, painting, sculpture and works on paper. Equally important will be the popular representations of the cybernetic body characterized in film, literature, comic books and graphic illustrations, music, television, interactive games, science and medicine. The exhibition includes a small historical segment (Futurist and Vorticist work) which will provide a context for some of the current work. An electronic or virtual conference will be organized during the period of the exhibition and the exhibition catalogue will be published as a computer-based hypertext. The exhibition is organized by a curatorial collective made up of staff from the Mendel Art Gallery, freelance curators and cultural theorists.

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< International Conference on Auditory Display - Santa Fe Institute >

ICAD '94 - November 7-9, 1994

Address general inquiries to the Conference Chair:
Gregory Kramer
Clarity
Nelson Lane
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Tel: (914) 424-4071
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For current and complete details, address inquiries to:
Santa Fe Institute
1660 Old Pecos Trail, Suite A
Santa Fe, NM 87051
Email: icad94@santafe.edu.

Continuing the work of the successful ICAD '92 meeting, ICAD '94 will be held November 7-9, 1994 in Santa Fe, New Mexico, U.S.A. ICAD is a forum for presenting research on the use of sound to display data, monitor systems, and provide enhanced user interfaces for computers and virtual reality systems. It is unique in its singular focus on auditory displays, and the array of perception, technology, and application areas that these encompass. ICAD '94 will be a single- track conference. Attendance is open to all, with no membership or affiliation requirements.

Papers are solicited on any aspects of Auditory Display. Topic

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areas include, but are not limited to:

- Auditory exploration of data via sonification (data-controlled sound) and audification (audible playback of data samples)
- Real-time monitoring of multivariate data
- Sound in immersive interfaces (Virtual Reality) and Teleoperation
- Perceptual issues in Auditory Display
- Sound in generalized computer interfaces
- Technologies supporting Auditory Display creation
- Data handling and sound synthesis for Auditory Display systems
- Applications of Auditory Display

There is still time to submit proposals for student papers and posters/demonstrations. The deadline for those is July 15.

Student Papers
ICAD '94 will devote one full session to student papers. Students are invited to submit papers on any aspect of Auditory Display. These papers should be 2-4 pages in length, and each paper will be allowed 10 minutes plus a brief question-and-answer period. Student authors should submit three copies of their paper to the ICAD address above by July 15, 1994. Student authors will be notified of the Review Committee's decisions by September 1, 1994. In order to encourage student participation in ICAD '94, students will be offered a significant discount on the registration fee.

Posters and Demonstrations
ICAD '94 will also include informal sessions where preliminary or speculative material and descriptions or demonstrations of hardware and software may be presented. Send one copy of your poster session paper or a description of your demonstration to the address above by 15 July 1993.

The Santa Fe Institute
The focus of the Santa Fe Institute is research on complex systems. This work encompasses an extraordinary range of topics normally studied in seemingly disparate fields. Natural systems displaying complex adaptive behavior range upwards from DNA through cells and evolutionary systems to human societies. The dynamics of complex systems are difficult to comprehend and even more difficult to communicate. Data visualization -- and more recently data sonification -- are emerging as crucial tools for the comprehension and communication of complex systems data.

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< Autour du Pere Castel et du Clavecin Oculaire - Call for Papers >
(Around "Pere Castel's Ocular Harpsichord")

Clermont Ferrand, France
December 1-3, 1994

Prof Michel Naranjo
Centre Associe au Conservatoire National des Arts et Metiers
BP 161, 63173 AUBIERE Cedex
Fax: (33) 73 40 75 10
Email: naranjo@le-eva.univ-bpclermont.fr

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The Conference "Autour du Pere Castel et du Clavecin Oculaire" is sponsored by:
- Conservatoire National des Arts et Metiers
  (Regional Institut of Clermont Ferrand)
- Universite Libre de Bruxelles
  (Studies team of the 18th Century)
- Universite Blaise Pascal de Clermont Ferrand
  (Revolutionary and Romantic Institut)

The conference is being organized in commemoration of the 200th birthday of the Conservatoire National des Arts et Metiers. It will be articulated with these suggested themes:

- a Multiform Activity:
Castel as a Pedagogue, Physicist, Zoologist, Mathematician, Esthete, Tactician, Journalist, Polygraphic Designer, Musicologist;
- the "Invention" of the Ocular Harpsichord: Resonance and Interference:
Antecedents and Predecessors, Epistemological and Philosophical Foundation (a certain vision of the world, a "Jesuit" Physics, Descartes/Newton's debate, some about Leibniz Theological debates, etc...);
- Castel and his Ocular Harpsichord facing his contemporaries:
    + Reception: books, papers and others evidences
    + The Prestigious Witnesses: Montesquieu, Rameau, Voltaire, Rousseau, Diderot, D'Alembert, Telemann, Geminiani, Goethe,
    + Reception of Castel's work abroad,
    + Modern set-back of Castel's false colour/sound analogy direct repetition;
- The Posterity of the Ocular Harpsichord
A tradition in Bordeaux's Country? (Manslon, Alexandre Durand),
    + Synesthetic Art (symbolists, Charles Beaudelaire, Alexandre Scriabine, Paul Klee. Man Ray, Eric de Hauleville, Walt Disney, Jean Michel Jarre, Kadinsky, etc.),
    + Esthetical Theories,
    + Scientific Theories of Coloured Hearing Synesthesia,
    + Technical Aspects and realisation: two centuries of Technological Experimentation,
    + New instruments to perform Colour-Music.

Contributions:
Participants who wish to present a paper are requested to submit an abstract (up to 400 words) as soon as possible but not later than July 20, 1994. Notification of acceptance will be sent to authors by September 15, 1994. No conference fee for authors.

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< Cosmic Collisions: A Celebration of the Impending Impact of Comet Shoemaker-Levy 9 on Jupiter >

Palace of Fine Arts Theater
San Francisco, CA
For tickets and further information, please contact
CITY BOX OFFICE - (415) 392-4400

Thursday, July 14, 1994
6:30 pm - 10:00 pm

U.C. Berkeley's NASA Extreme Ultraviolet Explorer satellite project and the San Francisco Exploratorium present "Cosmic

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Collisions: A Celebration of the Impending Impact of Comet Shoemaker-Levy 9 on Jupiter".

Guest speakers:
*Dr. Marcia Neugebauer
  Comet Specialist, NASA's Jet Propulsion Laboratory
*Dr. Jere Lipps
  Director, University of California Museum of Paleontology
*Dr. Randy Gladstone
  Planetary Scientist, Extreme Ultraviolet Explorer Guest Observer
*Kevin Anderson
  Science Fiction Writer,
   author of the current New York Times Best Seller
   "STAR WARS; Dark Apprentice, Volume 2 of the Jedi Academy Trilogy"
*Poul Anderson
  Science Fiction Writer,
   author of "Harvest of Stars" and winner of seven Hugo and
   three Nebula Awards.

The evening will highlight the upcoming comet impact, other comet collisions in the past, including the comet theory of dinosaur mass extinction, plus the role of cosmic collisions in popular culture. Both Kevin Anderson and Poul Anderson will be available for BOOK SIGNINGS.

EXHIBITS AND BOOTHS - doors open at 6:30 p.m.

Tentatively Scheduled Participants to include:
  * Center for Extreme Ultraviolet Astrophysics
  * Exploratorium
  * Another Change of Hobbit
  * Bay Area Musician's Forum
  * Hearts of Space Records
  * Leonardo/International Society of Arts, Sciences, and Technology
  * Mondo 2000 magazine
  * The Nature Company
  * Wired magazine
  * YLEM: Artists Using Science and Technology

TALKS begin promptly at 7:30 p.m.
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PUBLICATIONS

< Computers & Graphics -
   Special issue on Computer Graphics Art >

Carl Machover
Machover Associates Corporation
152A Longview Ave., Box 308
White Plains, NY 10605
Tel: (914) 949-3777
Fax: (914) 949-3851
Email: machover@egs.mcc.com

Carl Machover reports that he is guest editor of the Pergamon Press international journal, "Computers & Graphics" special issue on Computer Graphics Art, scheduled for publication in

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July 1995. LEA readers might be interested in submitting an article which discusses such topics as:

- actual computer graphics art pieces or other realizations - creative and production processes
- market opportunities for computer graphics art
- hardware, software, systems, services and educational opportunities
- areas in which we need additional information to improve the effectiveness of computer graphics art - current limitations
- history and/or origins of computer graphics art - artists, exhibitions, critical response, etc.
- requirements for next generation hardware and software
- aesthetic considerations unique to computer graphics art.

Articles need to arrive by July 31, 1994.

JOB ANNOUNCEMENTS

< Two Posts at the Bournemouth University National Centre for Computer Animation >

Stephen Bell
National Centre for Computer Animation,
Department of Media Production,
Bournemouth University, Talbot Campus
Fern Barrow, Poole, Dorset BH12 5BB UK
Email: sbell@bournemouth.ac.uk

The National Centre for Computer Animation is seeking applications for the following 2 posts of Senior Lecturer in Computer Animation.

The posts involve working with students in the Division of Computer Animation on undergraduate and postgraduate courses. The postholders will have good communication and teaching skills and a proven record in a commercial and/or academic environment and will offer relevant expertise.

The teaching duties of post (1) will include:
- The teaching of the PASCAL, C, C++ programming languages.
- The teaching of the X-Window system with emphasis on the Xlib, Xt
- and OSF/Motif or Open-Look libraries and tool kits.
- The teaching of the UNIX operating system.
- The teaching of 2-D and 3-D computer graphics programming techniques.
- The teaching of 3-D animation using both the in-house and commercial animation systems available at the University.
- Supervise computer graphics and animation programming techniques projects.

The teaching duties of post (2) will include:
- The teaching of the history of art, design and static image.
- The teaching of the history and development of film, television and traditional/computer animation.
- The teaching of drawing, painting, animation and filming techniques.
- The supervision of drawing, painting and animation tutorials and projects.

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- The organisation of master classes in computer animation techniques.

****

< GRAME is seeking a computer science researcher. >

Mr. Orlarey or Mr. Fober
GRAME
6, quai Jean Moulin
BP 1185
69202 LYON Cedex 01 FRANCE
Tel: (33) 78.39.32.02
Fax: (33) 78.28.35.09
E-mail : GRAME@AppleLink.Apple.com

GRAME is a research center for contemporary music sponsored by the French Ministry of Culture. Its R&D activities in computer-music are devoted to promoting new approaches and new tools for musicians. One of our two research areas is concerned with formal languages for musical notation and composition. Its objectives are:
- promoting new techniques of musical composition.
- favoring the link between formalization and experimentation in the process of composition.
- enriching the means of representation, abstraction and handling of musical materials.

with the following directions:
- programming models, particularly lambda-calculus, combinatory logic and functional programming.
- formal languages as cognitive tools for design, invention and creation.
- relationship between notation, writing and musical thought.
- memory and musical heritage problems introduced by computer science. Several compositional languages (MidiLogo 1984, MidiLisp 1986, CLCE 1991) come from these works.

We are now seeking for a computer science researcher with extensive background in formal definition, semantic and theory of programming languages, especially lambda-calculus and functional programming, to work with us on the theoretical definition of a time based language currently in progress.

This post may apply to the Bc part of the European COMETT program for a duration of 6 months and won't begin before the end of this year. Applications including a C.V. addressing the above points, expected salary and availability should be sent to GRAME as soon as possible. The COMETT program concerns only countries of the European Community [EEC] or of the European Free Trade Association [EFTA] .

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< Research studentships available at CAIIA >

Sally Willson, Research Administrative Assistant
Gwent College of Higher Education
Caerleon Campus
PO Box 179
Newport NP6 1YG
Tel: 0633 432210

Gwent College of Higher Education in Wales is seeking to appoint three full time research students to CAIIA - The Centre for Advanced Inquiry in the Interactive Arts under the

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direction of Roy Ascott. Students will be registered for research degrees focused around CAIIA's specialist areas of work:
* computer-mediated telecommunications
* multi media (desktop and installation)
* intelligent structures and environments

The grants for these posts are 5,500 pounds per annum plus dependents' allowances (under review). Applicants should hold a good honours degree or equivalent. For informal discussion telephone 0633 432174.

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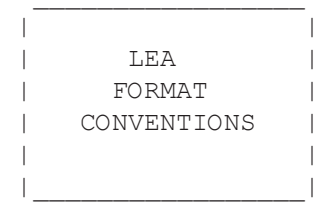
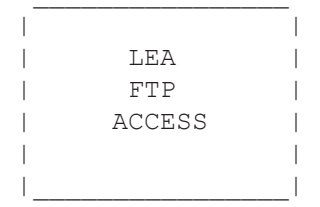


The following describes the format or markup conventions used in creating Leonardo Electronic Almanac. The function of these conventions is to facilitate perusal through the text, and to make it easier to create conversion programs to various text readers.

=====: Section Heading Delineation - full line character sequence
*****: Item Delineation within Section - full line character sequence
<: Item Title - search for the character "<" followed by two spaces
|_ or _|: This sequence takes you to the next SECTION TITLE.
Item titles and author/contributor names appear exactly the same in the Table of Contents and at the location of the actual item.
Section names appear in all capital letters, and with this issue will appear with all letters in sequence with no spaces (PROFILES, REVIEWS, etc.).



The following are the specifics about ftp access:

```
ftp mitpress.mit.edu
login: anonymous
password: your_email_address
cd pub/Leonardo/Leonardo-Elec-Almanac
```

Files for the Leonardo Electronic Almanac Gallery are currently kept in the directory:
pub/Leonardo/Leonardo-Elec-Almanac/Gallery.

This is an evolving system. Check the README file for the most

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current information about the contents in the system, and for the most current information about all of the ftp services. Submission Guidelines and Past issues are available via ftp.

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 |  PUBLISHING &   |
 |  SUBSCRIPTION   |
 |  INFORMATION    |
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========== < End of Leonardo Electronic Almanac 2(6) >
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