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< LEA and the Expanding Resources on the Internet >
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There is an alarming expansion of resources evident on the Internet, including a variety of data archiving/retrieval systems and a growing number of information presentation systems. Leonardo/ISAST and The MIT Press are committed to exploring an expansion of its resources for both distribution and presentation of its electronic publications, as evidenced in the report on Artificial Life Online below. The MIT Press has initiated a new phase in this evolution by establishing

its own computer file server which will become available early in 1994. We are exploring appropriate mechanisms for archiving information and making a variety of resources available to our readers.

The Submission Guidelines for Leonardo Electronic Almanac are now available on MIT's techinfo system, which is also their gopher service. To access this telnet to techinfo.mit.edu.

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select 2) Around MIT - Offices & Services/MIT Press.
select 22) MIT Press
select 5) Journals 1993
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Past issues of Leonardo Electronic Almanac are available through MIT's list server system. To get an index of the archive, send email to listserv@mitvma.mit.edu. The "subject" component of the email message is irrelevant, but the body of the message should contain "INDEX LEONELEC". The output of this request looks like this:

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LEONELEC 93-00001   PRV OWN V       77   857 93/10/07 08:05:56
-> Leonardo Electronic Almanac - Volume 1, Number 1
LEONELEC 93-00002   PRV OWN V       73  1577 93/10/06 13:00:25
-> Leonardo Electronic Almanac - Volume 1, Number 2
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To retrieve an issue of LEA, send email to the same list server address, with a message body containing "GET LEONELEC FILETAG", where the FILETAG is replaced with the file number appearing after "LEONELEC". In the above example, one would request "93-00001" for LEA 1:1, and "93-00002" for LEA 1:2.

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R E V I E W S

< A Report on the Fourth International Symposium >
on Electronic Art (ISEA '93)
November 3 - 7, 1993
Craig Harris, with Sonya Rapoport

In reporting on the Fourth International Symposium on Electronic Art, I believe that it would be useful to place the event in its historical context, examining the successes and failures in terms of the goals of the organizers and the needs of the international art, science and technology community. This is the first installment of a collection of perspectives designed to convey the flavor of this event, with a further goal being to facilitate a dialogue which helps to define the needs of a diverse creative community. Sonya Rapoport joins me in this installment, helping me to convey the character of FISEA '93.

The International Symposia on Electronic Art began in 1988 in Utrecht, Holland. The event included presentations, papers, panels, concerts, and electronic theater showings. There were discussions about linking organizations which concentrate in particular disciplines or geographic regions, such as the International Computer Music Association (ICMC), the Australian Network for Art and Technology (ANAT), and the

Canadian Electroacoustic Community (CEC), by establishing an Inter-Society for Electronic Art (ISEA) as an umbrella organization for institutions, organizations and individuals active in the electronic arts. The need for a venue for presenting electronic art in all categories, and for the exchange of knowledge and resources was widely acknowledged, and it was evident that there was a lack of communication among artists and developers working in different fields. After symposia in 1990 in Groningen, Holland and in 1992 in Sydney, Australia, FISEA '93 in Minneapolis represents the shift to an annual event, and this was the first time ISEA was launched in the United States. In 1994 ISEA goes to Helsinki, Finland, and to Montreal, Canada in 1995. To their credit, the organizers of ISEA are working hard to establish the symposium as a significant international event focused on creative uses of new technology.

FISEA 93 was hosted by the Minneapolis College of Art and Design (MCAD), in affiliation with the Inter-Society for the Electronic Arts, and in partnership with the University of Minnesota, Walker Art Center, the Minneapolis Institute of Arts and other local organizations. The hosts presented a well-organized event, including paper sessions, poster sessions, panels, workshops, electronic theater, sound performance events, a gallery exhibition and a fax art display. Roman Verostko assembled a strong group of presentation collaborators. Homer Lambrecht's management of the sound performance event was for me, as one of the performers in the new Tedd Mann concert hall event, a shining model for producing technologically challenging performances. Andy Mickel, MCAD's Computer Center Director, gracefully created an underlying technological foundation. Brad Smith, MCAD's Media Center Director, was FISEA's Equipment Manager, a project which he handled with expertise, striving to provide everybody with whatever they needed. Look to future issues of Leonardo Electronic Almanac for a more comprehensive perspective from the FISEA organizers' perspective.

The guest speakers were Jan Hoet and Brenda Laurel, and each of them brought their full personalities to bear in sharing their perspectives. As Sonya Rapoport shares in her statement about FISEA, Jan Hoet vociferously questioned the validity of computer art in his talk "The Place is Art".

"For a long time I have been sometimes fascinated and involved, but more often annoyed by the use of electronic media in art. ... The place is art. ... The basic reference for me remained the one to painting and its disposition to extend beyond itself."

Jan Hoet, "The Place is Art", FISEA Abstracts and Artist Statements

My compliments to FISEA Program Director Roman Verostko for having the courage to invite the controversy that was inspired by Jan Hoet. It is unfortunate that Jan Hoet's tone was emphatic nearly to a fault, diluting the impact of his message. In that environment it became easy to discount the arguments on the basis of the black and white nature of his position, or on the evaluation of his examples. I believe that the intention was to provoke questioning of the reason for using the technology in the artistic expression. The

marriage of art and technology becomes a functional creative element to the extent that the technology used is intimately integrated into the meaning of the work, and even necessary to convey the artistic message. The discussions about this topic became part of the event, even to the last minutes as Jan was shuttled off to the plane. At the closing reception at Roman's house Jan continued to support his perspective in heated debate, pointing to the art that Roman created before using computers as being his "real art", discounting his remarkable epigenetic work created in recent years. And as he walked out the door Jan turned around and said to me in a concerned fashion - "You must provoke, you know. It's not just a social activity to do at parties." It reminded me of Herbert Brun's keynote speech presented at the 1987 International Computer Music Conference, entitled "The Premise is That There Be Music". Here also the speaker, in a style which can only be truly appreciated by those who have had the opportunity to spend time with him, cautioned the audience of musicians and developers that the goal of the activity is to create music and not merely to create hardware and software. Seven years later I'm not convinced that very many people listened to Herbert's underlying message.

Brenda Laurel spoke of the collaborative challenges we face as artists working with new technologies in her presentation "Art/Tech Collaborations: some tips on getting along".

"You have to fall in love. Not necessarily with each other, although that helps - but with a vision of what you are trying to do together."

Brenda Laurel, "Art/Tech Collaborations: some tips on getting along", FISEA Abstracts and Artist Statements

Her stories about the virtual reality project she worked on at the Banff Centre for the Arts provided some fascinating windows into her work, collaborative creativity in general, the state of the "art" in VR. It was evident that even with remarkable human, technological and financial resources, it is still extremely difficult to create effective, immersive art. Brenda remarked that her group will be pursuing the sound realm as it relates to creating a successfully immersive experience. Her conclusion is indication of a shifting perspective regarding art as process and tool development as opposed to art as artifact.

"The most important thing you will do together in the course of any project is to design tools. ... Good tools will be there long after the piece is forgotten and the team is dissolved. They will influence the medium more strongly than any individual piece ever could. Good tools are the enduring fruit of successful collaborations."

Brenda Laurel, "Art/Tech Collaborations: some tips on getting along", FISEA Abstracts and Artist Statements

At the closing Plenary Session there was much discussion about the goals, focus and format of the symposium. It was clear that this was a community trying to create its venue. While there was disagreement about the means (papers, panels, demonstrations, 2-D gallery exhibitions, round-table discussions), it was generally agreed that there was a need for artists working in new technology to learn about each other's work. Simon Penny, the curator of the Machine Culture

exhibition at SIGGRAPH '93, reinforced the importance of having a venue like ISEA which is based on art as the starting point. As crucial as the SIGGRAPH Art Shows have become in the computer graphics community, the main focus of the venue remains its research exchange and trade show components. After three years the CyberArts International event has been terminated by its organizers Keyboard Magazine (Miller Freeman), eliminating another venue. The Ars Electronica Festival is acknowledged as an important event, and the Prix Ars Electronica remains a major electronic art competition. In its current form, however, Ars Electronic does not fulfill all of the needs of a diverse community.

Rich Gold, the organizer of the Xerox PARC Artist-In-Residence (PARC PAIR) project remarked later about how small the representation is within ISEA from the fine art community, even considering the significant sub-cultures within the fine art community which use new technologies in their work. David O'Halloran, the new Director of the Australian Network for Art and Technology, commented that the exposure to discussions about the creative process and the tools of musicians/composers was particularly revealing to him, providing insights about other art forms which are critical if one intends to collaborate.

The absence of government and industry support was evident in Minneapolis, especially by comparison with the Australian conference (TISEA) and the reports about future Finland and Canada events. I was particularly surprised that attendance was as small as it was - about 170 registrants. The ISEA can only succeed in bringing this diverse community together if the community is an active participant in forming the event. This requires that there be a dialogue within the community based on defining the most appropriate kind of event for presentation and communication. Organizers for ISEA '94 and ISEA '95 are exploring ways to use the electronic network to facilitate communication. LEA readers who attended FISEA are encouraged to communicate their observations and suggestions. Those who were not able to attend are invited to offer their suggestions and experience with respect to defining the goals of the community and the designing of appropriate presentation formats.

< A Friendly Walk Through Cyberspace - FISEA '93 >
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My first-ever attendance at an electronic symposium has left me in a state of euphoria. To assess this experience, my only reference is to the "Fine Art World" to which I belonged for 3 decades before entering, in the 70's, the world of art, science and technology.

At MCAD, where my main preoccupation was getting my piece installed, I found no territorial imperatives; Scott Sayre and the staff were pleasant and helpful to all. I had read about, written to or talked with a number of the registrants, and wondered if I'd ever get a chance to spend time with them. My first encounter was with Greg Garvey. He was lugging

his confessional, pleased that I had introduced myself and looked forward to talking with me later. Roy Ascott was ready to dialogue every time I "hounded" him about his theory of "appearance (outmoded) and apparition (the future)". (1) I could actually engage in exciting conversation with anyone I wished - very different from the art crowd - inaccessible, cliquy, secretive and unsharing; incapable or uncooperative in discussion unless there was a possibility for personal gain. FISEA '93 was a world of bright people with bright ideas and I was in heaven. I didn't even care if only Hans Dehlinger of Kassel knew of DOCUMENTA and that very few had heard of Hans Hofmann.

This takes me to the first plenary speaker, Jan Hoet, Director of the Museum of Contemporary Art at Ghent, Belgium and curator of DOCUMENTA IX. DOCUMENTA, held every 4 or 5 years in Kassel, Germany is purportedly the most prestigious world-wide contemporary art exhibition. I had attended Hoet's expo and was critical of its sparse representation of electronic art. The rest of the art world just plainly damned the show. Reviews and references during the past year have relentlessly attacked him. When I heard of his participation in FISEA '93 I thought, surely, that a man of his earlier reputation would have the resilience to find an art area into which to expand and redeem himself. This was pure fantasy. He proclaimed that there was no art at the MCAD exhibition. Hoet was certain that art had no place in modes that utilize science or technology. To reveal his aesthetic scope, he mentioned a few favorite video artists. There were several good videos at Kassel. But offering video art as an indication of cutting-edge connoisseurship is embarrassing. Hoet, in his talk, also gave credentials to Matt Mulligan, who is not a video artist. Mulligan is an interesting example of a maverick artist who toys with technological tools. I have often admired such artists and wondered how they have managed to navigate the white water of museum and gallery corridors. Has their familiarity with the "art scene" enabled them to operate within it? Are their works especially marketable?

As I tried to locate the panels, papers and projects which were relevant to my interests, I was searching for ways in which artists who use electronic devices express themselves beyond traditional art media styles. I wanted the answer to what are the criteria for considering these new forms as good art. I am beginning to question whether we can use traditional standards for electronic art productions. If not, then what? Maybe "what is art?" will eventually fall into place and, at the moment, has only priority with outmoded academics. New formats, like hypertext, are very much here and have great potential. Judy Malloy's "The Yellow Bowl" narrabase was a standout among the visual "appearances". I was absorbed by Steve Wilson's "Cultural Theory" that suggested "Research" as an art form. Telecommunication, also here and with great potential, back-fired in Henry See's presentation room where a cauldron of protest was ignited with references to "teleconferencing colonization", "(mis)appropriation from 3rd world cultures", "virtual reality commercialization and going nowhere aesthetically", and "artists being sucked into software and hardware upgrades". I was pleased to hear that Henry See preferred the simplicity of hypercard. I was not pleased that Joseph

DeLappe, in his "projects and applications" venue, opted for open-ended interactive parameters. Psychologist/artist George Shortess, also took this viewpoint, but he was "watching" the participant. DeLappe appears to let the participant go. DeLappe turned up in the cauldron as did Paul Brown "and the band played on". Brenda Laurel's earlier presentation had fomented the appropriation theme that reverberated ubiquitously. I ask "what is wrong in appropriating (positively) information from other cultures"? Is this not a way of learning about the "differences" and giving them respect? Has the scientific method of building block upon block gone astray? My last words are about the Music component of the symposium. What did Craig Harris mean when at the closing panel, he said, "Remember, let art be first".(2) Are the words "Music" and "Art" interchangeable? In the fine art world, art is for seeing and music is for hearing. In the electronic art world they merge. Here the music world appears to be inhabiting the visual world and the visual world has encroached upon the musical world. In Steve Kenny's musical composition "star dot star plus plus" the musical score was projected onto a large screen. The audience could follow icons moving to an attractive grid of dynamic graphical notations. For me, the interactive complexity of participant, performer, composer and viewer made this work the aesthetic highlight of the symposium.

1. Roy Ascott's text "From Appearance to Apparition: Communications and Consciousness in the Cybersphere" was published in LEA 1:2, October 1993.

2. My comments about art being first were in the context of discussions about Electronic Art as a whole, and not about visual art specifically. I was reflecting on the terminology used to describe art created using new technologies, making a distinction between terminology which is inclusive versus that which is exclusive. In an attempt to be descriptive, terms like Computer Music and Electronic Art can actually facilitate a circumstance where the instrument or technology becomes the focus, where the tools become the end as opposed to the means, where the aesthetics are based on an assessment of the application of resources, and where the community creates its raison d'être within the confines of its fellow practitioners. Brenda Laurel's emphasis on the development of tools notwithstanding, as an artist and member of an audience I prefer to perceive art work on its creative merits, and on the artistic message.

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P R O F I L E S

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In recognition of the fact that computers, multi-media, telecommunications, and telepresence will change the life of every individual, the City of Linz, Austria is building the Ars Electronica Center (AEC), a museum dedicated to the future. The Ars Electronica Center has been conceived as a gateway into this new world, introducing visitors to new developments and trends in the science field as well as in business, art, and entertainment. Its interdisciplinary nature makes it a lively and unique building attracting a wide range of visitors, from computer whiz-kids and their families to artists and business enterprises. The AEC especially wants to provide business and industry with a showcase for innovation and progressive stimuli by hosting events and exhibitions on its 2,000 square meters (21,000 square feet) of floor space, and through the use of its infrastructure.

Based on a concept by Dr. Hannes Leopoldseder, Upper Austrian Regional Director of the Austrian Broadcasting Corporation, a project study was commissioned a year ago by the City of Linz and carried out by a number of scientists, technicians, and experts. ART+COM in Berlin was responsible for the detailed planning of the content of the AEC, and the project was overseen by City Cultural Director Siegbert Janko and Dr. Hannes Leopoldseder.

Though the AEC in Linz takes its name from the internationally renowned festival Ars Electronica, its overall concept extends far beyond the realm of the art world. The AEC is dedicated not only to the integration of science, technology, art and business but also to an overall forward-looking orientation. It is a building committed not just to presenting the past but to introducing people to the scenarios, techniques and media of the future.

The AEC building has six levels, each dedicated to a specific area of emphasis. A block-like construction allows for a high degree of flexibility so that any changes in the future can be incorporated quickly and cheaply.

Upper Basement Level

----- The AEC Datarium

The Datarium is a guide to the digital image world of the future. It is a technical space installation using the large-screen projection capabilities of liquid crystal display (LCD) glass. On entering the Datarium the visitor finds himself surrounded by 5m by 3m (15' by 9') glass walls running from pillar to pillar. In their passive state these plates function as display panels for exhibiting real objects, including robots and installations, which are accessible to the visitor by means of sensors. At the touch of a button these transparent LCD panels become giant projection screens. Once provided with special glasses, the visitor is transported into a three-dimensional image world. Because LCD screens can handle data as well as images, a broad palette of digital image worlds is possible, ranging from computer graphics and urban and architectural simulations to visualizations from the world of science, research and industry.

Mediathek/Archive

The Mediathek is the AEC's electronic memory. It also contains a center for the documentation of the new interactive media, picture discs, CD-ROMs, etc. The core of the Mediathek is made up of the work of the artists who have taken part in the Prix Ars Electronica competition in Linz since 1987. More than 6,000 graphical, animation, interactive and musical entries from over 50 countries have been submitted to the Prix. For casual visitors, students, scientists, artists and others, the Mediathek provides a unique library of electronic art.

Electronic Cinema

The Electronic Cinema is a theater designed for a variety of uses including the presentation of films from science, research, and industry, but also from Ars Electronica. The room will also be used for lectures, workshops and other presentations.

AEC Ground Floor and Mezzanine

On the AEC ground floor the tone is set by the Expovision, where rotating exhibitions offer the visitor insight into latest developments in computer-supported art, and businesses can hold presentations and exhibitions to test-market typical products and prototypes by introducing them to a wide range of visitors. On this floor, three permanent installations catch the eye:

- the Cyberdeck with the Cybernauts and the Radio and TV Media World. The Cyberdeck presents itself as a world-spanning media station.
- the AEC RAM, is a large, optical, interactive installation, also incorporating the coat check and information counter.
- the elevator is conceived as a "Televator", and is one of the AEC's particular attractions, not because of its outward appearance but mainly through the installation built into its floor.

The Cyberdeck's main attraction is the so-called Cybernaut. Cybernauts are VR-adventurers floating in mid-air. The would-be Cybernaut is equipped with an eyephone (helmet with Liquid Crystal Display) and a dataglove or datasuit. Strapped into a frame, he floats freely in the air over the heads of the visitors on the ground floor. The feeling of floating weightlessly gives the virtual space experience a new dimension.

2nd Floor

Cyber-City

The name "Cyber-City" for the 2nd floor is a reference to its "Linz-City" installation, a 3-dimensional, computer-generated model of the city, and to the other material and presentation technology housed here. Cyberspace, virtual reality, 3-D-simulation also in CIM and CAD applications, multi-media - these concepts form the core of what the visitor can see on this floor.

3rd Floor

AEC Knowledge Net

"Das Wissen im Netz" ("networked knowledge") represents the "classroom of the 21st century", a place of new learning - embracing the latest multi-media hard- and software, which will revolutionize training and further education. As an extra-mural place of learning, the AEC intends to stimulate developments in the educational field in Austria, providing a model for new, innovative learning.

The AEC's educational potential not only provides an opportunity for individual use by school and university students, but also serves specific uses for groups and workshops, for individual theme areas, but primarily for project-based teaching and project weeks for interested school classes.

Top Floor

AEC-Sky

With a superb view over the Danube and surrounding city, the AEC-Sky offers the ideal opportunity for relaxation and communication using "media tools", such as picture phones and other virtual communications media. The visitor can relax in comfortable 'media armchairs'; a friendly robot bartender serves drinks and Cybersnacks in the Sky-Cafe. This floor is not only ideal for relaxing but for forming worldwide communications networks or holding video conferences. The centerpiece on this floor is called the "Waltisch" ('whale table') - a big, integrated, oval table characterized by one thing: communication. This communicative function is the origin of the name "Waltisch" (a play on words), because whales possess a unique communications and navigation system. By sitting at this table one can take part in local and even international networks by means of the latest communications and multi-media technology.

Functions and Roles of the Ars Electronica Center

The AEC promises to be a showcase for innovation which can be made available here to a worldwide public as well as to local people. The AEC is also a place for communication and addresses a broad, experience-seeking public as well as a specialist audience. Young people, students, families, hi-tech enthusiasts, technology enterprises, scientists, artists, architects, researchers and trendsetters have the opportunity here to see, and even try out, the latest innovations in the fields of art, culture, science, research, entertainment and technology. The AEC is intended to introduce the public to new worlds of experience which clearly illustrate the transition to an information society in both work and leisure. This is made possible by interaction and simulation, by cyber-space and virtual reality, by multi-media and artificial life, and by connection to local, national and international data networks.

Furthermore, the AEC is not so much a part of the Austrian network as it is part of the global network of artists, scientists, institutions, festivals and establishments. The decisive stimulus for this forward-looking development is Ars Electronica, the international festival for art, technology and society, which has taken place since 1979 in Linz. The

Prix Ars Electronica, which was developed as a part of the festival, has since made Linz a center for computer art.

< Zentrum fur Kunst und Medientechnologie Karlsruhe (ZKM) >

Editor's Note: This is an excerpt from The Leonardo Almanac: International Resources in Art, Science and Technology. See the Publications section of LEA for more information.

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The Center for Art and Mediatechnology was established as a foundation by the city of Karlsruhe and the State of Baden-Wuerttemberg in 1989. The goal of the Foundation as a facility for research, dissemination of culture and training is to facilitate the all-embracing and wide-reaching exploration of art and mediatechnology, especially in the areas of visual images, music and word, and their interrelationships. Currently the Center's activities are spread over three different locations in the city of Karlsruhe. In 1996 the Center will move to a renovated factory site which will house all departments on a total area of 15,000 square meters. The investments will accumulate to \$100 Million. In the current state, the two institutes for research and production are already functioning within the limits of a start-up operation. Two museums and an audio-visual library are being planned so they can open to the public in 1996.

Museum of Contemporary Art

Heinrich Klotz, Director
The collection of this museum is already now one of the largest collections of media-art. In contrast to traditional museums it will house contemporary art spanning a range from traditional media like oil paintings to video installations and interactive exhibits.

Media Museum

Hans-Peter Schwarz, Director
This museum will focus on how technology, art and perception influenced each other over the course of time. Hands-on experiments and interactive installations will expose the visitor to the manifold intertwinings of media technology and cultural changes.

Mediathek

The Mediathek is comprised of three sections: a library, a videotheque and an audiotheque. All collections will be publicly accessible in 1996. Already now, the videotheque (Dieter Daniels) aquired many artists' videos and the famous Infermental collection of experimental videos. The heart of the audiotheque (Thomas Gerwin) is the International Digital ElectroAcoustic Music Archive (IDEAMA), a joint undertaking

between CCRMA, Stanford University, and ZKM. Partner institutions are GRM (Paris), IRCAM (Paris), GMEB (Bourges), NACIS (Tokyo), EMS (Stockholm), and the New York Public Library (NYPL).

Institute for Image Media

Jeffrey Shaw, Director

The Institute for Image Media focuses its practical research and production activities in the following areas: Video, Computer Graphics, Computer Animation, Digital Multimedia, Interactivity, Visualization, and Telecommunication. Through the accumulated activities of its resident artists and technicians, the Insitute will be able to develop specialized in-house hardware and software resources which will facilitate new and experimental form of media art production.

Institute for Music and Acoustics

Johannes Goebel, Director

The work of the Institute centers around artistic production, scientific research and the development of tools for composition . Radio plays, works with live-electronics, tape-music, sound-installations and intermedia works are carried out in temporary work spaces. The new building will provide recording and rehearsal studios on a professional level.

General Statements

The Institutes do not offer educational programs. Specific workshops are offered for professionals. In general, artists can apply for residencies to work on defined projects, funded by third parties or, within limits, from the Center itself. Since 1989, the MultiMediale festival is staged biannually, presenting art installations, interactive exhibits, mixed media performances and concerts.

< Jay Riskind >

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Editor's Note: Roger Malina's "A Review of the 1993 SIGGRAPH Art Show 'Machine Culture: The Virtual Frontier' " (LEA 1:1) prompted Jay Riskind to offer some insight into his work as a photographer and computer artist. Malina was commenting on the work of John Heartfield as exemplifying an artist deeply in touch with the technology and politics of his time.

The work of John Heartfield on the other hand is a revelation. Heartfield has sometimes been called the "inventor" of photomontage and his work is almost emblematic of work of an engaged politically active artist. The exhibit features examples of his work created during and between the two World Wars, work that was disseminated as posters, book and magazine covers and illustrations. Cut up photographs, from a variety of sources, are assembled into satirical and startling combinations with politically charged meaning. Born in

1881, Heartfield adapted a technology of his own age and used it in the context of the emerging mass media. His work is an art of his own times, that still succeeds as art objects today. According to the catalogue the Berlin Dadaists, of which Heartfield was one, "preferred to call themselves "mechanics"- and to create an iconography using mass-produced material in order to fashion their own "reality"".

Roger Malina, LEA 1:1

Jay Riskind has been a photographer since 1966, and has taught Computer Art at The Art Institute of Chicago. His work has appeared in a variety of publications, including the Siggraph '92 Visual Proceedings and Computer Graphics World, July, 1992.

RISKART is my own studio and gallery where I work and display my work to the public. The current exhibition is titled "The Road to Hell" The work is computer generated photo montage dealing with the issues of death and resurrection. I produce the work on a 486DX with a targa board, using Lumena and Photostyler software. I send the files to a film recorder where I get 4 x 5 color negatives which I print to 20 x 24 inches on Fujicolor paper.

From the labor-intensive photo montages and colleges of the past 125 years, including the work of John Heartfield in the 20's and 30's, I believe we are in a period of post-photography where, according to A. D. Coleman, we will have to address with understanding these computer generated descendents which are now upon us for good. That this understanding is difficult to achieve is partially the result of computer generated "media" being in the same outsider position as was photography prior to the 1960's, complicated by the love/hate relationship between humans and their machines.

I find my own work somewhat curious, in that, although I have had an assimilationist Jewish upbringing, my work reflects proto-Christian, pre-Columbian and Native American (including Latin American) concerns about death and resurrection. Dying may or may not be painful, but death itself would appear to be non-traumatic and may be a cosmological event. In a sense, a summary of my work may be found in an excerpt from a poem by the Chilean poet, Pablo Naruda:

O what it costs us in fiendish activity
to harry the dead to their death! And then, just
when we thought nothing could move us again...to be
scourged in the resurrection of the portraits?

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A N N O U N C E M E N T S

< 1st "New Generation" Competition Music & Technology Competition >
Szombathely, Hungary 1994

Secretariat of New Generation Competition

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The Hungarian Computer Music Foundation and the Interart Festivalcenter are organizing the 1st "New Generation" Music & Technology Competition in the framework of the International Bartok Festival, Szombathely.

The organizers' main intentions are:

- to foster the dissemination of the repertoire in the area of music using technology,
- to bring together talented young composers interested in this creative field,
- to invite them to participate in common work in the following years,
- to give them the opportunity to meet other musicians and discuss their ideas and motivations in the context of the International Bartok Seminar,
- to present the selected pieces to a wide, international audience.

The subject of the competition is a piece for tape and/or live electronics, alone or in combination with instruments. The competition will confer a "New Generation" Prize, consisting of a sum of \$1000, and up to 5 honorable mentions. The criteria of evaluation will depend on both the musical qualities of the work and the creative usage of the technology. All of the selected works will be performed during the 1995 Budapest Spring Festival, and the composers will be invited to attend both the rehearsals and the concert. Hungarian Radio will broadcast the selected pieces.

The competition is open to composers born after June 1st, 1964. The deadline for entries is June 15, 1994. Entries will be judged by an international committee of representative musicians, including Peter Eotvos, Marco Stroppa and Jonathan Harvey.

< Obituary - Leon Theremin >

Craig Harris

Leon Theremin, the inventor of the music instrument which bears his name, died in Moscow at the age of 97. Theremin created one of the first electronic music instruments, and was a pioneer in the area of human-machine interface. The Theremin senses the proximity of each of the performer's hands in relation to its two antennae, affecting both pitch and amplitude. As a scientist and inventor for the KGB in Moscow, Leon Theremin invented electronic surveillance devices, worked on remote-control aircraft, and developed systems for tracking ships behind enemy lines. He spent time in Siberia when he was convicted of anti-Soviet propoganda.

I met Theremin during a trip he made to the United States in 1991. A concert was "presented to celebrate Stanford University's Centennial year and the Center for Computer Research in Music and Acoustics's (CCRMA) contribution to

electroacoustic music, and to honor Leon Theremin and Max Mathews, whose respective contributions were visionary and extensible." (1) I also had the privilege, with Stephen Pope (Computer Music Journal) and Roger Dannenberg (Carnegie Mellon University), of attending a performance in Vilnius, Lithuania (1989) by his daughter Natasha on one of the original Theremins. One of the interests of the Lithuanians who hosted our cultural/technological exchange group was to establish a Western partner to transform the Theremin into a MIDI device.

Theremin's explorations into music instrument design foreshadowed and even influenced the work of many music instrument builders, including those who are now working with computer-based technology. In the early 1980's Joel Chadabe created gestural interface devices to control synthesizers in live performance, prior to the development of MIDI. Mark Coniglio's MIDI Dancer, Ed Severinghaus' BodySynth, and the Mandala systems are reflective of Theremin's Terpsitone, a theremin-based musical dance platform on which dancers' movements affect the sound production. Other examples of non-contact and gesture-based controllers include Will Bauer and Bruce Foss' Gesture and Media System (GAMS) (2), a sonar-based sensing system for performance; The Hands, a MIDI-based gestural controller created by Michel Waisvisz at the STEIM center in Amsterdam; and the Radio Baton created at Stanford by Max Mathews.

Steven Martin, a New York-based film maker, created a documentary about his life, entitled "The Electronic Odyssey of Leon Theremin.

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| P U B L I C A T I O N S |

< Artificial Life Journal and Artificial Life Online >
Chris Langton, Editor
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The journal Artificial Life is a new quarterly journal edited by Christopher Langton, and published by MIT Press. It is intended to be a unifying forum for the determination of scientific research in the field of artificial life. Relevant topics span the hierarchy of biological organization, including studies of the origin of life, self-assembly, growth and development, evolutionary and ecological dynamics, animal and robot behavior, social organization, and cultural evolution.

In considering the services that the Artificial Life Journal could provide for the highly computer-literate ALife community, the quarterly hard-copy publication is being enhanced with an online electronic bulletin board, called ALIFE. The services provided by ALIFE will include: participation in multiple threads of discussion on artificial life topics via usenet news; an archive server for uploading and downloading papers and software; an online bibliographic database; e-mail; incoming Internet access via telnet, ftp, and gopher; outgoing Internet access via these same services plus wais, world-wide-web, and other database services; and so forth.

All of the primary functions of ALIFE described above will be provided as a free service to the research community by MIT Press, although subscribers to the paper Artificial Life Journal will receive extended ALIFE services with their subscription, including interactive dialog with the authors of published papers, pre-publication viewing of forthcoming articles in the paper journal, executable software demonstrations, regular accounts on the Artificial Life server, and more. The ALIFE service is part of an experimental program being conducted by MIT Press into the most effective ways to make use of electronic media to serve the needs of intellectual communities that have traditionally been served by paper journals.

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< Leonardo/ISAST launches the Leonardo Book Series >

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The Leonardo Almanac - International Resources in Art,
Science and Technology
edited by Craig Harris

The Leonardo Almanac, a consolidated and expanded version of the Leonardo Fine Art Science and Technology (FAST) Database and Archive project, covers a wide range of topics, including computer graphics and animation, holography, robotics, telecommunications and art, video, computer literature, applications of artificial intelligence to the arts, applications of computers in the sound arts, and new materials in the arts. This publication is designed as a resource for those who are working at the intersection of the arts, sciences and technology, and includes profiles of organizations and individuals active in the related fields. The organizations directory contains entries for artist-in-residence programs, grant and fellowship opportunities, and a variety of programs relating to sound and music, computer arts, video, and multimedia. In addition, there is an artists' Words on Works archive, a Speakers' Network, and a collection of bibliographies covering a variety of topics.

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B I B L I O G R A P H Y

< Gender and Technology >
Judy Malloy

Editor's Note: The Gender and Technology bibliography reflects the titles collected to date for a more extensive bibliography in development for a special issue of the journal Leonardo on this topic. This is an excerpt from The Leonardo Almanac: International Resources in Art, Science and Technology. See the Publications section of LEA for more information.

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