



Leonardo Electronic Almanac

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| INTRODUCTION |
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< This Issue >

Craig Harris

The LEA Editorial Advisory Board met in September at ISEA 97, and several issues were raised for discussion relating to the structure, process and editorial focus of the journal. The LEA Editorial Advisory Board agreed that the community would benefit from creating thematic issues or threads that explore some of the main currents and trends over the long term. LEA used this year's Art on the Electronic Edge festival to launch a theme that we will explore in the journal in the months and years ahead - interdisciplinary education in art, science and technology. We hosted a presentation/discussion at the Science Museum of Minnesota, titled "The Leonardo Equation: Interdisciplinary Education in Art, Science and Technology," and we present the first installment of material presented at this session in LEA 5:11. Andreas Broekman and Kit Blake have created a "kaleidoscopic introduction" to Rotterdam-based V2_Organisation specifically for LEA. V2_Organization has been active in the realm of new media art for several years, and the multimedia Profile that Andreas and Kit have supplied us provides us with insights into the perspectives that are central to the organization. Leonardo Digital Reviews this month includes reviews of books, a web site, software, a CD-ROM, and an exhibition. Next month in LEA multimedia artist Mike Mosher presents a hypermedia article "Community History Visualized: Murals in Place and Cyberspace." We will also present installment II of "The Leonardo Equation: Interdisciplinary Education in Art, Science and Technology," described in the text below.

Late word came in from Roy Ascott that the deadlines for sending papers in for consideration for the 2nd International CAiiA Research Conference: "CONSCIOUSNESS REFRAMED - art and consciousness in the post-biological era" has been extended to December 25, 1997. Check out URL <http://caiiamind.nsad.newport.ac.uk> for details.

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| FEATURE ARTICLE |
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< The Leonardo Equation: Interdisciplinary Education in Art, Science and Technology >

Craig Harris

Email: lea@mitpress.mit.edu

The topic of this profile evolved out of a presentation that took place on November 5, 1997 at the Science Museum of Minnesota, as part of the Art on the Electronic Edge festival. The focus of the event was to explore current initiatives to integrate the arts into the curriculum throughout the educational spectrum from elementary through college, university, and professional school environments.

Participants provide insights into how people working at the forefront of the convergence of art, science and technology are addressing issues that relate to these questions. The intention was, and is, to begin a dialog focusing on developing an interdisciplinary perspective on education in "Leonardo Electronic Almanac", and we will revisit the issue in the months and years ahead.

In the mid-1940s C.P. Snow posited the existence of a dichotomy in our society between those involved in the arts, and those involved in the sciences. Snow navigated among literary intellectuals on one side, and scientists on the other, and expressed concern about an ever widening rift in his essays "The Two Cultures and the Scientific Revolution," and "The Two Cultures: A Second Look." (1) In Snow's view large

segments within the society were not communicating with each other, and were creating language, educational and social infrastructures that reinforce the gulf between these domains. He points to the opportunities for creativity and innovation that are made possible at the point of convergence between the worlds of art and science:

"There seems then to be no place where the cultures meet. ... at the heart of thought and creation we are letting some of our best chances go by default. The clashing point of two subjects, two disciplines, two cultures-of two galaxies, so far as that goes-ought to produce creative chances. In the history of mental activity that has been where some of the breakthroughs came."(2)

He further stressed the need to rethink current educational models, based on what he refers to as "a fanatical belief in educational specialisation,"(3) and to work towards a more comprehensive and integrated approach to education-towards the exchange of knowledge and understanding across traditional disciplinary boundaries. One might take issue with the separation of the entire society into only two segments, but Snow's perception revealed a widening gulf among large groups within the society, and he pointed towards communication and education as a means of building bridges between diverse sectors of the society.

Fifty years later the canvas has changed, and nowhere is this more evident than in the activities of scientists and artists working with new media. Technological developments have transformed working practices and modes of communication. A large and extremely active group of artists around the world are working with new media and are interested in creative approaches to science. New understandings about education and new approaches to learning styles point to substantial benefits from integrated, interdisciplinary education programs. All of these factors converge to provide an opportunity to review some of the premises upon which our educational and professional relationships are based.

A survey of educational programs in professional art colleges and music conservatories highlight some of the changes that have taken place in this arena. Twenty years ago in the arts new media had found its way into select research facilities. In the United States work was taking place in such research facilities as MIT, Stanford, Northwestern University, and UC San Diego, but generally had not found its way into the professional art academies. Major developments in the realm of computer music were taking place in Bill Buxton's SSSP project at the University of Toronto, Canada in the late-1970s, across the street from Canada's renowned Faculty of Music, with no connection between the two worlds.(4)

The integration of new media moved slowly into the art environments as the technology evolved, and as more contemporary artists were directing their attention towards the capabilities for exploring new territories of human expression. The propagation of the technology and the educational programs designed to train artists working in new media has exploded, to the point where today comprehensive instruction in the use of new media is no longer an isolated activity, but is an educational imperative. New media resources have become indispensable resources in the creation, presentation and documentation in contemporary art practice, and expertise in their use has become a requisite for employment in academic, research and commercial sectors. Many of the same issues of concern in the worlds of science and technology are similarly of concern to artists working in new media, such as artificial life, telepresence, and multiple issues relating to the nature and impact of cyberspace, though perhaps with a different approach and emphasis. While education programs in many of the traditional art and science practices remain isolated, the use of new media resources permeates contemporary practices in both art and science. In fact, many artists and scientists now have more sophisticated and integrated multimedia computing power in their home office or studio than research facilities had at their disposal twenty

years ago.

The training of scientists, however, does not generally reflect a reciprocal interest in the arts and in the concerns of the arts. The humanities are not considered to be integral to the practice of their respective fields, and therefore has not become integrated into the educational program. This is one of the elements that would need to change if a truly comprehensive interdisciplinary approach to education is to take shape.

This topic flows naturally out of the particular collaboration that created the Art on the Electronic Edge festival, and is part of the current circulating in Minnesota with respect to an evolving view about interdisciplinary education, and the role that the arts can play in providing a comprehensive foundation for young people as they prepare to become functional in the contemporary environment.

One needs to consider how to make educational program of this nature sustainable? What kind of assessment models might apply, when quality of life is defined in terms that do not necessarily have a clear dollar figure, and when knowledge and wisdom cannot be evaluated by rote memorization of facts, but has more to do with process? And how do we create programs that don't simply add stress to existing teaching practices, adding work to the teaching and curriculum development loads for teachers who already have plenty to do? Clearly this requires a long term vision in order to establish practices that provide the foundation for individuals who will infiltrate industry, educational institutions and the social fabric of the culture during the course of 30-40 years of transformation. This exploration strives to frame some of the main issues, and to foster a continuing discussion.

We launch the theme of interdisciplinary education in art, science and technology with a group of participants who address these issues on several levels, ranging from early education through professional situations. Installment I begins with a brief overview of the Minnesota Arts and Education Partnership, and a specific initiative to integrate the arts in general, and new media art in particular, into the regional public school system-the Marcy Arts Partnership. Next month Kris Sorenson of the Minnesota Media Project presents work done by students participating in the "Fresh Voices" project, and Barbara Bridges presents information about ArtsNet Minnesota, a collaboration among a group of arts organizations and presenters targeting ways to disseminate information about education and the arts to both students and teachers.

The Minnesota Arts & Education Partnership (MA&EP)

The Minnesota Arts & Education Partnership is a 7-year grant program of the Minnesota Center for Arts Education, with funding from Dayton's, General Mills, Medtronic and the St. Paul Pioneer Press. The goal is to integrate the arts into the curriculum of elementary and secondary schools, creating an interdisciplinary foundation for education. Eleven Minneapolis and nine St. Paul schools were selected to receive funding and each will work in partnership with their local arts, community and business organizations to integrate the arts into all areas of school curriculum.

A survey of the organizations that comprise the various partnerships reveals a wide variety of organizations, crossing both disciplinary and cultural boundaries. The following selection presents the participants for partnerships in which Art on the Electronic Edge cosponsors are involved:

Jefferson

Key Arts Partner: Minnesota Media Project

Additional Partners: CreARte, Creatives for Causes, Intermedia Arts, Metro YMCA, Very Special Arts Minnesota
South/Ramsey/Barton

Partners: Asian-American Renaissance, Corcoran Neighborhood Association, Dance Educator's Coalition, In the Heart of the East Puppet and Mask Theater, Metro YMCA, Milkweek Editions, Minneapolis Institute of Arts, Minnesota Center for Book Arts, Minnesota Orchestra, Reliastar, Walker Art Center Tuttle/Northeast

Key Arts Partner: Child's Play Theater Company

Additional Partners: American Composers Forum, Cultural Center of Minnesota, East Side Neighborhood Association, Theatre Mu J.J. Hill

Key Arts Partner: ArtStart

Additional Partners: Illusion Theater, Minnesota Museum of Art, Red Balloon Bookstore, St. Paul Police, Science Museum of Minnesota, Summit-University Planning Council Jackson/Maxfield

Key Partners: College of Visual Arts, Walker-West Music Academy

Additional Partners: Allina Foundation, Asian-American Renaissance, Penumbra Theatre Company, St. Paul Central Touring Theatre, Science Museum of Minnesota

The Marcy Arts Partnership

Scott Bean

Marcy Open School
415 4th Avenue SE
Minneapolis, MN 55414
Email: mebean@aol.com

URL: <http://www.mpls.k12.mn.us/marcy/>

[Ed. Scott Bean is a Marcy Open School Special Education teacher and Marcy Arts Partnership Board Member. He has been deeply involved in the development of the Marcy Arts Partnership of the MA&EP, as it was conceived, during the initial planning phase, and now as projects are being implemented throughout the school. I have been fortunate to work with Scott over the last year as we collaborated on the steering committee, and as we launched a pilot project that he will tell us about. Scott will take us down into the trenches at the elementary school level, providing us with some insights into the background, the projects, and the challenges faced in establishing individual partnerships.]

I am a teacher at Marcy Open School in the Marcy Holmes neighborhood in Minneapolis, Minnesota. I will present information about the Marcy Art Partnership (MAP) and talk about some of the exciting projects and initiatives this grant is making possible for us at Marcy Open School.

I. What is the Marcy Arts Partnership (MAP)?

MAP is Marcy Open School's program for providing basic arts resources to the school and integrating the Arts into every aspect of education at the school. It is made possible through a grant from the Minnesota Arts & Education Program, an initiative of the Dayton Hudson Foundation. It is an opportunity to work with other arts funding groups and have greater leverage and credibility, when seeking support for arts programs at Marcy.

MAP is a seven-year (\$20,000.00 this year for each partnership, and more to come) granting process and represents the most comprehensive effort I know of to bring arts into the public schools and the communities they serve. The goal of MAP is to make possible increased arts programs in the schools, improve the stature of art as a core curriculum, and develop models for arts integration in interdisciplinary explorations of content and concepts in education. The Partners are Marcy Holmes Neighborhood Association, Marcy Open School, Parents and Area artists, Forecast Public Art, Cedar Cultural Center and Aveda Corporation/Give to the Earth Foundation. It is through MAP that I have come to know Craig Harris and become

interested in the issues of technology and its impact on art. It is through MAP that the Marcy Open School WEB site was developed as a test effort in our planning year. It was developed with the guidance of Craig Harris and involved Marcy 5-6th graders as designers and editors.

II. What does it mean?

What is integration of Art in every aspect of education at Marcy, what is in it for the community, and how does this interest people who have come to this forum "Art on the Electronic Edge"?

1. Art is and ought to be considered a core subject like math, reading, writing and science. Research in the last few years greatly supports this notion. Arts integration is the effort to include art as a core subject and include art in all interdisciplinary studies. Melding Art, Science, Math and Literature to the same goal of helping students understand, discover and give meaning to the world around them represents the best modern educational practice.

2. Arts integration is the inclusion of art in the exploration of the content and concepts associated with many different subjects. It is a model of how things really work in the world. Student who learn concepts through arts activities have a greater depth of understanding. Earnest Boyer, president of the Carnegie Foundation for the advancement of Teaching, states: "During the past quarter century, literally thousands of school-based programs have demonstrated beyond question that the arts can not only bring coherence to our fragmented academic world, but through the Arts, students' performance in other academic disciplines can be enhanced as well."

3. Arts integration represents the best way of recognizing and acknowledging that students have many different learning styles. Concepts presented through the arts can have greater impact to students. Interesting support for this statement can be found in "Eloquent Evidence: Arts at the Core of Learning." "Eloquent Evidence" is a publication produced through a partnership of the National Endowment for the Arts, the National Assembly of State Arts Agencies and the Presidents Committee on the Arts and the Humanities. It was funded through the generous support of the General Electric Fund. The publication contains the following quotes and summaries of recent research regarding art and its impact on learning.

Scientist Lewis Thomas has written "The arts are serious business and rigorous academic subjects. They are an essential aspect of human knowing. "Science will ... produce the data but never the full meaning. For perceiving real significance, we shall need... most of all the brains of poets, [and] also those of artists, musicians, philosophers, historians and writers in general."

Art has a far reaching potential to help students achieve education goals. Howard Gardner of Harvard University, whose theory of multiple intelligences broadens our view of how humans learn, places art as a crucial component in the development of the ability to learn.

Comparison of students not exposed to the arts and those exposed shows that students of the arts continue to out-perform their non-arts peers on the Scholastic Assessment Test, according to the College Entrance Examination Board. In 1995 SAT scores for students who studied the arts more than four years were 59 points higher on the verbal and 44 points higher on the math portion than the students with no course work or experience in the arts. Reading and Writing and Math Skills can be enhanced through the arts".

Students improved an average of one to two months in reading for each month they participated in the "Learning to Read through the Arts" program in New York City. "Humanitus Program" students in Los Angeles, California high schools wrote higher quality essays, showed more conceptual understanding of history and made more interdisciplinary references than the non-"Humanitus" students. Low achieving students made gains equivalent to those made by higher achievers after exposure

to the Spectra+ arts program. The "Spectra+" arts program in Ohio demonstrated real gains in reading and math over a control group not exposed to "Spectra+". The "Arts Alternative" program in New Jersey demonstrated a strong connection between drama skills and literacy. Creativity is naturally developed through the arts. Total creativity was four times greater for elementary students in an arts curriculum than for the control groups in two Ohio school districts. Student engagement and persistence improved with arts-based curriculum. Classes were more interactive, there were more student-initiated topics and discussions, more time was devoted to literacy activities and problem solving activities in schools using the arts-based "Different Ways of Knowing" program. High-risk elementary students with one year in the "Different Ways of Knowing" program gained 8 percentile points on standardized language arts tests; students with two years in the program gained 16 percentile points. On and on. Evidence is presented throughout "Eloquent Evidence" that demonstrates the importance of arts to learning. Arts also help us grow in skills of empathy and enhance students' sense of self worth.

III. What's in it for the community?

It is the goal of MAP to develop the school as a resource for the community for the exchange of artistic ideas and expressions by providing an opportunity for artists and arts organizations to be involved with students, and for students to go outside of the school. This will be done through a focus on:

1. programming after school events, workshops and classes.
2. Developing of summer programs.
3. creating artist residencies
4. offering field courses with artists and arts organizations
5. establishing community and school collaborations.

IV. How does this relate to "Art on the Electronic Edge"?

Our first pilot project, and one that propelled us into some of the issues of this gathering was the creation of the Marcy Open School Web site. We had several needs that were answered by this project. We needed a way to organize resources for our MAP program. We needed a way to spotlight for the public some of the exciting projects that have been and are always going on at Marcy. We needed a way to give students and the community a sense of the history of Marcy school and its relationship to the community. (Last year was Marcy Open School's twenty fifth year as an open school and we had a twenty fifth year anniversary celebration, which was documented by the students, and presented on the web site.) And we needed a way for students to give meaningful content to an exploration of an electronic technology that they are constantly exposed to in school - the exploding amount of information on the net. We were guided in our efforts by Craig Harris. Some of the things I learned while working with Craig and the students to put together the project were both how hard and how important content was to making the site meaningful. Selecting the things we wanted to show and discussing why we wanted to show those things and editing the most important materials turned out to be the most valuable aspect for the students of the project. Editing was the real challenge. Organizing our thinking and creating meaningful movement through our site was the creative stuff. Everyday our technological world becomes more complex.

The tools of artists expand our perceptions, and with those new tools comes the potential for including more complex questions in our exploration of the meaning of relationships around us. As an educator I no longer agree with Marshal McLuhan's assertion that the media is the message. It is driven by technology and it changes too fast. Art and Art education is the message. To me Art at the Electronic Edge doesn't mean a passive response to ever changing technology, but

rather the influence of something gigantic on the technological world - art and artistic expression. Artists will give the bells and whistles something to ring and whistle about.

The Marcy Open School World-Wide-Web Site & the Marcy Arts Newsletter

Craig Harris and Scott Bean

This is a description of a course taught at Marcy Open School in the spring of 1997, as a pilot project of the Marcy Arts Partnership. Marcy teacher Scott Bean is the course faculty host, and Craig Harris is the artist/educator invited to participate in the project. The course engaged a group of students in a process that educated them about current technology and practice as it relates to the World Wide Web, including them in the creation of the Marcy Open School World Wide Web site and the Marcy Arts Newsletter. In addition to learning technological skills, students learned about design, art as an interdisciplinary activity, critical thinking, project development and collaboration.

The course utilized the new media resources available throughout the school, and established a forum to increase the awareness of the existence and value of the MAP project. This project was designed to establish a process that would be ongoing, including more students as the project evolves. It created a strong foundation for continuation in the 1997/98 school year, reinforced by a core group of students and faculty members.

The course model grew out of the following imperatives:

- a) Scott Bean's students were creating a hard copy newsletter about school activities, and would benefit from developing computer and internet/web skills.
- b) The Marcy Arts Partnership needed to develop its information resource and communication system in order to establish a strong foundation for the program to evolve.
- c) Marcy Open School needed to develop their web site, and to improve the usage of the media resources throughout the school.

The course targeted the following goals:

- a) Teach students about issues relating to design, critical thinking and project implementation.
- b) Engage the student body in the collection, organization and dissemination of the information that forms the foundation of activities at Marcy Open School, and in particular the Marcy Arts Program.
- c) Teach the students basic computer editing, email, and web design skills.
- d) Advance the use of the new media resources at Marcy Open School in a way that addresses skills, communication and community building.
- e) Bring the students directly in at the foundation of the evolving Marcy Arts Partnership in a collaborative setting.
- f) Engage the Marcy media center directly in the process of developing a comprehensive and integrated network, serving as a nexus for communication.
- g) Make information about the Marcy Arts Partnership activities widely available within and outside of the school.
- h) Create an educational paradigm that educates students, who then proceed to educate other students, eventually bringing a large segment of the student body into the program.

The web site was launched in June of 1997, and is available for viewing at <<http://www.mpls.k12.mn.us/marcy/>>.

Art on the Electronic Edge

Art on the Electronic Edge is an annual festival in the Midwest United States that encourages artists working in new media to present and discuss their work. This four-night event is a collaboration between the Science Museum of Minnesota, the American Composers Forum,

Intermedia Arts of Minnesota, the Walker Art Center, and "Leonardo Electronic Almanac", and provides a focused program that explores the work of contemporary artists, and the impact of science and technology on our culture.

Five years ago the American Composers Forum began its Sonic Circuits Electronic Music Festival, and in five years it has evolved into an international event with concert programs appearing throughout the year. In the last three years Art on the Electronic Edge has grown from two nights of performances into an integrated program of performances, presentations and exhibitions in four nights at the most prestigious venues in the Twin Cities.

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1. C. P. Snow, *The Two Cultures: and A Second Look* (Cambridge: Cambridge University Press, 1959, 1963).
 2. *Ibid*, pp. 21-22.
 3. *Ibid*, p. 22.
 4. William Buxton et al, "An Introduction to the SSSP Digital Synthesizer," *Computer Music Journal* 2, No. 4 (Cambridge: MIT Press, 1979) pp. 28-38. Reprinted in C. Roads and J. Strawn, eds., *Foundations of Computer Music* (Cambridge: MIT Press, 1985). See also Buxton et al, "The Evolution of the SSSP Score Editing Tools," *Computer Music Journal* 3, No. 4 (Cambridge: MIT Press, 1985) pp. 14-25. Also reprinted in *Foundations of Computer Music*.

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PROFILES

< V2_Organization >

V2_Organisatie

Postbus 19049

3001 BA Rotterdam

The Netherlands

Tel: +31 10 404 6427

Fax: +31 10 412 8562

Email: <v2@v2.nl>

URL: <<http://www.v2.nl/>>

V2_Organisation is a Rotterdam-based center for art and (media) technology.

Introduction

Media and technology play an increasingly important role in contemporary society. Communications, production, international trade, urbanism, medicine - all these fields are changing through technological developments that entail processes of automation and the emergence of large, partly global network structures. These technological and cultural developments are also changing the arts. Art that makes use of electronic, especially digital or, as we like to call them, 'unstable' media, explores the meaning, the specificity and the boundaries of these media. The notion of instability implies that these explorations emphasise the processual nature of media. Instability is a creative force which is fundamental to the continuous reorganisation of the social, cultural, political and economic relations in our society but which can also be regarded as a deregulating force that disrupts existing social structures. Rather than showing us an orderly and homogeneous world, unstable media present us with an image of the world that is contradictory, heterogeneous and impermanent.

History

V2_Organisation was founded in 1981 by a group of multi-media artists in 's-Hertogenbosch, Netherlands. Since 1987 it has focused on the presentation of international developments in the field of machine art

and electronic and media art.

V2_Organisation has its offices plus two floors of exhibition space in a former printing plant in the center of Rotterdam. The archive of videos, sound recordings, slides, photographs and other documentation materials covers more than ten years of work in the field of multi-media and electronic art.

V2 offers server space to artists on its own webserver, enabling them to present their work and use the server as an experimental site. Currently, V2 is pursuing the realisation of a media lab in which artists are given the opportunity to develop their projects on-site. V2 is interested in the combination of and relations between different media. It consistently pursues its research about the relationship between art, technology, the media and society by bringing together artists, social groups, researchers and commercial companies and by initiating interdisciplinary work relations among them.

Projects

V2's programmes follow annual themes like: The Body in Ruins (1993), Generated Nature (1994), Interfacing Realities (1995), Digital Territories (1996) and Machine Aesthetics (1997). In workshops, lectures, performances and presentations, the overlapping field of art, society and technology is presented to a broad audience - artists, designers, programmers, and a more general public. V2 organises the bi-annual Dutch Electronic Art Festival (DEAF) during which it presents an exhibition of interactive installations, WWW-sites, cd-roms and music performances, seminars and an academic symposium.

V2 supports artists and designers in developing their own projects, often in cooperation with other electronic arts institutions both in the Netherlands and internationally.

V2_Organisation maintains a wide international network of artists and writers, critics and researchers working in electronic art, media, science and technology. V2 forms part of the 'Virtual Platform', an association of Dutch institutes that support each other in different areas of media technology (design, education, research, art, presentation).

As a result of its research and presentation projects, V2 publishes books about the relation between art, (media) technology and society. The first was, in 1992, the Book for the Unstable Media.

Features

The Dutch Electronic Art Festival is a bi-annual event critically devoted to developments in art in relation to (media) technology. DEAF' 96 dealt with the interaction between the city and urban communities in relation to computer networks and their virtual communities. Keywords for DEAF' 98 are: topology, trans-architecture, time and space machines.

Information on the DEAF' 96 website was represented as a softscaper; activity inside the web-pages of the node will result in a changing of the shape of it's softscaper. The architecture of this growing city in turn changes the interface of this website. The behaviour of web-surfers continuously transformed the shape of the projected city and of the website.

V2_East is an initiative aimed at facilitating exchange and co-operation between media artists in East and West Europe. In June 1997, V2_Organisation presented an exhibition and presentations of works-in-progress that reflect on the possibility of a new aesthetics of the machinic. Does digital technology make it possible for the machine to develop aesthetic behaviour, to create art, and to become an autonomous agent?

Publications

"Interfacing Realities": the book creates a hypertextual dialogue between five authors about the use of metaphors and the conceptions of cyberspace.

"TechnoMorphica": a book about the merging of biology and technology: 'Life contaminated by the virus of Machines' .

V2 Archive

The V2_Archive carries a wide variety of printed publications, electronic music CDs, etc., all of which can be ordered by mail order through the online catalogue that also offers sound and image samples from many international artists.

The V2_Archive regularly releases its own tape and CD productions. Recent releases have included new work by Gregory Whitehead, Gunther/Wehowsky, and The Haters.

V2 has a shop and mail order service that offers a wide variety of printed publications, CDs, video and audio tapes which provide background information to the organisation's activities in art, science, architecture, sound and media theory.

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LEONARDO DIGITAL REVIEWS
November 1997

Editor: Roger Malina

Coordinating Editor: Kasey Rios Asberry

Editorial Advisors: Roy Ascott, Chet Grycz, Judy Malloy, Annick Bureaud, Marc Battier, Curtis E.A. Karnow, David Topper

Review Panel: Rudolf Arnheim, Wilfred Arnold, Marc Battier, Robert Coburn, Mary Cure, Shawn Decker, Tim Druckrey, Michele Emmer, Josh Firebaugh, Eva Belik Firebaugh, Geoff Gaines, Bulat M. Galejev, George Gessert, Thom Gillespie, Francesco Giomi, Tony Green, Molly Hankwitz, Istvan Hargittai, Gerald Hartnett, Paul Hertz, Curtis Karnow, Richard Land, Roger Malina, Diana Meckley, Axel Mulder, Kevin Murray, Youri Nazaroff, Joseph Nechvatal, Simon Penny, Clifford Pickover, Harry Rand, Sonya Rapoport, Kasey Rios Asberry, Jason Vantomme, Misha Vaughn, Rainer Voltz, Christopher Willard, Barbara Lee Williams, Stephen Wilson

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< Book Reviews: Counterpunch & Designing Books >

Counterpunch

by Fred Smeijers.

Hyphen Press,
London, 1996.

and

Designing Books: Practice and Theory

by Jost Hochuli and Robin Kinross.

Hyphen Press,
London, 1996.

Reviewed by Wilfred Niels Arnold

E-mail: <WARNOLD@KUMC.EDU>

We of the word processor and laser printer era are undoubtedly grateful but somewhat blasé about the large range of available fonts and their facile interchange. Likewise, the developments in print technology and the production of books, which enjoy a rich history spanning five centuries, tend to be taken for granted. In order to appreciate the skills and techniques associated with the design and manufacture of books it can be fulfilling to read within the history of printing and to be guided through critical assessments of the final products. Hyphen Press has published a series in this regard. The first movable types were cast in lead. A matrix was struck by a punch to generate a mold. This was filled with molten lead and then,

after cooling, adjusting, and manipulating the type, it could be inked and used to create the printed words on paper. A set of punches was thus an essential and valuable item. In the first of two books to be reviewed here we are taken one step further back in the process, i.e. the construction and use of the counterpunch. An example helps to make the point. A counterpunch of solid elliptical shape would be used to make the depression in the interior of an "O" in a new punch. The other basic feature is the use of soft steel during cutting and punching followed by tempering for a hard final product. In any event, every punch cutter had a well-balanced set of conterpunches because it would have been almost impossible to construct the smaller fonts with deep enough groves by gouging and engraving. The surprising fact is that the Plantin-Moretus Museum, for example, has about 4,500 punches, but only 16 counterpunches. For answers to these and other questions Fred Smeijers provides a delightful treatise. The author is not only a typographic designer but has mastered all of the old techniques and he takes us step by step through processes for which he has obviously developed great love and appreciation.

"Designing books: practice and theory" is the work of another graphics designer and typographer, Jost Hochuli, together with Robin Kinros who is also the editor of the series. This volume will be of interest to specialists. My main reservation concerns the format. The pages are 6.5" x 10" and in many cases the illustrations fail to make the point. The authors have elected to use greatly reduced examples, four or more on the same page, and the result is at best a GestÉlt impression. For those that have access to the originals this volume may point the way but most of us will have difficulty conceiving the effects that the authors are proposing. In short, a much larger format would have more utility.

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< Web site review: Shadow Server >

Shadow Server By Ken Goldberg

URL: <<http://taylor.ieor.berkeley.edu/>>

Annick Bureaud

E-mail: <bureaud@altern.org>

When you reach the Shadow Server's first page you get this user's guide: "The apparatus is housed in a lightproof box that contains physical objects, some of which move of their own accord within the apparatus. Viewers can interact with these objects via buttons. Viewers can select any combination of five buttons and then Cast a Shadow, which activates a combination of lighting devices and returns a digital snapshot of the resulting shadow. Each combination of buttons produce different lighting conditions. Certain random combinations will provide clues which lead to a mysterious Sixth button. The Sixth button illuminates hidden secrets in an alcove of the apparatus...."

The title says it is a "server" -and not a site. And this is exactly what it is : a server is something which delivers you other things. If you perform the instructions, you will be delivered images of shadows of unidentifiable objects.

This work is remarkable in at least 3 aspects : its singularity among the art projects and sites on the web, its statement about the web and about telepresence and its aesthetic qualities.

Shadow Server stays at the opposite of the current trends in web design: no flashy images, no Java apples, no little animation's all over the pages. It is not a participatory work where the users are invited to input text, images, sound and profound inner thoughts, it has no links and you don't get lost in a rhizomatic hyperstructure. It is in black and white and there is basically not much to see and very little to do. However (or because ?) it is tremendously powerful and keeps you glued to your screen for hours.

This work strongly questions the motto of these past few years in electronic art which was "make visible the invisible". Shadow Server

makes the normally visible invisible and gives you only its shadow The "thing" is hidden, the objects, the "real" are no longer available. Moreover, what is interesting and relevant are the shadows themselves, in other words a certain kind of information about the "thing". You have no way to get any information about the objects themselves, the shadows have become the "thing".

What do you get on the Web ? Or what do you think you get ? The "things" or only their "shadows" ? This work emphasizes the beliefs and trust in the fact that what is put online is the "truth". Is Shadow Server really working as it says, with real objects that you light in a different way according to the combination of the different buttons or is it just a data bank of images that are randomly provided to you ? How do you know you are really telepresent in the room of apparatus ? You don't. But, interestingly enough, it is not just a matter of trust but the strong idea that faking a telepresence installation would require, more time, much more complicated work. In some cases, like here, it would make no difference because it has reached one of its goal which is to raise issues about trust and beliefs in what we see and what we get through those remote media of communication and information delivery systems.

But what keeps us connected again and again on the Shadow Server are its aesthetic qualities and relations to philosophy and art history. We cannot but think of Plato and the Cave. Ken Goldberg, in a kind of reverse situation, demonstrates here that the shadows are as important, if not more than the objects. This strengthens a connection with the 20th Century achievement of the disappearance of the objects in art. From an art history point of view, the images of the Shadow Server remind us of Moholy-Nagy photograms. They truly capture light in a delicate and subtle way and bring it to your screen. They reintroduce contemplation in a media where flow and movement are the common attitude. They not only freeze light but also time in a fragile balance. And after a short while you no longer wonder about the nature of the objects behind, or what would bring the "Sixth button", you just enjoy them, their complexity and simplicity, and you let you get lost in their depth. Your computer screen has become pure light, a shadow.

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< Book Review : The Loom of God >

The Loom of God

Mathematical Tapestries at the Edge of Time

by Clifford A. Pickover,
Plenum Trade,
New York and London,
1997.

Reviewed by: Istvan Hargittai,
E-mail: <hargittai@chem.bme.hu>

This is the most recent addition to a fast growing series of books by Clifford Pickover, blending computers, science, art, and each time at least one special topic of general interest. This time the motto of the book is, "I do not know if God is a mathematician, but mathematics is the loom upon which God weaves the fabric of the universe."

Pickover can discuss the most serious matters playfully and can take a fresh look at topics that generally would be considered over-discussed. In this book he discusses questions that seemingly overlap between mathematics and theology. He does this though with a characteristic wink.

The reader ends up with a lot of entertaining mathematics and very little theology in the traditional sense of the word. Whether there is a mathematical proof of the existence of God appears to be a much more important question than the question itself whether God exists in the first place. The book is full of beautiful graphics, both classical from Dover volumes and those, generated by computer, famous and not so well-known quotations, imaginary characters, reader's fan

mail referring to Pickover's previous books, and his trademark Smorgasbord for Computer Junkies. Pickover appears, again, as an unusual and uninhibited author in several innovative features of this volume, such as the involvement of many partners, as co-authors, through the Internet. Such a book, as *The Loom of God*, could not have been imagined 30 ago, and could not have been produced even 10 years ago. Today, it is all possible, and there seems to be a strong market for it. In this connection, we could paraphrase what George M. Cohan, the King of Broadway in the first half of this century answered when asked about the secret of his success, but his words have direct relevance without change. He said something like, "I am an ordinary guy who knows what ordinary guys like." This is what makes Pickover, like Cohan, extraordinary.

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< Software Review: Hyperprism-PPC Version 1.2.1 >

Real-time sound-designing software for the Macintosh.

Arboretum Systems, Inc.,

915 Cole Street, Suite 387, San Francisco, CA 94117,

U.S.A.

Phone: (415) 626-4440; Fax: (415) 626-4439; toll-free-line

(U.S.A. only): (800) 700-7390.

Web: <<http://www.arboretum.com/>>

Reviewed by Marc Battier

E-mail: <bam@ircam.fr>.

I reviewed the first release of this software for *Leonardo Music Journal* in 1994. Since then, Hyperprism has been hailed as a wonderful invention by Brian Eno, and the program is in wide use for all kinds of professional musical and audio applications.

A major revision justifies the present review. When Apple introduced its line of Macintosh computers based on PowerPC processors, it quickly became clear that the number-crunching possibilities of these machines allowed for stand-alone sound processing and many DSP (digital-signal processing) chores. The first release of Hyperprism had relied on an audio card to complete this kind of work; with the advent of the PowerPC, audio cards were no longer necessary. In fact, the new kind of processor offered a substantial increase in raw power as compared to the average audio card. Today, audio cards are still in use because they usually offer two sorts of advantages: (1) a high sound quality due to the careful design and selection of components for the digital and analog conversion operations, in which sounds stored inside the computer in digital form are exchanged with those recorded from the outside world, and (2) a specialized environment: for example, audio cards can offer up to several dozen audio channels for multitrack recording purposes. But even these advantages might be challenged in the near future by the augmented capabilities of the PowerPC and other types of fast microprocessors.

Audio software designed for sound processing, such as Hyperprism, has diligently adapted to this situation. As of today, Hyperprism is available for conventional 68K-based processors with adequate audio boards as well as for PowerPC-processor Macintoshes. I will discuss the PowerPC version here.

The blue window is still the most prominent feature of the program. This is where the user can vary sound parameters in a two-dimensional space by dragging the mouse in a panel. As this is a real-time operation, one can hear the results of adjustments immediately. After parameters have been selected, a curve graphically representing the resulting trajectory remains, providing a convenient visualization of the sound. One can play back the sound while a small circular cursor representing mouse position moves along the curve. The speed at which the user originally moved the mouse is recorded and becomes the playback speed. The curve can be edited, to a limited degree: one can copy or cut it, rescale the X and Y axes of the blue window and paste the curve in the newly defined space.

A new feature of importance is a panel placed just above the blue

window, which displays a number of settings. The type of settings displayed depends upon the effect selected. Each type has a presets function in the form of a scrolling menu. Effects come with a number of factory-defined presets; users can add their own settings to this range of possibilities. As soon as one changes the default parameters, a scrolling menu becomes available in the settings panel that allows one to save the new setting. The settings panel allows for multiple and precise controls over the behavior of the selected algorithm. Several new effects have been added to the latest version of Hyperprism, which offers no less than 26 effects in all. All the effects are of high quality; among them are two kinds of reverberation with variable parameters. Space is controlled through several precise stereo placement and movement algorithms that create a wonderful feeling of tri-dimensional space, even from monophonic sound. When settings obtained from sound processing in real time are satisfactory, one can use these settings to process a sound file from a data-storage device and create a new sound file. This is essentially a non-destructive process.

Arboretum Systems, the manufacturer of Hyperprism, has an established presence on the Internet. The front page of the company's World Wide Web site is well organized and easily leads the visitor to various pages dedicated to general and technical information, demonstration software and updates for downloading. Of late, important additions have been made to the site. It is now possible to read the whole Hyperprism manual on line, as it has been converted and stored in HTML (hypertext markup language). I find this hypertext manual more legible than the paper copy, although several chunks of text have been deleted in the conversion process.

Hyperprism continues to be available in various forms. As mentioned above, Arboretum has maintained its versions for the two sorts of Macintosh processors, although Hyperprism for the PowerPC platform has much more to offer than the previous version. Hyperprism is also available as a series of plug-ins for other major programs. A VST (Virtual Studio Technology) version was made for Cubase Score VST, a popular MIDI and audio editor and sequencer. There is a TDM (Time-Division Multiplexing) and Audiosuite version designed as a plug-in for the Digidesign TDM architecture, which makes it accessible within the ever-popular Pro Tools professional sound-editing and mixing environment, as well as other programs such as Opcode Studio Vision, Emagic Logic Audio and Mark of the Unicorn Digital Performer. Hyperprism-DAS (Digidesign Audio Suite) is a set of 25 plug-ins for Digidesign Pro Tools 4.0 and Powermix architecture. The MMP (Multimedia Producer) version is a series a plug-ins for professional audio and multimedia authoring programs such as Macromedia Premiere, Opcode Studio Vision, Macromedia Deck and BIAS (Berkley Integrated Audio Software) Peak. By the time this review is published, a version for Windows should have been released.

Hyperprism remains unique: never before have so many high quality, professional standard effects been gathered in a single program. This is why Hyperprism will be of use to all Leonardo readers who are involved in sound-production activities, be they for radio, postproduction, multimedia authoring or even games. Composers will find a great deal of stimulating response to their sounds in this program. What could be better than a computer program that helps develop creativity? In this respect, Hyperprism is indeed a very powerful tool that, in most cases, will bring results that go beyond expectations. Yet, it does all this in a friendly and easy way by means of an interface that is simple and straightforward. Seen in this way, it is both a processing program and a challenge.

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< CD-Rom Review: Gravikords, Whirlies and Pyrophones >

Gravikords, Whirlies and Pyrophones:
Experimental Musical Instruments
Compiled and written by Bart Hopkin.

Ellipsis Arts, Roslyn, NY,
U.S.A., 1996. ISBN: 1-55961382-3.

Reviewed by Patrick Lambelet

E-mail: <plambelet@msp.sfsu.edu.>

With Gravikords, Whirlies and Pyrophones Bart Hopkin rescues from obscurity the works of a wide range of musical eccentrics who invent and make their own unique musical devices. The set consists of a book of Hopkin's short essays on individual artists and a CD featuring tracks by many of those artists. The inventors described here are by turns fascinating, illuminating and comically idiosyncratic. While some stand out as true innovators, others appear to be tinkerers with intriguing ideas but questionable artistic merits. Nonetheless, Gravikords, Whirlies and Pyrophones stands alone as a skillfully written but lighthearted document of an outer periphery of musical experimentation, with detailed descriptions and photographs of the instruments and descriptions of how they are played.

In the book, Hopkin deliberately avoids extensive coverage of electronic instruments and technology. He writes in the introduction that "... electronic instrument manufacturers have (with some notable exceptions) taken an unimaginative approach to instrument design"; and, indeed, the artists in this collection show no shortage of imagination. Writing with obvious enthusiasm, Hopkin relishes the oddities displayed in the book's pages---among them, instruments that utilize flower pots, inflatable cushions, cloud-chamber bowls, bamboo, plastic children's toys and fire.

Gravikords, Whirlies and Pyrophones is intriguing in its documentation of how people step outside the traditionally accepted boundaries of musical instrument design and musical composition, finding beauty, humor and even spiritual solace in their creations. In challenging these boundaries, the creators and their instruments also reflect responses to the cultures from which they emerge. Most of the artists are from technologically advanced Western nations, and they often appropriate technology for their own uses, demonstrating that the misuse of technology can yield interesting results. Qubais Reed Ghazala, for example, bases many of his designs on circuit bending: essentially, the use of short-circuited audio devices as sound sources. Ghazala's track on the CD, Silence the Tongues of Prophecy, is composed of a series of electronic sounds and voices that sound somewhat like malfunctioning robots engaging in a lively conversation. Although he uses technology, Ghazala rejects the idea that newer is necessarily better.

Other works exhibit a wholesale rejection of electronics in favor of the use of natural materials and processes. Darrell De Vore sees his use of bamboo in his instruments as a connection to a distant ancestral past, while Turkish born Nazim-zel has created a stringed instrument from a section of a branch that he cut from a tree. A strong point of this collection is its treatment of the contributions of several influential innovators in the field of musical instrument design. Hopkin includes sections on Leon Theremin, Harry Partch, the Futurist painter/musician Luigi Russolo (author of the essay The Art of Noises) and lesser-known figures such as Sugar Belly (a Jamaican reggae musician who played a bamboo saxophone) and Carleen Hutchins (designer of a reconfigured family of bowed stringed instruments). By including these forebears, Hopkin creates a historical context for the contemporary work he describes, although most of the people profiled here defy any attempts at categorization. Are they craftspeople? Engineers? Musicians? It is often difficult to tell, which only adds to the appeal and charm of this odd collection. Although the CD provides us with only brief glimpses into some interesting musical visions, the book ensures that this set's worth as a chronicle is unrivaled.

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< Exhibition Review: The Opening of the ZKM >
Report of the Opening of the ZKM, Karlsruhe, Germany

Reviewed by: Sonya Rapoport

E-mail: <rapop@socrates.berkeley.edu>

On October 18, 1997 the ZKM (Center for Art and Media Karlsruhe) opened the doors of its Media Museum, an electronic counterpart to the Louvre. The structure, originally conceived architecturally as a glass cube to echo the image of a monitor, was constructed from a renovated munitions factory. A smaller blue structure in the form of a cube, containing its music and acoustic facilities, dramatically dominates the entrance. As early as 1872 the site was used for weapons manufacture; a new construction, completed in 1918, equipped the German militia with arms during World War I and then again in World War II. This architectural monument to the industrial age is now converted to a stunning electronic Bauhaus with an exhibition space of 130,000 square feet. Only two other museums, the InterCommunication Center in Tokyo and the Ars Electronica Center in Linz, Austria are similarly dedicated to new media art.

Opening night the building sustained its feeling of openness, gracefully accomodating thousands of people. I navigated easily up and down its cantilevered staircases, and through a rubric of categories of Media Bodies, Media Spaces, Media Visions, Media Arts, Media Experiments and Media Games. The journey seemed logical as I experienced it but in retrospect a maze of spectacle becomes a schizophrenic Disneyland not easily sorted out.

From the balcony on the second floor where the Media Museum is located, Jill Scott had established CUCME connections with participants in distant lands, dialogues focusing on the body, its identity and transformation, a prevalent theme in her interactive installation work and throughout the ZKM's collection. As well as Scotts' richly referenced and physically objectified DIGITAL BODY-AUTOMATA were Tony Oursler's poignant and soleful video projected image /puppet HELLO? and Bruce Nauman's nervous RAW MATERIAL---BRRR. At ZKM Nauman's head in his video installation was shaking larger than life and made more sense here than my former experiences of viewing it at Documenta and other places. On the other hand, the large scale of Frank den Oudsten's ten oversized FLOATING IDENTITIES figure sculptures did not enhance its metaphoric beauty.

The interactive Web, CUCME, from the above balcony permeated the environment on the central main floor below where trytograms (three dimensional monitor stations that resembled modernistic free-standing mailboxes) were installed. Keyboards helped direct you to wherever you wanted to go, and to what you wanted to see and told you what you wanted to know about the artworks and their creators. Here a visitor could also participate in Lynn Hershman's new interactive project by scanning him or herself into the digital network system to become an avatar appearing in the networks' simulated space of the museum. This plethora of technological extravagances was not a political nor a politically correct scene that represented ethnic deprivations, earthy autobiographical confessions, or causes to die for. Although most of the work was figurative and referential (with the notable exception of the non-objective collection in the Contemporary Art Museum) my mind briefly flashed back to an abstract art era. I believe this happened because subject matter in digital media can be convoluted into a carapace of technological innovation. However, provocative thematic motivations did exist.

Peter Weibel's TRAMPLING JUSTICE UNDERFOOT incorporated a floor of panels bearing the word RECHT (law), that conceptually related to Karlsruhe's role as the city seat of Germany's supreme court. Michael Bielicky's MENORAH alighted small monitors on each of the seven branches of his large steel candelabra. On the monitors' screens a video images of flickering flames from a wood fire emanated hauntingly. Meanwhile a different brand of fire, Franziska's Megert's PLAYING WITH FIRE video depicted flames enveloping the morphing of male to female and female to male genital transgender application. Continuing with the theme of the basic elements (but less provocative

in spite of their sensational scale) were Fabrizio Plessi's LIQUID TIME (water) and Bill Viola's TREE of KNOWLEDGE (earth related). Fabrizio Plessi's sixteen foot high mill wheel made of steel loomed above a long gutter. At each blade of the wheel a monitor's screen unfolded a video of cascading water. The turning wheel was engineered to barely touch the real water in the gutter, suggesting a lapping up of water into its power system. Bill Viola's "current " (a category of recent/in progress works in the exhibit) contribution was a tunnel through which a visitor walked while simultaneously activating an amazingly beautiful video of the life process transformations of a tree. Despite its richly connotative understated title the installation remained for me an exquisite object rather than a "deep level of self-encounter". More unpredictable and thought provoking was Viola's eclectic THRESHHOLD video-sound installation. An horizontal electronic strip of daily jarring news reports hung surreptitiously outside the entrance to a room. The visitor walked over a threshold between the half life sized letters into this room where a video/sound projection showed a person asleep and breathing on each of three walls. As I absorbed this a passing viewer simulated perfectly coordinated snoring making this installation inadvertently a piece in real time.

Several galleries were furnished with futuristic appointments such as audio chairs for listening to audio pieces and video chairs for viewing interactive CD's, videos, and games. I briefly tested the various seats and momentarily relived being a kid again having an exciting time in Dodge'em cars. As time was limited I frantically tried avoiding trivial wo light hearted minutes I experienced viewing Stephan von Huene's DANCING ON TABLES which presented half figures of Presidents Eisenhower and Lyndon Johnson and Jesse Jackson configured from the waist down as tap dancers. Visitors' movements activated these personalities to spout excerpts from their public speeches as they danced in a personalized gestural routine. Coincidentally, Jeffrey Shaw's DISAPPEARANCE had a tiny toy ballerina whose greatly enlarged virtual image was viewed on a monitor placed in a forklift. She danced to a more complex technological tune within a more abstract concept. Another kinetic extension to the cutting electronic edge containing a small figure was Simon Penny's visitor activated FUGITIVE . Here the real-time sequences of a diminished figure were projected in the space of a huge circular screen.

The emphasis on body works (as it is in today's traditional art world) at the ZKM can be surprising to those who view the technological art world as unfeeling. The senses were introduced in Maureen Conner's video from one of her five series, SMELL: AN-AESTHETIC. Viewers were mesmerized with its depiction of a compassionate administering of anesthesia to a young patient. Alba d' Urbano insisted on our touching her face on the screen as our own scanned face replaced hers. Ken Feingold utilized the sense of touch in his encased wax casts of the hands of an adult and a child in SURPRISING SPIRAL. Touching the case triggered projected film footage and spoken words, each overwhelming the other. I can still hear Madame Curie talking to me in Jill Scott's IMMORTAL DUALITY.

The conformation of ZKM from a munitions factory to an electronic treasure house is indeed the inversion of the Golden Temple in Amritsar becoming an arms depot.

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< Digital Review Notes >

Leonardo Digital Reviews is a review journal published regularly as a section of the Leonardo Electronic Almanac. Leonardo Digital Reviews covers publications, conferences, events and publicly presented performances and exhibits. The focus is the work of artists, scientists, technologists and scholars dealing with the interaction of the arts, sciences and technology. Topics covered include the work of visual artists, composers and multimedia artists using new media and technologies in their work, artists dealing with issues and concepts

from contemporary science, the cultural dimensions of science and technology and the work of scholars and historians in related fields. Specifically, we publish:

- a) Reviews of publications in electronic formats (CD, CD-ROM, CDI, on-line, diskette, WWW, etc.).
- b) Reviews of print publications, events, conferences, and exhibits dealing with art, science and technology.

Accepted reviews will be published in Leonardo Digital Reviews. Reviews of key works will also be considered for publication in the Leonardo Journal and Leonardo Music Journal published in print by MIT Press. Authors, artists and others interested in having their (physical) publications considered for review in Leonardo Digital Reviews should mail a copy of the publication to Leonardo, 425 Market Street, San Francisco CA 94107, USA. Event and exhibit organizers, and authors of virtual/electronic publications and events interested in having their event reviewed should send information in advance electronically (only) to:

<davinci@uclink.berkeley.edu>

Individuals interested in being added to the Leonardo Digital Reviews review panel should email (only) their curriculum vitae to:

<leo@mitpress.mit.edu>

We are particularly seeking reviewers who can review material in other languages than English. Unsolicited reviews are not accepted by LDR.

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PUBLICATIONS

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< NEOART' s 6th Edition >

Digital Environs

Virginia M. Freeman, Directing Curator

Email: <office@neoart.simplenet.com>

URL: <http://neoart.simplenet.com>

With this Edition, NEOART Productions, a non-papered, multi-media, contemporary art edition, celebrates its first anniversary. The anniversary edition is inclusive of projects from French artist, Valery Grancher, and Swedish artist, Peter Hagdahl. Both artists experiment and explore synthetically induced digital realities and related realms.

"Be Safe, Be Free", Valery Grancher's recent digital project addresses and criticizes the "net utopia based on transparency and real time". The project incorporates a network of web cameras placed in Antarctica, Bela Vista, Brazil and the Russian/Helsinki border, among other locations around the world, thus constituting a new derivative of topos based on the premise of paranoia.

In Peter Hagdahl's, "Everything is a substitute for something else", verbose phases and lengthy explanations of conspiracy resemble the workings of a rhizome without beginning nor end. The work encompasses the cyclical flow of information and entropy which collide not only in the physical but in informatic spheres. Hagdahl's installation suffices as an invitation to explore and re-invent both the familiar and new realities. Thus, the transference from the physical to the digital toggle back and forth with reality and synthetic reality, though never distinguishing between.

Both Grancher and Hagdahl's projects deal not only with digital environments but raise critical issues dealing with poles of paranoia. The situation presupposes various connections, associations and the transference of change. Both situations traverse freely from the physical to mental yet often pre-defined meanings become obstructed. Simultaneously, the transformation between both media and material (i.e. space and information) seeps into the cracks and vanishes through transparent passages.

This is NEOART' s sixth edition. Our next edition, available in

January, shall address a cross section of Digital Environments. I would like to offer special thanks to both Valery Grancher and Peter Hagdahl and to all the contributing curators and programmers at NEOART Productions for their creative insight and diligent efforts. Also, note that NEOART's email address has been changed. The new address is <office@neoart.simplenet.com>. We invite you to browse the new edition by following the active link above.

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OPPORTUNITIES

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< Northeastern University Job Vacancy >

VACANCY LISTING

ASSISTANT PROFESSOR

DEPARTMENT OF MUSIC/MULTIMEDIA STUDIES DUAL MAJOR

Search Committee Chair

Department of Music

Northeastern University

360 Huntington Avenue, Room 351 RY

Boston, MA 02115

Tel: (617) 373-2440

Fax: (617) 373-4129

RESPONSIBILITIES: Teach courses in the area of music & technology and multimedia production. Other courses and administrative duties as required by the Multimedia Studies program and the Music Department.
QUALIFICATIONS: Broad background in either music composition, theory, performance, or history, with extensive expertise in the use of multimedia technology for musical applications. Established reputation in teaching and in candidate's discipline. Ph.D. or its equivalent preferred.

RANK: Assistant Professor

SALARY: Negotiable

DATE OF APPT.: September, 1998. Please note that this is a competitive search with the Department of Art and Architecture. Only one position will be funded in 1998.

THE MULTIMEDIA STUDIES PROGRAM: The Multimedia Studies dual major is a new program that will begin in Fall, 1998. It is intended to offer a focussed opportunity for majors in Art and Architecture, (which encompasses animation, photography and graphic design), and Music to acquire a comprehensive understanding and advanced facility in the disparate disciplines that contribute to multimedia creation. This pioneering program will help students find creative connections between their own specialized interests and those of other artists and designers. It will also provide a means for students to work in cross-disciplinary teams developing and delivering original content.

THE MUSIC DEPARTMENT: The Music Department has nine full-time and several part-time faculty members. An undergraduate degree in music is currently offered in three concentrations: music industry, music literature and performance, and music teacher preparation program. A new concentration in music and technology has been approved for Fall of 1998. The Music Department will collaborate with the Department of Art and Architecture in the implementation and supervision of the dual major in multimedia studies, also beginning in Fall of 1998.

Performance opportunities, both solo and ensemble, are available to students, faculty, alumni, and members of the community.

THE UNIVERSITY: Northeastern is a large, private urban university in Boston situated close to Symphony Hall and the Museum of Fine Arts. It is an equal opportunity/affirmative action, Title IX employer.

TO APPLY: Send resume, three letters of recommendation, and statement of professional interests and experience by January 15th, 1998.

Do not send tapes or scores at this time.

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| ANNOUNCEMENTS |
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< New at Alt-X: Digital Studies: Being In Cyberspace >

New at Alt-X

Email: <x@altx.com>

URL: <www.altx.com>

Digital Studies: Being In Cyberspace

URL: <www.altx.com/ds/>

The most recent addition to our rapidly growing Hyper-X network installation, the Digital Studies "online exhibition," curated by Mark Amerika and Alex Galloway, features some of the most innovative hypermedia art being coded in the electrosphere! The DS group of artists and theorists being showcased here include Roy Ascott, Shelley Jackson, Vuk Cosic, Lev Manovich, Knut Mork, Erwin Redl, INTIMA, Ricardo Dominguez, Juliet Ann Martin, Tina Laporta, Claire Cann, Richard Allalouf, Nino Rodriguez, Melinda Rackham, Jeff Zilm, Dr. Hugo, Nari, La Societe Anonyme, Jennifer McCoy, Kevin McCoy and Torsten Burns.

Alt-X Audio

URL: <www.altx.com/audio/>

Alt-X is now actively streaming both home-grown radio.art and specially-curated audio installations. The program streams every Saturday night at 11:00 pm Mountain Standard Time and, for our overseas listeners, on Sundays at 5:00 am MST. We will also have an active archive set-up for random listening of past shows! Our initial blasts into net.radio space will feature Ambient Fiction from Erik Belgum and Eric Lyon's breakthrough CD *Retirement Fund*, clips from the Dogma Hum Archives (featuring Mark Amerika on vocals), Raymond Federman reading from his classic Pomo novel *Take It Or Leave It*, and all manner of excessive word-dub from the Alt-X Audio Files. This new addition to our endless push-media mayhem is NOT FOR EVERYONE. But don't take our word for it -- tune in yourself!

Alt-X Virtual Imprints

Since Alt-X's inception in 1993, our primary mission has been to challenge both the art and literary publishing establishments by supporting some of the most iconoclastic voices and visions in the international art world. Our new *Virtual Imprints* section brings to web-readers some of this Century's most subversive narrative art, including electronic reprints of classic interventionist writings of the recent past like Ronald Sukenick's landmark novel OUT and Raymond Federman's post-holocaust novella VOICE IN THE CLOSET. V-Imprints also features a backlist of excellent anthologies, including *The Write Stuff*, our collection of over 50 interviews with writers, artists and political activists like Leslie Marmon Silko, William T. Vollmann, Mark Leyner, George Landow, Avital Ronell, Sadie Plant, Marcos Novak, Bret Easton Ellis, Douglas Coupland, Kathy Acker, Dennis Cooper, Stephen Wright, Larry McCaffery, Rikki Ducornet and many others. For those interested in sexually-transgressive fiction, our popular *Dirty Desires* anthology celebrates our Freedom To Write in cyberspace, while those of you curious about the still headline-grabbing Avant-Pop phenomenon will want to open up our *In Memoriam To Postmodernism* essay collection featuring work from Michael Joyce, Eurydice, Don Webb, Curtis White, Lance Olsen, Steve Shaviro, Martin Schecter and many others. And as if this were not enough, our *Interzones: Genre-Blending*

anthology features a diversity of un-definable writing styles from
Alt-X correspondents all around the world!

< XII CIM 1998 - Call For Submissions >
XII CIM 1998 PRELIMINARY CALL FOR SUBMISSIONS
XII Colloquium on Musical Informatics
September 24-26, 1998
Gorizia, Italy
CEGO - Centro Polifunzionale di Gorizia
Via Italico Brass n-22
34170 Gorizia, Italy
Tel: +39 481 33869
Fax: +39 481 33981
Email: <XIICIMpapers@canin.sci.uniud.it>
URL: <<http://www.sci.uniud.it/~ciminfo/>>

AIMI - Associazione di Informatica Musicale Italiana
Diploma Universitario per Operatore dei Beni Culturali (Gorizia)
Facolt  di Lettere e Filosofia
Facolt  di Scienze M.F.N.
University of Udine, Italy
The Italian Association for Musical Informatics, AIMI, in cooperation
with the University of Udine, organizes the twelfth Colloquium on
Musical Informatics, which will be held in Gorizia (Italy) from
September 24 to September 26, 1998. This conference is co-sponsored by
IEEE CS Technical Committee on Computer Generated Music

SCOPE

The Colloquium on Musical Informatics is an international meeting of
researchers interested in musical applications of computer science.
The previous editions showed an increasing interest in this area, as
proved by the number and quality of scientific contributions as well
as by the development of new tools to be used by composers, musicians
and musicologists.

TOPICS

The special theme of the conference is:

- * Restoration of Audio Documents

The other topics to be covered include, but are not limited to:

- * Computer Music and Other Digital Art
- * Artificial Intelligence
- * Aesthetics, Philosophy, Criticism
- * Acoustics of Musical Instruments and Voice
- * Audio Analysis and Resynthesis
- * Audio Hardware
- * Audio Signal Processing
- * Composition Systems and Techniques
- * History and Analysis of Electroacoustic Music
- * Interactive Performance Systems
- * Machine Recognition of Audio
- * Machine Recognition of Music
- * MIDI Applications
- * Music Analysis
- * Music Data Structures and Representations
- * Music Education
- * Music Grammars
- * Music Languages
- * Music Notation and Printing
- * Music Workstations
- * Performance Interfaces
- * Psychoacoustics, Perception, Cognition
- * Realtime Systems

- * Room Acoustics
- * Sound in Multimedia
- * Sound Synthesis Languages
- * Sound Synthesis Methods
- * Studio Report
- * Other

SUBMISSIONS

XII CIM invites submissions of papers, demos, presentations and posters covering all aspects of computer music. The official language is English. All submissions are subject to peer review. The accepted contributions will be published in the Proceedings of the Colloquium and each contributor is expected to give a talk/demonstration which will be scheduled according to the timing below:

- Paper: 4 pages (A4) in the Proceedings
about 20 minutes for presentation
- Demo/Presentation: 2 pages (A4) in the Proceedings
about 10 minutes for presentation
free time for demonstration
- Poster: 2 pages (A4) in the Proceedings
about 10 minutes for presentation
free time for discussion

For papers presentations the XII CIM Organization will supply a service of simultaneous translation from English into Italian and from Italian into English.

Submissions should be received by March 1, 1998. The contributors will be notified of acceptance/rejection by May 1, 1998. Camera ready papers are due by July 31st, 1998.

The submission guidelines will appear in the XII CIM WWW site (after December 1st, 1997) and in the XII CIM Brochure. Electronic submissions are encouraged.

XII CIM - 1998 MUSIC AND INSTALLATIONS

XII CIM is particularly interested in electro-acoustic music that includes some aspect of composition and computer performance. A Musical Committee will choose the musical works showing innovative musical and technological solutions. The organization offers a hall suitable for electro-acoustic music with the following equipment:

- 1 amplification system 4 output channels (standard quadraphonic setup)
- 1 analog mixer 32/8
- 1 digital mixer Yamaha 02R
- 1 DAT
- 1 CD
- 10 microphones

Composers are invited to submit their music and the whole project for performance, i.e. a score and/or recorded segments. If the work requires individual performers, these should be provided and payed by the composer.

Music submissions should be received by March 1, 1998.

< LIGHTFORMS' 98 - Call For Proposals >

LIGHTFORMS' 98

Cynthia Pannucci

Founder/Director

Art & Science Collaborations, Inc. (ASCI)

PO Box 358, Staten Island, NY 10301

Tel: 718 816-9796.

Email: <asci@asci.org>

URL: <http://www.asci.org>

LIGHTFORMS' 98 MARKS THE BEGINNING of an exciting new bi-annual event for the field of lightart ! \$5,000 prizes to each of three winners,

award-winning judges, prestigious sponsors. This event is a co-production of Art & Science Collaborations, Inc. (ASCI) and The New York Hall of Science.

LIGHTFORMS' 98 is an international competition and exhibition of the three winning LightArt proposals that will be executed and installed in the Great Hall of the New York Hall of Science, April 16 - May 31, 1998. This will be the first exhibition of monumental, site-specific, and interactive lightart in the world. Such an exhibition is possible only because of the uniquely appropriate nature of the Great Hall. Proposal deadline: Jan. 10, 1998.

To "feel" this space, imagine a blue, honeycombed cave, or gliding through space leagues under the sea. Envision a cathedral-like space (123' long by 70' wide) unfettered by the visual interruption of vertical or horizontal support beams. No natural light enters this darkened space, only that which is filtered by chunks of cobalt blue glass embedded into cells of the grid-like concrete walls. The undulating, modular curtain-wall forms distinct "bays" in the oddly shaped, 80' tall cylinder room. The bays vary in shape and size between 10' -15' deep and 20' - 32' wide. (There are photos, floor plan, and wall-cell diagrams in the Guidelines.)

A Definition of "LightArt"

Any use of the medium of light to create a unique and personally expressive piece of art. As well as being engaging and aesthetic, this lightwork must be appropriate for the family and school audience (40,000 public anticipated) that will see this exhibition. Types of light sources utilized can be as low-tech as fluorescent or incandescent lamps or more high-tech, such as lasers (non-water cooled), electro-luminescence, and fiber optics. Remember these LightArt installations must be "interactive" with the public! We will help you with this aspect (read the Guidelines).

Award-winning judges with international reputations: James Carpenter, artist; Don Holder, lighting designer, and Billie Tsien, architect. (bios on website) The proposals will be evaluated based on the following criteria: the nature of the interaction, feasibility, and concept.

WINNERS WILL RECEIVE:

- A \$5,000 prize (presented at the end of the Opening Reception)
- Equipment: Donated or loaned by our theatrical & architectural lighting Sponsors.
- A \$150 per diem for 8 days (for expenses during installation; April 9-16, '98)
- 2-3 Helpers (college students) for installation.
- Round-trip airfare (if we can secure a donation for it)
- Auditorium Talk & Presentation by three winners; including past work.
- Print Publicity: winners announced in full-page ad in Discover Magazine and photos of lightworks will be included in a Special Gallery Section of Leonardo Journal, and editorial coverage is anticipated by our sponsoring magazines.
- An online version of the exhibition, including all finalists' proposals.
- Exhibition Catalog: 2,000 will be distributed for free at the exhibition.
- NYC Media Coverage: we anticipate network TV coverage.

SCHEDULE:

- Design Proposals due: January 10, 1998 (email during Jan. 5-10 ONLY)
- Notification of Winners: February 1, 1998
- Installation: April 9 - 15, 1998
- Exhibition Opening: April 16
- Exhibition closes: May 31, 1998 (anticipated 40,000 public viewers)

No printed Guidelines or Application Forms will be sent. Entrants must visit the ASCI website for complete details. Electronic submissions are encouraged. Email any questions but please read the Guidelines thoroughly before doing so.

This event is endorsed by: IES/NYSection (Illuminating Engineering Society) Major Sponsors include: Discover Magazine; Ushio America, Inc; Leprecon, CAE. Media sponsors: Architectural Record, Lighting Dimensions, TCI, The International Lighting Review, LD+A, Photonics Spectra. Plus twelve other lighting companies have contributed to make this first year's event possible. (See Sponsor Information in the Guidelines).

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Editorial Address:
Leonardo Electronic Almanac
718 6th Street SE
Minneapolis, MN 55414-1318
Tel: (612) 362-9390
Fax: (612) 362-0097
Email: lea@mitpress.mit.edu

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