



Leonardo Electronic Almanac

Volume 7, No. 12

December, 1999

Craig Harris, Executive Editor
Patrick Maun, Gallery Editor/Curator
Craig Arko, Coordinating Editor
Michael Punt, LDR Editor-in Chief
Roger Malina, LDR Executive Editor
Kasey Asberry, LDR Coordinating Editor

Editorial Advisory Board:

Roy Ascott, Michael Naimark, Simon Penny, Greg Garvey,
Joan Truckenbrod

ISSN #1071-4391

CONTENTS

INTRODUCTION

< This Issue >

Craig Harris

FEATURE ARTICLES

< Information Systems Development and Music: The Exploration of a
Parallelism >

by Sasan Rahmatian

< A Performer's Lexicon of Synesthesia (or have I got some noodles
for you, boys!) >

by David Moss

PROFILES

< MECAD - Media Centre d'Art i Disseny >

Claudia Giannetti, director

LEONARDO DIGITAL REVIEWS

< This Month's Reviews >

Michael Punt

OPPORTUNITIES

< Faculty Positions Media Arts and Technology Program University of
California, Santa Barbara >

ANNOUNCEMENTS

< ISAMA 2000 >

< AAAI-2000 Workshop on Artificial Intelligence and Music >

< Metal and Flesh: The Digital Anamorphosis of the Universe >

< Leonardo Book Series Announces: Ken Goldberg's Robot in the Garden >

< The Burning Man Festival >

< OLATS News >

=====

INTRODUCTION

=====

< This Issue >

Craig Harris, Executive Editor

Leonardo Electronic Almanac - Volume 7, Number 12

This month Sasan Rahmatian presents a feature article "Information Systems Development and Music: The Exploration of a Parallelism." This is another installment of articles published in LEA that coordinate with content in Leonardo Music Journal. Also this month we present "A Performer's Lexicon of Synesthesia (or have I got some noodles for you, boys!," by David Moss. Finally, LEA presents a PROFILE of MECAD, the Media Centre d'Art i Disseny.

LDR Editor-in-Chief Michael Punt reports that in this month's Leonardo Digital Reviews Roger Malina launches a new departure by initiating a moderated discussion around the topics and issues raised by Semir Zeki's new book Inner Visions: An Exploration of Art and the Brain.

The LEA web site is being made available gratis to site visitors through LEA Volume 8, Number 3. This is a fabulous opportunity to peruse the valuable archives, and hopefully decide to join us in our endeavor as subscribers. Between now and then we expect additional electronic versions of issues of the hardcopy journal Leonardo to come on line, in addition to a continuing collection of Feature Articles, Profiles of Organizations and Individuals, Gallery exhibition works, and our feature Leonardo Digital Reviews.

To gain entry to the site, use the following entry scheme:

Username: lea
Password: animich

A new password will be installed with LEA Volume 8, Number 4, and the restricted access will be reimplemented. Do consider subscribing this year, if you're not already doing so. Your support is important to the development of the project.

=====

FEATURE ARTICLES

=====

< Information Systems Development and Music: The Exploration of a Parallelism >

by Sasan Rahmatian

Sasan Rahmatian (information systems researcher)

5245 N. Backer Avenue,
Fresno, CA 93740-0007, U.S.A.
Email: <sasan_rahmatian@csufresno.edu>.

Abstract

The author examines numerous parallels between information systems and music. Roles played by individuals involved in the creation and performance of music are shown to correspond to parallel roles in the creation and implementation of information systems. Examples include correspondences between the user, in information systems, and the audience, in music. Similarly, many processes or elements---such as analysis, design and programming, among others---are common to both domains. For instance, thematic transformation in music composition can be seen to correspond to a form of programming logic in information systems. The author also notes that while many elements of information systems can be mapped onto musical functions, the analogy does not hold in all instances---in particular, the importance of subjectivity and interpretation in music does not have a parallel in information systems, where the complete objectivity of the computer and reproducibility of results are paramount.

The development of an information system and the creation and performance of a piece of music may be viewed as having a great deal in common. Information system roles such as user, analyst, designer, programmer and implementor can be mapped onto various music roles, such as audience, composer, conductor, performer, etc. (although not necessarily respectively). Going beyond personal roles, we can draw other analogies in regards the processes common to each domain, such as analysis, design, programming, testing, implementation and maintenance. Although the relationship is not an exact isomorphism, there are significant parallels. In exploring these parallels, I will present here the most common elements from the domain of information systems development, and for each explore the corresponding element from the realm of music.

... [Content omitted: Ed.] ...

[Ed. note: the complete content of this article is available at the LEA website: <<http://mitpress.mit.edu/e-journals/LEA/>>.]

< A Performer's Lexicon of Synesthesia (or have I got some noodles for you, boys!) >

by David Moss

David Moss
Email: <MossLerner@compuserve.com>

Introduction

What happens when a performer stands in front of people? What goes through the mind? It's not all linear, a to b to c, not at all. There are eddies, currents, slipstreams, backwaters, rapids, quiet pools, grottoes, and other living things in the middle of that rush of actions which create a performance. What comes into the minds of the

Introduction

Digital and telecommunications technologies are opening paths towards hitherto unprecedented aesthetic experiences. During recent decades these new media have made a deep impact on art and design, and their future development prospects are considerable. This has led us to create the MECAD \ Media Centre d'Art i Disseny in Sabadell - Barcelona, a centre oriented specifically towards research and support for creative practices using infographic, audio-visual, and telematic media and hypermedia.

The Creation of MECAD

MECAD was created in September 1998 on the initiative of the FUNDIT Foundation, the institution that in 1989 founded the School of Design ESDI with the aim of fostering design culture and providing the necessary pedagogical and research means to do so. With the recent creation of MECAD and the appointment of Claudia Giannetti as director of the Centre, FUNDIT has made a substantial step forward in its endeavour to fortify the increasingly close links between design, art and the new technologies. The Foundation Board is composed of various institutions. Among these, the following are especially remarkable:

Spanish Intertextile Council; Catalan Department of Industry, Commerce and Tourism; Association of Manufacturers of Sabadell; Ministry of Industry and Energy; Chamber of Commerce and Industry of Sabadell.

Physical and Virtual Space

MECAD has been born with the will to be an open, decentralised entity. We believe that traditional models of institutions that restrict their field of action to the limits of the physical space they occupy have become obsolete and ineffectual, since they base their activities on closed policies that hamper dialogue.

MECAD identifies with the metaphor of the "hub" from which a wide variety of ideas and actions radiate, and also with that of the "nucleus", which becomes a meeting point, debate forum and centre of creation. In this context we aspire to promoting and developing both our own projects and initiatives in conjunction with other centres, entities or individuals, as well as to support and share projects from outside. In practice, this means that we act both "at home", by generating activities from the MECAD itself, as well as elsewhere in Sabadell, Barcelona, Spain and the international context.

Besides the physical space we occupy in the FUNDIT building with an area of 10,000 sqm --space we share with ESDI--, our field of action also encompasses telematic space, which allows us to be present on a global level. By building our web we set out both to facilitate access to important information concerning Media Art, and through the network to develop new strategies and supports for creation.

Through these proposals, open to all kinds of projects and collaborations, our intention is to increase the scope of our action to become a centre of research and production of ideas and activities; a nucleus of reception and support for projects carried out by artists and other entities; and a point of dissemination and launching pad for artists for creators from all areas of Media Art.

... [Content omitted: Ed.] ...

[Ed. note: the complete content of this profile is available at the LEA website: <<http://mitpress.mit.edu/e-journals/LEA/>>.]

=====

LEONARDO DIGITAL REVIEWS
1999.12

Editor-in Chief: Michael Punt
Executive Editor: Roger Malina
Managing Editor: Kasey Rios Asberry

=====

Michael Punt
<<http://mitpress.mit.edu/e-journals/Leonardo/ldr.html>>

In this month's Leonardo Digital Reviews Roger Malina launches a new departure for us by initiating a moderated discussion around the topics and issues raised by Semir Zeki's new book "Inner Visions: An Exploration of Art and the Brain." Malina clearly feels that this book is significant to the Leonardo community for its courage and relevance, dealing as it does with art and the processes of the brain. We hope that in the coming months an ongoing discussion of the central issues will develop here. Elsewhere Wilfred Niels Arnold is moved to reflect on the moral and ethical implications of copyright law on art and scholarship as he reviews William S Strong's fifth edition of The Copyright Book: a practical guide. The complexity and inconsistency of copyright law is a source of frustration to us all, not least for its apparent asymmetry in the treatment of the various contributions involved in art an exhibition. Roy Behrens' pointer to a timely biography of the tragic life of Audrey Munson, the artists' model, also calls for a more even bibliographical and scholarly approach to the network of collaborators which are essential to the processes of art.

Michael Punt
Editor in Chief
Leonardo Digital Reviews

The Copyright Book: a Practical Guide
by William S Strong.
Reviewed by Wilfred Niels Arnold.

American Venus: The Extraordinary Life of Audrey Munson,
Model and Muse
by Diane Rozas and Anita Bourne Gottehrer.
Reviewed by Roy R Behrens.

Inner Visions: An Exploration of Art and the Brain
by Semir Zeki
Reviewd by Roger Malina.

=====

Visit Leonardo Digital Reviews online to read these reviews in full together with the latest postings in LDR Raw as they come in.
<<http://mitpress.mit.edu/e-journals/Leonardo/ldr.html>> Your comments

are welcome at <kasberry@humanorigins.org>

=====

OPPORTUNITIES

=====

< Faculty Positions Media Arts and Technology Program University of California, Santa Barbara >

MAT Program Search Committee
College of Letters and Science
University of California, Santa Barbara
Santa Barbara, CA 93106

The University of California, Santa Barbara, announces a new graduate program jointly offered by the College of Letters and Science and the College of Engineering. The program is designed to respond to the ways in which the convergence of electronic art, media, and technology is transforming our society and to prepare graduates for media, entertainment, and technology industries as well as careers in the arts and acamedia.

The MAT Program has three areas of concentration, leading to either a Masters of Science or a Masters of Arts. The Multimedia Engineering emphasis is for creative engineers and computer scientists seeking a comprehensive program in multimedia software design and implementation. Students will learn several programming languages and software libraries, and be involved in the development of large-scale software systems. The Electronic Music and Sound Design emphasis focuses on contemporary electronic music composition or sound design and digital audio engineering.

Courses will include private composition lessons, lessons in computer techniques, and composer's seminars, as well as directed work on various music production systems. The Visual and Spatial Arts emphasis is intended for technically inclined students in the visual and performing arts. Courses will include training in the history of art and computing, video and installation art, dynamic web design, intermedia production, animation, film production. UCSB is also the host campus for the University of California system-wide university-industry partnership project, the Digital Media Innovation Program.

The MAT Program will hire up to four new faculty members during the 1999-2000 academic year. Appointments will be effective July 1, 2000. The College of Letters and Science invites applications for two positions, one in Electronic and Computer Music, and one in the Digital/Media Arts. Joint appointments with the Department of Music and the Department of Art Studio are possible, if appropriate.

Electronic and Computer Music:

Tenure-track Assistant Professor in the field of electronic and computer music. The candidate should be an innovative composer who can explore new possibilities opened up by technology. Training in computer science as well as music is desirable, as is experience in developing music software. The candidate should have experience in the multidisciplinary approaches of the program and have experience in media such as film, video, and CD-ROM production. Possible research interests include multi-channel spatialization of sound, micro-sound

synthesis and processing, new interfaces and notations, and high-resolution audio. Excellence in teaching and a doctorate or equivalent experience are required.

Digital/Media Arts

Tenure-track Assistant Professor in the field of visual arts. Candidate should be an accomplished artist with experience in new technologies in the digital and media arts. Experience in one or more of the following areas is expected; conceptual art and design; networked virtual environments development and design; installation and performance utilizing digital technologies; programming; contemporary media theory. Will assume a leadership role in developing digital production facilities an establishing an environment for learning cross-platform tools as well as theoretical and critical issues. Excellence in teaching and a doctorate, MFA, or equivalent experience required. Significant exhibitions, publication record, and three or more years of teaching experience preferred.

Review of applications will begin on January 15, 2000, but the position will remain open until filled. Please submit a letter of application, a curriculum vitae, and samples of recent work, including selected publications and/ or compositions, recordings, slides, videos, etc., and at least three letters of recommendation to: MAT Program Search Committee, College of Letters and Science, UCSB, Santa Barbara, CA 93106. Women and minorities are encouraged to apply.

The University of California is an Equal Opportunity/Affirmative Action Employer.

=====

ANNOUNCEMENTS

=====

< ISAMA 2000 >

ISAMA 2000

The Second Annual Conference of the International Society of the Arts, Mathematics and Architecture

21-25 August 2000
University of Washington
Seattle, Washington

Complete details about the conference are available at:

Email: <isama2000@cs.washington.edu>
URL: <<http://www.cs.washington.edu/isama2000/>>

The purpose of ISAMA is to further interdisciplinary research and education relating the arts, mathematics, and architecture. Held at

the University of Washington in Seattle, ISAMA 2000 will bring together artists, mathematicians, and architects as well as teachers, computer scientists, musicians, writers, choreographers and poets to explore the opportunities at the intersections of these fields. To encourage interdisciplinary education at an early age, the last day and a half of ISAMA 2000 will feature K-12 teacher workshops.

Whenever mathematics has encountered the arts, works of subtle beauty and harmony have emerged. The discovery of mathematical perspective during the Renaissance revolutionized painting. The interest in four-dimensional geometry during the early part of this century motivated the idea of multiple viewpoints in cubism. The Islamic art that M.C. Escher found during his visits to the Alhambra inspired him to create ingenious tilings of the plane. More recently, the Torqued Ellipses of Richard Serra were deeply influenced by mathematics and architecture.

* Fields of Interest

ISAMA 2000 encompasses a broad range of fields as they relate to mathematics and/or computer technology, including, for example: architecture; computer-aided design and fabrication; 2D geometric art; sculpture; origami; mathematical visualization; the structure of music, poetry, and dance; and tessellations and tilings.

More detailed descriptions of some fields of interest can be found at <http://www.cs.washington.edu/isama2000/fields.html>.

* Call for Papers

The conference offers an opportunity to present and publish selected and refereed papers in the Conference Proceedings. Prospective authors must submit four copies of their complete papers by February 15, 2000 to:

Nathaniel Friedman
Department of Mathematics
University at Albany-SUNY
Albany, NY 12222

Authors will be notified of acceptance by March 31, 2000. Accepted papers must then be sent in revised and camera-ready form by May 15, 2000. Figures will be printed in gray-scale only. The final papers should be between 6 and 12 pages long, including figures, and use single-line spacing and 10-point fonts. The contents and writing style should be aimed at a broad, non-expert audience.

The latest information about paper submission is available at <http://www.cs.washington.edu/isama2000/cfp.html>.

* Getting More Information

If you have questions, desire more information, or are interested in leading a workshop or seminar, please contact the conference committee at isama2000@cs.washington.edu. You can also keep abreast of announcements and updates by subscribing to the ISAMA 2000 mailing list. See <http://www.cs.washington.edu/isama2000/maillinglist.html> for instructions.

We hope you can join us for this enlightening and energizing experience!

< AAAI-2000 Workshop on Artificial Intelligence and Music >

CALL FOR PAPERS/PARTICIPATION

William Birmingham
The University of Michigan, EECS Department
1101 Beal Ave
Ann Arbor, MI 48109 USA
Tel: 734-936-1590
Fax: 734-763-1260
Email: <wpb@eecs.umich.edu>
URL:
Workshop: <<http://musen.engin.umich.edu/aaai2000.htm>>
AAAI-2000:
<<http://www.aaai.org/Conferences/National/2000/aaai-iaai2000.html>>

AAAI-2000 Workshop on Artificial Intelligence and Music: Towards Formal Models for Composition, Performance, and Analysis to be held in the context of the 17th National Conference on Artificial Intelligence (AAAI-2000) Austin, Texas, July 30-August 3, 2000

While the AI-and-Music field has an important place in AI research, its practical relevance is now more compelling than ever: increasing demand for high-quality content from WWW-based providers, entertainment and computer-game industries has fueled new interest in algorithms for composing and analyzing music.

TOPICS OF INTEREST

AIM research has been mostly cognitively driven, and has yielded impressive results. Yet, this work often does not consider computational and other theoretical issues inherent in music processing and understanding. To move forward, a solid understanding of these issues must be developed. This workshop, another in a series of international AIM workshops, will address the following topics:

Systems using formal AI techniques from such fields as machine learning, pattern recognition, and constraint satisfaction for music processing;

Computational models of style induction, musical performance, or composition, and their application in working systems;

Discussion of how computational models impact traditional areas of music theory and especially practice; and

Discussion of research linking AI approaches to perceptual processing.

Potential participants are encouraged to suggest related topics.

WORKSHOP FORMAT

The one-day workshop will include presentations by selected participants, and panel and open discussions on key topics. We encourage workshop participants to provide either live or recorded demonstrations of their research results.

SUBMISSION REQUIREMENTS

A potential participant should submit a brief paper (approximately 3000 words) describing research in progress, completed research, or position statements on the workshop topics. Instead of a paper, a potential attendee may submit a short statement of interest (approximately 500 words) describing his or her interest in the

workshop and relevant perspectives he or she can bring to workshop discussions. Please include a concise description of any demonstrations that will be made.

We highly encourage email submission of Postscript, PDF, or Word documents, as attachments. Submissions should be single column and 12-point font. Hardcopy submissions are acceptable. All submissions must be sent to:

William Birmingham
The University of Michigan, EECS Department
1101 Beal Ave
Ann Arbor, MI 48109 USA
wpb@eecs.umich.edu
734-936-1590
734-763-1260 (fax)

IMPORTANT DATES

Submission deadline: March 10, 2000
Notification date: March 24, 2000
Camera-ready papers due: April 26, 2000
Date of workshop: July 31, 2000

PARTICIPATION

Participation will be based on submitted research summaries. We anticipate admitting about 30 persons to the workshop.

< Metal and Flesh: The Digital Anamorphosis of the Universe >

METAL AND FLESH: THE DIGITAL ANAMORPHOSIS OF THE UNIVERSE
(Chair et Metal: L'Anamorphose numerique de l'univers)

URL's:

<<http://www.metalandflesh.com>>

<<http://www.chairetmetal.com>>

Metal and Flesh is a new electronic and interactive journal that examines the human condition in the digital age. Through essays, interactive work of arts and, virtual reality, Metal and Flesh aims at defining the human-machine society.

Bruce Sterling, John Perry Barlow, Christopher Langton, Arthur and Marilouise Kroker, Joel de Rosnay, Philippe Queau, Catherine Ikam., Pierre Levy, Gareth Branwyn, Rudy Rucker and Roger Malina are some of the members of its international advisory board.

IN THIS FIRST ISSUE OF METAL AND FLESH

Noam Chomsky: Power in the Global Arena
Bruce Sterling: The Life and Death of Media
Alexandre Leupin: The End of Sex (La Fin du sexe)
Philippe Queau: La Presence de l'esprit
Ollivier Dyens: The Technological Reality (The Technological Reality)
Joel de Rosnay: Biologie et informatique: les perspectives de la biotique
Pierre Levy: The Virtual Economy (L'Economie virtuelle)

Michel Larouche: Les Images de synthese et la contamination de
l' analogique
Steve Jones The Un-Wired Wired
Herve Fisher Une Bataille gagee! Et apres?
Robert Logan: The Extended Mind: Understanding Language and
Thoughts in Terms of Complexity and Chaos Theory
Paul Levinson The First Circuit Judge (Le Juge du 1er circuit)
Nicolas Reeves Penser le virtuel

EVENT HORIZON: THE METAL AND FLESH GALLERY
<<http://www.chairetmetal.com/ehorizon.htm>>
with Shockwave, Flash and VRML

POEMS BY EDOUARD GLISSANT
<<http://www.chairetmetal.com/pento55.htm>>

SUBSCRIBE TO METAL AND FLESH (it' s free)
<<http://www.chairetmetal.com/abonne3.htm>>

< Leonardo Book Series Announces: Ken Goldberg' s Robot in the Garden >

For information please visit
<<http://mitpress.mit.edu/promotions/books/GOLTHS00>>

The Robot in the Garden Telerobotics and Telepistemology in the Age of
the Internet
edited by Ken Goldberg

The Robot in the Garden initiates a critical theory of telerobotics
and introduces telepistemology, the study of knowledge acquired at a
distance. Many of our most influential technologies, the telescope,
telephone, and television, were developed to provide knowledge at a
distance. Telerobots, remotely controlled robots, facilitate action at
a distance. Specialists use telerobots to explore actively
environments such as Mars, the Titanic, and Chernobyl. Military
personnel increasingly employ reconnaissance drones and telerobotic
missiles. At home, we have remote controls for the garage door, car
alarm, and television (the latter a remote for the remote). The
Internet dramatically extends our scope and reach. Thousands of
cameras and robots are now accessible online. Although the role of
technical mediation has been of interest to philosophers since the
seventeenth century, the Internet forces a reconsideration. As the
public gains access to telerobotic instruments previously restricted
to scientists and soldiers, questions of mediation, knowledge, and
trust take on new significance for everyday life.

Telerobotics is a mode of representation. But representations can
misrepresent. If Orson Welles' s "War of the Worlds" was the defining
moment for radio, what will be the defining moment for the Internet?
As artists have always been concerned with how representations provide
us with knowledge, the book also looks at telerobotics' potential as
an artistic medium.

The seventeen essays, by leading figures in philosophy, art, history,
and engineering, are organized into three sections: Philosophy; Art,
History, and Critical Theory; and Engineering, Interface, and System
Design.

Contributors

Albert Borgmann, Tom Campanella, John Canny, Judith Donath, Hubert

Dreyfus, Ken Goldberg, Alvin Goldman, Oliver Grau, Marina Grzanic, Blake Hannaford, Michael Idinopulos, Martin Jay, Eduardo Kac, Machiko Kusahara, Jeff Malpas, Lev Manovich, Maurice Merleau-Ponty, Eric Paulos, Catherine Wilson.

May 2000, 7 x 9, 330 pp., 49 illus., cloth ISBN 0-262-07203-3

A Leonardo Book

To order: <<http://mitpress.mit.edu> >

< The Burning Man Festival >

A CALL FOR ART-TECHNOLOGY PROJECTS FOR THE BURNING MAN FESTIVAL

Artists with questions or proposals may direct comments to :

Email: <body@burningman.com>

URL: <<http://www.burningman.com>>

Burning Man is an annual, outdoor arts festival held every Labor day week end in the Black Rock Desert, Nevada. The festival requires its participants to be fully self-sufficient (water, food and camping gear for at least 5 - 7 days) during their stay in the desert. This year the event will focus on technology as the foundation of its outdoor art exhibit showcase.

Artists are invited to submit a 2-page proposal for an art exhibit that is technology-based, incorporating any, but not limited to the following technologies:

neon, lasers, solar energy, light sculptures, multi-media, video projection, Tesla coils, electro-luminescent technology (El-wire) or LED displays.

While few grants are available to subsidize exhibits, there is plenty of space for ambitious installations (the Black Rock dseert is the largest flat expanse of land in North America), an audience of thousands and an international media presence to experience your art work.

In 1999, 23,400 people attended Burning Man and witnessed a 40 foot high neon enclosed Burning Man sculpture, a ring of computer controlled LEDs in a 300 foot circumference surrounding this piece, a large-scale mobile performance art Tesla coil and several laser sculptures within the festival area.

In 2000, a three-quarter mile long laser light sculpture of the Burning Man will light the way for this year's theme which focuses on the human body.

< OLATS News >

Annick Bureauud

57, rue Falguiere - 75015 Paris France

Tel : 33/143 20 92 23

Fax : 33/143 22 11 24

Email: <bureauud@altern.org>

IDEA online/International Directory of Electronic Arts:

<<http://nunc.com>>

OLATS/Observatoire Leonardo des Arts et des Techno-Sciences:

<<http://www.olats.org>>

1 - The River Festival, organized by Camel Zekri continues:
<<http://www.olats.org/festival-eau>>

2 Reperes & Ressources : update of the Bibliographie generale des arts technologiques (General bibliography on technological arts) -
<<http://www.olats.org/OLATS/sous-menu/reperes.shtml>>

3 - Reperes & Ressources/Presentation d'oeuvre off-line : Nouvelle critique de cd-rom (New cd-rom review) -
<<http://www.olats.org/OLATS/sous-menu/reperes.shtml>>

1 - The River Festival, organized by Camel Zekri continues :

On the 29th of January, you are invited to listen to Camel Zekri's real audio concert, at the French Cultural Centre of Ouagadougou (Burkina Faso).

Discover an other unique moment of this fascinating encounter with the arts and culture of Burkina Faso !

2 - Reperes & Ressources : update of the Bibliographie generale des arts technologiques (General bibliography on technological arts). My first "good decision" of Year 2000 has been achieved: the update of the Bibliographie generale des arts technologiques (General bibliography on technological arts) is online. You'll find there lots of new references among which the new books in the Leonardo Book Serie of MIT Press such as "The XEROX PARC Artist-in-Residence Program" edited by Craig Harris but also the proceedings of the Consciousness Reframed Conference, "Reframing Consciousness: art, mind and technology, edited by Roy Ascott, Intellect Books, Exeter UK and Portland, Oregon.
<<http://www.intellectbooks.com/authors/ascott/refram.htm>>

3 Reperes & Ressources/Presentation d'oeuvre off-line : Nouvelle critique de cd-rom (New cd-rom review) - MUNTADAS, Media, Architecture, Installations, sous la direction d'Anne-Marie Duguet

=====

ACKNOWLEDGMENTS

=====

LEA and Leonardo/ISAST gratefully acknowledges Al Smith and The Malina Trust for their support of Leonardo Electronic Almanac.

LEA
WORLD WIDE WEB
ACCESS

The LEA Word Wide Web site contains the LEA archives, including all back issues, the LEA Gallery, the Profiles, Feature Articles, Publications, Opportunities and Announcements. It is accessible using the following URL: <<http://mitpress.mit.edu/e-journals/LEA/>>

LEA
PUBLISHING &
SUBSCRIPTION
INFORMATION

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>

Copyright (2000), Leonardo, the International Society for the Arts,
Sciences and Technology

All Rights Reserved.

Leonardo Electronic Almanac is published by:

The MIT Press Journals
Five Cambridge Center
Cambridge, MA 02142 USA

Posting of this journal is prohibited without permission of Leonardo/ISAST, except for the posting of news and events listings which have been independently received. Leonardo/ISAST and the MIT Press give institutions permission to offer access to LEA within the organization through such resources as restricted local gopher and mosaic services. Open access to other individuals and organizations is not permitted.

< Ordering Information >

Leonardo Electronic Almanac is free to Leonardo/ISAST members and to subscribers to the journal Leonardo for the 1999 subscription year. The rate for Non-Leonardo individual subscribers is \$35.00, and for Non-Leonardo institutional subscribers the rate is \$50.00. All subscriptions are entered for the calendar year only.

Send orders to: <journals-orders@mit.edu>

Please include full mailing address or MIT Press account number, telephone and fax numbers, and e-mail address. Please send VISA/MasterCard information as well.

ADVERTISING

Individuals and institutions interested in advertising in Leonardo Electronic Almanac, either in the distributed text version or on the World Wide Web site should contact <journals-info@mit.edu> at MIT Press for details.

=====
< End of Leonardo Electronic Almanac 7(12) >
=====