

Leonardo Electronic Almanac

Volume 9, No. 7

Roger Malina, Executive Editor Molly Hankwitz, Guest Editor

Craig Arko, Coordinating Editor Michael Punt, LDR Editor-in Chief

Editorial Advisory Board:

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

Joan Truckenbrod

ISSN #1071-4391

CONTENTS

INTRODUCTION

This Issue >

Molly Hankwitz

FEATURE ARTICLES

- Space as Narrative Context: Architecture as a Storytelling Medium > by Celia Pearce
- < 3D Computer Interaction Using Physical Objects: Exploration of Tangible User</p> Interfaces >

by Ehud Sharlin et al

< From a relational history of technology to the design of a three-dimensional electronic book: "The Encoded Eye, the Archive, and its Engine House." > by David Tomas

ANNOUNCEMENTS

- cast01: Living in Mixed Realities >
- < Open Source Architecture: The Future Art Space >
- < Switch Announces New Issue >
- ArtSci2001: Catalyst for Collaboration >
- < MidAmerican Center for Contemporary Music >
- < Distributed Art Publishers New Releases >

ACKNOWLEDGMENTS

LEA WORLD WIDE WEB ACCESS

LEA PUBLISHING & SUBSCRIPTION INFORMATION

INTRODUCTION

< This Issue >

Molly Hankwitz, Guest Editor

Leonardo Electronic Almanac Volume 9, Number 7 Introduction

This is the last issue in a series of three issues which have highlighted some of the content from the Banff Centre Institute for New Media's 'Living Architectures' Summit. All contributions were excellent and unfortunately we could only include so many of the some 44 presentations. For readers of Leonardo, I hope that the smattering of design, theory, poetics, and new technology I edited for presentation has shed light on the creative possibilities of virtual space in architecture.

There isn't much doubt that new technologies are impacting architectural design and the design of media (even their purposes) in contemporary environments;

By bringing portions of 'Living Architectures' to Leonardo, I hope for at two reasons to have raised more than speculative interest in new design. On the one hand, as museums, schools, universities, hospitals, community spaces, archives and cinemas adopt the benefits of digital media, the inherent opportunities for complex and innovative design are manifold. Secondly, the design of virtual and immersive environments, information interfaces and digital architectures, like other art forms and softwares before them, have a rich history of innovation upon which to build and to base new work.

With this in mind, I hope that the last three issues of Leonardo Electronic Almanac, for which I have been a Guest Editor, have inspired design-minded readers to open channels towards new developments, new discourse and the free flow of information -- better and clearer, more informative and interactive environments, performances and spaces are, I'm sure yet to be created.

I thank Craig Harris and Leonardo for supportive comments and Sara Diamond, Don Stein and Caroline Thebault from the Banff Centre New Media Institute for their helpful suggestions and interest in collaborating.

Celia Pearce

The USC Annenberg Center for Communication URL: URL: <a href="http://www.annenberg.edu/cpea

Author's Note

The following began as a presentation at the Banff Centre for the Arts New Media Institute's Living Architectures conference. It has since become the basis for a project of rather epic proportions which, depending on how things end up, will either be a book, a television program, an interactive media experience, or, ideally, all three. The text below is edited from the original presentation at Banff, which is the first time these ideas were presented publicly in a codified form. I've since presented variations of this talk in a number of contexts, incrementally expanding along the way as my research evolves. Although they are derived from some initial writings in The Interactive Book: A Guide to the Interactive Book, my first full volume, published in 1997, this will mark the first incidence of print publication in this particular line of inquiry. No doubt it will not be the last. (cp, Los Angeles, 5/24/2001)

Abstract

This essay, derived from a talk given at Banff Centre for the Arts New Media Institute in September of 2000, explores the notion of "Architecture as a Storytelling Medium." In particular, I will talk identify the practice of architectural fiction or environmental storytelling, and then attempt to illuminate these theories with two specific examples which provide both commonalities and contrasts. In the process, I will speak specifically about my own experience creating narrative scripts for both architectural and virtual spaces. Finally, I will touch lightly on the use of autonomous characters in virtual spaces and within responsive environments.

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

[Ed. note: the complete content of this article is available at the LEA website: ">.]

3D Computer Interaction Using Physical Objects: Exploration of Tangible User Interfaces >

by Ehud Sharlin et al

Ehud Sharlin

University of Alberta, Department of Computing Science, Alberta, Canada Email: <ehud@cs.ualberta.ca>

Benjamin Watson

Northwestern University, Department of Computer Science, Illinois, USA Email: <watsonb@cs.nwu.edu>

Steve Sutphen

University of Alberta, Department of Computing Science, Alberta, Canada Email: <steve@cs.ualberta.ca>

Robert Lederer

University of Alberta, Department of Art and Design, Alberta, Canada Email: <rlederer@ualberta.ca>

Pablo Figueroa

University of Alberta, Department of Computing Science, Alberta, Canada Email: <pfiguero@cs.ualberta.ca>

and

John Frazer

Hong-Kong Polytechnic University, School of Design, Hong-Kong, China Email: <sdfrazer@polyu.edu.hk>

Abstract

Why is computer interaction using a 3D CAD (Computer Aided Design) tool such a hard task while an untrained child can easily build 3D buildings out of a Lego TM set? We believe that the reason lies in the current Human Computer interface (HCI). TUIs (Tangible User Interfaces) offer natural means of interaction with computers and have already been shown to simplify existing computerized applications and offer solutions for tasks that were considered to be "out of the scope" of human-computer interaction. We are currently pursuing new applications for 3D geometry defining TUIs that can better exploit our innate abilities. In this paper we attempt to provide the reader with a brief overview of the underlying paradigms and research in this emerging domain. We also describe a TUI, the Segal Model, created by John Frazer and his colleagues 20 years ago and our current work in reviving this interface. We briefly present some of the initial results of building physical 3D worlds on top of the Segal Model and then rendering them into fully active 3D virtual worlds. Practical ways of enhancing the expressiveness of the interface and some of our future research plans are briefly presented.

Introduction

When we interact with the world we rely on several natural abilities, among them our tangible manipulation ability. We can move, manipulate, assemble and disassemble a seemingly endless variety of physical objects with very little cognitive effort. Yet, current Human-Computer Interfaces (HCI) use only a limited range of our abilities and rely on a very limited variety of physical objects. The thirty year old Keyboard-Mouse-Monitor interface and the Window-Icon-Menu-Pointer (WIMP) interaction metaphor prevail as the major or even sole HCI, used for anything from word processing to 3D graphical design and modeling. We believe that many of our natural abilities are blocked by this standard HCI, forcing complexity on what could otherwise become a simple, even natural HCI task. More specifically, we believe that providing new and original tangible 3D-shape based HCI tools might change dramatically the way in which we perform 3D modeling and construction oriented HCI tasks and open the way for other applications that are not currently supported by computers.

What can be learned from the ease of building models or manipulating objects in the real world as opposed to the hardship involved in performing similar tasks in a digital environment? Three concepts that are taken from our "natural" interaction with physical tasks can be borrowed as themes for the design of new HCI paradigms and TUIs. The affordances or transparency of the interface is the expression of its functionality through its physical qualities. The synchronization of perception and action space is the "natural" coincidence in time and space of our hands and fingers (termed as parts of our action space) with the position of the objects we are manipulating (termed as part of our perception space). Last, the support of both pragmatic and epistemic maneuvers is the natural inclusion of both straightforward and trial and error procedures in the set of possible actions we can perform with physical objects.

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

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

From a relational history of technology to the design of a three-dimensional electronic book: "The Encoded Eye, the Archive, and its Engine House." > by David Tomas

The traditional book is a mass-produced object, generally rectangular in shape,

composed of a sequence of thin flat surfaces that are composed, most often, of paper. These surfaces are bound together and protected by more or less rigid boards. Each conventional book contains a body of common or interconnected information, displayed inthe shape of words, symbols, and images, that are sequentially organized and presented on these surfaces or "pages." The range of this information is only limitedby the possibility of its being reproduced in compact two-dimensional form. This artifact's ubiquity as a convenient and economical storage device is related to its powers of reproducibility and standardization: to the fact that all information is reduced, in its context, to a common medium and format that is easily reproduced; to the fact that the book's organizational density (a function of the thinness of its pages) and compact size ensures portability and ease of distribution; and to the fact that a book's limited range of physical sizes, which are determined in part by its portability, allows, in turn, for a common basis for its efficient classification, storage, and distribution in the shape of what is known as a 'library.'

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

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

OPPORTUNITIES

No new Opportunities this issue.

ANNOUNCEMENTS

< cast01: Living in Mixed Realities >

cast01 // living in mixed realities is open for registration now!

Monika Fleischmann & Wolfgang Strauss cast01 Conference Chairs

URL: <http://netzspannung.org/cast01>

Email: <cast01@netzspannung.org>

September 21-22, 2001 // Schloss Birlinghoven // Sankt Augustin near Bonn // Germany

Dear friends and colleagues!

We invite you to participate in the cast01 conference discussing intersections of artistic, cultural, technological and scientific issues of:

Living in Mixed Realities

cast01 demonstrates outstanding examples of research, technological development and artistic production in the form of research papers and artistic presentations as well as blueprints and posters about ideas still under development.

Internationally well known keynote speakers like Roy Ascott, Bill Buxton, Manfred Fassler, Perry Hoberman, Natalie Jeremijenko will navigate you through the two-days field of inspiring new concepts in the ambience of Birlinghoven castle in Sankt Augustin near Bonn, Germany.

Highlights of the conference are the launch of the Internet platform for media art and culture "netzspannung.org" and the initiative >digital sparks< presenting current projects of German media education.

The cast01 Conference team wants you to be part of "Living in Mixed Realities".

Registration for cast01 has already started. There is a limited number of seats.

Register online: <http://netzspannung.org/cast01 >.

Registration by fax: http://netzspannung.org/cast01/cast01 register.pdf>.

Please make use of the early registration deadline (August 15, 2001) to benefit from lower fee.

Basis conference fee:

Until August 15, 2001 350.- DM (178.95 EURO) From August 16, 2001 500.- DM (255.65 EURO)

(Students)

Until August 15, 2001 100.- DM (51.13 EURO) From August 16, 2001 150.- DM (76.69 EURO)

For more information about the program, the speakers, the registration conditions and the location, please visit the conference website.

< Open Source Architecture: The Future Art Space >

Eyebeam Atelier with the Center for New Design at Parsons School of Design presents:

OPEN SOURCE ARCHITECTURE: THE FUTURE ART SPACE July 9-August 4, 2001 An Online Critical Forum URL: <http://www.eyebeam.org/opensourcearchitecture>

Open Source Architecture is a four week online critical forum featuring artists, architects, critics, curators, designers, and theorists, along with the public, in a discussion on the convergence of new media art and architectural space. Each week will explore a different theme-Making, Mediating, Experiencing-with the fourth week dedicated to The Future Art Space. The forum is co-directed by architects Craig Newick and David Hotson.

Participants include:

Peter Anders, Andreas Angelidakis, Suzanne Anker, Architecture Research Office, Roy Ascott, Asymptote Architecture, Robert Atkins, Betty Beaumont, Andrew Blauvelt, Marshall Blonsky, Wayne Carlson, David Chipperfield Architects, Preston Scott Cohen, Carolina Cruz-Neira, Neil M. Denari, Diller Scofidio, Foreign Office Architects, Jean-Marc Gauthier, Gluckman Mayner Architects, Michael Joaquin Grey, Michael Heim, Pablo Helguera, Natalie Jeremijenko, Ronald Jones, Leeser Architects, Greg Lynn FORM, Fabian Marcaccio, Pedro Meyer, Christian Moeller, MVRDV, Louise Poissant, Erwin Redl, Reiser Umemoto, RUR Architecture, Rogers Marvel Architecture LLP, Cynthia Beth Rubin, Michael Rush, Peter Seidler, Vibeke Sorensen, Soundlab/Cultural Alchemy, Elizabeth Streb, Tucker Viemeister, Bruce Wands.

This is the fourth annual online forum produced by Eyebeam Atelier. The first online forum, INTERACTION: Artistic Practice in the Network, was recently compiled and edited into a book co-published with D.A.P. and is currently available at <www.eyebeam.org> and in bookstores. A book about the second forum, RE:PLAY: Game Culture Game Design is currently in production.

Open Source Architecture is supported by a grant from the New York State Council on the Arts, a state agency, and The Center for New Design at Parsons School of Design <www.parsons.edu>. Additional support is provided by e-flux.com and Artbyte magazine.

Eyebeam Atelier <www.eyebeam.org> is a not-for-profit organization founded in 1996 by John S. Johnson with the purpose of introducing broad and diverse audiences to new technologies and media arts while simultaneously establishing new media art as a significant genre. Eyebeam is currently in the last phase of an Architectural Design Competition for its new museum of art and technology in the Chelsea art district in New York City.

< Switch Announces New Issue >

Spring/Summer 2001 Sheila A. Malone

Managing Editor, Switch: Cadre's On-line Journal

Email: <smalone@cadre.sjsu.edu>
URL: <http://switch.sjsu.edu>

Switch is proud to announce a new Spring/Summer 2001 issue, Social Networks II, v7n1. Taking inspiration from our previous issue, Social Networks, v6n2, Switch continues the investigation of what social, networks, and social networks means in relationship to contemporary art practice, new media, technology, and science.

In "Bacterial Cybernetics and PDAs" (or, why PDA shouldn't stand for Personal Digital Animalculi) Benjamin Eakins proposes that the communication and control structures of bacteria may serve as a useful model for the interactions of wireless personal devices. Cindy Ahuna's "Online Game Communities Are Social in Nature" looks at social environments evolving from online games. In "Substantial Disturbance: An Interview with Faith Wilding" conducted in May of 2001, Brett Stalbaum asks Faith Wilding about artworlds, collaboration, interventionist art, and the models that lie behind activism and activist art today. From another perspective on activism, James Morgan's "Virtual Political and Cultural Activism" looks at the nature of electronic civil disobedience as both an art practice and a political tool.

To the chagrin of the academic elite who even bother to notice, Thomas Kinkade has built a multimedia empire based on a lifestyle brand of Rockwellian simplicity and small town family values. Matt Mays' "Thomas Kinkade and the La-Z-Boy Aesthetic" explores the Kinkade phenomena, its shaky financial underpinnings and the implications for the growing rift between middle America. In contrast, Glen Sparer's "Art As Creative Virus and Host in the work of Mel Chin" illuminates Mel Chin's unique ideology on art as insertionary idea within a social realm.

Rob Riddle's "Dubwise: Sonic Networks and Experiments in Studied Chance" explores relationships of sounds and rhythms; stories, thoughts, emotions and ideas that steep in the songs of a culture, giving the full concoction a unique voice and flavor. Wendy Angel's "DiFi: Digital and Fiber" is a text which explores a network of interrelationships between two superficially disparate media. Digital and fiber are entwined technologically, linguistically and socially.

Inna Razumova's "Interview with Victoria Vesna" focuses on Vesna's recent

collaborative project Datamining Bodies. In addition, Mark Gonzales' "Databodies, Genitals, and Living Forever.....An Interview with Victoria Vesna" addresses such topics as developing an information persona through autonomous agents, social networks and databodies. Sheila Malone's "The Man Behind The Bunny: An informal interview with Eduardo Kac" reveals answers to popular ethical questions about science and art commingling in a test tube. Eduardo Kac traces his career and objectives as an artist in pursuit of a dialogic perspective.

Nora Raggio's "Dancing on the Web, Dancing over the Ocean: An Interview with Amy Critchett" discusses DANCING ON THE WEB, DANCING OVER THE OCEAN, a multicultural performance that will take place between youth groups in CA, USA and SENEGAL this summer and will culminate in a live performance in San Jose on Labor Day weekend, 2001. Nora also interviews Lisa Jevbratt, curator of the show "LifeLike," an interdisciplinary survey of all things LifeLike--on the web, in the gallery, and in the theater. (
www.newlangtonarts.org/network/infome) involving artists Elliot Anderson, Marc Bohlen, Natalie Bookchin, Steve Dietz, Alex Galloway, Arijana Kaifes, Diane Ludens, Eddo Stern, Lev Manovich, Ken and Jennifer McCoy, Mark Tribe and Geri Wittig.

In a unique feature Joel Slayton and Glen Sparer review and interview featured artists at SIGGRAPH 2001 http://switch.sjsu.edu/v7n1/siggraph01.html Also featured in our current issue are projects from Cadre students, Dawn Ahlquist, Susie McKinnon, and Rob Spain. Dawn Ahlquist's and Susie McKinnon's project, Nephelococcygia http://dma.sjsu.edu/~dahlquis/public_space/clouds digitally explores nonsensical cloud watching. Rob Spain's The Referential Database http://cadre.sjsu.edu/~rspain/the/egomachine/statement.html is a combination of Scripting and Mark up languages designed to analyze, process and store data.

Social Networks II is a robust issue of exclusive interviews and unique social explorations of cultural and technological concerns. We hope you enjoy our latest endeavor.

< ArtSci2001: Catalyst for Collaboration >

Art and Science Collaborations, Inc. (ASCI) presents:

ArtSci2001: Catalyst for Collaboration
A 2-day symposium [November 2 - 4, 2001]
The Graduate Center of the City University of New York (CUNY)
URL: http://www.asci.org

How can the discoveries of scientific research and the powerful metaphors of art combine to impact society at large? Some artists and scientists are exploring the promise of art-sci collaborative projects. This third international symposium produced by Art and Science Collaborations, Inc. (ASCI) will feature multimedia presentations on extraordinary projects involving artists and scientists, ranging from photographs rendered in hybrid grass, to a musical score based on brain activity, to sculpture grown from living tissue. The presenters will discuss the opportunities and pitfalls of collaborating across disciplines and invite questions from the audience.

Stephen Jay Gould and Rosamond Purcell, authors of the recently published book "Crossing Over: Where Art and Science Meet" will deliver the keynote address on Friday evening from 7-8pm at CUNY. Tickets are available to the general public.

In addition to 16 fascinating art-sci presentations, Saturday and Sunday's all-day programming includes breakout, poster, and resource sessions, plus many networking opportunities. The symposium will attract artists, scientists, technologists, writers, scholars, humanists, educators, and all others interested in the synergy possible when the barriers between disciplines are removed.

PRE-REGISTRATION OPENS: Seating is limited and people will be attending from around the world, so Pre-Registration [May 1 - Oct. 1] is recommended.

INTRODUCING: ArtSci INDEX [an incubator for collaborative inquiry] Take a sample Tour of a new online research tool that ASCI is building! Its purpose is to create a rich global database of resources and requests from individuals wishing to collaborate, barter, research or fund art-sci collaborative projects. Perhaps you will find a collaborator and then meet face-to-face at the symposium! www.asci.org for Tour. While at our website, check-out the Open Call for digital prints for "Digital' 01: Our Sci-Tech World."

SEEKING: We are now seeking innovative products, services, venues, and funding opportunities targeted to the art-sci-technology market for our Resource Room at the ArtSci2001 symposium. Send e-mail to pannucci@asci.org if you wish to showcase your company or become a sponsor -- or breakout session leader! [free attendance]

ArtSci2001 is a co-production of Art & Science Collaborations, Inc. (ASCI) and the Science Research and the Continuing Education & Public Programs departments of the Graduate Center at City University of New York (CUNY), and was made possible in part with the generous support of The Rockefeller Foundation and AT&T Foundation, as well as our media sponsors: Leonardo Journal and ArtByte magazine.

< MidAmerican Center for Contemporary Music >

Dr. Burton Beerman, Director
Email: <bbeerma@bgnet.bgsu.edu>

Adam Zygmunt, Coordinator of MACCM Operations

Email: <azygmun@bgnet.bgsu.edu>

We invite to visit the MidAmerican Center for Contemporary Music's web site

URL: <http://www.bgsu.edu/colleges/music/MACCM/>

to peruse over 100 interviews of composers who have attended the festival and other Center activities. In addition, there are programs from the New Music & Art Festival radio series, as well as the first three back issues of the Contemporary Music Forum theory journal. We will continue to make more of our large collection of interviews and performances available so please periodically check this site for updates.

The MidAmerican Center for Contemporary Music of Bowling Green State University is an award-winning organization devoted to the study and promotion of contemporary music and technology. Funded in 1987 by an Ohio Board of Regents' Academic Challenge Grant, the Center builds on the strong and internationally recognized activities of the College of Musical Arts, presenting concerts and symposia, disseminating information, sponsoring research and collecting archival materials. The Center enriches the lives of northwest Ohio residents and assists music professionals from throughout the United States. As a result of these activities, the Center received the 1998 and 1992 Chamber Music America/ASCAP Awards for Adventuresome Programming.

At the heart of the Center's activities is the renowned New Music & Art Festival. This annual event celebrates the contemporary arts through concerts, panels, art exhibitions, seminars, master classes and papers. Begun in 1980, the festival has hosted John Adams, Milton Babbit, Anthony Braxton, John Cage, John Corigliano, George Crumb, Mario Davidovsky, Anthony Davis, Philip Glass, Lou Harrison, Karel Husa, Pauline Oliveros, Bernard Rands, Christopher Rouse, Gunther Schuller, Joan Tower and more than 200 other guests and artists.

< Distributed Art Publishers New Releases >

D.A.P. (Distributed Art Publishers) is happy to announce the release of 2 important new books of writings on contemporary art. These titles are available at better bookstores, online booksellers or through D.A.P. (1-800-338-2665)

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

WORDS OF WIDSOM: A Curator's Vade Mecum Published by ICI/Independent Curators International Edited by Carin Kuoni

An invaluable guidebook for anyone interested in contemporary art and the practice of curating. Among the 60 original contributors are: Jean Christophe Ammann, Carlos Basualdo, Rene Block, Francesco Bonami, Dan Cameron, Lynne Cooke, Bice Curiger, Donna De Salvo, Richard Flood, Thelma Golden, Yuko Hasegawa, Mary Jane Jacob, Jean-Hubert Martin, Gerardo Mosquera, Fumio Nanjo, Hans-Ulrich Obrist, Olu Oguibe, Mari Carmen Ramirez, Nancy Spector, Robert Storr, Harald Szeemann, and Marcia Tucker.

ISBN 0-916365-60-3

Paperback, 5.24×8.5 inches, 176 pages, 120 b&w images. \$14.95 For more information on this title, click on the artbook.com link below. You may also visit ICI's web site.

URL: <http://www.artbook.com/wordsofwisdom.html>

URL: <http://www.ici-exhibitions.org>

INTERACTION: Artistic Practice in the Network Published by Eyebeam Atelier and D.A.P. Edited by Amy Scholder and Jordan Crandall Foreword by John S. Johnson

A passionate debate on the vast transformations wrought by the internet and their implications for artistic practice. Contributors to the book include: Robert Adrian, Oladele Ajiboye Bamgboye, Saul Anton, Adnan Ashraf, Robert Atkins, Ricardo Basbaum, Carlos Basualdo, Ursula Biemann, Simon Biggs, Josephine Bosma, Mez Breeze, Andreas Broeckmann, Craig Brozefsky, Robert Cheatham, Critical Art Ensemble, Andy Deck, Ricardo Dominguez, Keller Easterling, Ellen Fernandez-Sacco, Coco Fusco, Alex Galloway, Joy Garnett, Ken Goldberg, Michael H. Goldhaber, Marina Grzinic Mauhler, N. Katherine Hayles, Susan Hapgood, Brian Holmes, Martin Jay, Jodi, Bill Jones, Tim Jordan, Knowbotic Research, Eve Andree Laramee, Bracha Lichtenberg-Ettinger, Eric Liftin, Lev Manovich, Pedro Meyer, Paul D. Miller (DJ Spooky), Margaret Morse, Sally Jane Norman, Hans Ulrich Obrist, Luiz Camillo Osorio, Daniel Palmer, Saskia Sassen, Waltraud Schwab, Yukiko Shikata, Matthew Slotover, Alan Sondheim, Brett Stalbaum, Gilane Tawadros, Judith Thorn, Andrej Tisma, Gregory L. Ulmer, Sjoukje van der Meulen, Joel Weishaus, and Ben Williams

This is the first book published by Eyebeam Atelier, which has been working towards building a major new museum in New York City, which will focus on art and technology. On July 19th, Diller Scofidio, and Leeser Architecture from New York City, and MVRDV of Rotterdam, where chosen as the three finalists for the design commission of the new space. The final cut will be made by October, and construction is set to start in 2002 and finish in 2005.

ISBN 1-891024-24-8

Paperback, 6 x 8 inches, 168 pages, 34 b&w. \$19.95

For more information on this title, click on the artbook.com link below. You may also visit Eyebeam Atelier's web site.

URL: <http://www.artbook.com/inarpracinne.html>

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

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:

Email: <lea@mitpress.mit.edu>

Copyright (2001), 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

Reposting 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 2001 subscription year. The rate for Non-Leonardo individual subscribers is \$35.00, and for Non-Leonardo institutional subscribers the rate is \$75.00. 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 9(7) >
