



Leonardo Electronic Almanac

VOLUME 9, NO. 11
November, 2001

Roger Malina, LEA Executive Editor
Michael Punt, LDR Editor-in-Chief
Craig Harris, LEA Guest Editor
Patrick Lambelet, LEA Managing Editor

Editorial Advisory Board:

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

ISSN #1071-4391

CONTENTS

EDITORIAL

< Obituary for Leonardo Honorary Editor Ernst Gombrich >
by Roger Malina

LEONARDO JOURNAL

< Leonardo 34, No. 5: Table of Contents of The Ninth New York
Digital Salon Catalog >

FEATURED TEXTS

< About Dramat-iBlaster >

LEONARDO DIGITAL REVIEWS

< Displaying the Marvelous: Marcel Duchamp, Salvador Dali and the
Surrealist Exhibitions >

Reviewed by David Gove Surman

< SEEINGDRAWING >

Reviewed by Mike Leggett

ANNOUNCEMENTS

< ISEA 2002 NAGOYA [Orai] - The Eleventh International Symposium
on Electronic Art >

< M.I.R Collaboration >

< Stephen Wilson Book Release Party >

| EDITORIAL |

=====

< Obituary for Leonardo Honorary Editor Ernst Gombrich >
by Roger Malina, E-mail: <leo@mitpress.mit.edu>

Leonardo Honorary Editor Ernst Gombrich died in London on 3 November, 2001. An art historian perhaps best known for a series of influential books, including "The Story of Art" and "Art and Illusion," he joined the Leonardo editorial board in 1979. He was a frequent reviewer and was active in Leonardo projects, such as "The Meaning of Order in Art in Science."

Gombrich was born in 1909 in Vienna and fled to London in 1936, joining the Warburg Institute. "The Story of Art" first appeared in 1950 and is still in print, with more than 15 updated editions. With "Art and Illusion," he elaborated a number of propositions that sought to use contemporary psychology in understanding the power of visual images. This topic continues to be an ongoing strand of research and inquiry appearing in the pages of Leonardo.

I remember Gombrich's presence at a Leonardo Editorial Board meeting in the early 1990s, when we were discussing the use of the still nascent Internet medium to work with the growing Leonardo professional community. He was enthusiastically supportive of this initiative and remained strongly supportive of the Leonardo mission to discuss the contemporary arts within the context of science and technology and to draw on the international community of researchers, scholars and artists that are preoccupied by these issues.

He published a number of texts and letters in Leonardo, most notably discussions with Rudolf Arnheim and James Gibson around the topic "The Meaning of Order in Art and Science," a discussion that prefigured new sources of ideas on this topic arising from network theory and the science and mathematics of complexity and chaos.

A particular strength of the Leonardo network, a network that has supported Leonardo publications since 1967, is the bridging of generations. For example the generation of Gombrich built, in the pre- and post-Second World War era, the theoretical bases of many of the discussions that are now current in the Leonardo community among researchers and practitioners born in the 1980s.

The passing of Gombrich is far more than the turning of a page in the history of the Leonardo community, and his influence will continue to be evident. We can only encourage current practitioners and researchers to be more aware of the long discussions and historical bases that nourish current excitement in our field.

=====

=====

< Leonardo 34, No. 5 (2001): Table of Contents of The Ninth New York Digital Salon Catalog >

Contents

Bruce Wands: Director's Statement
Christiane Paul: Editor's Introduction

Digital Salon Essays

Richard Merritt: Memory Arts to the New Code Paradigm: The Artist as Engineer of Virtual Information Space and Virtual Experience

Peter Anders: Anthropic Cyberspace: Defining Electronic Space from First Principles

Joseph Nechvatal: Towards an Immersive Intelligence: Nervous Views from Within

Bill Seaman: Recombinant Poetics | VS | OULIPO

Dante Tanzi: Observations About Music and Decentralized Environments

Luisa Paraguai Donati and Gilbertto Prado: Artistic Environments of Telepresence on the World Wide Web

Patrick Lichty: An Alpha Revisionist Manifesto

Ariake Ando: What are People for?

G.H. Hovagimyan: Art in the Age of Spiritual Machines

Digital Salon Catalog

Jurors' Statements

Computer Animation, Gallery Artworks, CDs, Web Sites

Exhibiting Artists

Jury

Artists' Statements

Leonardo/ISAST News

=====

FEATURED TEXTS

=====

< About Dramat-iBlaster >

Created by Mike Roy, E-mail: <mikeroy@integratedArts.com>.

Background

I began working in photography in the late 1970s and soon became interested in the tension between the expressive and forensic aspects of the medium. Like others, I could not resist playing with the deceptively "factual" nature of photography. I began photographing staged events and performances and presenting them as artless "snapshots." I modified cameras, "prepared" film and manipulated prints to the point that it made more sense to draw and paint the imagery I wanted to create.

I wanted images to interact with the viewer, and the static nature of visual art frustrated me. I made sculptural paintings and sequential images to create narrative. I made multimedia environments using all sorts of media and processes, and environmental design interested me so much that I began to work as an architect.

But the architectural environment is essentially passive, and only as interesting as what people do with it. In general, people do not want or need the architectural environment to intrude into their lives. I was ready to go back to staging events and performances, so I went to film school.

I arrived at the University of Southern California (USC) film school as post-modernism and the Web were energizing creative work, exploring the dynamics between creators and consumers of media. The hyperlink (and lots of cheap computing power) meant that a "text" could come alive in a way very different than how films, novels, paintings and games had existed in the past.

Interactive media knits together elements that have not previously had a reason to be integrated: audience participation, narrative, sound, images and all sorts of metaphoric, digitally mediated "spaces." How should these media elements come together to form an interactive work that is more than the sum of its parts?

Combining Game-Play and Dramatic Structure

Dramat-iBlaster is an interactive artwork that encourages exploration and audience participation, like a game, while maintaining a narrative, like a movie. I wanted the interactor's open-ended experience to have momentum, consequences and rising action, culminating in a resolution of the primary conflict. It sounds pretty serious, not to say dull, and of course I have not come close to doing all that; but here is an amusing interactive entertainment.

Dramat-iBlaster as a Teaching Tool

A classic problem in the production of narrative interactive

media is the creation of dramatically compelling consequences for every interactive option within the storyworld. The number of potential story situations grows exponentially with the amount of audience interaction and the sheer number of options creates daunting production demands. Dramat-iBlaster is a prototype for a teaching tool that takes advantage of this content creation problem to engage large numbers of student writers, animators, sound designers and programmers in the creation of an ongoing, Web-based, collaborative artwork.

Ideally, student production units would be spread all over the world, bringing diversity to the project and implementation of its interactive media elements. Dramat-iBlaster is delivered through Macromedia's Flash application. If implemented as a teaching tool, any number of students, teachers and artists with access to Flash and the Web could build their own Dramat-iBlaster spin-offs, creating new stories and longer form narratives.

For more information about Mike Roy's work, please visit his portfolio website at: <<http://www.integratedArts.com>>.

=====

LEONARDO DIGITAL REVIEWS 2001.11

=====

This month, Leonardo Digital Reviews is pleased to welcome two guest reviewers tackling different texts on Marcel Duchamp. Kieran Lyons, a researcher at CAiiA, looks at "Duchamp: Love and Death, even," the new book by Juan Antonio Ramirez, and finds it rather too dispersed for its own argument. On the other hand, David Gove Surman, an animator and theorist, finds Lewis Kachur's "Displaying the Marvellous: Marcel Duchamp, Salvador Dali, and the Surrealist Exhibitions" an important contribution to the ever-expanding Duchamp bibliography that always seems to threaten to capsize art into theory. In contrast, Mike Leggett's review of the DVD, "Seeing Drawing," identifies a valiant and worthwhile effort by non-theorists to catalog and experiment with drawn images through the digital possibilities of DVD. Leggett's conclusion is that this medium provides a worthwhile and valid encounter with a practice that, in my view, has been somewhat overshadowed in the last century as a subordinate (or even occult) form of artistic practice.

Michael Punt

Editor-in-Chief
Leonardo Digital Reviews

Duchamp, Love and Death, even

By Juan Antonio Ramirez, trans. A.R. Tulloch. Reaction Books Ltd., London, 1998. 291 pp., illus., trade. ISBN: 1-86189-027-3.

Reviewed By Kieran Lyons. E-mail: <kieran.lyons@newport.ac.uk>.

Andr  Breton, writing in his essay "The Lighthouse of the Bride"

(1945) about Marcel Duchamp, mused that "It will be of great interest, some day, to explain the full meaning of all these [Duchamp's] projects," and to try to unravel the law whereby they progress.

Duchamp was 58 at the time and had, in fact, been carefully preparing for the possible explanations that Breton was anticipating in his text. Between 1914 and 1966, he would release a series of notes in collections that were intended to smooth a path towards his complex methodologies and concerns. The first of these, "The Box" (1914) was augmented by later publications, "The Green Box" (1934), "The Box in a Valise" (1941), "The White Box" (1966) and the "Operating Instructions" for "Given: 1. The waterfall, 2. The illuminating gas (1967)." After Duchamp's death, a final set was released in French, under the title "Marcel Duchamp: Notes" (1980), followed by its English translation in 1983. These notes have provoked a stream of publications in English as well as further offerings from Europe and elsewhere. One of these is Juan Antonio Ramirez's "Duchamp: Love and Death, even," originally published in Spanish and subsequently translated into English. It provides a useful but problematic addition to the canon.

Ramirez's aim is to project a beam of light over Duchamp's career. The first to be illuminated are the Munich works from 1912, with the sweep finally arresting in 1966 on his last installation, "Given: 1. The waterfall." The last section of the book discusses this work through a variety of sources, while giving particular attention to the 1967 "Operating Instructions," and Ramirez, good lighthouse keeper that he is, follows its directives, completes his examination and switches off the lamp. Unexpectedly, it flickers back on again and we see for an instant, illuminated at the end of Duchamp's life, a spectral parade of his earlier works. They appear in a swift sequence of nine "representative" works, displayed across nine consecutive pages. This emphasis recalls Ramirez's preoccupations with the erotic conjugations of the number 69, which he is at pains to reveal in Duchamp's work (leading to prurient speculations that he might have discharged his survey even more hastily over six pages, rather than nine). In any event, Ramirez makes quick work of these early pieces, which include such accomplishments as "The Nude Descending a Staircase No. 2" and a selection of fauve and symbolist works, all of which inherently support the erotic focus of Ramirez's book. As the lamp fades on the last pages, we see his select bibliography with its numerical sub-heading: "69 Books."

Ramirez limits his main survey to the works that can be traced to the production of either the "Large Glass" or of "ftant donn□s." Through this process, the reader is introduced to the book's central thesis and its strongest and most attractive feature. This is the identification of the two great works as the two brightest stars of a constellation that hold in their orbit a discrete network of satellite objects and artifacts. All the works discussed in the main text are held in a pattern that determines their orientation towards one or other of the two major works. The review begins with a survey of the ready-mades. Ramirez provides an analysis of each work, in a linear progression that creates in the mind of the reader an imaginary diagram, forming a meta-commentary on the original notes that Duchamp had conscientiously provided. In his analysis, Ramirez gives a great deal of detailed information drawn from sources taken from contemporary advertising. These images contribute a wealth of visual material that purposefully animates the pages of

the book while giving the reader a visual key to the material that lies ahead. At some point, however, one has to ask questions about this methodology. Duchamp's background, after all, was patrician; his father was a country solicitor, not a tradesman, and in these and subsequent surroundings one wonders where he would have encountered so many catalogs for products as varied as hydraulic pumps, porcelain sanitary ware, agricultural machinery and electrically enhanced corsetry. The ready availability of these resources allows Ramirez to devote as many pages to a work like "Fountain" (1917) as he does to the entire section on the "Representative Works" of 1902-12.

Nevertheless, the chapters on the "Large Glass" are insightful and show Ramirez at his best. They are packed with useful illustrations that superimpose images from the Glass and the corresponding drawings from the Notes. Ramirez handles his material for the lower section of the "Large Glass" particularly well and his ordering of the component parts into two mutually incompatible systems demonstrates clearly the intentional inadequacies of Duchamp's celebrated mechanism. The book is painstaking in its detail, but leads the reader through an examination of minutiae that rarely steps back to consider the larger implications that make this work so attractive to succeeding generations of artists. Ramirez refers to Duchamp's general project and "The Large Glass" in particular as being "globally interactive;" it would have been interesting to have him expand further on this theme.

"Duchamp, love and death, even" falls between stools in terms of its readership. It is insufficiently comprehensive for a general introduction (Ramirez's sketchy treatment of the early work before Munich has already been addressed) and elsewhere his emphasis on "The Large Glass" and "font donnés" leaves important areas of practice without adequate coverage. The mysterious role played by Rose Sélavie would in any reasonable analysis occupy more space in a general work than s/he does here. It is paradoxical, therefore, that Ramirez's spotlight is on the erotic interpretation of Duchamp's work. His contribution brings much close detail to bear without significantly changing the pattern of an already burdened area of research.

< Displaying the Marvelous: Marcel Duchamp, Salvador Dali, and the Surrealist Exhibitions >

by Lewis Kachur. MIT Press, Cambridge, MA, 2001. 259 pp., illus. Trade, \$34.95. ISBN: 0-262-11256-6.

Reviewed by David Gove Surman. E-mail: <david_gove_surman@yahoo.co.uk>.

In "Displaying the Marvelous: Marcel Duchamp, Salvador Dali, and the Surrealist Exhibitions," Lewis Kachur notes, with meticulous detail, the integral characters, exhibition motives and locations of these exhibitions. In Chapter One, Kachur details the development of the surrealist group, observing that they were not the first to utilize the potential of the display environment. He also carefully states the surrealist theme of exhibition as both subject and producer of political meaning. Detailing the International Surrealist Exhibition, the work of the chief exponents and, more importantly, the relationships between them, Kachur is quick to add persona to the previously somewhat two-dimensional history. He notes the nascent tension between Breton and Eluard, founded (one concludes from Kachur's detailed

account of their involvement in the 1938 exhibition preparation) in the conflicts between art, commerce and politics, so central to the surrealist manifesto.

Chapter Two centers on Kachur's argument around the symbiosis of environment and spectator and the use of "objet du surréalisme," discussing Breton, Dali and Duchamp in the context of what has become "controversial" in conceptual art. The use of a parade of mannequins customized by the surrealist artists adds a noteworthy debate on the somewhat lyrical early interpretations of Freud and their influence on contemporary world-views. The potential for political forethought within the surrealist mindset is embodied in Duchamp's "1200 Coal Sacks" - pre-empting the wartime sensibilities that were to rule Parisian life shortly after. Here too we find the symbiotic tension between the surrealist fetish object and the found object. The outcome, Kachur posits, is a similar symbiosis of art and fashion key-stoned by the cooperative of Dali and designer Elsa Schiaparelli.

The percolation of the surrealists into the American mindset forms the hub of Chapter Three. Kachur here makes note of Dali's repeat of the original show - a distinct and consumable display of his surrealist "product." The eponymous 1938 World Trade Fair forms the greater body of this chapter and is, as Kachur points out, perhaps the most telling of all the surrealist "spaces" in its reports on audience interface and response. Central to Kachur's surrealist history is the repeated cerebral fetishization of the female form - the combination of mannequin and performer within said spaces and the treatment and display of the "marvel" of femininity. The public's response to such themes tells of the niche that the consumer surreal of the 1930s and 1940s had carved, that of a disorienting, though wholly pleasurable, "peep-show." Chapter Four details the implicit tragedy of surrealism. In coming together as a group of equals (reflective of earlier communist motives), often a single piece, "marvelous" as it was often intended to be, seemed to steal the show, so to speak - often to the (arguable) detriment of the encompassing works. Duchamp's "Mile of String" and its discourse/deconstruction of the function of work in the gallery space embodies Kachur's point and is featured in the book as part of its design.

In Chapter, Kachur speaks on Peggy Guggenheim's Art of this Century Gallery and the increase in "a form of spectator involvement." He then speaks of the artistic tangents that extended from the original surrealist works, notably Eva Hesse (and other female artists) emulating and reinventing the string works of Duchamp. Kachur's conclusion inserts the surrealist debate into our modern world view, asserting its contribution to debate on the body, gender and sexuality - especially those within the constructed "exhibition" space. He seems to conclude that surrealism is a study in longevity - that in its drifts from logistical to poetical to political and to commercial, it could have only ever survived in the spaces discussed. In its fragility of statement and miasmatic ideology, the ability to capture the potential of the chosen space pulled it through to (commercial) success. Kachur's work makes for a compulsory (and beautifully presented) read for those with an interest in key debates surrounding the body and its interiors/exteriorities so prevalent today. One thing that does puzzle for a book so closely researched is the absence of the photographer Lee Miller, who was also lover to both Penrose and Man Ray. Otherwise the book is extensively detailed, adding depth to the characters, previously undefinable in the literature. Overall, "Displaying the

Marvelous" is a wholly recommended work for those with a professional interest in the topic.

< SEEINGDRAWING >

Information Technology Research and Development Unit together with project team from Ravensbourne College of Design and Communication, Falmouth College of Arts, University of Ulster Faculty of Art and Design.

Publisher: The London Institute, London.

DVD-ROM, £50 (including VAT) + £5 postage (approx.

U.S.\$80, inc. postage).

Information and on-line sales:

<www.seeingdrawing.com>.

Reviewed by: Mike Leggett, E-mail: <legart@ozemail.com.au>.

"The most ambitious and extensive interactive learning package on drawing ever produced," claims the packaging hyperbole, but it is actually a modest claim and more than correct. This has to be one of the most complex interactive artworks ever made on disc, and it is a resource and learning tool as well.

For a group of British artists to set out to stimulate and inform an audience about the joys of drawing, using the fundamentals of paper and pencil is no surprise, but for them to utilize advanced contemporary technology - Director and DVD is cutting-edge stuff - is remarkable; to have scored the equivalent of half a million U.S. dollars for production, a triumph.

The outcome is an engrossing entry into the fabled world of the hand-eye-brain artists, the aristocrats of the art world and the true professionals of the arts and graphics tradition. We may have encountered that slight disdain for any technology pre-1800 in the drawing studios of countless art schools, but it is tempered here, unavoidably given the delivery medium, by a message that gently insists that though the superhighways are digital, the skills needed to have them lead somewhere meaningful begin on the drawing-board.

Appropriately, the interactive interface is not cluttered with words. The six initial branches illustrate the directions in which they lead: Drawing as Method, as Reflection, as Understanding, as Instrument, as Fashion and as Exploration - plenty of possibilities amongst the foliage of this tree.

So, if you want to start talking about the galaxy of drawing to say, a newly enrolled art student (with stars in the eyes), or anyone burning to put themselves out there, why not begin here, with these headings? Strategy - create the space where a discourse can develop through that gentle correspondence between mouse and screen - on-screen interaction avoids the theatricality of the real-life studio, which can follow in good time. These six spaces are for exploring the practice of drawing, many critical and theoretical issues and examples of outcomes and career paths as experienced by professionals in the various fields. The links between the branches are implied with frequent references to paper, pencil and charcoal. The sciences of perception and cognition are even vividly conveyed with reference to the recent

research work of John Tchalenko.

Exploration, besides being a branch subject heading, is the modus operandi for this opus. There is a set of sparely designed navigation tools constantly available at the bottom of the screen, including notebook and bookmark devices. However, finding ones way about is initially difficult and one can easily become lost in apparently sprawling areas. For instance, one area, a matrix of bathroom tiles, leads to groupings of aphorisms that perfectly represent the generic drawing teacher's disposition to encapsulate with words (of wisdom) aspects of his or her art. Though groups of slide illustrations are available at various points throughout this apparently randomly generated path, the sum effect is one of the more alienating encounters among the branches of this complex tree, rather like encountering a call center operator reading cues from a computer screen without much desire to engage. Self is represented with a wholly visible matrix - thus the intended metaphors become clearer - populated by single concept words dynamically linked together, or liable to trigger another aphorism. Clearly, as these sound-vision bites are encountered around this galaxy, they are intended to provoke: designers think for us; if they do this well, we use their designs.

The verbal vocabulary of the art school has always been a constant source of fascination and it has clearly been useful to use words, as the dominant culture's preferred tool of communication, to achieve the overall improvement of the student. Clearly, the art teachers who consulted on this project have a well-developed vocabulary in both senses of the word. Words that identify the branches and sub-branches were arrived at by a committee and, besides being snapshots of a certain state of things (including the outcomes of mutual consent), enabled each contributing partner to produce the content for an allotted section during the three-year time of the project's span. Thus, together with an extraordinarily skilled multimedia production team, the user encounters a collaborative artwork with layers of visual, audible and text-based material that conspires to provoke users to itch and scratch at aspects of their encounters with these people - surely this is the oldest trick in the textbook.

There are strong elements of pure didacticism that seeks to update present and future artists and designers with the tools currently available to enlarge the palette of possibilities. The user can try out various principles of Computer-Aided Drawing/Design, from basic transformations to extrusions and sweeps, or can be briefed on the terms used by architects and engineers for the various kinds of sheets and conventions employed in technical drawing.

As a lapsed drawer myself, I marveled in a corner of this galaxy as the ceramicist Peter Meanley, using pen and ink, applied patient method while collecting visual data for the construction of a sculpture based on a vintage Velocette motorbike. Within an elegantly designed interface, we observe from over his shoulder the intensive activity and process that he describes with a language rich in the deliberation of his approach and experience.

=====

ANNOUNCEMENTS

=====

< ISEA 2002 NAGOYA [Orai] - The Eleventh International Symposium on Electronic Art >

27-31 October, 2002, Nagoya, Japan
URL: <<http://www.isea.jp/e-mail> info@isea.jp>

On October 27-31, 2001, the Eleventh International Symposium on Electronic Art (ISEA2002) will take place in the city of Nagoya, Japan.

The Inter-Society for the Electronic Arts was founded in 1990 and is currently based in Amersfoort, Netherlands. ISEA is an international non-profit organization dedicated to the promotion and development of the electronic arts.

ISEA is committed to interdisciplinary and cross-cultural communication/cooperation between the arts and the fields of technology, science education and industry. ISEA2002 will be a major international event for members of the artistic community involved with electronic arts.

ISEA2002 NAGOYA [Orai], the first ISEA symposium in Asia, is expected to include about 1,500 participants, including artists, researchers, engineers and students as well as presentations of over 200 papers and works from 30 countries. Many related exhibitions, concerts, performances and other events are also planned to take place in the Nagoya area during the time of ISEA2002.

Members from communities that have traditionally been under-represented at ISEA are encouraged to identify the new perspectives they can bring to ISEA2002.

Theme

[Orai] is a Japanese word with many interpretations. It refers to comings and goings, communication, and contact, as well as streets and traffic. About 200 years ago, a book titled "Nagoya Orai" was compiled and published in Nagoya and was used as a kind of textbook for teaching, writing and development of literacy. Through discussions around art and its inter-disciplinary studies, ISEA2002 hopes to provide an opportunity to create a new text and explore new forms of literacy in the electronically networked society.

Topics

Topics of the symposium include theory, Internet and electronic society, art, design, architecture and urbanism, music, performing arts, programming and software, education & literacy as well as the 2002 special topic, [Orai].

Call For Papers

ISEA2002 invites papers to be given during the symposium. Proposals for panels, round tables, poster sessions and institutional presentations are also welcome. Papers can range from 20 to 45 minutes. The papers will be published in the

ISEA2002 proceedings, to be published for the event. All papers must be original, unpublished and in English. Please note that only submission of an abstract (maximum 500 words, both formats) is required by the deadline (February 28, 2002).

There are also separate calls for workshops, exhibitions, performances and concerts.

Electronic Theater Information

Contact ISEA2002 NAGOYA Office for further information.
Submission guidelines and an entry form are available on our website: <<http://www.isea.jp/> e-mail info@isea.jp>

< M.I.R Collaboration >

Leonardo has entered into a collaboration with the Arts Catalyst, V2 and TV Gallery organizations. This consortium seeks to promote and encourage artists' experiments in earth orbit and outer space. Further details on the collaboration can be found at:

<<http://www.artscatalyst.org/htm/mir.htm>>

A key project of the consortium is the organizing and funding of flights on zero-gravity training flights. Documentation on recent zero-gravity flights by artists can be found at the URL above.

Within this collaboration, Leonardo/OLATS will continue to organize the annual Space Arts workshops in Paris (see <http://www.olats.org> for further details).

Leonardo is also collaborating with the OURS Foundation to contribute an extensive database documenting space-art projects. If you have projects that you feel should be documented in this database, please send an e-mail to: <leo@mitpress.mit.edu>.

< Stephen Wilson Book Release Party >
3 December, 2001

On 3 December, Leonardo and GroundZero will host the release celebration of the highly-anticipated book by Stephen Wilson, "Information Arts: Intersections of Art, Science and Technology," at the Silicon Valley MicroSoft campus in Mountain View, CA. The book offers the first comprehensive survey of international artists who incorporate concepts and research from mathematics, the physical sciences, biology, kinetics, telecommunications and experimental digital systems such as artificial intelligence and ubiquitous computing. In addition to visual documentation and statements by the artists, Wilson examines relevant art-theoretical writings and explores emerging scientific and technological research likely to be culturally significant in the future. He also provides lists of resources including organizations, publications, conferences, museums, research centers and web sites.

For information on GroundZero, visit <www.GroundZero.org>. For more information, reviews and to pre-order this book, go to <www.amazon.com>. For information on Leonardo, visit our web site: <<http://mitpress.mit.edu/Leonardo/>>.

=====

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
425 Market St., Second Floor
San Francisco, CA 94105
USA
E-mail: <leo@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 U.S.A.

Re-posting of the content 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 (11) >
=====