



Leonardo Electronic Almanac

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INTRODUCTION

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< This Issue >

Craig Harris

This month Michele Emmer presents a thoughtful Editorial addressing mathematics, art, peace and responsibility, entitled "Only Bombs Are Intelligent?"

Stephen Pevnick, in "The Rainfall Project," provides insight into his large scale public art installations.

Paul Fishwick presents a profile of programs in Digital Arts and Sciences (DAS) offered at the University of Florida, designed to train artist-engineers. He also announces a job opportunity at their facility.

Leonardo Digital Reviews Editor-in-Chief Michael Punt provides an editorial for LDR.

MIT Press is still working on integrating the electronic versions of the hard copy journal Leonardo into their system. We should have word soon about when LEA and Leonardo subscribers will have access to this valuable resource.

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FEATURE ARTICLE

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< Editorial - Only Bombs Are Intelligent? >

Michele Emmer

Michele Emmer  
Editorial Advisor  
Dipartimento di Matematica  
Universita di Roma "La Sapienza"  
Piazzale A. Moro  
00185 Rome, Italy  
Email: <emmer@mat.uniroma1.it>

In 1997 I was asked to contribute to a special section of the magazine Zentralblatt fur Didaktik der Mathematik, one of the most important publications in the field of mathematical education. The section was devoted to "Mathematics, Peace and Ethics" [ 1 ], and the magazine was published in 1998. The special section began with an article by the section editor, Ubiratan D' Ambrosio, a Brazilian mathematician from the University of Sao Paulo. The title of his article was "Mathematics and Peace: Our Responsibilities."

In his introduction, D' Ambrosio wrote: "I am concerned with peace in its several dimensions: inner peace, social peace, environmental peace and military peace. This paper addresses the global responsibilities of mathematicians and mathematics educators in the quest for peace. Our responsibility includes the uses society makes of our intellectual production and the influence we have in the behaviour of our students.

I do not think we have to accept that it is normal to solve regional conflicts by military means and that isolated war can be tolerated. Although isolated, the violence and violation of human dignity going on in these conflicts are abhorrent. Besides, history has shown us that there is a high possibility of a larger involvement of nations and that the escalation of these regional conflicts may result in World War III."

These words were written 2 years ago. No one could have known or imagined what would take place. My article in the special section dealt with the "Mathematics of War," and my point of reference was the Gulf War. I cited several newspaper articles written then, in 1991, in Italy (but it was the same all over the world): "In mathematical terms, war is becoming more and more electronically controlled and, as a result, it is moving away from the battlefield---in other words, it keeps troops, photographers, TV operators and journalists at a distance from the enemy." (La Repubblica, 2 February 1991); "Bombing with surgical precision, following the fine ray of a laser, with sophisticated technology, with the circumspection and precision of Science." (LaUnita, 25 January 1991).

Of course, none of the journalists who wrote those articles could have imagined that a war would break out, a few years later, in the heart of Europe.

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References  
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1. U. D' Ambrosio, "Mathematics and Peace: Our Responsibilities," introduction to special section "Analyses: Mathematics, Peace and Ethics," edited by U. D' Ambrosio and M. Marme, in Zentralblatt fur Didaktik der Mathematik 98, No. 3 (June 1998) pp. 64--94.

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

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

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Call for Papers  
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The Role of Artists and Scientists in Times of War

What can artists and scientists do when there is a war? How can we be useful? How can we help to find solutions? How can we avoid the use of the military while at the same time protecting the lives of innocent civilians? What educational work can we do to avoid violence and war?

Leonardo Editorial Advisor Michele Emmer and Leonardo seek papers discussing these and other topics that address the role of artists and scientists in times of war.

Please send manuscripts or manuscript proposals to Michele Emmer <M.Emmer@iol.it> or to the Leonardo editorial office: LEONARDO, 425 Market Street, 2nd Floor, San Francisco, CA 94105, U.S.A. <isast@sfsu.edu>.

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| PROFILES |  
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< The Rainfall Project >

Stephen Pevnick

Stephen Pevnick  
Pevnick Design  
2602 E. Hampshire Street  
Milwaukee, Wisconsin 53211  
Tel: 414 961-8818  
Fax: 414 961-1781

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Artist's Statement  
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I research, build and exhibit computer controlled fountains which I think are a fresh look at the traditional concept of fountain. They are more like a programmable public information display where information can be letters or words or kinetic graphics or symbols like logos. I'll enclose a video and some magazine articles for you to look at. The research is done at the University of Wisconsin-Milwaukee where I am an Associate Professor teaching computer drawing for artists, but I take the fountains out on the road as art installations for Corporate sponsored shows and I am looking for a first permanent site for my fountain art work, both through my art/Industrial Design consulting business.

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The Rainfall Project  
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The Rainfall Project represents the future of urban fountains. Created at the University of Wisconsin at Milwaukee, this research project has produced several state-of-the-art, programmable free-falling water droplet fountains of different sizes. Computer controlled water droplets fall so precisely that they create vivid graphic images and words. The shapes appear to move because each frame resembles a frame in a strip of movie film. Each cinematic frame defines slightly different positions, creating multiple dancing ribbons, flipping squares, falling chevrons and pyramids. We can create free falling water droplet defined words for European languages as well as Hebrew, Arabic, and Japanese. Kinetic graphic images customized to your needs can be created and programmed into the fountain. Once installed you can experiment in creating additional computer generated images and messages. This fountain hypnotizes viewers and attracts crowds fascinated by the novel effect of an infinitely programmable water screen, a public information display. In fact, exhibiting with the Kohler Company at the National Association of Home Builders' show, the exhibit won Exhibit Surveys Inc. award for Most Memorable Exhibit of 1991. Although the fountains are portable for shows, I can fabricate Rainfall Fountains for permanent installations as well. These can be any desired width and could even be run from the internet or linked together in different cities or even in different countries.

Two styles of fountains are available for rental for shows to fit different budget and space requirements ranging from the largest which ran at the 1996 Summer Olympics in Atlanta to the smallest, the

quarter depth fountain. The standard fountains use a modular 576 nozzle one foot square by 4 foot high valve. They are exhibited in 4,6 and 12 ft. lengths, all one ft. deep. The new 576 nozzle quarter depth modular fountain has 25% of the depth of the standard modular valve but is 4 times wider. This fountain has a foot print of 4 in. by 4 ft and is available for shows in 4 ft. and 12 ft. lengths. The standard valve produces a world's fair class fountain suitable for tall installations in large public indoor and outdoor spaces. The new quarter depth valve is designed for smaller installations and smaller budget exhibits. All of the fountains use a closed water system so that water is not wasted. The smallest holds about 50 gallons and the largest about 500 gallons. Each requires some support equipment on the ground: a pump, a power supply and a computer control station. Ground support elements need to be placed in a ventilated equipment room.

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

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

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< University of Florida Programs in Digital Arts and Sciences (DAS) >

Paul Fishwick

Dr. Paul A. Fishwick  
Dept. of Computer & Info  
Science and Engineering  
University of Florida  
P. O. Box 116120  
332 Bldg. CSE, Gainesville, FL 32611-6120  
Tel/Fax: (352) 392-1414  
Email: <[fishwick@cise.ufl.edu](mailto:fishwick@cise.ufl.edu)>  
URL: <<http://www.cise.ufl.edu/~fishwick/das>>

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The Program  
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The proposed three programs in Digital Arts and Sciences (DAS) are meant to create a student who is capable of being a computer scientist and an artist at the same time. Many jobs in industry require computer scientists and artists to work together on productions. These productions can involve the development of a feature-length film, an educational CD-ROM, a computer game, or an interactive scientific visualization. Computer scientists need to have a working knowledge of the arts to be successful in these careers, and many companies are hard pressed to find time, space and resources for on-the-job training to make up for a lack of cross-disciplinary knowledge on the part of the student. Several companies in our Industry Advisory Board (IAB) have made concrete recommendations to CISE on the formation of a set of programs to address these issues.

We present three new programs in DAS: BS, MS and the new 4-1 MS. All three programs work together in terms of requiring the same course material at the appropriate level. Moreover, we tailored the three programs to work in synchrony with six new programs being proposed in the Schools of Art and Music within the College of Fine Arts. In particular, both CISE-DAS students and the Art/Music students will be required to take production classes involving both Fine Arts and CISE students working with each other motivated by a work schedule that results in the creation of a multimedia production.

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The Florida Digital Worlds Institute  
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The goal of the Florida Digital Worlds Institute is to combine expertise from the arts, sciences, and engineering in order to solve real world problems in a digital world environment and to advance the technology associated with creative digital world systems. Digital worlds are computer based systems able of representing various aspects of real world objects and environments through the effective application and integration of multi-modal information. The strategic vision of the Florida Digital Worlds Institute is to define, integrate, and advance digital worlds technologies by drawing on the diverse talents and skills of the artist, scientist, and engineer. The current explosion of these creative multimedia technologies into virtually every aspect of human activity associated with entertainment, education, communication, science, and engineering attests to the power and importance of these technologies. The very nature of these technologies requires that future development of these technologies involve innovators and researcher from a wide spectrum of disciplines.

The educational mission of the Institute is to produce what Walt Disney aptly calls the imagineer for the 21st century. This mission is accomplished through the establishment of several new joint Master degrees in the member colleges of the Institute. The research and development mission will focus on defining, creating, and advancing digital worlds technology for applications in the entertainment industry, science and medicine, manufacturing, and education. The Institute makes such advances possible by providing a synergistic environment for the arts, sciences and engineering. Many areas of business and government realize the importance of such synergism of disciplines. In the entertainment industry there is Disney Quest, whose efforts involved artists, 3- dimensional modeling, visualization, virtual reality, mechanical engineering and more. In transportation, one could point to the Orange County, Florida, light-rail project. This project requires a team consisting of engineers, artists, and scientists to help model the proposed route, apply textures using aerial photography and employ science to demonstrate the impact (noise, air movement, etc.). In law, there is a great demand for people who can model crime and accident scenes for the courtroom, a skill that clearly combines artistic and engineering capabilities. And the above are only a few of many thousands of real world situations in which interdisciplinary teams are a necessary ingredient.

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

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

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| LEONARDO DIGITAL REVIEWS |  
| 1999.05 |  
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Editor-in Chief: Michael Punt  
Executive Editor: Roger Malina  
Managing Editor: Kasey Rios Asberry

This month's reviews includes one of the newest members of the panel Robert Pepperell, and several by one of our most regular contributors, Roy Behrens. Pepperell's review of Leonard Shlain's new book takes the view that some potent ideas have a relatively short shelf life. Behrens' coverage of the new translation of one of the most revered typographer's work also reminds us that some of the great intellectual icons of the century have made dramatic U-turns' in their cultural allegiances. In science too, there is an intellectual historiography which inflects certainty, and Charles G. Gross's review of 'Brain, Vision and Memory: Tales in the History of Neuroscience' particularly highlights the relationship between neuroscience and the history of ideas.

We are fortunate this month to also be able to include an early response by Douglas Kahn to Linda Dalrymple Henderson's book 'Duchamp in Context'. He argues that in a field which perhaps should have long ago declared a moratorium on critical accounts of Duchamp, Henderson's book makes a crucial intervention by challenging the historical assumptions about science and culture at the beginning of the century on which most discussions of the art science interface are based. The tendency to revise our ideas of what constitutes culture should not be restricted to the immediate past but provide the basis for a revisionism which may indeed mean that many of the intellectual icons of the twentieth century are revisited for their vulnerability rather than the restricted activities enshrined in Modernist narratives - a point alluded to in Hill's review of Escape Velocity and forcibly made in Rapoport's poignant reminder of the art of Joan Brown.

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In this month's LDR:  
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Brain, Vision, Memory: Tales in the History of Neuroscience  
by Charles G. Gross  
MIT Press, Cambridge, MA, 1998.  
255 pp., illus. Trade, \$32.50.  
ISBN: 0-262-07186-X.  
Reviewed by George K. Shortess

The Alphabet Versus the Goddess: The Conflict Between Word and Image  
by Leonard Shlain  
Viking, New York, NY, U.S.A., 1998. 464 pp. Trade.  
ISBN:0-670-87883-9.  
Reviewed by Robert Pepperell

Duchamp in Context: Science and Technology in the Large Glass and  
Related Works  
by Linda Dalrymple Henderson  
Princeton University Press, 1998  
Reviewed by Douglas Kahn

The New Typography  
by Jan Tschichold  
Translated by Ruari McLean  
Introduction by Robin Kinross  
University of California Press, Berkeley, CA, U.S.A., 1998.  
ISBN 0-520-07147-6.  
Reviewed by Roy R. Behrens

The Peacock Room: A Cultural Biography  
by Linda Merrill  
Freer Gallery of Art,

Washington, D.C., and Yale University Press, New Haven, CT, U.S.A., 1998.  
ISBN 0-300-07611-8.  
Reviewed by Roy Behrens

Masterpieces of Japanese Prints: Ukiyo-e from the Victoria and Albert  
Museum  
by Rupert Faulkner  
Kodansha America, New York, NY, U.S.A., 1999.  
ISBN 4-7700-2387-1.  
Reviewed by Roy R. Behrens

The Art of Joan Brown  
by Karen Tsujimoto and Jacquelynn Baas  
with foreward by Brenda Richardson  
University of California Press, Berkeley 1998  
ISBN 0-520-21469-4, 0-520-21469-2  
Reviewed by Sonya Rapoport

Escape Velocity: Cyber Culture at the End of the Century  
by Mark Dery  
Hodder and Stoughton 1996  
Reviewed by Anthony Hill

A Typographic Workbook; A Primer to History, Techniques and Artistry  
by Kate Clair  
John Wiley, New York, NY, U.S.A., 1999.  
ISBN: 0-471-29237-0  
Reviewed by Roy R. Behrens

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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](mailto:kasberry@humanorigins.org)>  
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	OPPORTUNITIES	
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< Faculty - University of Florida Programs in Digital  
Arts and Sciences (DAS) >

Dr. Paul A. Fishwick  
Dept. of Computer & Info  
Science and Engineering  
University of Florida  
P. O. Box 116120  
332 Bldg. CSE, Gainesville, FL 32611-6120  
Tel/Fax: (352) 392-1414  
Email: <[fishwick@cise.ufl.edu](mailto:fishwick@cise.ufl.edu)>  
URL: <<http://www.cise.ufl.edu/~fishwick/das>>

If you are in the Computer/Arts community and have a doctorate in  
computer science and are looking for a faculty position, there is an  
opening in our Digital Arts and Science Programs (DAS). The Programs  
are now in place and the CISE part of it can be seen at the above URL.

The College of Fine Arts is also seeking candidates and they have  
complementary programs to ours that are synchronized via "production

studio" courses.

[Ed. note: We profile this program in this issue of LEA.]

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ANNOUNCEMENTS
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< OLATS News >

1 - Virtual Africa : The paintings of Rachel Malcolm Wood

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

Currently in the ancient art/contemporary art section : The paintings of Rachel Malcolm Woods

Interested in the study of ideographical languages, guided by her desire to reach a universal form of visual communication which would carry a message of peace, Rachel Malcolm Woods is currently working on the ejagham African language : the Nsibidi. Her work is the result of this encounter with the African culture.

Also in the Virtual Gallery : the recent works of the painter and sculptor Godefroy Kouassi. Belonging to the cycle "La misere entouree d'or" (Misery surrounded by gold), they denounce the exploitation of African workers by the rich coffee and cacao traders.

Soon in "Virtual Africa" : the coming participation of Michael Conner, Ray Silverman and Louis Perrois .Michael Conner, professor of anthropology at the University of Indiana, and his colleague Ray Silverman will discuss the effects of Internet on the study of African cultures. Louis Perrois, French ethnologist, previously researcher at ORSTOM, is a specialist of traditionnal African arts.

2 - The EMF/Leonardo Guide to the World:

URL: <<http://www.emf.org/guidetotheworld/>>

Joel Chadabe (Electronic Music Foundation) and Roger Malina (Leonardo) announce The EMF / Leonardo Guide to the World. Electronic Music Foundation (EMF) and Leonardo, both not-for-profit organizations that serve music and art in today's world, have launched a collaboration to develop The EMF / Leonardo Guide to the World, which includes The World Wide Calendar, special features, a guide to internet resources, an Internet Directory, and notices from sponsors.

The World Wide Calendar is a web-based calendar / database and monthly email update. As Joel Chadabe, President of Electronic Music Foundation, said, "Our goal is to make it possible for anyone in the world to find out what's happening at the cutting edge of new music, electronic music, media art, and related artforms ... anywhere in the world ... without investing hours in navigating different websites, sorting email messages, or scouring lists and more lists."

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< Video Electroacoustic Concert in Mexico City >

Vidarte - Priamo Lozada  
Coordinacion Nacional de Medios Audiovisuales - CNMA  
Barranca del Muerto 380

Col. Guadalupe Inn  
Mexico, D.F. 01020  
Mexico

The date for receiving material for the video electroacoustic concert to be held on the 23rd of September on the VIDARTE festival (Mexico City) has been anticipated for June 15th. Please look at the proposal down here if you are interested in sending work.

The Mexican National Council for Culture and the Arts (CONACULTA) through the National Coordination of Audiovisual Media (CNMA) organizes VIDARTE, a video and electronic media festival which will take place from the 22-26 of September at the National Center for the Arts (CENART) in Mexico City.

As part of the festival, there will be one electroacoustic music concert with video, curated by the Mexican composer Manuel Rocha Iturbide, who invites the international electroacoustic music community to participate by sending their video-electroacoustic works. The works not selected for the concerts will nonetheless be considered for future events by the curator.

Anyone interested must send their work in format BETACAM SP (preferred) or VHS to the following address, and before JUNE 15th, along with a description of the work and their biography (one page maximum).

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< ISEA - Inter-Society for the Electronic Arts; New address >

Please Note Our New Addresses

ISEA - Inter-Society for the Electronic Arts  
ISEA - L' Inter-Societe des arts electroniques  
Complexe Ex-Centris  
3530 boulevard Saint-Laurent, suite 305  
Montreal, Quebec, Canada, H2X 2V1  
Tel: 514-847-8912  
Fax: 514-847-8834  
Email: <isea@isea.qc.ca>  
URL: <http://www.isea.qc.ca>

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Editorial Address:

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

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