Leonardo Electronic Almanac
Volume 6, No. 10
October, 1998

ISSN #1071-4391

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INTRODUCTION

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< This Issue >

Craig Harris

This month we present Eddie Shanken's article "The House That Jack Built: Jack Burnham's Concept of 'Software' as a Metaphor for Art." This is one of two articles by Eddie Shanken that we are fortunate to be able to feature in LEA, the next one, "Gemini Rising:..." to appear in next month's issue. Artemis Moroni of Brazil has been working with Jonatas Manzolli on"AtoContAto," where electronically modified shoes control visual and sonic material in a performance context, and they provide a profile of their system. In addition, Patrick Maun presents a new feature in the LEA Gallery, Eugene Thacker's "embody_dissolve" completing a 3-part series of works on art and the body in cyberspace. This issue includes commentary by Carl DiSalvo and Tina LaPorta, the artists presenting the previous works in the series.

In addition to the usual informative and insightful reviews of books, CD-ROMs, exhibitions and web sites, Leonardo Digital Reviews is implementing a new column - Intersections with Architecture and New Media - targeted to provide opportunities for extended commentary about current issues. We complete the issue with a group of announcements and opportunities.

Some LEA visitors may be wondering about the changes in the site that were announced earlier this year relating to establishing the LEA subscription-access system. It was our intention to bring a system on line in July or August that would allow free access to LEA visitors for limited material, with full access to all of LEA for paid subscribers. As it turns out, a new structure is being implemented that will benefit LEA and Leonardo Journal subscribers in new ways. Beginning in 1999 Leonardo Electronic Almanac is to become the long-term archive site for the International Society for the Arts, Sciences and Technology. As Leonardo Journal institutional subscribers continue to request electronic access to the journal articles, and as all of us at ISAST strive to bring consistency and sense to the various sites that comprise the ISAST/Leonardo perspective, we have identified a mechanism that will address these issues effectively.

Beginning with Leonardo Journal Vol. 32 (1999) and Leonardo Electronic Almanac Vol. 7, any subscriber to Leonardo (individual, student, or institution) can get access to LEA for no extra fee if they register for it. Electronic versions of the hardcopy journal Leonardo will become available via the Online Computer Library Center, Inc. (OCLC)

system, which will be integrated into the LEA web site archive. Material from other Leonardo/ISAST web sites will propagate to the LEA archive. People will still be able to subscribe only to LEA if they wish. Electronic access to LEA will be access-controlled effective January 1, 1999 by subscription, which will include the listserve ASCII excerpt version. LEA subscribers will be offered a one-year free trial to the OCLC version of Leonardo if they register. We will still produce a gratis area at LEA for people to gain access to some of what is available at the LEA web site.

LEA web designer and Gallery Curator Patrick Maun is taking on the job of creating the structure that will house this new system. We at LEA applaud this transformation, and are convinced that it will solidify our financial foundation, expand our visibility, clarify our role among the diverse set of ISAST electronic publications, extend our reach into new areas around the world, and provide a substantial archive for people to explore the vast and ever-increasing activities in contemporary art and thought. We welcome you all to join us in this endeavor, and we look forward to your input as we proceed into this new arena.

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FEATURE ARTICLE

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< The House That Jack Built: Jack Burnham's Concept of "Software" as a Metaphor for Art (excerpts) >

Edward A. Shanken

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Forthcoming in Reframing Consciousness: Art and Consciousness in the Post-Biological Era (Proceedings of the Second International CAiiA Research Conference) Exeter: Intellect, 1999. This research represents a portion of the author's doctoral dissertation in the History of Art at Duke University.

Abstract

This paper identifies and analyzes the convergence of computers, experimental art practice, and structuralist theory in Jack Burnham's Software exhibition at the Jewish Museum. In contrast to the numerous art and technology exhibitions which took place between 1966-1972, and which focused on the aesthetic applications of technological apparatus, Software was predicated on the idea of "software" as a metaphor for art. Under this rubric, the curator explored his notion of the mythic structure of art, and its convergence with information technology, and the increasing conceptualism of art in the late 1960s. I suggest that these components represent the interlocked emergence of postmodernity at this critical art historical moment.

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

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

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PROFILE

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< AtoContAto >

Artemis Moroni

Artemis Moroni
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The Tap Shoes Gesture Interface

AtoContAto is based on a pair of tap shoes gesture interface. Piezo-electric sensors were applied inside the taps, in the region underneath the toes and heel, and a cable terminated at that point. To simplify the electronic hardware, the total number of force sensors was limited to four, two per foot. These points are considered consistent with the dominant peaks of distribution of force along the base of the foot. Also, in this case, they supply enough amount of information. The sensors connected to an analog interface circuitry through a cable harness. There, the sensor signals are conditioned and digitized by a small micro-controller.The analog circuitry and micro-controller comprise a small module that is worn on the waist. The micro-controller translates the data into packets and sends them across a standard serial interface. It results a MIDI Control Signal that can be plugged to several MIDI devices

Artemis Moroni is a researcher in Computer Graphics at CTI, Centro Tecnologico para lnformatica (Technological Center for lnformatics), a Brazilian federal research center in Campinas, Sao Paulo. Her master's degree in Computer Science and Bachelors Computer Science were at the University of Campinas (Unicamp), Brazil. She has acted in the areas of Computer Graphics and Art & Technology since 1988.

... [Content omitted: Ed.] ...
... [Some of the web content is in Portuguese: Ed.] ...

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

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< LEA Gallery Feature: embody_dissolve >

Eugene Thacker

Eugene Thacker
Email: <maldoror@eden.rutgers.edu>
URL: <http://gsa.rutgers.edu/maldoror/index.html>

CURATOR'S STATEMENT

Eugene Thacker's Embody_Dissolve 2.0 closes the first segment in the re-design of the Leonardo Electronic Almanac Gallery. For those of you keeping track, all three pieces deal with the body in the

post-industrial information age. Carl DiSalvo's piece concerns itself primarily with Bataille's notion of "The Impossible" - the indefinite reality of actions taken to the extreme. Tina LaPorta addresses the issue of the body and its engagement within the realm of technology. And finally, Eugene's explores the "dis-embodied" digital body.

The first three pieces have dealt extensively with the body. I'd like to thank Carl, Tina and Eugene for taking part in this initial, sometimes rocky, phase of the Gallery. 1999 will see several changes of both the site and the Gallery. Please return often and see what we have in store.

The next piece will premiere in January of 1999.
--
Patrick Maun

ARTISTS STATEMENT

embody_dissolve is an experiment situated between net.art, web programming, and cultural theory. It is a hyper-media essay and inquiry into two types of bodies currently being produced and reproduced on the Web: the body found in contemporary technoscience, particularly in the "digital anatomy" of the Visual Human Project, and the body found in the virtual sex industry, particularly in "web pornography." This project attempts to use both text and image to ask how these two seemingly disparate discourses are both involved in reconfiguring what will come to be recognized as a "body" in a new medium such as the Web. Much of the visual material has been appropriated from the Visual Human Project and pornography sites, using a range of computer and Web technologies (from basic animated .GIFs to Dynamic HTML and streaming media) to produce new types of virtual bodies.

Eugene Thacker [maldoror@eden.rutgers.edu] teaches technology & culture at Rutgers University, where he is a PhD candidate in the Program in Comparative Literature and Cultural Studies. His works for the Web have recently been featured at Agent13, Alt-X, Basilisk, Ctheory MultiMedia, Perforations, and several online group shows. He directs [techne], a forum for multimedia and electronic culture. His current projects can be accessed at:
<http://gsa.rutgers.edu/maldoror/index.html>.

CARL DISALVO'S THOUGHTS

"Network Bodies", "Productive Bodies", "Illegible Bodies", "Digital Anatomy", "Web Porn": sites of discourse on the body.

References to Descartes, Harraway, Hayles and, the Science Fiction contingent of Gibson and Stephenson. And Bataille. Discourses on the site of the body.

"embody_dissolve" : a suture between them.

"embody_dissolve" is not about the web as cybernetic prosthetic but rather investigates, through the web, the web as a space through which the body is represented. Somehow, in this representation, due to the nature of expression within this space, something about the body changes: its presence and our experience with it.

The technological "production" of the body that Thacker references is not a theoretical posturing, rather it is "production" in the media sense of "production". The body on the web is produced as an event: captured and transmitted to all who can log on. It's presence however

 ISSN 1071-4391 ISBN 978-0-9833571-0-0

is not immediate, even if it is real-time. There is a distance about the body's presence, it transmission on the web. This distance seems to come from the very technology which has captured it and which transmits it. Our experience with the body in Visible Human project is an event of aestheticized obsessive compulsive detail that would not at all be out of place as a side project of Dr. Hannibal "The Cannibal" Lecter's in some version of The Silence of The Lambs. Our experience of web porn is almost an erotic event of anticipation and imagination as pixelated images of slightly off flesh tones jerk around. Somehow...these expressions of the body experienced through the space of the web allure us in a manner which is almost self-reflexive, reminding us of our corporeality by their distance from a (or failure to transmit a) truly corporeal experience.

Eugene Thacker's "embody_dissolve" is not so much an experiencing of the

different manifestations of the body on the web, but rather a dialogue upon them, through the very technology of their production. In this way it acts as both a site of reflection as well a map, a sort of topology of meaning of the body on the web.
--
Carl Francis DiSalvo

Carl Francis DiSalvo is an artist, designer, and theorist interested in technological mediation of identity and being. He was a featured presenter at the 1997 ISEA where he delivered a paper entitled VRML: Writing The Space Of Identity on The WWW. He is currently working as a Senior Designer and

Consultant for Bitstream Underground, Inc., in Minneapolis. His piece Blinded... As I Stared Into the Sun was presented in the Gallery in February on 1998.

TINA LAPORTA'S THOUGHTS

w h e r e
will the body be in the future?

as i explore both the potentialities and the meaning(s) of embodiment within an environment built around and within communications technologies, i see traces-- random patterns of my corpoReal self inhabiting loose areas within the constructs of C-space. simultaneously, it is within "cyberspace," where illusion of depth and abstraction from representation pronounces an experience of alienation from the physical. The body is doubled-- now inhabiting both the physical and the virtual realms at once. while in this space of the virtual, the body becomes transmissible, dematerialized and distributed. the interplay between transparency and opacity is subject in the layered world i now inhabit.

my (mostly voyeuristic) presence in cyberspace looks for interaction. wandering.....linking from one site to the next, searching..... uploading, downloading, connecting, communicating, scanning the surface of the screen, wanting direct contact with it's surface, getting closer..... mediated.

crashing. re-booting and re-connecting: i mark each site with my own passing, sometimes random presence.... leaving behind both in-visible and visible traces; tracking where i have been and where i will go from there. re:tracing my steps, backwards, forwards, i inhabit a multi-linear environment which demands from me no conclusion-- ongoing.

as i immerse myself, the body becomes an interface between C-space and my own imagi(n)ation. merging and interacting with media traces left in digital spaces, my mirrored environment has multiplied. the physical body imagined becomes the projecting body networking.

i am present without a trace of the real.
--
Tina LaPorta, Media Artist
URL's:
< http://wintermute.aec.at/traces >
< http://www.users.interport.net/~laporta >

Tina LaPorta has recently been an Artist-in-Resident at Ars Electronica's FutureLab (Linz, Austria) where she has produced a Web specific video installation titled TRACES. Traces has been included in SEAFAIR '98 at the Soros Center for Contemporary Art in Skopje, Macedonia, the International Festival for New Film in Split, Croatia and the Downtown Arts Festival in NYC.

Tina's work is also included on several World Wide Web Sites including the ALT-X exhibition, "Being in Cyberspace," the United Nations' Fourth World Conference on Women in Beijing, China, the Women and Performance On-Line Journal "Sexuality in Cyberspace" and "Maid in Cyberspace" at Studio XX, Montreal (Quebec).

Last year, Ms. LaPorta produced CyberFemme TV, an experimental television series on Manhattan Cable Television in which she shot on location around various public spaces in New York City, in order to explore it's media-enhanced landscape and the impact it has on subjectivity. Tina has also been an Artist-in-Resident at the Experimental Television Center (Owego, New York) where she completed her video Camera Work.

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

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LEONARDO DIGITAL REVIEWS
SEPTEMBER 1998

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< Book Review: Picturing Science, Producing Art >

Edited by Caroline A. Jones and Peter Galison Routledge

 ISSN 1071-4391 ISBN 978-0-9833571-0-0

New York and London
1998, 518pp.
ISBN: 0-415-91912-6

Reviewed by: David Topper
E-mail: <topper@UWinnipeg.ca>

In recent years there has been a plethora of publications unmasking in a myriad of ways the relationship between art and science. This book, a collection of nineteen essays, purports to add to this growing body of literature. Many of the authors are well-known in their respective fields (mostly art history and science history, but also architecture, photography, and perception) and all have contributed scholarly essays. Nevertheless, the goal of bridging the gap between art and science is seldom reached, since most essays remain fixed in either the art or science mode, with at most a nod given the other way.

For example, Svetlana Alpers' study of the artist's studio in the 17th century makes some suggestive comments on the scientist's laboratory as an analog, but the essay is mostly about the studio.

In the essays that do bridge the art/science gap, the connection is often made through scientific illustration - another topic much discussed of late. A fascinating example is David Freedberg's study of the iconography of the bee in 17th century Rome. Also noteworthy: Peter Galison's thesis that the concept of "objectivity" was a 19th century invention, and Simon Schaffer's study of the influence of various cultural elements on the drawing of nebulae in the last century.

There are numerous outstanding essays in this collection but I believe it is my obligation to add this caution: many are of the "post-modern" genre and as such are heavily laden with the corresponding jargon (thankfully, not the essays mentioned above). For a recent collection of essays on scientific illustration see, Picturing Knowledge: Historical and Philosophical Problems Concerning the Use of Art in Science, ed. Brian Baigrie (Toronto: University of Toronto Press, 1996).

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< WWW Review: BODIES INCORPORATED >

Produced by Victoria Vesna
URL: <http://www.arts.ucsb.edu/bodiesinc>

Reviewed by Alex Galloway
(republished with permission from Rhizome Internet)

The more virtual we get, the more obsessed we become with the "real" world, especially with bodies. This has been true for generations--think of Mary Shelly's book Frankenstein, an iconic exploration of our fears and fantasies of artificial and human bodies. At that early point, in the Industrial Age, artists were interested in the impact of technology on our potential to recreate ourselves. This interest persists: the "body" is, not surprisingly, one of the biggest themes of net art.

Victoria Vesna's "Bodies INCorporated"--considered old school in web art--is a massive online community where users create and maintain virtual bodies. At Bodies INCorporated the user goes shopping. You order your very own virtual body, give it (him? her?) a whole set of shapes, characteristics and tendencies. Finally, one can view the prosthetic body in 3D and interact in the Bodies INC. virtual space.

Playing on the word "incorporate," Vesna is interested in both corporate business practices and the corporeal body. Users earn "shares" based on how involved they are in the various activities and options on offer. Consequently, more shares allow for greater participation in the community of body-owners.

At one level Bodies INCorporated is absurd, and seems almost surreal: why try to put real bodies on the very unreal web? On another level, this project addresses the need for personhood and identity--a particularly urgent need in electronic space.

URL's:
<http://www.alberta.com/unfamiliarart/>
<http://www.arts.ucsb.edu/bodiesinc>

Alex Galloway - Some of My Favourite Web Sites Are Art
<http://www.alberta.com/unfamiliarart/>
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< Book Review: To Light Such a Candle: Chapters in the history of science and technology >

Written by Keith J. Laidler
Oxford University Press
Oxford, 1998.(384+ xii) pp
ISBN: 0-19-850056-4.

Reviewed by Wilfred Niels Arnold
Email: <warnold@kumc.edu>

While attending a history of medicine meeting some years ago I was attracted to a program title on the interactions among painters and physicians in early 19th century London. The paper, which was based on a Ph.D. thesis, was read from a prepared manuscript but, to my surprise and disappointment, no slides were employed. Had they been lost on the way to Baltimore? No, the young lady elected not to use any illustrations because "scholars in history did not expect them." A significant number of historians still hold to this strange custom. Keith Laidler is not of that school and his latest book is richly illustrated with line drawings, reproductions of paintings and engravings, and photographs of the scientific men and women who are his subjects.

The title comes from a statement by Bishop Hugh Latimer to a fellow 16th century martyr, "We shall this day light such a candle ... as shall never be put out." (It was a "Roman" candle: Latimer and Ridley were burnt at the stake for refusing to recant Protestantism when Mary became Queen of England.) I dare say that the average reader in this country will miss the dark humor but will connect with the qualifier "chapters in the history of science and technology" as Laidler makes the metaphor for scientists, inventors, and technologists who have cast intellectual light. The selected individuals and their work are central to this volume but interactions and chronologies are also discussed with enthusiasm. Thus technology sometimes preceded science, e.g. steam engines before thermodynamics, while basic science discoveries often lay dormant before their technological values were realized. These themes are clearly developed, all in an easy style and amenable even to those without much more than high school physics and chemistry.

Individual readers will find their own favorite subjects. I was particularly taken by chapters 4 and 5 on "Michael Faraday and electric power" and "James Clerk Maxwell and radio transmission." There is much of general interest and particularly enjoyable is the

manner in which Laidler discovers and describes less well known people such as William Robert Grove (1811-1896). Sir William was variously barrister, scientist, and judge, and credited with one of the first clear statements of the first law of thermodynamics. While professor at the London Institution, Grove developed an electric cell that was subsequently favored by Michael Faraday (1791-1865) in his demonstrations at the Royal Institution. The diagrams, which are frequently taken from the original publications, are well placed in the text. The index, which combines subjects and names, works well and the inclusion of birth and death years for the scientists is appreciated. The lack of a list of figures, or page references to portraits, is a minor criticism.

The ninth and final chapter, "Scientists, science, and society," is both welcome and appropriate. It represents the ideas and views of a successful scientist and educator at the level of a sincere fireside chat. A discussion of the contributions of Robert Merton and his followers in the sociology of science, who popularized the term "organized skepticism," as opposed to an unqualified "skepticism" (which may conjure up simply "Doubting Thomases" in the lay mind) would have improved this section. It may be of passing interest to mention that the American Physical Society recently engaged a select committee to formulate working definitions of science and scientific research. To date, according to the popular press, the committee remains dissatisfied with its attempts, which reminds us of the difficulties that attend such seemingly simple endeavors.

Laidler, who was born in Liverpool and received his first degree from Oxford, did graduate work at Princeton University. He has rubbed shoulders with some of the best and brightest around the world. During World War II he was a member of the Canadian Armaments Research and Development Establishment, where one supposes he developed his abiding interest in technology. Since 1955 Dr. Laidler's research and teaching career has been spent at Ottawa University, Canada, where he became Emeritus Professor of Chemistry in 1981. He is the author of several basic books on physical chemistry and also the recipient of awards from the History of Chemistry Division of the American Chemical Society.

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< Book Review: Hyperkult, Geschichte, Theorie und Kontext digitaler Medien >

(transl.:Hypercult, History, Theory and Context of Digital Media)

Edited by Martin Warnke, Wolfgang Coy, Georg Christoph Tholen
Stroemfeld
Publishers, Basel & Frankfurt am Main, Germany 1997.
520 pp, b/w illustrations, paper DM 78.00
ISBN: 3-86109-141-0

Reviewed by Yvonne Spielmann
E-mail: <spielmann@sfb240.uni-siegen.de>

This book talks about hyper-media from the point of view of theoreticians, media practitioners, and artists. It gives interesting examples of hypertext as well as fascinating new ideas on the interrelationship between computers and media. The reader gains as well an insight into the different meanings of metaphors like hypertext, interactivity, and the net.

The editors of this collection of essays call for a crossing of the borders between computer science and cultural studies if we want to discuss the ways that the computer can be considered as a medium, in

particular a hypermedium. The compendium brings together almost twenty authors from varying disciplines of theory and practice. These theoreticians have developed ways of bridging the gap between configuration and discourse and the history and theories of computers by regarding the mediation. The collection starts from the assumption that the metaphors we use to describe computers as symbolic machines are too limited to adequately deal with the transformation, the mediation in digital technologies.

The book surveys critical readings on the philosophy of computing machines, the models such as hypertext or interactivity are used to express certain ideas about accessibility and human-machine-interfaces. The investigation introduces a historical dimension through Friedrich Kittler's reminder that when evaluating media technologies we must deal with the effects of the theoretical separation between the humanities and natural sciences. He argues that the idea of the universal machine, the range of discussing borders between possibilities and impossibilities, could be illuminated against the background of Heidegger's late writings. Furthermore, many authors in the book put a strong emphasis on the definition of computers as media. It is Kittler however who states more precisely that the emergence of computers describes the course of crossing formal languages on the technological level with such categories as tools and machines. Wolfgang Hagen suggests that we must consider the style of computer languages such that the acknowledged distinction ('break-point') between programming and symbolic machines must be redefined in terms of metaphor and metonymy.

Discussing computers in terms of media allows for a model of digital media that refers to transmission processes. This approach explains the domain of digital media in which the mathematics are transformed into a perceivable environment.

The prime concern with the media lies in the digitalization and connectivity. As the computer scientist Wolfgang Coy puts it, how far will cultural processes and effects be influenced or even transformed, through the structure of the internet? Where certainty about the quality and authenticity of information cannot be achieved in a hypertext system, the transmission of knowledge indicates a break in its production and distribution. Coy observes how the systems of knowledge were commuted to a "culture of footnotes" with the emergence of hypertext and the net. In this respect, his emphasis on the computer as medium shows the limits of programming by pointing to the social and the political effects caused by restructured ordering that dislocates the maintenance of knowledge. With respect to the global shifting of content and context in the net, it is not at all overstated when Coy says in the introductory remarks that we should not forget that the ordering of knowledge has always been a technique of power and politics. Finally, the computer is only a building block for creating new hypermedia, argues Coy.

Overlapping interests in the humanities and natural sciences become evident. Throughout the book the history of ideas on interaction in formal systems, the development of intelligent machines, is parallelled with the use of its metaphors. The range of facets, such as the construction of hypertexts, the development of musical hyperinstruments, the occupation with agent theories, and the artificial life debates, when viewed together show that their common point of reference lies within the functions of the hypermedium. The book "Hyperkult" connects different ways to working with hypermedia, contrasting types of definitions of the digital machine and gives examples of different applications within media practice. Rolf Grossmann describes the characteristics of computed music, digital instruments and interactive sound installations:and Peter Gendolla in

 ISSN 1071-4391 ISBN 978-0-9833571-0-0

terms of literature and fine arts introduces predecessors of the hypertext, where the structure of hypertext can be identified in modern pose and surrealist collage. The reader will be delighted at this openness of discourse and merging of disciplines that usually do not communicate within the same forum. The diversity of the debate is echoed in the combination of scholarly research and practical applications.

The variety of disciplines, such as philosophy, literature and music, film and photography, that are extended in heterogeneous forms of text like essays, historical or theoretical surveys, and project descriptions, results from a series of workshops, annually organized by the Computer Science Department at the University of Lueneburg. It is due to the circumspection of the organizers as editors in dealing with the complexity and complications of crossing borders in the current media debate that the vividness of the workshops is reflected and maintained in the collected writings. Likewise, the overall term "hypercult", the title of the workshop series, establishes the cohesion between investigations into areas like medium and machine, program and commutation, tools and instruments. The collection of essays is divided into four sections; computers as media; metaphors of omnidirectional spaces; media machines, and virtual realities that essentially deal with the interrelationship between the medium in the machine and the machine as medium.

With the exception of the artist Arnold Dreyblatt and the Danish multi-media expert Peter Andersen, the collection assembles contributions by Wolfgang Coy and Friedrich Kittler on computing, by Peter Gendolla and Hartmut Winkler on metaphors, by Hubertus von Amelunxen and Joachim Paech on imaging machines, by Joerg Pflueger and Hans-Joachim Metzger on agents and artificial intelligence, and a few others that are written from a German point of view. The theoretical complexity of the book encompasses two developments in the history and ordering of sciences. The first is humanities and its hermeneutics. The second is mathematics and especially computer science. These are compared to the critical readings of metaphors like hypertext and interactivity as applied to commuting processes by which the internet, human-machine-interfaces and artificial lifes are often characterized. The constantly critical approach addresses the shifted use of these categories that derive from either literary theory or biology and are linked to phenomena of hybridization and hypercult. Vice versa, many authors, namely Hans-Jochen Metzger in his survey on artificial lifes, call for a close examination of environmental conditions, technical requirements, and cultural constraints that have to be taken into consideration when we talk about the possibilities and limits of connectivity through digital media.

Strikingly, there is not much concern with the appearance of artifacts, like the shape of artificial (life) forms or the bodily figurations of multiple selves in virtual realities. Hubertus von Amelunxen in his essay deals with the notion and the rhetoric of the photographic image after the age of analog representation; Joachim Paech discusses the distinction between medium and form in relation to problems of figuration and configuration in film, thereby focusing on the paradox of visibility and invisibility - the construction and deconstruction of form in the medium.

Apart from these few examples, the issue of design and imaging seems to be of little importance to the hypercult debate. More strikingly, the whole topic of gender and body that has become an important issue in the international debate on new technologies, is absent. Despite these limitations, the editors deserve credit for an entirely readable volume that provides an overview on the German discourse. Finally, utmost striking is the fact, that the contributions in the book,

without exception, are conceived from a male point of view. This may give the false impression that there are no women in the field and should be corrected in a second volume.

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< Book Review: Any Sound You Can Imagine Making Music/Consuming Technology >

Written by Paul Theberge
Wesleyan University Press
1997
pp293
ISBN: 0-8195-5307-7 cloth, 0-8195-6309-9 paper

Reviewed by Axel Mulder
E-mail: <amulder@sfu.ca>

Although the title of this book is rather dry, the author Paul Theberge has succeeded in bringing to bear the intricate marriage between technology and music and their effect on current musical culture. The depth and breadth of Mr. Theberge's knowledge of music, technology, and the socio-economic "bigger picture" is astounding and leaves little room for argument. His ability to trace back musical-theoretic concepts to socio-economic and legal structures is reminiscent of Attali's "Noise".

Unfortunately though, this vast knowledge of the musical industry and history has negatively affected the flow of the book at times - often his elaborate reasoning and deductions from numerous information sources lead the reader astray from his original argument into the backstages of MIDI, Yamaha and other big performers of the musical industry. If there is any flaw in this highly recommended study of the impact of the technology of music making, it could be the somewhat frequent use of suggested hidden meanings of words like "democratization", "sound", "live" and "home studio". Mr. Theberge is attentive to musician's lingo and verbiage and use of gender (he particularly examines the male domination of the music making scene) - this is very interesting, but I am somewhat skeptical as to the extent these subtle social behavioral pattern changes are indicators of dramatic changes. I tend to think that his observations could be especially useful to advertisers and marketeers in the music industry who aim to ride the current hype.

What I found really intriguing, and what is the main argument of the book, is the idea that musical technology is a driving force with which musicians have to contend, and hence that they are forced into a consumer pattern as opposed to being purely creators of new content. As the president of Infusion Systems, who make the I- Cube System which can be used as a tool for musicians to extend their musical control capabilities or expand their performance gestures, I have to agree on this perspective. But while Mr. Theberge puts up warning signs with this perspective I disagree with him in the sense that it is not just the artists (Mr. Theberge limits his analysis to musicians, but it is obvious that graphic artists are on the same track) who are becoming compulsory consumers of technology.

The whole world is!

So, while it is an important change, I simply see it as a change across the board. Over and above, the notion of consumerism being a bad thing (a backdrop of this book) - it seems to me as much another holy commandment and another reason to feel guilty about being human (this doesn't mean I am an advocate of consuming !). Nevertheless, Mr. Theberge's analysis and understanding of the development musical technology is remarkably accurate and demands respect. In my company

we also find it is necessary to yield to mass-marketability so as to generate bigger revenues and hence the large R&D budgets required for survival. But while Mr. Theberge argues this kind of business planning is an impediment to furthering the idiosyncratic and individualistic nature of artistic progress because of institutional and commercial pressures on musical practices and what music is due to the standardization following from products, it can equally be argued that such corporate strategies are exactly the premise on which true artistic progress is based. It is often within the big companies and institutions that complete artistic (and academic) freedom is available. Unfortunately such positions are only available to a few people, but I fail to see how such freedom can be made available to everyone. I also disagree that the days of the inventor/entrepreneur personality are over due to the legal poker games of the multinationals - a healthy understanding of the lawyer's psyche (and his prozaic style) is sufficient to de-emphasize the current legal hype, which I am betting will blow apart in the coming decade due to "legal inflation".

This book is a must-read for all the gear heads who are craving for a better understanding of their compulsory buying behavior so as to control their spending on gear. It is also a must-read for all the computer music freaks who spend their days creating so-called "dead art-music" to realize how their brains have been hijacked by the machine. It is also a great information source for all the music "captains of in industry" and their marketeer buddies.

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< Intersection Architecture: Let's Keep the City a 2-Way Experience. >

Written by David Cox
E-mail: <Dcox@netspace.net.au>

Reviewed by: Molly Beth Hankwitz, Corresponding Editor
E-mail: <mhankwitz@atasite.org>

Computer visionary Ted Nelson recently described "Pac Man" as a good model for office software design. The user is fully aware of what is involved after playing the game once. According to Nelson, most software should require only a few sentences of instruction and preferably none at all. He described such software as "retrospectively obvious". Nelson correctly identified clarity of purpose for the user as an important aspect of what makes a piece of software worth using. Ease and enjoyment of use for the user are often low design priorities in applications designed for the workplace. Increasingly the contemporary western urban landscape is starting to ensemble the layout and functionality of such easy to use early videogames.

Large shiny buildings, which look as if they jumped off the CAD-CAM screen right onto the cityscape. A good example is Melbourne's recently completed massive Exhibition Centre. Dominating the exterior of the structure is a large ramp like protuberance which bears an unfortunate resemblance to a Nazi salute. Known locally as "Jeff's Shed" the shiny and almost texture mapped structure was fast tracked through to completion by the state of Victoria's premier Jeff Kennet.

It was erected somewhat self consciously directly opposite another gigantic structure of elephantine scale and apocalyptically bad taste, the Crown Casino. Both structures look exactly as if they were constructed on a desktop monitor and somehow transplanted into the urban zones, bringing with them something of the antiseptic and mathematically precise nowhereness of virtuality. The mouse and keyboard version of public space is not limited to oversized decorated sheds however. Transport too in Melbourne has felt the influence of

the over zealous economic rationalist hand in the look and feel of its most prized icons, the tramways system. We now have brand new shiny ticketing machines with primary coloured buttons where once the friendly click of the conductor's ticket hole-punch resounded. The stainless steel exteriors of the dispensers often are bedecked with 'boycott Metcard' stickers - defiant attempts to undermine the effectiveness of a system which somehow ignored the community and social aspects of the role of the tram conductor who apart from helping the elderly on and off trams, and assisting with prams and shopping carts, also could be relied upon for directions, advice and the odd bad joke.

Some unspoken rule ensures that software for "work" should not be fun, and if not fun, then difficult to use. So what do games have which make them so irresistible? They have "game-play". Put simply, "game-play" is engagement. That quality which ensures you want to repeat the game, and keep going back to get it right. Early games like "Pong" and "Space Invaders" featured little other than game-play. The graphics were primitive, and the player's imagination contributed much toward the overall experience. Strategy is usually part of game-play, having to think on your feet, and plan what to do next. Game-play is essentially, what you actually "do" in a game. The push button replacement of conductors has had the effect of dulling Melbourne's trams. In removing the relationship of the passenger to the conductor automation has enforced game-play without enjoyment into the experience.

As the city becomes more like a video-game in the way it is structured, it should come as no surprise that the model increasingly brought to mind is something along the lines of a kind of physical Nintendo 64 simulator. The rate and speed of the development, as well as the implied relationship of that environment to the people who use it seems out of proportion. The casino alone seems to have appeared from nowhere. Its vastness and spectacle so out of keeping with the rest of the city that the one arm bandits seem somehow to have infected the building's exterior, covering them with video-game score panels.

If Melbourne is a video-game then the Crown Casino - a hideous and grotesque blight upon the otherwise beautiful riverside of the Yarra is most certainly its health and status bar. And we seem to be losing...Remember the first video game to make it into pinball parlours in 1976 - "Pong"? The rules read: "Avoid missing ball with bat for higher score". You can't get much simpler than that. I remember seeing it for the first time in a fish and chip shop in a suburb of Melbourne called St Kilda. A laminated chipboard cabinet held the screen (a large black and white television), a coin slot (20 cents a game) and a control dial for each player. You had a rectangle "bat", and a square "ball". If you hit the ball it would fly up and bounce back at you at a faster rate. Eventually you missed, and lost points. Simple. "Tetris", a game developed in Moscow in the late 1980s engages the player in a process of pattern recognition. The player must prevent the screen from becoming filled with constantly falling squares, rectangles and "L" and "T" shapes,. The player can rotate and move the descending shapes so that they fit together into rows and columns. As the rate of shape descent increases, so does the difficulty, until eventually the screen fills with mismatched shapes. Game over. Tetris is non-violent,and invites contemplation. It engages the intellect and imagination. It provides the electronic equivalent of staring into an open fire. At the Media Lab on my recent visit the discovery of people embedding computers into everyday objects like microwave ovens and coffee machines got me thinking. Already our urban life is punctuated by automatic, net-connected machinery.

 ISSN 1071-4391 ISBN 978-0-9833571-0-0

How many of us engage in street life without punching buttons somewhere along the way - at the ATM, on the TRAM (now that human conductors have been deemed obsolete like so much outdated hardware). Pretty soon networked toasters, cars and fridges will permeate our daily lives. Our fleeting trajectory through the city will resemble more and more the flight of the arrow shaped cursors on our contemporary win 95 and mac screens. As life becomes increasingly electronically mediated - one wonders at the role "gameplay" will start to play in our ordinary lives.

Traversing the city link we are told will entail a measure of acquiescence to electronic tagging of personal vehicles. Barcode scanners will relay in an instant our windscreen tagged information to a database. Motion through the physical space of Melbourne is feeling more like virtual reality every day. This could be something contributing to our sense of play and liberty, instead it is starting to feel like a kind of shiny irrefutable entrapment. I noticed the trend was starting to be honed to chilling perfection in parts of San Francisco. Times Square is almost complete in its transformation from seedy dive to sanitized Theme Park TM.

Battles are currently raging between Melbourne's television channel 7 and the Melbourne Cricket Club over who owns the space of a televised football match. By superimposing its ads over the presumably visually and commercially useless view of the MCC crowd, channel 7 sees augmenting reality for its paying advertisers as entirely acceptable. Virtual space is becoming the site for bitter dispute.

What a pity.

I would have hoped that the new media might have helped individuals to have claimed for themselves a stronger sense of community and public space rather than be used in the service of massive PR and advertising firms to reinforce and strengthen their hold over the look and feel of the urban landscape. Junk mail signage, banner ad facades, push media transport. Looking back at Pac Man - Nelson's model of easy to use software - lets hope we don't become an army of put upon hungry faces as we chase our way through maze like city streets, forever needing to satisfy a hunger that will not go away. -David Cox, September 1998.

Intersections with Architecture and New Media is an expanding column featuring the thought of contemporary writers, architects and critics from around the globe on electronically-mediated space and the impact of new media on overlapping fields in architecture.

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OPPORTUNITIES

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< Music notation software position in Philadelphia >

John Strawn, Ph.D. (recruiter)
S Systems Inc.
15 Willow Avenue
Larkspur California 94939
Tel: (415) 927-8856
Fax: (415) 927-2935
Email: <ssys@netcom.com>

Normally S Systems Inc. is a DSP consulting firm; as a sideline we

also work as a recruiter. We are now searching to fill full-time employment positions at a small company on the East Coast. If you are a team player and are interested in this or other hardware and software positions related to DSP around the country, please send a resume (email ASCII preferred) to the address above (or see me at ICMC Ann Arbor).

Location: Philadelphia

Company: 8-year-old well-established startup specializing in music performance, music education, computers, especially guitars --- I'll point you at their interesting web site if we send your resume to this company. There are about 2 dozen people there now, the company is growing; several new products and product lines are in the works. I have placed 3 people there so far in 1998, all are happy to be there.

Position title: Senior Applications Programmer (music notation)

Description:

This person will be responsible for:

- Organization, upkeep and modernization of legacy music notation code in the company's well-respected applications.
- Periodic updates of existing notation software.
- Creating and updating graphic user interfaces for notation and MIDI sequencing software.
- Creating and updating functionality for notation and sequencing software. By creating/updating functionality I mean the addition of functionality to notation software that may not exist in the commercial market currently, such as the ability for the user to embed/edit performance information (MIDI and otherwise) in a graphic element of notation such as a tenuto mark.
- providing technical management to guide one or two junior programmers working on the same project.

REQUIREMENTS:

Team player;willing to relocate to Philadelphia area.
Experience in writing music notation software, ideally on Wintel platform, but experience on other platforms is acceptable. We don't care so much which language you did this in, but you need to have coded up music notation before.
5+ years experience with C/C++/Obj-C.
5+ years experience using MSVC.
5+ years applications experience.
Some experience as technical lead or project manager.
Win95 experience.

Other desired skills:

Mac experience will be helpful.
Some experience with MFC.

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< Audio Artist/Musician. School of the Art Institute of Chicago >

Audio Artist/Musician.
The School of the Art Institute of Chicago.
Full-time, tenure-track, rank open.

Sound department seeks practicing audio artist/musician with experience in one or more of the following: digital/analog electronic production techniques, experimental instrument design and

 ISSN 1071-4391 ISBN 978-0-9833571-0-0

construction, improvisation, sound installation, and sound for internet or multi-media presentation. Candidates should be familiar with current critical discourse as well as with the history of audio art and experimental music. Candidates should be comfortable working with sound and music in the context of a variety of artistic disciplines. MFA or other terminal degree or equivalent experience as well as college-level teaching experience required. AA.EOE.WMA.

Send letter of application; resume; documentation of work (audio cassette or DAT, VHS/NTSC videotapes, slides, CDs or CD-ROMS, written materials); names and addresses of three references and self-addressed stamped envelope by February 1, 1999 to: Sound Search Committee/em1, SAIC, Dean's office, 37 S. Wabash, Chicago, IL 60603.

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< Concpetual Information Arts Program at San Francisco State University >

Chair, Conceptual/ Information Arts Search Committee
Art Dept, San Francisco State University
1600 Holloway Avenue
San Francisco, CA 94132
URL: <http://userwww.sfsu.edu/~infoarts>

POSITION DESCRIPTION - CONCEPTUAL/INFORMATION ARTS

LEVEL OF APPOINTMENT: Assistant Professor; Tenure Track

DATE OF HIRE: Late August, 1999

RESPONSIBILITIES: Teach beginning, advanced, and graduate levels of Conceptual/Information Arts courses and tutorials. Curricular, advising, and other departmental responsibilities expected.

POSITION DESCRIPTION: The Conceptual/Information Arts area focuses on contemporary art explorations in non traditional media that integrate the information bases, work styles, and perspectives of disciplines outside the artsespecially those involving science and technology. The program stresses integration of intuitive processes typical of the arts with structured processes of research and analysis more characteristic of other disciplines. It promotes non-conventional art media, new media, and the movement of artists into non art contexts. It prepares artists to work with emerging research not yet defined as artistic media. It teaches students concrete skills related to contemporary technology such as structured problem solving, analysis of biological systems, computers, telecommunications and Internet, interactive media, electronics and robotics, and the electronic synthesis of image, text, and sound, and explores the integration of these technologies into performance and installation. It stresses the integration of critical theory and cultural analysis with studio production. Salary will be competitive based on experience.

QUALIFICATIONS: Terminal degree and exceptional performance in the arts required. Practicing artist/teacher with significant exhibition record of works relating to the above concerns. Three or more years of teaching experience preferred. Functional computer literacy. Art work and teaching record must show ability to teach courses related to contemporary technology and structured processes.

APPLICATION DEADLINE: February 1, 1999

Send letter of application, slides and other documentation, three letters of recommendation, and self-addressed stamped envelope for

return of slides and other documentation to Chair, Conceptual/ Information Arts Search Committee, Art Department, San Francisco State University, 1600 Holloway Avenue, San Francisco, CA 94132. Information about the program available at <http://userwww.sfsu.edu/~infoarts>.

SFSU, a large urban university, is part of the 23-campus California State University system (CSU) and serves a diverse student body in the liberal arts and professional programs. The mission of the University is to create an environment for learning that promotes an appreciation of scholarship, freedom, and human diversity; promotes excellence in instruction and intellectual accomplishment; and provides broadly-accessible higher education. SFSU faculty are expected to be effective in teaching; to demonstrate professional achievement and growth through continued research, publications and/or creative activities; and to contribute in other significant ways to the campus and community. The Art Department is part of a dynamic College of Creative Arts. Its curriculum mirrors the wide spectrum of Bay Area artistic activity.

San Francisco State University is an equal opportunity/affirmative action employer.

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ANNOUNCEMENTS

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< Consciousness Studies at the University of Arizona >

Submissions sent by e-mail are preferred.

Hard copies can be sent to:

Jim Laukes
Consciousness Studies
Department of Psychology
University of Arizona
Tucson AZ 85721 USA
Tel: (520) 621-9317
Email: <center@u.arizona.edu>

More details about Consciousness Studies at the University of Arizona can be found at <http://www.consciousness.arizona.edu>.

Consciousness Studies at the University of Arizona is currently seeking research pre-proposals that address issues related to the understanding of human consciousness.

Proposals will be accepted that touch on the following disciplines and will be judged on the basis of quality, originality and relevance. Interdisciplinary proposals are especially encouraged.

1) Philosophy
2) Neuroscience
3) Cognitive science and Psychology
4) Physical and biological sciences
5) Experiential approaches
6) Culture and Humanities

Examples of areas to be addressed would include but not be limited to:

 ISSN 1071-4391 ISBN 978-0-9833571-0-0

-- the binding problem
-- implicit cognition
-- the "hard problem" and the explanatory gap
-- conscious and unconscious processes
-- neural correlates of consciousness
-- synesthesia
-- computability vs. non computability
-- subjective time
-- emergent and hierarchical systems
-- cross cultural approaches to mind

Pre-proposals are due October 30, 1998. A number of these will be selected to submit full proposals by March 1999. Awards will be made in June 1999.

Pre-proposals should include:

1) Principal Investigator(s), with affiliation, address, phone and e-mail and a two page CV.

2) Two page project description, including a summary budget for an amount between $10,000. and $20,000.

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< Invencao - Brazil >

Instituto Cultural Itau
Av. Paulista 149
01311-000 Sao Paulo (SP) - Brazil
Tel: 55 11 2381741
Fax: 55 11 2381720
Email: <invencao@itaucultural.org.br>
URL: <http://www.itaucultural.org.br/invencao/invencao.htm>

Invencao
Thinking the Next Millenium

25 - 29 August 1999

Itaucultural, Sao Paulo, Brazil

Invencao is an opportunity for those working at the creative edge of the arts, sciences and technology to collaborate in the transdisciplinary development of ideas and innovative strategies for life in the next millenium. Invencao is a "seeding" event that seeks to identify key questions and issues that can lead to the radical transformation of culture.

Just as increasingly artists work with the metaphors of science, so scientists are employing forms of representation, such as visualization, which owe much to research in the digital arts. As art is transformed by interactivity, so science increasingly recognises the subjectivity of the observer. In turn, technology informs our aesthetic and epistemological structures and is engendering new processes of perception, communication and cognition.

Invencao will examine the consequences of this convergence of art, science and technology on our sense of self and human identity, on consciousness, community and the city, as well as on learning and leisure. For example, the artist is challenged to consider what might lie beyond "electronic art": where might the connectivity of the Internet, the interactivity of hypermedia and the fluidity of virtual reality lead us? The scientist, walking a delicate balance between the world of the quantum, deep space, chaos and complexity has profound

questions to ask about the constraints of nature and the part that can be played by artificial intelligence and post-biological systems in the construction of reality. Bio-technology and nano-engineering add further dimensions to these questions.

Invencao will take place in Brazil, whose euphoric energy, cultural diversity and productive optimism is intended to characterise the conference. With its history of dynamic pragmatism coupled with utopian vision, Brazil is a country where dreams can be reclaimed, a vast space both geographically and culturally, in which we can re-invent ourselves and collaborate in the construction of new realities.

Invencao will be structured to enable a wide range of presentations, collaborations and interventions to take place, involving lectures, workshops, panel discussions, poster sessions and breakout groups. The onsite activity will be integrated with online activity, through a dedicated website. The proceedings will be embodied in CD-ROM and print publications.

CALL FOR PROPOSALS
(Papers, panels, work in progress)

The official languages of the conference are Portuguese, Spanish and English. All presentations will be simultaneously interpreted into the three official languages. However, abstracts must be submitted in English to facilitate the work of the organising and scientific committees.

ABSTRACTS

Abstracts (350 word maximum) must be accompanied by a brief biography (250 words). Include up to five keywords with your abstract. Submit as an attached document in Microsoft Word to the following e-mail address: <invencao@itaucultural.org.br>.

Your abstract must be accompanied by a declaration of intention to attend the conference.

Panels may be proposed. Proposals should include details of each member of the panel. Innovative forms of contributions are welcomed. Please provide full details.

Include in your submission the title, author(s), institutional affiliation, and contact address (including phone/fax/email and URL if applicable).

DEADLINE

Abstracts must be submitted by November 30, 1998 and they will be acknowledge on receipt.

ACCEPTANCE

The authors of papers to be presented will be notified of acceptance by mid-February, 1999. The selected authors are requested to confirm their participation as soon as possible.

FEES

There will be a registration fee of U$ 100 (or equivalent amount in national currency) for those who are selected to present. Members of ISEA, CAiiA/STAR and Leonardo/ISAST will be granted a 20% reduction.

 ISSN 1071-4391 ISBN 978-0-9833571-0-0

In order to be included in the Abstracts and Conference Programme, presenters are required to pay registration fee by April 30, 1999.

ACCOMODATION

As a suggestion, informations on travel and accomodation can be asked to:

Sparta Turismo
Fax: 55 11 8819733

This event is produced by Itau Cultural Institute (Sao Paulo, Brazil) in collaboration with the ISEA (Inter-Society for the Electronic Arts), CAiiA-STAR (Centre for Advanced Inquiry in the Interactive Arts, University of Wales College, Newport, and the Centre for Science, Technology and Art Research, University of Plymouth, UK), and the journal Leonardo, published by ISAST (International Society for the Arts, Sciences and Technology).

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< Santa Fe International Festival of Electro-Acoustic Music >

Steven M. Miller, Assistant Chair/PAD
Contemporary Music Program
The College of Santa Fe
1600 St. Michael's Drive
Santa Fe NM 87505
USA
Email: <CMP@unix.nets.com>

The Contemporary Music Program of The College of Santa Fe

Announces a Call For Works

Background Information:
The 3rd Annual Santa Fe International Festival of Electro-Acoustic Music will be held April 23-25, 1999 in Santa Fe New Mexico, USA. Presented in collaboration with Nonsequitur, Inc. and Outpost Productions (both of Albuquerque), this year's festival will again be hosted by the College of Santa Fe's Contemporary Music Program. The festival program will tentatively include the following events:

- Outdoor ambient sound/music installation in the CMP (Contemporary Music Program) courtyard
- Performance by the CSF Electro-Acoustic Music Ensemble led by David Dunn and Steven M. Miller
- Radio broadcasts of electro-acoustic tape music
- Several evenings of live electro-acoustic performances
- An afternoon concert of pieces for Pipe Organ and Pipe Organ with Tape
- A showing of videos & video art related to electro-acoustic music
- Several guest residencies (participants & events TBA)
- Other special events TBA

The Call For Works:

Tape Music:

We are soliciting tape music works intended for stereo broadcast on several evenings throughout the week preceding the festival. Preference is for recent works, no longer than 15-18 minutes in length (to facilitate a larger number of pieces presented), composed specifically for the electro-acoustic tape music medium. All submissions must be submitted on audio CD or DAT (44.1 ONLY), and include short program notes and bio on composer/performers involved.

All tape music submissions must be postmarked no later than 15 November 1998.

Compositions for Organ & Tape:

Submissions are being solicited for pieces composed for Pipe Organ and Stereo Tape. The piece(s) selected will be included in a performance by Joseph Weber at The Santa Fe Museum of Fine Arts on the afternoon of 24 April 1999. Preference is for recent works no longer than 12-15 minutes in duration. Submissions must include a legible performance score and tape part on audio CD or DAT (44.1 ONLY). All composition submissions must be postmarked no later than 15 November 1998.

Live Performance:

Proposals for live performances of electro-acoustic music will also be considered. Please be aware that at this time only a modest honorarium for performers can be offered. All performers needed must be supplied by the artist making the proposal. Regrettably, we can not provide or assist with transportation, lodging, or other expenses. All live performance proposals must include a high quality recording of the piece(s) to be performed or other relevant examples, a complete description of technical needs (indicating which will be provided by the composer/performers, and which will need to be supplied by us), and short program notes and bio on the composer/performers. All proposals for live performances must be postmarked no later than 15 November 1998.

Outdoor Sound Installation:

We are soliciting proposals for our ongoing outdoor sound installation. The specific format is in the form of 2 stereo CD playback systems projected simultaneously at very low level into a public courtyard space on the CSF campus. Further particulars may be requested via the contact information listed below. All installation proposals must include a high quality recording of the piece(s) to be programmed or other relevant excerpts, and include short program notes and bio on composer/performers involved. Final copies of selected proposal(s) must be submitted on audio CD or DAT (44.1 ONLY). All installation proposals must be postmarked no later than 15 November 1998.

Please note that all submissions and proposals will be deposited in the archives of Santa Fe International Festival of Electro-Acoustic Music, and will not be returned unless accompanied by a self-addresssed envelope with sufficient return postage.

****
< Avatars98 Online Conference >

Bruce Damer
Avatars98 Conference
PO Box 66866
Scotts Valley CA USA 95067-6866
Tel: (831) 338 9400
Email: <avatars98@ccon.org >
URL: <http://www.ccon.org/conf98/>

Avatars98 Inside Cyberspace and Everywhere Major Online Conference to be held Nov 21 1998

The Contact Consortium will be hosting a breakthrough cyberspace event: a large global conference held entirely inside graphical virtual worlds on the net. These worlds will be inhabited by thousands

of guests graphically embodied as 'avatars'. The cyberconference will come complete with a debut of new technologies never seen before on the net including a 3D exhibit hall with booths from numerous universities, government agencies such as NASA, internet design studios, companies and individual netizens will complement an all day show full of online speakers, art shows, the annual "Avvy Awards", webcasts and special guest appearances. The virtual tradeshow floor will pioneer a new approach to Internet Commerce, while the speakers and virtual community activities connecting two dozen physical get togethers will tie in the whole planet and open a new medium for distance education and global cultural advancement.

"Avatars98 represents the closest thing yet to cyberauthors William Gibson, Bruce Sterling and Neal Stephenson's vision of a of a greater inhabited Cyberspace. In this event, we will pioneer new concepts in community, i-commerce, education online, and entertainment all in one go" says Bruce Damer, co-director of Contact Consortium, an organization dedicated to the advancement of living, learning and working in virtual worlds.

"As we enter the Millenium, we will see Cyberspace start to move beyond the 2D, document centric Web, and embrace virtual communities inside living color virtual worlds. The current explosion of communities will transform the everyday experience of the Internet from an interface to that of and 'enterplace', a real place to visit".

The Consortium membership, which includes sponsors and participants such as Philips, SGI, Microsoft, NTT, 3D Labs, Intel, British Telecom, UC Santa Cruz, Sun Microsystems, Fujitsu, and Cornell University, will be hosting this first ever event on November 21st, 1998. The event is free and open to the public and can be attended through the portals of downloaded virtual world software available through the conference site.

Details on Avatars98, Inside Cyberspace and Everywhere may be found at the Contact Consortium homepage at <http://www.ccon.org/> Interested persons can sign up for the Newsfeed for further updates or participate in the event.

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< The Science of Aliens >

Cliff Pickover
Email: <CLIFF@watson.ibm.com>
URL: <http://sprott.physics.wisc.edu/pickover/soa.htm>

"Life is a movement from the forgotten into the unexpected."

Leonardo editorial board member, Cliff Pickover, just published "The Science of Aliens" (Basic Books, ISBN 0-465-06314-X). It is lavishly illustrated and contains scientifically-based speculation regarding alien life. The illustrations and frequent references to popular culture should make it appeal to all ages. More information on "The Science of Aliens" can be found at his web site.

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ACKNOWLEDGMENTS

LEA and Leonardo/ISAST gratefully acknowledges Interval Research Corporation for its continuing 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

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718 6th Street SE
Minneapolis, MN 55414-1318
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Leonardo Electronic Almanac is published by:

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

< Ordering Information >

Leonardo Electronic Almanac is $15 to Leonardo/ISAST members and to subscribers to the journal Leonardo. The rate for Non-Leonardo subscribers is $30.00

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.

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 ISSN 1071-4391 ISBN 978-0-9833571-0-0

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