



Leonardo Electronic Almanac

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Craig Harris, Executive Editor

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Joan Truckenbrod

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< This issue >

Craig Harris

Simon Penny probes the emerging aesthetics of interactive art in one of this issue's feature articles. Joan Truckenbrod explores women and their involvement with technology in another feature, describing a series of recent telecommunications-based lectures. Leonardo Digital Reviews provides its usual insightful collection of perspectives into a current book about reading in the electronic age, an art show catalogue exploring the use of shadow in Western Art, a group of CD-ROMs, and a Herbert W. Franke editorial about the latest developments in Media Art.

Two new books in the Leonardo/MIT Press Book Series have been recently released: Richard Coyne's "Designing Information Technology in the Postmodern Age - From Method to Metaphor", and "Immersed in Technology - Art and Virtual Environments", edited by Mary Anne Moser with Douglas MacLeod. LEA readers have an opportunity to find out more about these books, and we also present a preview of abstracts from 'Leonardo' journal Volume 29, Number 3. It is sometimes hard to believe that 'Leonardo' has been publishing the journal for nearly 30 years. This longevity is certainly indicative of the value of providing a forum for exploring issues relating to contemporary art, and the relationship to science and technology. Perusing the full range of content found in 'Leonardo' since 1968 helps to establish an historical perspective that places the focus on the concerns of art and culture, and not merely on a specific technology or science. It is in this context that I find Simon Penny's article, Herbert Franke's editorial and Richard Coyne's book relevant and related.

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< Letters >

Art + Science Collaborations

Hi there-

Someone from PA recently read LEONARDO and is joining ASCI because they saw us listed again. Thank-you. However, he said that our old address is posted, would you please include our new contact info in the next issue? or whenever convenient:

Art & Science Collaboration, Inc. (ASCI)  
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URL: <http://nttad.com/asci>

P.S. Our homepage recently won a "TOP 50" prize (from 2,000 web sites) from The WEB MAGAZINE in the U.K. Check it out if you get a chance.

Happy Spring,  
Cynthia Pannucci, Director of ASCI

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FEATURE ARTICLE
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< From A to D and back again:  
the emerging aesthetics of interactive art >

Simon Penny  
Email: penny+@andrew.cmu.edu  
Pittsburgh, Pennsylvania

Interactive art represents a radical phase-shift in western esthetics. Artists are confronting unexplored territory: the esthetics of machine mediated interactivity. Designing the interactive experience adds an entire dimension to the esthetic endeavour, one without precedent in the visual and plastic arts. In the west, the visual arts have no tradition of an esthetics of interactivity. Six hundred years of painting has resulted in a rich esthetics of the still image, of color and line, shape and area, of representational geometry and perspective. The effect of six hundred years of enculturation is that we know how to read images (which observe the conventions of renaissance perspective) before we can read text. One hundred years of moving image has given us a culturally established set of cinematic conventions: we can read cinema, but as yet we have no culturally established esthetic of real time interaction. The implications of this observation are resounding. Jonathan Crary cogently argues that meaning in an artwork is constituted between the viewer and the work, that the 'techniques of the observer' are as important as the techniques of the artist. Artists are struggling to establish a new canon, a new genre. However, not only are understandings about the dynamics of the interactive experience very limited among artists, but the 'techniques of the user' are non-existent. What results is a crisis of meaning: the work cannot 'mean' because the user doesn't speak the language.

What I hope to do here is lay out some tentative definitions and contingent categorisations, and question some obfuscating notions, in order to stimulate closer, more rigorous thought on the subject. In the past, some people have proposed to me that a photo or a painting is interactive; I find that infuriating. So I'd like to define 'interactive' for the purpose of this discussion: An interactive system is a machine system which reacts in the moment, by virtue of automated reasoning based on data from its sensory apparatus. An Interactive Artwork is such a system which addresses artistic issues. A painting is an instance of representation. A film is a sequence of representations. Interactive artworks are not instance of representation, they are virtual machines which themselves produces instances of representation based on real time inputs.

There are two new esthetic tasks in interactive art. The first is to discover the nuances and modalities of the interactive dynamic, and to find out how to apply these to esthetic goals. The second is the integration of the esthetically-manipulated interactive dynamic with the other components of the work, be they physical objects, images or sounds, into an integrated esthetic whole.

Interactivity implies real time, now. The difference between an interactive application and handwritten correspondence is

essentially one of time. There is a time frame which is perceived by humans as 'real-time' response - it is the time frame of physiological reaction. Slower (or faster) than this is not 'real time'. Switching a light switch produces a real time response, but it is simplistic. Interactivity allows reactions by a machine in real time which are intellectually and cognitively complex. This defines the medium. This capability is made possible by high speed data processing. Observation of altered spatial and temporal relationships has been one of the staples of new media theory for decades. These changing relationships are effecting critical social and cultural changes, and it is to be expected that artists will get interested in such changes.

Peter Callas observed some years ago that the televised spectacle was in the process of taking on the functions historically assigned to the architectural monument. The architectural monument is localised in space but persistent over time. The broadcast media spectacle, on the other hand, is localised in time but spread wide over space. A book is a medium in which time is collapsed (you read after I write) but space remains stable (I cannot access the book unless I am sharing my physical space with the book). Conversely, telematic works collapse space but 'maintain' time. A book is like a monument. A conventional artwork is like a monument. Interactive artworks may be inherently Warholian - they may have significance only for their '15 minutes of fame'. On the other hand some interactive artworks present themselves in the guise of static, permanent 'monumental' things (this may only be a transition phase).

The advent of artworks which combine electronic image (and sound) technologies, sculptural utilisation of space and digitally coordinated automation of parts - often with electromechanical elements and recourse to data from sensors or other user input devices - presents us with a new esthetic complex, the conformations of which are only marginally amenable to the techniques of traditional artistic analysis. Therefore it seems necessary to attempt an evaluation of the esthetic modalities and formal qualities of various types of interactive work, by reference to some well known examples.

Two preliminary distinctions must be made. In the first case I would like to distinguish between systems which embrace the 'top-down', serial processing single CPU model. These works are usually built on or for desktop computers. Another genre of work, inspired by robotics, complexity theory and artificial life models, utilises discrete or networked multiple processors, and are usually installations or performances with mobile components. This paper will concentrate on the former category (although my own work concentrates on the latter).

A second distinction must be drawn within the 'single CPU' category: between screenal and spatial interactivity. The first extends the idea of the painting or the cinema/TV screen, the second engages the kinesthetic aspects of embodiment, the sensibilities of sculpture and dance. Hypertextual works offer through the screenal window a navigable dataspace, a space which is experienced intellectually rather than physically: Henry See's "A Memory Project" and Lynn Hershman's "Deep Contact" were early examples of this paradigm which has become ubiquitous in what is now called 'interactive multimedia'.

Many interactive artworks explore the relationship between real space and virtual space. One way to understand this phenomenon is

to 'see' it as a visualisation of the relationship between the physical world and the imperceptible digital world. The entire phenomenon of VR may be seen this way, as a metaphorisation of digital data 'space' into the visual. Certainly the conflation of digital communication with some kind of non-existent 'space' is a consistent trope from the 'cyberspace' of Gibson's "Neuromancer" to "Lawnmowerman". Thankfully, VR's fifteen minutes of fame came and went. Now we look back in wonder at all the utopian brouhaha that was generated around what basically amounts to a viewing device. I note that many projects which are presented as 'VR' these days have dumped the HMD and are presented on monitors or projection screens; they amount to navigable CAD projects.

Two of Jeffrey Shaw's works: "Legible City" and "Virtual Museum", are paradigmatic of works which map a virtual space onto a real space. In these works physical movement in real space navigated the viewpoint through a superimposed virtual world. In "Legible City", speed of travel through the virtual world was controlled by pedaling a stationary bicycle. There was a one-to-one correspondence between the rate of movement through the virtual world and the speed the bicycle would have been traveling, were it mobile. In effect, the bicycle is a mouse. It is worth noting that the interfaces to virtual worlds are seldom mapped one to one. Generally a small movement in the real world produces a large movement in the virtual world. This tendency replicates the paradigm of the labour saving machine. This paradigm is taken to the absurd extreme in the 'flying eye' type of VR interfaces in which the gaze seems to be rocket-propelled. In "Virtual Museum", simply leaning in your seat provided the motion through the virtual world.

In "Legible City", the bicycle analogy allows for the dissociation between steering and linear travel. This dissociation of rotational and linear modes is carried to extreme in EVE, (Experimental Virtual Environment, Jeffrey Shaw et al). In EVE the three degrees of rotational movement are mapped directly from the movement of the head, i.e., I turn ninety degrees to the right, the image also moves ninety degrees to the right. But the three degrees of linear movement are abstracted, mapped through the use of a joystick.

Another type of relation between virtual space and real space is the 'paradoxical map', in which the virtual space replicates and is aligned point for point with the real space, except for certain digital phenomena. Gideon May's "Table with the Spirits" (1993) is one of several examples of this type. In most HMD (Head Mounted Display) type VR projects, Virtual Space and Real Space are totally separated.

David Rokeby's "Very Nervous System" presents us with a paradigm of non-visual interactivity in which human physical movement illicitly responses (in this case sound) in a more or less marvelous way (in this case video image interpretation). There is no metaphor of travel here; you are (only) where you are. Yet a kind of invisible 'virtual world' is mapped over the real world. Interaction with that virtual world produces sound. In some circles this instrumenting of an architectural space is referred to as 'ubiquitous computing', and is discussed as the inverse of VR.

Screen-based 'hypertextual works', 'instrumented physical spaces' and 'mapped virtual and real environments' are three new genres. Another 'dimension' can be added to each of these by the inclusion of fast, wide bandwidth digital communications technologies. We

might call this tele-interactivity. There are identifiable sub-genres, in which the interaction is: between people geographically separated; between a person and a machine, geographically separated; or between people geographically separated at a virtual site.

The first we might call 'teleconferencing art'. Paul Sermon has produced provocative works in this vein, such as "Telematic Dreaming". In this work, a video camera sends the image of Paul, on a bed, to another site at which it is projected onto a bed. At the second site, a guest is invited onto the bed. Paul can see the remote site by a returned video image. Paul's image interacts with the guest on the bed. The piece also includes two way audio contact. Through its direct eroticism this piece generates a host of questions about prescience.

A second sub-genre utilises the idea of teleoperation. Eduardo Kac and Ed Bennett's "Ornithorinco" allows a user to teleoperate a robot (over phone lines) to explore an environment. More provocatively, Stelarc's recent "Fractal Flesh" project allows his body to be teleoperated over the net. In both these works some aspect of the user (vision, volition) is extruded over the communication network to 'be' in another place. A third sub-genre (exemplified by Agnes Hegedus' "Fruit Machine") allows multiple remote users to cooperate in tasks in a shared virtual environment.

The sudden explosion of networked multimedia (via the World Wide Web) has finally realised the dreams of the pioneer network artist of the mid eighties, (though this realisation has a decidedly commercial cast to it). A recent network project by the Berlin based Art+Com group, "T-Vision" is on the one hand chillingly panoptical, on the other it demonstrates coordinated global data retrieval in a way that the WWW only hints at. "T-Vision" offers a radical new paradigm of computation. In this work, a user rolls a beach-ball sized trackball, and a globe of the world presented on the screen, rolls correspondingly. This image is made up of a patchwork of satellite and aerial photos. This world can be zoomed. In some cases one can zoom from the entire globe down to a city street in one smooth swoop. In one case, one can zoom into the Art+Com office, and look through a video camera pointing out the window, and see real time video action! "T-Vision" can utilise the entire internet, drawing on dispersed databases for its images, so that the globe is continually updated, even to the extent of real time video, if available.

As cinema emerged as a technology and an esthetic, it also built its institution - its cultural niche. Cinema did not find its home in the museum. It built another institution, where the notion of the 'original' was absurd. (No one asks if the particular print of the film you're watching is an 'original or a copy'.) In the same way, interactive art will forge its own cultural niche. Is the web the environment where Interactive art will settle? Only time will tell.

Simon Penny  
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< Creating an Ecology for Cyberspace >

Joan Truckenbrod

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The WWW is currently under construction. Consumers, participants and makers of the Web are creating an architecture of the cybersocial. Telecommunications is a socially constructed form of interaction embedded with structures, strategies and value systems. Means of communication are not "fixed natural objects". They are constructed complexes of habits, beliefs, and procedures embedded in elaborate cultural codes of communication ("Hello, Central?", Michele Martin, p. 6).

The web interaction, the Internet, is a subculture of computer technology with its own folklore. The computer display screen displacing time and space, becomes the playing field, but rather than a team sport, the majority of the experiences are actually solitary experiences in front of the monitor. Surfing the web, reading, looking, listening, and chatting via email are all performed in the light of the monitor using the keyboard and mouse. Chat groups may or may not be real time interaction. However they are tied to text and/or pictures on the screen. The face-to-face is absent. There are no facial expressions, no gesturing, no personal aromas, and no glances that communicate on another level. The social gets mapped onto the visual field - the display screen. There is elaborate cyber-costuming, as participants construct identities using the artifacts of cyberspace, rather than those of personality. The imagination takes over where the sensory experiences are limited or absent. We visualize the social dynamics. Social rituals become synthetic.

Women and their involvement with technology is the topic of a series of lectures given in the Telecommunication Arts course I am currently teaching. The lecturers are from Monster Central, a group of women in Vancouver B.C., who study the issues involving women and technology. This series of lectures was presented using CUSeeMe software via the Internet. We did not have access to a telecommunication site so we used the internet for a real time face-to-face interaction, and a conference telephone for the audio portion of the lecture. This interaction constructed a space occupied by both groups of participants. The face to face interaction includes facial expressions, gestures, glances as well as personal identity information gained through hair, clothing and electronic circuit boards embedded in each person's chest.

This conference was organized by Monique Genton, a graduate student in the Art and Technology Department. Lecturers included Susan Edelstein, an artist who exhibited at the 1995 Venice Biennale and who is Director/Curator for the Artspeak Gallery in Vancouver; Sharla Sava, an Art Historian; Jil Weaving, Lori Macintosh, and Sandra Seekins, artists. Attending this conference together with students were Visiting Artists Cynde Schauer and Manny Hernandez, and Syndy Zeigenfuss, Graduate Teaching Assistant.

Monique Genton

Introduction:

Feminist criticisms of technology have addressed women's marginalization and the need for uncovering and foregrounding women's contributions in technical fields. In addressing women's alienation it is productive to also examine how technology itself, through various cultural formations, embodies a celebration of masculinity and power. Monster Central is a Vancouver-based group comprised of artists, curators, and cultural critics who all share

interests and concerns regarding women and digital technology. We meet regularly to review current media and to discuss how we, as women, can negotiate and assert ourselves within digital discourse. The speakers discuss current technothory, gender and sexuality on the internet, improving women's access through an artist-run centre, and how the model of monster/woman/machine forms a potential means of gaining agency in the digital domain.

Sharla Sava

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By adopting various viewpoints in current technothory, I interrogate the increasingly shady boundaries between real presence, telepresence and tv-land. My presentation relies on the premise that the tele-audience can't definitively know when I am telling a lie. Keeping this in mind, I restate a few of the absurdly idealistic claims which have been applied to telecommunications technologies. The claims I take have been culled from various sources - locating utopian discourse around virtual communities; hypertext; technospirituality; electronic art and feminist approaches to technology. I also speak of more specific attempts, made by feminists with different ideological positions, at making women grasp and make use of multimedia. Working as a highly mediated body within "the belly of the monster" - as Donna Haraway has named the current technocultural environment, I try to stress the ambiguity of 'truth claims' when it comes to new inventions. I like to keep in mind that things are getting better, but they are also getting worse.

Lori Macintosh and Sandra Seekins

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Sandra Seekins and Lori MacIntosh are engaged in an examination of the Internet's queer sites. What strategies can be used to queer cyberspace? How do we assert a lesbian presence? We want to investigate the possibility of lesbian cyborgs, cyberqueers.

It seems that queer sites that clearly identify themselves as such in listserves, etc. fall into the trap of cyber-ghettoization. How can the boundaries be breached so that a queer presence is prevalent and unavoidable on the Internet? And what about heterosexual users who gender bend in chat rooms - aren't they, too, potentially queering the net?

We also intend to critique attempts to police and survey cyberspace. As government control insinuates itself, it becomes harder for the Internet to be a radical space wherein critiques can be launched; the potential for transgression quickly narrows. This dilemma is especially acute given the urgency of non-normative interventions in the masculine and heterosexual domains of science and technology. What Donna Haraway calls "the informatics of domination" becomes particularly relevant in the case of gay and lesbian subjects. The dominant myths of "disembodiment" and "democratic" exchange that haunt the rhetoric of cyberspace have to be exploded. They obscure the way new technologies are linked to material bodies and material existence. The future is already in process and its possibilities are already being circumscribed in a variety of unsavory ways.

It is crucial to preserve the potential for alternative and radical sexualities and voices within this space that is undeniably the repository of our present and future knowledge. It is imperative that we explore and critique the complex interchange between technological and medical discourses which often construct the homosexual body as a deviant object of scrutiny, and dominant political ideologies such as the current plague of right wing



conservative backlashes which map out the legal and social criteria for homosexual (non) citizens.

Jil P. Weaving  
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Drawing from and slithering between a variety of discourses I have developed a genealogy for a feminist activist cybermonster. Anchoring this construct is the binary opposition of Western logics which posit the organization of the standard male body as normal and the female's morphologically dubious body as the abnormal or monstrous. Developing a line of descent, I contend that mutations of the monster strain have been introduced through new reproductive technologies. Under the joint rubrics of freeing the female body from the constraints of pregnancy and the "correction" of fetal abnormality the reproductive body has become a compilation of machine and biotic components.

Current utopian ideologies posit a communications technology induced gender disengagement. Combining these theories with medical 'advances' implies that the womb has become an organic prosthesis. I question how virtual enactments of this, of the monster denied, repercuss both internally and externally. For instance, what is my accountability if I rape in cyberspace? What is my accountability to my gendered, warranting body? What to the set of structured social relations that my body exists within? As the regulation of criminality in areas infected by new technologies are inevitably informed by the definitions of transgression established in those fields previous to exposure, I project a guilty verdict.

My presentation is based on the instance and implications of reproductive bodies. However the trajectories of any technological development are not objective, inevitable or even accidental. It is imperative that activism acts within technologically located and mediated discourses; imperative that many 'big sisters' are watching; and imperative that when the cyborgs emerge, so do the cybermonsters.

Susan Edelstein  
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I approached this discussion by acknowledging my binary position. First, I examine new technology from the perspective of a practicing artist, questioning the inherent limitations and problems that affect the production of my work when I use this new medium. Then I examine new technology in my role as a curator of a noncommercial artist centre, sensitive to the problems that arise on a more "universal" level. The problems I refer to exist on the internet. A new form of communication technology that has been viewed as one of the great democratic advances of the late 20th century.

I step back and watch myself wriggle around between the shoulds and should nots. I shift back and forth with my own internal debates, and I watch myself sliding into the position of the Other, the otherone - the one that has become responsible for neatly packaging up culture for the masses, mass consumption for the mainstream. How can I avoid or even deny the problems that go hand in hand with this new medium? How can I support this rhetoric when I'm constantly reminded of the problems with access, privilege and those three little words, World Wide Web. The web is only as wide as the English language allows it to be.

As a curator I search for artists who engage in these practices. I become the hungry monster seeking out artists who push the

boundaries of this new tool. I often begin to wonder if I have become part of the cyber marketeering hype that makes my skin crawl. Am I responsible for forcing artists into a position of unrequited consumption? Always needing to upgrade their equipment, and never having enough RAM to complete the next project.

I wanted to go beyond the utopian promises and speculations that surrounded me in my daily encounters with the internet and various computer applications. Attempting to stay grounded in the practical aspects of artistic production I have questioned if the convergence of theoretically informed art making and this electronic medium would ever materialize? I spent hours on the internet cruising, lurking, wondering if serious art and electronics co-existed. At times my life began to resemble some obsessive Las Vegas casino experience, one that had no contact with the outside world. Once I was online my days and nights became one. The sound of birds singing were my cue to stop.

It quickly became apparent that most sites were created BY and FOR men. Men represented approximately 90% of the people working in the computer industry. The types of applications being developed didn't seem to challenge the medium and did not speak out to me. Most programmes seemed void of any real content, and I began to see a pattern - something akin to the pattern of a boring algorithm wallpaper.

It was from these types of frustrations that I began to see the possibility for change. Meeting with friends in the community, just one year ago, we would discuss our concerns about the direction or lack of direction of new technology. We started a small reading group that would meet, biweekly, to discuss feminist/techno related articles. We eventually established a group that provided women with access to a computer and fostered the development and exchange of skills and ideas. Our mandate has been continually revised to keep up with the demand. We have an open door policy for any woman who is interested in taking part. The gallery will continue to support this type of action until we see changes reflected in new technology and its direction.

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LEONARDO DIGITAL REVIEWS APRIL 1996
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< Book Review: "The Gutenberg Elegies:

The Fate of Reading In The Electronic Age",

by Sven Birkerts >

New York: Fawcett Columbine, 1994.

Reviewed by J. R. Megg  
Email: MHANKWITZ@aol.com

Sven Birkerts' book is a passionate and perplexing tale of one man's love affair with the printed page, a plea for literature, and also a perturbing query into the effects of the new technologies. It is a well-detailed and genuine book when it comes to the passion, the love affair and the plea. It is shortsighted and conservative when it comes to cultural query. "The Gutenberg Elegies: The Fate of Reading In The Electronic Age" is emblematic of a certain superficial anxiety affecting our current sense of things, an anxiety generated by the introduction of a new and seemingly quite powerful medium - the internet and electronic media - as it pervades our culture. What is really at stake here in terms of Birkerts' text is an issue of knowledge, but not as Birkerts, author and reviewer, describes it. What I mean is that while Birkerts' glowing, impassioned sensibilities on reading, on teaching, on imparting his pleasure of reading to his daughter, and on his early, personal relationship to books, bookshops, and lovers of books, at times beautifully written and well-thought out, his arguments about culture, post modernism and electronic media, are not. This lends the book a disproportion which is perplexing, as perplexing as the general anxiety upon which Birkerts rightly makes his pleas. His understanding of new technologies and their effects on daily life, the creative act of thinking, orientations in space and the authority of the writer is limited, hence, self-conscious.

The problem is that Birkerts' questions regarding electronic media are under researched. He also has almost no space in this text, despite the fact that he is impassioned by literature and reading, for the vast and welcome body of literary criticism written by the postmoderns from Roland Barthes, to Helene Cixous, to Harold Bloom, Gayatri Spivak, Wayne Koestenbaum, Julia Kristeva, Michele Wallace, and many, many more - those who have struggled to produce literature and literary critique as well as to produce tracts on reading and literature through the past two decades. In fact, Birkerts' plea seems to come from too personal an anxiety about the idea of the author. It is clear in his questions that he is not a post-modern and that the invaluable critique which top writers and literary figures have embraced through a period of conservative authority is not his forte. In fact, Birkerts does not take this canon seriously at all. Rather, by not addressing it, and by taking as his departure point for complaint the decentering and vast "horizontal" effects of hypertext, Barthes' famous essay "The Death of the Author" shows his limitations. And, this is seemingly the only work of post-modern literary writing to which he seriously ascribes in order to support his arguments. Hence, his analysis of the new age of electronic media is for me rather thin, although at times a warm, less self-conscious voice develops in his endearing descriptions of his students and their feelings, or of a particular desire of his to write. Nevertheless, the absence of research behind his arguments is unmatched by the level of impatience with which he asks his questions, questions, it would seem, that if he were to relinquish some of his grasp on authority as a writer/author and enjoy the new technologies along with thousands of others who are becoming users, are doing, would evaporate. The new technologies are fun. Much else produces anxiety.

But I do have compassion for Mr. Birkerts' puzzled sense of disenfranchisement, potentially as a writer. He seems detached

from a sense of confirmed productivity and internet use. This is not a solid reason to decry the advent of the electronic page, however. How the internet is going to effect us is a good premise for a discussion, but not, it seems to me, in the manner that Birkerts brackets the problem. Moreover, he clearly omits substantial reasons for the pervasive lack of reading and literature in culture - illiteracy and lowered educational support - and focuses rather uniquely on a set of questions which do not really address the problem! Hence, many of his statements appear reactionary in light of the burgeoning discourse and multitude of books, artworks, and valuable and interesting uses for electronic media which many people, including writers, are developing. For example, while Birkerts' personal treatise on reading is joyful and thorough, his failure to discuss illiteracy rates which have shaken our culture and sense of future is a major oversight considering his stance on the importance of reading. If anything is responsible for a loss of literary sensibility in our children, teens and college students, it is the loss of solid literacy programs in the schools beginning in the United States under the Reagan administration and the overt decline in literacy rates among Americans as a result. Literature as an art has long been a privileged medium, one defined by leisure and class, another shining omission in this text as he fails to include at the explosion of multicultural literature which has broadened national sensibilities towards literature, reading and its cultural importance. Jamaica Kincaid, Toni Morrison and others have who have become popular and recognized for their excellence are but two writers who have made major contributions and advanced their cultures.

These oversights give "The Gutenberg Elegies" an uncomfortably narrow tweak on culture. Yet, when Birkerts describes his relation to the screen, one sympathizes. The screen is not a pleasant thing to look at for hours. A book is a much more substantial and loving material object to hold. Yet, Birkerts seems to fear not only the death of authorship, but a complete saturation of culture by screens and computers as if it were going to happen tomorrow or has not happened already. In actuality, what Birkerts falls for is the racy "drama of transformation" generated by the commercial market.

[end of part 1, please see

<<http://www-mitpress.mit.edu/Leonardo/reviews/mhellegies.html>>  
for this review in entirety.]

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< CD-Rom Review: Three Pieces in Form Of A Pair >

Reviews by Curtis E.A. Karnow

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"The Durringer Expeditions"

Jacob Durringer

Heavenbound Systems,

Lake Forest, California

Mr. Durringer has invented a new MIDI keyboard instrument with multiple rows of keys which are playable simultaneously by a single performer. The Monolith, as he calls it, has 15 rows (15 MIDI channels) of 4 octaves each, and allows what sounds like multi-tracking by a single performer in a live context. The dimensions of the Monolith synthesizer are about 2 x 4 feet, and it sells for about \$4500. The CD is meant as a sample of the instruments capabilities; while the recording quality is mediocre, the CD succeeds in providing a wide range of synthesized music, all accomplished without programming or sequencing. The

pieces themselves (all composed by Durringer) are a bit weak, consisting mostly of simple showy multivoice accompanied by guitar and drums. But that fulfills their function here. The instrument is intriguing, opening up possibilities for truly live, non-programmed electronic music.

"U Totem"

Strange Attractors

Cuneiform Records, 1994

The CD comes with an original novella, a short series of episodic text bursts shifting across the now classic US/Japan terrain, our inheritance from William Gibson's "Neuromancer" et seq series. The music is an opera with a classical background, as much as Philip Glass' "1000 Airplanes on The Roof" is an opera: the text episodes are the libretto-ish framework, and each item on the CD tracks the sequence of the text. The text swivels fonts between the usual Times Roman and this Courier computer talk, moving from Japan to California, citing shady drugs and hologramic recordings, shifting back and forth across a decade or two. The music serves this text, and not the reverse: music pushing an agenda, music linking episodes. The music is clean, professional, experienced; but only a few segments stand on their own, floating beautifully, lyrically, over the others, etheria cut loose of the mundane. My favorite, "Postcard" is a simulacrum of Japanese pop, sung by Kaori Kuboniaw, a simple innocent song that puts everything else in contrast. So take this as a knotty text with accoutrements; this is not music free of the story. In "Hayakukinasai//Burger, Fries & Shakes" "U Totem" looks forward to the PanPacific merger.

The Bifurcators,

"Gang of 2"

Artifact Recordings, 1995

This is another production of Ubu Inc., a San Francisco Bay Area organization supporting experimental and electronic music. Here Scott Fraser takes his "electronic" guitars and drives a series of synthesizers, samplers, pre-recorded materials and other electronic devices initially programmed and operated by the other bifurcator, Philip Perkins. Other humans input, too: voices; crickets, the chants of women, the sounds of the street. The blend of sampled input and pre-recorded materials gently blurs the machine/human boundaries. The sounds often combine delicately, a gentle admixture of liquid metal guitar strings and machine hum.

There is a play of light and shadow in the four pieces on this CD: the human players of instruments make continuous choices, but those trigger the programmed devices' output, within a legal set of choices. Fraser, Perkins et al. can play the digital lite replicant, loops and all. But when they need an elegy for the destruction of Sarejevo, they return home to a simple sweet amplified guitar singing over chanting and spoken voices, twisted around a spiral of notes by a simple synthesized strain, directly controlled by a human operator. "White Eagles" is that piece; named for a brutal Serbian 'ethnic cleansing' unit. Nothing; nothing replaces the human.

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< Catalogue Review: Shadows,  
The Depiction of Cast Shadows in Western Art,  
by E.H. Gombrich >

National Gallery Publications

London, 1995

distributed by Yale University Press

New Haven, CT 06520 USA  
64 pp.

Reviewed by Harry Rand  
National Museum of American Art  
Smithsonian Institution  
Email: SIWP06.NMAA.HARRY@ic.si.edu

From time to time the National Gallery has invited prominent artists to roam its collections and gather from its rich holdings a demonstrative group of works into one room. A slim and beautiful volume accompanies the first such exhibition to be assembled by an art historian - E.H. Gombrich. The event took place in the Sunley Room at the National Gallery, London, April - June 1995. The sumptuous number and quality of color plates in this little book of but 64 pages, the crisp, cool and heavy paper used, the care in every aspect of its production - all are further honor accorded to Sir Ernst, who gleaned these works where formerly only practicing artists were allowed. Gombrich ranged through art history, from antiquity to photography, from the orient to Impressionism. From such variety, a pattern develops with a few consistent visual mechanisms, which he describes. Gombrich considers the shade created when something interrupts light flowing toward another plane, the gradual diminution of light upon an object's surface by which we adjudge the source and intensity of the illumination and an object's form, and a shadow which ties things to their spatial position by touching the object and another surface. By examining these three species of shadow Gombrich opens a new vista into art, as much darkness as light. He invites us to roam through art history mentally, and any large museum literally, to gauge the treatment of light, and the implicit assertions thereby made, about the solidity of objects and what exists beyond the picture, perhaps casting a shadow into it. His brief inquiry leaves our sight refreshed by unconventional possibilities of looking and our reason invigorated by a new scale of judgment; we are reminded that shadow's presence or absence is a meaningfully diagnostic component of art, wherever it is encountered. The book is so brisk and lively that readers are consoled at having missed the exhibition.

Beside the delight Gombrich enlivens in his reader, all else is quibble, but a cavil or two should not be taken amiss as a blemish or demerit, only evidence of the dialogue and thoughtfulness that Sir Ernst seeks to enliven. His assertion "that we must never assume that artists did not see what they did not paint" is pure rhetoric of the most spurious kind, as phenomenological perception is hardly the issue (unless we want to ask, wearily yet again, whether El Greco was astigmatic); it is hard to believe what he infers. The absence or presence of shadows really does describe norms of viewing the world, various from time and place, conventionalized, information-rich - but not because they report on phenomenological perception: Egyptians did not see the world as flat cut-outs, although they so portrayed it. Nor is complete relativism warranted. Changes in reporting about light's activity in the world really do calibrate the station of various societies regarding their relationship to materiality, even morals, and certainly science. The very hallmark and distinction of occidental art is its treatment of cast shadow which, Gombrich eventually concedes, was a threshold crossed when "shadows re-entered the repertory of painting" after centuries of neglect, not after centuries of being unseen. Such points well aside, students and amateurs are well served. For all non-art historians this pleasant book will find its place as an invitation to reconfigure the galleries of paintings through which they walk, whether actually

or mentally.

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< Editorial: The Latest Developments in Media Art >

By Herbert W. Franke  
LEONARDO Honorary Editor  
Email: mason@mitpress.mit.edu

Observers of media art notice that a new turning point has been reached. Perhaps this will lead to a decisive breakthrough. Art critics and philosophers are proclaiming the dawning of a new epoch, a "second modernism" characterized by the application of new media. The Austrian Pavilion at the Biennale in Venice in 1995, which was completely dedicated to media art, can be seen as proof of that development. (It has, however, been overlooked completely that there had already been a special show of computer graphics dedicated to constructivism in 1970.)

The recognition of media art has its repercussions, however. Judging from first-hand impression, one could well speak of a final legitimation of what had so far been allocated to the field of computer graphics/computer art. Among other effects, this forces us to look at events of the past from different angles, to judge many of the works created since 1963 under a different light. Suddenly, all that had been criticized and scorned by the old critics is considered to be revealing and interesting. The graphics created at that time, all of them still without serial number and certificate to prove their authenticity, are suddenly of value. Old computers are being recovered from cellars and shacks so that reconstructed programs can be run on them. We were at such a turning point once before, around 1980, when computer-graphic results were for the first time leaving the laboratories and offices. Designers, people in the advertising business and film people were the ones who wanted to use these pictures, and thus an aesthetic aspect was involved, even if only as a secondary effect. But it was the first time that a broader circle of people realized that these pictures from plotters and monitors could attain considerable commercial importance. All of a sudden, a positive interest in computer graphics arose, and quite a number of former opponents changed sides and became experts, supporters and, yes, even pioneers of this course. While until that time scientists, technicians, mathematicians and programmers had determined the mode of creating pictures, now conventionally educated historians were in control. Naturally, the winds that determine the direction had to change as well. The attitudes of many of these new experts are still rooted in conventional ways of thinking, and even when confronted with computer graphics and video sequences they are thinking in concepts of "originals" and unique works. The possibility of "unlimited reproducibility," as Walter Benjamin put it, is a thorn in their sides. But even worse: many of them are trying to introduce the criteria of the present-day official art style into computer graphics. This is reflected in the selection of pictures for exhibitions, in publications, at the awarding of prizes to artists; it directs the distribution of support and assistance. Computer graphics that most resemble traditional hand-painted pictures are being favored. This burgeoning acknowledgment of media art by the experts has been paid for dearly: what had previously had the chance to develop according to its own laws is now being taken in hand.

The consequences can be traced further. They even have their effects on the hardware and software sector. An example was the arrival of paint systems on the market. They were welcomed by artists and designers who wanted to avoid having to learn a

programming language. Computers made it possible: the classic process of applying color onto paper was now being simulated. The designer uses an induction pen on a tablet exactly as he or she formerly had used paint brushes and pencils. The consequence of this, however, is that, when users are simulating an old method, on principle nothing new will evolve. The experts do not mind: this way, the resulting works perfectly resemble the relevant conventional artworks. One thing, however, should not be forgotten: the revolting news about computer art is that the new method is totally different from the old one. The paint systems are useful and comfortable. One can do a lot with them. In doing this, however, one will stay rooted in the old methods of thinking and creating and thus stand in one's own way.

What on principal is new? It is not so much the instrument as the thinking. Those who want to work as pioneers work have to cope with structural problems first. They have to try and understand the underlying graphic order of any picture they have in mind. They have to try to put ideas into formulas that can be introduced into a program. For the designer this means having to think in a way that is completely new, a way that could well be called algorithmic.

I am not saying anything against the conventional way of creating art - it will keep its importance. But when thinking about the qualifications of computer-graphic systems as artistic instruments, we have to judge by whether or not they contribute to overcoming the existing status.

Can computer art - the programmed act of creation - really lead us to fields that are closed to classical art? As we all know by now, computer-generated creation leads to motion, to interactivity. In this sector, thinking in the old categories will lead to a dead-end street. In order to develop the method further, it is necessary to think in terms of algorithms, to have command over the structures. It is in a sense a more profound level of working with pictures, of creating them. Development is heading towards genetic programs, where universal laws for the construction of structural deployment can take effect. Employing this method leads directly into virtual space. Pictures are no longer enclosed in frames - the media artist leads the viewer into an unlimited three-dimensional world that is his or her original creation. The media artist has not built it from elements and building blocks but has analyzed it in all its correlations, growth processes and structural alternatives. Media artists can build their worlds according to existing laws, but they can also set up their worlds according to their own laws, by laying out the germ and watching what evolves from it. In this scenario the artist is the creator.

Our future world will be a world made of data-aggregates, of virtual spaces. A big part of what artists create will sit in the computer store waiting to be used. In this way, digital art will be more and more like music: it will become dynamic, moving in time; it will be storable and it will be possible to spread it via channels. In the future, in place of the PC will be a terminal with a new type of output equipment with enclosed cyberspace aggregates. Over the networks, users will download the spaces where they want to be, from all over the world, and not only from the real world. But somewhere, in the rooms of museums, there will still be "dinosaur-experts" sitting in front of installations of piled-up monitors with flickering screens - after all, it is the hardware that characterizes these works as art. Only in the hardware will yesterday's elite be able to find the originals and the unique artworks. But in the age of media art, the concepts of



originals and "unique works" do not make sense.

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Editor's Note: Leonardo Digital Reviews is available on the WWW at  
<http://www-mitpress.mit.edu/Leonardo/ldr.html>.  
Comments to the editors may be made to  
davinci@uclink.berkeley.edu.

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< END LEONARDO DIGITAL REVIEWS APRIL 1996 >  
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PUBLICATIONS
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< Immersed in Technology - Art and Virtual Environments >  
edited by Mary Anne Moser with Douglas MacLeod  
A Leonardo Book  
November 1995  
ISBN 0-262-13314-8

"Virtual Reality, like many technologies in their infancy, was not developed with a singular purpose in mind, and still lacks a fixed *raison d'etre*. Seizing the moment, the writers and artists in this book have taken a rare initiative by proposing a host of creative forms and ideas for the multifunctional use of virtual environments."

-- Andrew Ross, Director, American Studies Program, and Professor of Comparative Literature, New York University

The Banff Centre for the Arts has become synonymous for what's hot in the electronic arts, a place where professional artists come to produce new work and develop new skills. This book brings together critical essays along with artists' projects to explore the many issues raised by the creation of virtual environments and to provide a glimpse into worlds that have been much discussed but rarely seen.

The book opens with eleven essays that approach the social and cultural implications of cyberspace from the perspective of cultural studies, communications, art history, art criticism, English, and women's studies. These are followed by nine virtual environments (along with statements of what the artists are trying to accomplish in both theoretical and technical terms), created over a three-year period as part of the Art and Virtual Environments Project at the Banff Centre. Together, writers and artists examine the consequences in cyberspace for race and identity, materiality and the body, landscape and narrative. Specific implications of the masculinist and rationalist biases of cyberspace are also discussed.

Preface: Douglas MacLeod  
Introduction: Mary Anne Moser

Essays  
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- Embodied Virtuality: Or How to Put Bodies Back into the Picture  
N. Katherine Hayles
- Virtual Skin: Articulating Race in Cyberspace  
Cameron Bailey
- Mysteries of the Bioapparatus  
Nell Tenhaaf
- When Is the Ear Pierced?  
The Clashes of Sound, Technology, and Cyberculture  
Frances Dyson

Cyberdammerung at Wellspring Systems  
Allucquere Rosanne Stone

A Disappearance of Community  
Avital Ronell

Fascination, Masculinity, and Cyberspace  
Rob Milthorp

A City for Bachelors  
Jeanne Randolph

Aboriginal Narratives in Cyberspace  
Loretta Todd

Nature Morte: Landscape and Narrative in Virtual Environments  
Margaret Morse

Time Traveling in the Gallery:  
An Archeological Approach in Media Art  
Erkki Huhtamo

Artists' Statements

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Objects of Ritual  
Will Bauer and Steven

Gibson  
Archeology of a Mother Tongue  
Toni Dove and Michael

Mackenzie  
Dancing with the Virtual Dervish:  
Virtual Bodies  
Diane Gromala and Yacov

Sharir  
Bar Code Hotel  
Perry Hoberman

VR on \$5 a Day  
Ron Kuivila

Placeholder  
Brenda Laurel  
and Rachel Strickland

Field Recording Studies  
Michael Naimark

Dancing with the Virtual Dervish:  
Worlds in Progress  
Marcos Novak

Topological Slide  
Michael Scroggins  
and Steven Dickson

Inherent Rights, Vision Rights  
Lawrence Paul Yuxweluptun

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< Designing Information Technology in the Postmodern Age  
From Method to Metaphor >

Richard Coyne  
A Leonardo Book  
October 1995  
ISBN 0-262-03228-7  
408 pp.

"Designing Information Technology in the Postmodern Age" puts the theoretical discussion of computer systems and information technology on a new footing. Shifting the discourse from its usual rationalistic framework, Richard Coyne shows how the conception, development, and application of computer systems is challenged and enhanced by postmodern philosophical thought. He places particular emphasis on the theory of metaphor, showing how it has more to offer than notions of method and models appropriated from science.

Coyne examines the entire range of contemporary philosophical

thinking -- including logical positivism, analytic philosophy, pragmatism, phenomenology, critical theory, hermeneutics, and deconstruction -- comparing them and showing how they differ in their consequences for design and development issues in electronic communications, computer representation, virtual reality, artificial intelligence, and multimedia. He also probes the claims made of information technology, including its presumptions of control, its so-called radicality, even its ability to make virtual worlds, and shows that many of these claims are poorly founded.

Among the writings Coyne visits are works by Heidegger, Adorno, Benjamin, Gadamer, Derrida, Habermas, Rorty, and Foucault. He relates their views to information technology designers and critics such as Herbert Simon, Alan Kay, Terry Winograd, Hubert Dreyfus, and Joseph Weizenbaum. In particular, Coyne draws extensively from the writing of Martin Heidegger, who has presented one of the most radical critiques of technology to date.

#### Introduction

Being, Technology, and Design

#### Computers and Praxis

How the Theoretical Is Giving Way to the Pragmatic in Computer Systems Design

#### Who Is in Control??

Critical Theory and Information Technology Design

#### Deconstruction and Information Technology

The Implications of Derrida's Project against Metaphysics

#### Where is the World Is Cyberspace?

The Phenomenology of Computer-Mediated Communications

#### Representation and Reality

The Phenomenology of Virtual Reality

#### Systematic Design

Methods, Theories, and Models in Design

#### Metaphors and Machines

Metaphor, Being, and Computer Systems Design

#### Conclusion

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< Leonardo 29:3 abstracts >

#### Virtual Intimacy and the Male Gaze Cubed:

Interacting with Narratives on CD-ROM

J. Yellowlees Douglas

Interactive narratives on CD-ROM have the potential to make us feel more a part of the stories we experience than do either film or print. Yet, as some early offerings in this fledgling genre reveal, the use of subjective camera and the constraints on the user's interaction with the narrative can conspire to make some readers feel straitjacketed by the text, rather than transported by it. The author analyzes one of these early offerings in depth and presents some alternative possibilities for this new genre.

#### Laziza Videodance and Lumia Project:

The Intersection of Dance, Technology and Performance Art

Kathleen Laziza

The author chronicles the development of the Laziza Videodance and Lumia Project (LVLP), an experimental multiple-media theater that she founded with William Laziza in 1980. Descriptions of 14 movement-theater works detail LVLP's uses of special-effect lighting, video installation and production, optics and computers, as well as scientific and mathematical principles. The author discusses the intricacies of collaboration between technicians, art handlers, dancers and actors involved in multiple-media production.

Through the Electronic Labyrinth:

The Meanderings of a Visual Artist

Teresa Wennberg

The author describes the path that has taken her from the classic medium of oil on canvas to the world of sound, video and computer-graphic animation. She describes several of her large-scale installations in detail and discusses aspects of art based on new technologies.

A Common Impulse in Art and Science

Charles R. Garoian  
and John D. Mathews

Meanings, processes and values associated with art and science are explored with the intention of finding the similarities and differences in the origins and intellectual products of these areas of human endeavor. The authors argue that the most important reason for the present separation of these areas has been a cultural and philosophical failure to recognize the common human origins and goals of each. They hypothesize that art and science both contribute new "words" to our cultural lexicon and thus conclude that these areas are the same in a formal lexical sense.

Beyond the Interface:

A Phenomenological View of Computer Systems Design

Ivan Hybs

This article analyzes human-technology-world relations---namely, embodiment, hermeneutic and alterity relations---as a means of examining computer technology. Our understanding of computers and human-computer interaction is investigated in detail. In conclusion, the author indicates some flaws in current understanding of computer technology and of the technology's position within the human-technology-world continuum. "Human-Computer Interaction" (HCI) is emerging as one of the most important factors in the design of computer systems and the acceptance of computer technology by users. The abbreviation "HCI" sometimes also stands for "Human-Computer Interface." The double meaning of HCI is indicative of certain confused understandings of the problem posed by computer technology: the question of interaction is commonly seen as no more than a question of interface.

Quantitative Estimates of Left- and Right-Hemispherical

Dominance in Art

Vladimir M. Petrov

In order to determine their relationships to creativity, features of functional brain asymmetry were studied by means of analyzing the work of visual artists and composers from the seventeenth to the twentieth century, both in Western Europe and in Russia. To measure these features an iterative procedure was derived,

permitting the researchers to use experts as specific "instruments." The results are objective, despite the subjectivity of the primary data, and indicate a degree of dominance of left- or right-hemispherical processes in the work of each painter and composer studied.

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ANNOUNCEMENTS
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< ACM MULTIMEDIA' 96 >

November 18 - 22, 1996  
Hynes Convention Center  
Boston, MA, USA

Monika Fleischmann, ACM Multimedia '96 Art chair  
Research Scientist/Artistic Director  
GMD - German National Research Center for Information Technology  
Institute for Media Communication (IMK)  
Dept. Visualization and Media Systems Design (VMSD)  
<http://viswiz.gmd.de/>  
Schloss Birlinghoven, D-53754 Sankt Augustin  
Phone:++49-2241-14-2809 (Fax: -2040), Email: [fleischmann@gmd.de](mailto:fleischmann@gmd.de)  
URL: <http://viswiz.gmd.de/VMSD/PAGES.en/people.mia.html>

CALL FOR PAPERS / INFORMATION FOR ARTISTS

The 4th International Multimedia Conference and Exhibition will be held at Boston, November 18-22, 1996. ACM Multimedia' 96 will be co-located with SPIE's Symposium on Voice, Video and Data Communications, and Broadband Communications Expo. It will overlap with CSCW, to be held in nearby Cambridge.

Multimedia technology can substantially improve the communication between information providers and consumers. It contributes to the general accessibility of information, through new interactive media as well as through new forms of production, delivery and perception of existing media.

ACM Multimedia' 96 will provide an international forum for papers, panels, videos, demonstrations, courses, workshops, and exhibits focusing on all aspects of this multi-disciplinary field: from underlying technologies to applications and issues, and from theory to practice. We invite your medicine, etc.; collaboration environments; databases; digital libraries; distributed systems; documents and authoring; hardware and architectures; image, video and audio compression techniques; information retrieval; interactive television; media integration and synchronization; networking and communication; operating system extensions; programming paradigms and environments; standards and legal issues; storage and I/O architectures; tools; user interfaces; and virtual reality.

MULTIMEDIA AND ART

Submissions by artists presenting innovative work in the field of INTERACTIVE MEDIA ART & CULTURE are encouraged. A specific selection process and a special Multimedia and Art session on STORYTELLING AFTER CINEMA will take place. Submissions by artists should include EITHER a paper presentation, OR a VHS NTSC or PAL video OR CD-ROM OR URL with short description and demonstration requirements when applicable, and a biography.

Specific areas are:

1. Interactive Media Art & Drama
2. Interactive Design & Art Mediation

A juried election process and a special Multimedia and Art session on "Storytelling after Cinema" will be composed of:

- a) Papers (email)
- b) CD-ROM's (PC/MAC)
- c) URL's
- d) Video Tapes (VHS NTSC/PAL)

Ref. to a) :

Paper submitting authors should send a 2 page abstract focused on fundamental theoretical aspects of interactive storytelling, demonstration requirements and a biography.

Ref. to b), c), d) :

Submitting artists dispose of a 5 minute (demo) duration to tell an interactive story. Authors should send their work with a short description, demonstration requirements when applicable and a biography.

The elected art works will be part of the exhibition and/or round tables with elected speakers organized in Boston. The elected art works will be edited either in visual proceedings, on a CD-ROM or in the web.

Authors must assign copyright to ACM as a condition of publishing their work. An author who embeds an object, such as an art image, copyrighted by a third party is expected to obtain that party's permission to include the object with the understanding that the entire work may be distributed as a unity to ACM members and others.

Authors of accepted submissions will be required to send both a camera-ready copy of the manuscript for the printed proceedings and an electronic copy for the CD-ROM or visual proceedings.

#### IMPORTANT DATES

All Submissions (6 copies for papers) due: April 24th, 1996.

NOTE: Extended deadline: June 24 (postmarked), 1996

More information:

<http://www.acm.org/sigmm/MM96/cfp.html#Art>

<http://www.acm.org/sigmm/MM96/art.html>

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< WSCG '97 - The Fifth International Conference in Central Europe  
on Computer Graphics and Visualization 97 >

Vaclav Skala

Computer Sci.Dept., Univ.of West Bohemia

Univerzitni 22, Box 314, Plzen, Czech Republic

Email: wscg97@kiv.zcu.cz

URL: <http://yoyo.zcu.cz/~skala/wscg97.html>

The Fifth International Conference in Central Europe on Computer Graphics and Visualization 97 is being held on February 10-14, 1997 in the Czech Republic, in cooperation with IFIP working group 5.10 on Computer Graphics and Virtual Worlds.

Contribution deadline: October 30, 1996

Information on previous conferences is available at:

[http://yoyo.zcu.cz/cg\\_group](http://yoyo.zcu.cz/cg_group)

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< Experimental Aesthetics Institute 'Prometei' -  
Call for papers >

Bulat M. Galejev  
Institute "Prometei"  
KGTU  
10 K.Marx. str.  
Kazan, 420111, Russia  
Tel: (8432)386273  
Fax: (8432)365331  
Email: galeyev@prometey.ksu.ras.ru

In 1996 the Experimental aesthetics institute "Prometei" (Russia, Kazan) prepares for publishing an international collection of papers entitled tentatively "Melody-drawing transformations". The collection will be devoted to discussing:

- a) interrelations between music and ornament, between music and architecture,
- b) synaesthetic (psychological) base of methaphorical "melody-drawing" comparisons, and also instrumental (technical) methods of transformation melody into drawing (graphics) and vice versa.

Persons who wish to contribute to the collection are encouraged to send their papers (10-15 pp. in typewriting plus 4-5 b/w illustrations).

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< ELECTRONICS, MUSIC, LIGHT -  
to L.S. Termen 100-th anniversary >

Bulat M. Galejev  
Academy of Sciences of Tatarstan  
Tupolev Kazan State Technical University  
Experimental Aesthetics Institute "Prometei"  
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Email: galeyev@prometey.ksu.ras.ru

The conference "Electronics, music, light", dedicated to the memory of electronic music pioneer L.S. Termen (1896-1993) is to be held in Kazan from October 7 to 11. Foreign speakers are also encouraged to submit their papers.

Conference topics: life and creative work of L.S.Termen and development of his ideas in our days, respectively (electronic music, spatial music, light-music and other kinds of arts and researches in art field, based on introducing modern technologies, including computer ones. One section will devoted entirely to discussing "Artificial intelligence and art" problem). Conference will be devoted to discussing both theoretical (phylosophical and aesthetical, psychological) and technical, applied aspects of the problem. Demonstration of art works are to be held in evenings.

Max.presentation time is 20 min. Total participants number will be 50-60 persons. Place of the conference - Light-music hall "Prometei".

Papers abstracts (3 pages with 1.5 spaces) in participant country language are to be submitted to the Organizing

Committee by May 31 1996 as a deadline. Persons who wish to participate in the conference should provide also information on demonstration materials and necessary equipment (both for presentations and evening demonstrations). In the case participant is the representative is affiliated to an institution engaged in developing "Electronics and art" problem please enclose also one page summary of the organization activities with indication of its addresses, phone and fax numbers , e-mail adress and so on (this one will be published in reference appendix to conference proceedings). We earnestly ask all persons who wish to participate to provide their e-mail addresses in the case they have access to Internet.

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OPPORTUNITIES
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< Minnesota's Resources and Counseling for the Arts  
seeks an Executive Director >

Search Committee  
Resources and Counseling for the Arts  
308 Prince St. #270  
St. Paul MN 55101 USA

Resources and Counseling for the Arts (RCA) is a service organization established in 1978. RCA's mission is to improve the business competence and confidence of independent artists and cultural organizations by providing affordable management information, consulting and training services. With a budget of \$250,000, a small operating surplus, and a staff of five, RCA serves 2,000 artists and 250 arts organization each year.

The Executive Director of Resources and Counseling for the Arts is charged by the board of directors with carrying out the mission of the organization. This is a full-time exempt position. Specific responsibilities include designing and delivering services to nonprofit arts and cultural organizations and overseeing the general management of the organization. Reports to the board of directors.

In April 1996, RCA will move to expanded warehouse space in downtown Saint Paul. This move gives RCA greater visibility among artists but increases its annual operating budget. The new executive director will be asked to increase RCA's visibility and fundraising earning capacities.

Qualifications

- o At least five years' experience in nonprofit management, at progressively more responsible levels. Arts management experience a plus.
- o A working knowledge and understanding of the Minnesota arts scene.
- o Entrepreneurial skills: ability to envision, design and promote new programs (especially earned income activities), and to create and maintain alliances with other organizations
- o Promotional skills: ability to speak effectively for the organization, recognize promotional possibilities, and create and implement a marketing plan.
- o A working knowledge of strategic planning principles.
- o Experience working with a nonprofit board of directors.
- o Experience preparing budgets and understanding financial



reports.

- o Experience managing information systems; comfort with computers and the Internet.
- o Fundraising experience, and knowledge of the Minnesota funding scene.
- o Experience organizing, managing and coaching staff.
- o BA degree, with courses in arts administration, business or nonprofit management a plus.

Salary range: high 30's, commensurate with experience  
 Benefits: Full single health and dental coverage; very generous paid vacation and holidays.

Starting date: September 1, 1996

Application procedure: On or before June 1, 1996, send resume, a list of three professional references, and a cover letter describing qualifications for the position. Women, people of color and people with disabilities encouraged to apply. No phone calls please.

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ACKNOWLEDGMENTS
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LEA and Leonardo/ISAST gratefully acknowledges Interval Research Corporation for its continuing support of Leonardo Electronic Almanac.

LEA WORLD WIDE WEB AND FTP ACCESS
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The LEA Word Wide Web site contains the LEA archives, including all back issues, and the Leonardo Electronic Gallery. The Profiles and Feature Articles have been extracted from the back issues, and reside in their own sections of the site. It is accessible using the following URL:

<http://www-mitpress.mit.edu/LEA/home.html>

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