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EDITORIAL
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This month in LEA, we feature excerpts from two new titles in the Leonardo Book Series, published by MIT Press. The first of these is *\*Virtual Art: From Illusion to Immersion,\** by Oliver Grau (translated by Gloria Custance) and the second is *\*Uncanny Networks: Dialogues with the Virtual Intelligentsia,\** by Geert Lovink. Grau's book, described in Joel Slayton's foreword as "a comparative historical analysis of how virtual art fits into the art history of illusion and realism," draws on artworks and philosophical texts from a wide range of disciplines to provide an overview of virtuality and virtual art and its antecedents.

The second excerpt is from *\*Uncanny Networks: Dialogues with the Virtual Intelligentsia,\** by Geert Lovink. The book, described by Slayton as "an inquiry into various ideological, theoretical, and political orientations that have illuminated the relational blurring of information and cultural theory over the past decade," uses an interview format to explore these ideas. We present here the introduction, a "self-interview" with Lovink on the aims and ideas of his book.

Other features in this issue include the table of contents and selected abstracts from the latest issue of Leonardo, our regular Leonardo Digital Reviews and news and announcements from the Leonardo/ISAST community.

Finally, our apologies for the erratic distribution of recent LEA issues - as a truly international journal, we have staff and contributors located across Europe, Asia, in Australia, the U.S.A. and the U.K. (and sometimes in various airport terminals in Africa!). We are thus linked almost exclusively by e-mail. As you might expect, given such a situation, we sometimes encounter snags in our coordination and communication processes. We are working to resolve these issues to continue to provide a quality journal, regularly and on time. Please bear with us.

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FEATURES
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< Introduction to *\*Virtual Art: From Illusion to Immersion\** >  
by Oliver Grau, translated by Gloria Custance  
MIT Press, Cambridge, MA and London, England

This book is a translation of a revised and expanded version of a

book entitled \*Virtuelle Kunst in Geschichte und Gegenwart: Visuelle Strategien\* (Berlin: Reimer, 2001).

"The most elemental process of modern times is the conquest of the world as images." - Martin Heidegger, Holzwege, p. 92. Frankfurt: Klostermann (1980).

"Das Wahre hat keine Fenster. Das Wahre sieht nirgends zum Universum hinaus. Und das Interesse an Panoramen ist, die wahre Stadt zu sehen....-Die Stadt im Hause. Was im fen-sterlosen Hause steht, ist das Wahre. [The interesting thing about the panorama is to see the true city-a city inside a build-ing. What stands in the windowless building is the truth . . . (the truth has no windows; nowhere does it look out upon the universe.)]"

- Walter Benjamin, Das Passagenwerk. Gesammelte Schriften, vol. 5, 2, p. 1008. Rolf Tiedemann (ed.). Frankfurt/Main: Suhrkamp.

What is virtual art? Never before has the world of images around us changed so fast as over recent years, never before have we been exposed to so many different image worlds, and never before has the way in which images are produced changed so fundamentally. To an unprecedented degree, so many utopian expectations are intertwined with so much skepticism. The scale of recent and current encroachment of media and technology into the workplace and work processes is a far greater upheaval than other epochs have known, and, obviously, it has also affected large areas of art. Media art, that is, video, computer graphics and animation, Net-art, interactive art in its most advanced form of virtual art with its subgenres of telepresence art and genetic art, is beginning to dominate theories of the image and art. We are experiencing the rise of the computer-generated, virtual spatial image to image per se, to images that appear capable of autonomous change and of formulating a lifelike, all-embracing visual and sensory sphere. As yet, digital art still exists in a state of limbo, rather like photography before Stieglitz. The evolution of media of illusion has a long history, and now a new technological variety has appeared; however, it cannot be fully understood without its history. With the advent of new techniques for generating, distributing, and presenting images, the computer has transformed the image and now suggests that it is possible to "enter" it. Thus, it has laid the foundations for virtual reality as a core medium of the emerging "information society." Since the end of the 1980s, new interfaces communicate three-dimensional images using the head-mounted display (HMD) or the more recently developed CAVE. The suggestive impression is one of immersing oneself in the image space, moving and interacting there in "real time," and intervening creatively.

Virtual reality was discovered early on by artists, who appropriated it with their own methods and strategies. Through cooperation with many leading representatives of virtual image culture and their international media labs, but also extensive research in archives, this book rests on much unpublished source material. Media artists represent a new type of artist, who not only sounds out the aesthetic potential of advanced methods of creating images and formulates new options of perception and artistic positions in this media revolution, but also specifically researches innovative forms of interaction and interface design, thus contributing to the development of the medium in key areas, both as artists and as scientists. Art and science are once more allied in the service of today's most complex methods of producing images.

The new art media are also having far-reaching impacts on the theory of art and the image. In this context, this book endeavors, first, to demonstrate how new virtual art fits into the art history of illusion and immersion and, second, to analyze the metamorphosis of the concepts of art and the image that relate to this art. Art history, as the oldest discipline concerned with images, has the resources of a broad material base to analyze these concepts, including recent developments connected with computers. Although art history and the history of the media have always stood in an interdependent relationship and art has commented on, taken up, or even promoted each new media development, the view of art history as media history, as the history of this interdependent relationship that includes the role of artistic visions in the rise of new media of illusion, is still underdeveloped. Yet art's close relationship to machines in particular and technology in general, including the new media of images and their distribution, spans all epochs, from classical antiquity to the present day.

In many quarters, virtual reality is viewed as a totally new phenomenon. However, a central argument of this book is that the idea of installing an observer in a hermetically closed-off image space of illusion did not make its first appearance with the technical invention of computer-aided virtual realities. On the contrary, virtual reality forms part of the core of the relationship of humans to images. It is grounded in art traditions, which have received scant attention up to now, that, in the course of history, suffered ruptures and discontinuities, were subject to the specific media of their epoch, and used to transport content of a highly disparate nature. Yet the idea goes back at least as far as the classical world, and it now reappears in the immersion strategies of present-day virtual art.

Further, it is the intention of this book to trace the aesthetic conception of virtual image spaces, their historical genesis, including breaks, through various stages of Western art history. It begins with the broad, primarily European tradition of image spaces of illusion, which was found mainly in private country villas and town houses, like the cult frescoes of the Villa dei Misteri in Pompeii, the garden frescoes in the Villa Livia near Prima-porta (ca. 20 B.C.), the Gothic fresco room, the Chambre du Cerf, and the many examples of Renaissance illusion spaces, such as the Sala delle Prospettive. Illusion spaces also gained in importance in the public domain, as evidenced by the Sacri Monti movement and the ceiling panoramas of Baroque churches. One of the most exceptional vehicles for painted illusionism is the panorama, patented by Robert Barker in 1789. Paul Sandby's landscape room at Drakelowe Hall (1793) was a direct response to this invention. All these examples of image spaces for creating illusions are not, obviously, technically comparable with the illusions now possible with the aid of computers, which the user can experience interactively. However, this study shows clearly how, in each epoch, extraordinary efforts were made to produce maximum illusion with the technical means at hand. Before the panorama, there were successful attempts to create illusionist image spaces with traditional images, and after its demise - together with many artistic visions that never left the drawing board - technology was applied in the attempt to integrate the image and the observer: stereoscope, Cineorama, stereoptic television, Sensorama, Expanded Cinema, 3-D, Omnimax, and IMAX cinema, as well as the head-mounted display with its military origins.

This book does not interpret virtuality per se as an anthropological constant, for then it would begin with the cave paintings of Cluvet, Alta-mira, and Lascaux. Instead, attention centers on 360° images, such as the fresco rooms, the panorama, circular cinema, and computer art in the CAVE: media that are the means whereby the eye is addressed with a totality of images. This book engages with media in the history of art that concentrate on immersive image spaces.

The activation, or "domestication," of the human senses lay with changing forms of art and media; however, "the will to art" pursued comparable categories. The image spaces and media discussed here are the subject of many treatises, but never before have they been examined in the context of an art-historical analysis of the concept of immersion. So far, there has been no historically comparative or systematic theoretical approach to virtual realities. I endeavor to summarize and categorize existing work to present a coherent theoretical framework and analyze the phenomenologies, functions, and strategies of all-embracing image worlds to provide a historical overview of the idea of virtual reality. It is not a comprehensive history of this phenomenon nor of perception, although certain findings are of interest in this respect: it is a portrayal of the continuity of this idea and a characterization of its applications in the history of art.

The panorama demands special consideration for two reasons: first, this illusion space represented the highest developed form of illusionism and suggestive power of the problematical variety that used traditional methods of painting. The panorama is also exemplary in that this effect was an intended one, a pre-calculated outcome of the application of technological, physiological, and psychological knowledge. With the contemporary means at hand, the illusion space addressed the observer as directly as possible; this latter was "implicit." Second, the study of the panorama can help to lay the foundations of a systematic comparison, where the metamorphosis of image and art associated with computer-aided virtual reality emerges in a clearer light. The case study presented here of perhaps the most important German panorama (and political event), \*The Battle of Sedan\* by Anton von Werner (1883), has not been analyzed in this detail before and reveals in exemplary fashion the strategies for removing boundaries and psychological distance between observer and image space. Further, the normative forces of economics and their constraining effect on the role of the artist is examined, together with the artist's position within the configuration of co-workers, image techniques, and the interests of the client. How and with what effect does the strategy of immersion operate here, which methods are implemented, in what intensity and with which intentions vis a vis the audience? The in-depth depiction of these mechanisms is, at the same time, a prehistory of the immersive procedures of computer virtual reality.

Integration of virtual reality into the history of immersion in art must not lead to disregard of the specific characteristics of virtual computer art, which, as Theodor W. Adorno warned, may be negated in the interests of drawing comparisons: "All the same, nothing is more damaging to theoretical knowledge of modern art than its reduction to what it has in common with older periods. What is specific to it slips through the methodological net of 'nothing new under the sun'; it is reduced to the undialectical, gapless continuum of tranquil development that it in fact explodes. . . . In the relation of modern artworks to older ones that are similar, it is their differences that should be

elicited. "It is precisely to crystallize this specificity, this difference, that the second focus of this study engages with the metamorphosis of the concept of the image under the conditions of computer-generated virtual image spaces as driven by, for example, interface design, interaction, or the evolution of images.

In virtual reality, a panoramic view is joined by sensorimotor exploration of an image space that gives the impression of a "living" environment. Interactive media have changed our idea of the image into one of a multi-sensory interactive space of experience with a time frame. In a virtual space, the parameters of time and space can be modified at will, allowing the space to be used for modeling and experiment. The possibility of access to such spaces and communication worldwide via data networks, together with the technique of telepresence, opens up a range of new options. Images of the natural world are merged with artificial images in "mixed realities," where it is often impossible to distinguish between original and simulacrum.

The media strategy aims at producing a high-grade feeling of immersion, of presence (an impression suggestive of "being there"), which can be enhanced further through interaction with apparently "living" environments in "real time." The scenarios develop at random, based on genetic algorithms, that is, evolutionary image processes. These represent the link connecting research on presence (technology, perception, psychology) and research on artificial life or A-Life (bioinformatics), an art that has not only reflected on in recent years but also specifically contributed to the further development of image technology.

In this book, examples of artistic illusion spaces are discussed in depth and against the outline of this historical tradition, the transformation engendered by the digital media, which has enduring effects on the internal structure of the relationship between artist, work, and observer, and is exemplified by analyses of contemporary virtual reality installations. Analogies and principal differences in art production, image work phenomenology, and audience reception are revealed. This comparative approach is best suited to provide insights into the aesthetic innovations of this medium, with its growing societal and artistic importance, and the new status of the image under the hegemony of the digital. Recent but already well-known works of virtual computer art are integrated here for the first time within a broad art historical context. The intention is not to establish this young branch of art's credentials in terms of historical legitimation but rather to demonstrate the recurring existence of the inter-media figure of immersion together with its intentions and problematic potential. I am not suggesting that virtual reality should be viewed in terms of a prehistory of logical developments leading up to it; what is described here are individual and varied stages, each representing in contradictory, disparate, or dialectic form a new status of perception vis a vis older media. With these historical foundations, the study aims to facilitate comparison and enable critique of contemporary developments, emancipated from current media propaganda, both futuristic and apocalyptic - no more, no less. The approach is intentionally broad, linking historic media art with digital art in the hope of better understanding the quality of the new art form and contributing to the emerging science of the image by distilling some basic aspects of a history of media of illusion and immersion.

In a historical context, this new art form can be relativized, adequately described, and critiqued in terms of its phenomenology, aesthetics, and origination. In many ways, this method changes our perception of the old and helps us to understand history afresh. Thus, older media, such as frescoes, paintings, panoramas, film, and the art they convey, do not appear passé; rather, they are newly defined, categorized, and interpreted. Understood in this way, new media do not render old ones obsolete, but rather assign them new places within the system.

Interactivity and virtuality call into question the distinction between author and observer as well as the status of a work of art and the function of exhibitions. Therefore, it is important to determine which characteristics of virtual image systems distinguish them from images of traditional artworks or cinema. It is necessary to explore and analyze the new aesthetic potential that technology has made possible. What new possibilities of expression are open to the artist working with computer-aided, interactive, real-time images? What constraints does the technology impose on artistic concepts? What new potential for creativity does it make available to the artist and to the observer? How can the new relationship between artist and observer be characterized, and which artistic strategies result from this situation? How do interaction and interface design affect reception of the work? And finally, on the basis of knowledge of art history, how should the concepts of contemporary virtual art be assessed?

This book does not attempt to equate historic spaces of illusion with contemporary phenomena of virtual reality in order to construct a historical legitimation of the latest trends in art. Instead, the new art of illusion is investigated and relativized historically and, in a further step, analyzed and assessed. My contention is not that virtual art from the computer is always directed at maximizing illusion. However, it must be said that it does operate within the energy field of illusion and immersion - the paradigm of this medium. Whether the individual artists are critical of this aspect or implement it strategically, nevertheless, it remains the foundation on which this art operates.

The visualization potential of virtual artworks exceeds by far a purely mimetic view. The visualizations of complex systems, which the majority of artists in this book strive for, encompass a potential for creativity and image techniques that demand analysis. How are the observers affected by the kaleidoscope of endogenous viewing perspectives and the tension between physical and abstract experiences?

The creation of expanded image spaces experienced polysensorily and interactively, which enable processual situations, promote the trend toward performance art. In this way, the categories of game and game theory gain new significance. Thus, in addition to presenting the long and complex tradition of the concept of immersion, it is essential to portray the most recent dynamic changes that have taken place in images, brought forth by the new options of interaction and evolution. >From the point of view of both technology and art theory, it is illuminating to take an in-depth look at internationally acclaimed works that are already classics of the new image culture. Here we'll discuss further important parameters of virtual art, such as the interface, interaction, and image evolution. The interface, which connects the human senses to the image worlds of virtual art, is the main

focus of the chapter on \*Osmose\* (1995), a work by the Canadian artist Charlotte Davies that is particularly relevant with regard to this parameter. Interaction and image evolution, or the creation of artificial life in the form of images, a highly topical and controversial theme in view of recent developments in gene technology, robotics, and nanotechnology, are discussed with reference to examples of genetic art. The contention is that these factors mold not only the artistic options of expression but also the experience of the observer, the level of participation and immersion. A question that needs to be asked in this connection is whether there is still any place for distanced, critical reflection—a hallmark of the modern era—in illusion spaces experienced through interaction. I show how immersion techniques, such as the vanishing interface, or the so-called natural interface, affect the institution of the observer and how, on the other hand, strongly accentuated, visible interfaces make the observer acutely aware of the immersive experience and are particularly conducive to reflection.

Media art has been promoted institutionally since the 1980s. In addition to the tradition of strong engagement in this area in the United States, with the foundation of new media schools in Cologne, Frankfurt, and Leipzig and the Zentrum für Kunst und Medientechnologie in Karlsruhe, Germany is a heartland of media art, together with Japan and its new institutes, such as the InterCommunication Center in Tokyo and the International Academy of Media Arts and Sciences near Gifu. More recently, other countries, such as Korea, Australia, China, Taiwan, Brazil, and especially the Scandinavian countries, have founded new institutions of media art. In spite of this considerable activity at the institutional level, museums have only begun to open their doors hesitantly to the art of the digital present. Media art, which put in its first appearance at festivals, has rapidly found public acceptance; yet so far, museums have neglected to build up systematically any collections. There are gaping holes, in both collections and academic engagement with this art, which will not be easy to close in the near future. A further problem is that the longevity of digital art depends on its storage media. The permanent process of changing operating systems, for example, means that it is no longer possible to show some works that are not even ten years old. Perhaps like no other art genre in history, the continued existence of media art is in danger. Trained curators and conservators are almost entirely lacking as are any concepts for systematic collection, for example, in cooperation with computer centers, technical museums, or manufacturers of technical equipment.

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< Introduction to \*Uncanny Networks: Dialogues with the Virtual Intelligentsia\* >

by Geert Lovink

MIT Press, Cambridge, MA and London, England

The Art of Electronic Dialogue: Self-Interview as Introduction

\*Going through the table of contents for this book, I see a few familiar names, but not that many. How did you select them and what do the people you've exchanged ideas with have in common? What is your conceptual framework?\*

The people I exchanged ideas with combine a passionate pragmatism to define and shape the architecture of new media with a similar

drive to investigate its tools. They love to speculate about the coming of something yet unknown, while being aware that technology is not developed in a vacuum. I am interested in the beauty of digital discord. Business interests from both the Old and New Economy, in close harmony with governments and the moral majority, will do whatever they can to limit the potentials of new media. The right mix of speculative imagination and thorough economic analysis - and competence - could therefore have fantastic, subversive impacts. This will happen if this potential movement, if I may use my favorite concept, becomes transcultural, multilingual, and truly global, not just Western. As this selection of interviews shows, new media culture is nowhere near global. Yes, the user base is gradually changing, but this has not yet affected the core of matters such as discourse, software, and interfaces. Still, we are moving away from the narrow world of the male, geek culture and its libertarian visionaries. This book reflects this trend. I believe that it should be possible to exchange and amplify desires among different generations and social groupings and not get caught in a ghetto of terminology, identities, lifestyle, or choice for this or that standard or platform.

Over the last decade much effort has been put into overcoming the differences among artists who do conceptual work; old-school political activists, involved in investigative journalism and developing political arguments; theorists and critics, constantly in danger of getting stuck in structural analyses; the programmers who are writing the code, or installing and maintaining the networks; and last but not least designers shaping the media aesthetics (graphics, interfaces, etc.). An independent new media culture needs all these disciplines. I am talking here about a delicate balance among individuals, groups, and companies/institutions. Even though people are increasingly forced to develop a variety of skills, multidisciplinary remains an idle goal, not a daily reality. The division of labor is still there, due to the highly specialized knowledge of each field. All of these people are using and contributing to the network (not just their own), and this is one place where they meet and converge. At least that's my utopian drive. This book is an expression of tactical and temporary synergies that tries to further encourage cross-fertilizations of concepts and experiences, not only among professions but also among different cultures and social groups worldwide.

\*This all sounds inspiring and idealistic. I am not sure if the cultural networks you are referring to here have a long-term goal. Certainly they have pasts. What would these suggest?\*

Unlike most of their predecessors, the artists and critics featured in this book are working with the technology itself. There is no outside position anymore, nor is this perceived as something desirable. The laity has become engaged in the fight over the rules and tools with which we communicate and work. For decades the research and development of these media spaces was in the hands of politicians, companies, and their engineers. It is only in the nineties that we see a democratization of new media worldwide. It is no longer about rejecting or embracing the new media. Computers had become what they had originally been envisioned as: general computational devices. They come in all shapes and sizes, to be used for any possible purpose, including global surveillance and virtual sex.

In retrospect, the eighties in Europe look like one crisis-prone, apocalyptic age, dominated by conservative postmodernists,

privatization and budget cuts, fading social movements, and new wave "guitar" music. There was a hardware revolution taking off, with the rise of VCRs, fax machines, PCs. Despite the personal computer's reputation as a hippie invention, the self-satisfied 1968 generation had a rather hostile stance toward the introduction of computer networks. Its members did not want another revolution. Reworking their own New Left past was time-consuming enough. New media did not fit in their traditionalist concept of culture. This inward-looking intellectual climate, dominated by deconstructivist historicism, caused the cultural and academic sector in the West considerable delay in dealing with these issues. Both the fall of the Berlin Wall and the rise of computer networks took the postwar generation by surprise.

The rise of institutional cultural studies wasn't much more than a petit salon revolution. Identification with media consumers and their small pleasures was still situated in the realm of broadcast media, television, radio, and film. Cultural studies was all about creating meaning, not data. It is only in the mid-nineties that we found ourselves in the middle of heated debates over software piracy, the heroic Netscape, privacy issues, telecom pricing, the monopoly of Microsoft, cool and bad interface design. New media had become an issue you could exchange arguments about with perfect strangers, on the streets of Melbourne, in a Bucharest café, at a bus stop in Montreal, on a suburban train gliding over Osaka.

\*Where does your fascination with this "secondary" text genre of the interview originate? Wouldn't time be better spent writing original pieces? You are not a journalist. Shouldn't a media theorist stick to theory?\*

It is certainly easier and more rewarding for today's intellectual to withdraw into his or her own work than it is to engage. Interviews are all about creating contexts, together with chats and debates, reviews, links, and other reference systems. The genre fits very well into the general tendency to break down the text and create a social-technological knowledge environment. Interviews are one of many sorts of imaginative text one can use in creating common, networked discourses.

I started conducting interviews in 1980-1982 while working on two books as a member of a student research group on the Dutch antinuclear movement. In that same period, I co-edited the weekly newspaper of the squatters movement, called bluf!, in which I also published interviews. One of the best interviews from that period was an exchange between me and Eveline Lubbers. We wrote our master's thesis together and included a self-reflexive "conversation between two typewriters." This both serious and funny work on squatting, alternative media strategies, and their economic models even had a guest researcher who wrote a chapter. The day our supervisors rejected the thesis, while we were selling printed versions outside, certainly counts as the height of my academic career. We rewrote the thesis a bit and in the end got our M.A. degrees. Still, a lot of my later work as a media theorist, doing research on the economic dynamics and social psychology of new media culture, can be traced back to that 1983 study.

I really got the taste and understood the routine of doing interviews when I started a weekly radio show in 1987 called The Portrait Gallery, first at Radio 100, then Radio Patapoe, both free, pirate stations in Amsterdam. I made around 120 of these

one-hour programs. The idea was to give weird, fringe thinkers and researchers from both inside and outside academia the "royal space" to talk about their topic: a space they would normally not get in the mainstream media, not even in academic journals, especially not in an anti-intellectual culture such as Holland where everyone is forced to speak in a "normal way." There is an amazing consensus, among everyone from conservative liberals to radical squatters, that sophisticated intellectual discourses do not belong in the public domain. Theory is perceived as deeply elitist. You can do that perhaps among your peers (if you can find them) but not in public. The attitude of most science and humanities journalists was, and still is, to behave in a pseudo-critical way, complaining about typos, mistakes in footnotes, and other nonsense details, and ridiculing whichever person they talked with in the name of the imagined "average listener" who was portrayed to be too stupid to understand anything. In response to this organized innocence, I offered Ph.D. students, theorists, and lay thinkers the possibility to talk freely and encouraged them to push the envelope in front of the microphone. I hardly edited the programs. Instead, I learned to listen patiently and encouraged the interviewees to create a shared space of immense density - and freedom of thought.

\*The introduction of the PC and word processing programs around that same period gave a similar possibility to create dense "compact texts." When did you start using online interviews? Are they that much different from face-to-face conversations?\*

I gained access to the Internet in early 1993 after having played with bulletin board systems earlier on. Conducting interviews online - sending questions and answers back and forth, thereby composing a common text over a period of time - is a surprisingly recent phenomena. It may be hard to comprehend, but people really had to get used to e-mail. It took a while for everyone to discover its potential, which, in my view, is still not entirely unveiled. It has been argued that people are more open and straightforward in email. This is why flame wars start so easily - over nothing, seemingly out of the blue, and with sometimes tragic, even fatal consequences. Real-life conversations create trust, often quickly, but that's no guarantee for a better reflection. Online interviews in this book usually took weeks or months to accomplish. That's terribly slow of course, compared to the speed of light at which we are supposed to communicate. You need to be really patient and unconcerned with deadlines. The good thing is that the result will not simply be a snapshot full of timely references.

\*Can you explain what exactly is being exchanged during an interview?\*

Certainty not arguments; in most cases, not even information. I am more curious about opening new possibility-spaces than in having a polemic. Unlike their public image, most of the cybertribes, whether organized as company, newsgroup, list, or "virtual community," are not keen to engage in dialogue with outsiders. Libertarian thinkers, instrumental in creating the Internet hype in the mid-nineties, have been preaching "value creation," not the creation of public discourse. Like the big guys in the corporate world, they knew that dialogue with some wacky outsiders could potentially endanger one's market position. In volatile times, one bad remark in the (online) press can bring down your stock or postpone your initial public offering (IPO) to infinity. Playing down your critics could have the opposite effect and might be too late anyway. It is much wiser to ignore

them altogether. New Age gurus unanimously promote "positive" thinking and strongly advise today's leadership to route around "negative" sources. Cross-cultural and cross-disciplinary dialogues on the Net are still rare, despite the common belief that crossing borders is what the Internet is all about.

This very principle has so far prevented any real debate over the future of the "information society." There is simply no time, and as Paul Virilio and others have pointed out, reflection needs time, which is the scarcest of all commodities in the Society of Speed. With unaccountable companies, incompetent politicians, and isolated artists and researchers not familiar with the language of the mainstream, no wonder we end up with the "eternal repetition of the same." In general no big ideological debates occur in society. The Internet is no exception there. I am not enough of a believer in technological determinism to think that the global dissemination of a dialogical medium will eventually spur real discussion, guaranteeing social change. Technology itself is the change.

\*At numerous occasions you have used the terms "old" and "new" media. What do they mean to you?\*

First of all, they are to be used in an ironic way. We have warm, nostalgic feelings for authentic photo cameras, rusty magic lanterns, and valve radios, even though they were as virtual and alienating, as fascinating and global, in their time as "new" media are in ours. Still, we are such simple human creatures who love to forget and are easy to impress with the "new new thing." The promises of the new tap into amazing, undiscovered sources of libidinous energy. It is a lazy, even cynical intellectual exercise to deconstruct the new as an eternal repetition of the old. Scientific and historical "truth" in these cases does not empower today's tinkering subjects. I am all for a passionate form of Enlightenment that is willing to cross borders. The absolute, radical new is a deeply utopian construct, which should not be condemned because of its all-too-obvious shortsightedness. It is only when the mythological storytelling gets reduced to a rigid set of ideas that vigilance needs to be exercised for a belief system in the making. So, through redefining categories such as the old and new, one gets a better understanding where analysis and critique could start in order to be productive.

\*What examples of famous interviews did you have in mind while putting together this book?\*

I have always loved reading interviews, starting with the Bibeb interviews in Vrij Nederland, a Dutch weekly. In the late 1980s, when I became involved in the new media scene, I got acquainted with the work of the German critic Florian Rötzer, who interviewed most of the contemporary French and German philosophers, artists, architects, and scientists. He published two collections of interviews, both in German. I suppose I was influenced by him - namely, the issues of Kunstforum he edited in the late 1980s and the collection of essays he edited called Digitaler Schein. Then there are the interviews in Mondo 2000, the early issues of Wired, and the collection of interviews by John Brockman called Digerati. My book can be read as Brockman's shadow.

Be careful, though. It would be wishful thinking to start making up some global opposition against technolibertarianism. I have never seen what is often most visibly represented by Wired magazine as a true enemy. There are lots of common roots. I think it was mainly used as a virtual punching bag, for those in need

of a reference system. It would be a tactical mistake to position oneself on the opposite side of "freedom." It would be ideal to be uncontemporary, completely out of context. I myself have practiced postmodern metaphysics, "deep irrelevance" European style, for years. At some stage I started to miss the challenge and political context. It had gotten too safe, too easy, to be constantly in theory-fiction mode speculating about the end of the digital age. I got tired of the 1980s rhetoric of starting one's philosophy with the end. Deconstruction and postmodernism fulfilled their function. Even though much of the criticism of Western rationalism remains valid, I experienced a lack of strategy among cultural critics who were unable to undermine effectively the hegemony of global neoliberalism. By 1995 I thought it was time to return to practicality. As Kodwo Eshun says: "Everything was to be done." That's the spirit I am working in.

\*Who is in and who is out?\*

I don't think I have selected any interview partners because of their alleged subcultural, pop theory "celebrity" status. I only wish they had it. I think that they need more publicity, much more glamour. Perhaps, unlike others, I did not experience the nineties as the Golden Age of Theory. By and large intellectuals are artists who are being marginalized, and have, in response, isolated themselves. Within their small scenes there might have been a rise in the celebrity phenomena, yes. Unfortunately, neither media theory nor new media arts has this social status. The scenes these people are operating in are small, in fact way too small if you compare them to the hypergrowth of the IT (information technology) sector as a whole. It makes you wonder whether, against the will of its participants, this new media culture isn't unconsciously reproducing the highbrow-lowbrow divide. This is a sophisticated "developers' community" that incorporates critical discourses in its work, unwilling to simplify just for the sake of the market. Its concepts will spread like memes (cultural viruses), I am sure. Ideas have to grow and do not immediately spread. It is a modern marketing myth that ideas travel at the speed of light. At some stage they do, yes, supported by huge advertisement budgets. Most concepts in the IT branch have a long and rich history - and so do the ideas voiced in this book.

\*I noticed that you haven't included many interviews with media activists or programmers.\*

True, the choice could be much more balanced. The same could be said about gender and geography. I have a slight preference for my colleagues, media theorists, who, paradoxically, become known because of the books they wrote. This must be a transitional phenomenon. The figure of the "virtual intellectual" whose reputation solely exists within the Net is still one of the many utopian promises and perhaps even one of the many "unlikely futures." Valuable knowledge about new media culture is still usually stored in book form. "Ideas are cheap, what's valuable is their implementation." Those who manage to administer the implementation of ideas, with the help of lawyers and accountants, are today's role models. Yes, Michel Foucault, you are right: Ideas are tools. Some will design them, others will use them. Claiming intellectual property doesn't help much in such a case. It seems better to conceptualize and start building economic models for the distribution of content.

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LEONARDO DIGITAL REVIEWS 2003.03
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This month, Leonardo Digital Reviews is suffering more than usual from its customary embarrassment of riches. With over 20 reviews posted, the list of titles alone occupies more than our usual word count in Leonardo Electronic Almanac. Moreover, any attempt to summarize the general themes would be self-defeating. This really is a moment for personal adventure. The three reviews featured here this month are chosen for their intellectual and geographical diversity. A brief review from M. Zalivadny stakes a claim not just in Russia but in a quite unusual event. Dene Grigar's review of *\*The Mathematics of Oz: Mental Gymnastics from Beyond the Edge,\** by Clifford A. Pickover, may hail from Texas, but travels sufficiently freely back and forth through time to count as exotic. Finally Luisa Paraguai Donati's review of the web art work *\*Shine02.org\** draws an internationalist message from a reviewer now based in Brazil.

The reviews listed below are all newly posted and can be accessed along with the archive for the past twelve months at:  
<http://mitpress2.mit.edu/e-journals/Leonardo/ldr.html>

Michael Punt  
Editor-in-Chief  
Leonardo Digital Reviews

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Introduction to Art Image Access Tools, Standards, and Strategies, edited by Murtha Baca  
Reviewed by Chris Cobb

Bernd and Hilla Becher: Industrial Landscapes  
Reviewed by Chris Cobb

New Works of St. Petersburg Composers Treating Biblical Subjects (concert)  
Reviewed by M. Zalivadny

Design Humor: The Art of Graphic Wit, by Steven Heller  
Reviewed by Roy R. Behrens

Ezra Pound's Radio Operas, by Margaret Fisher  
Reviewed by Chris Cobb

FIRE & ICE: Treasures from the Photographic Collection of Frederick Church at Olana Thomas, by Weston Fels and Kevin J. Avery  
Reviewed by Chris Cobb

Geometry of Design: Studies in Proportion and Composition, by Kimberly Elam  
Reviewed by Roy R. Behrens

Writing Machines, by N. Katherine Hayles  
Reviewed by Dene Grigar

Images from Science: An Exhibition of Scientific Photography, by  
the School of Photographic Arts and Sciences  
Reviewed by Amy Ione

Leonardo's Laptop: Human Needs and the New Computing  
Technologies, by Ben Shneiderman  
Reviewed by Jack Ox

Lipchitz and the Avant-Garde: From Paris to New York, edited by  
Joseph Helferstein and Jordana Mendelson  
Reviewed by Roy R. Behrens

The Senses of Modernism: Technology, Perception, and Aesthetics,  
by Sara Danius  
Reviewed by George Shortess

Othermindedness: The Emergence of Network Culture,  
by Michael Joyce  
Reviewed by Michael R. Mosher

Nowhere in Particular, by Jonathan Miller  
Reviewed by Roy R. Behrens

The Mathematics of Oz: Mental Gymnastics from Beyond the Edge, by  
Clifford A. Pickover  
Reviewed by Dene Grigar

pict.soul, by Tetsu Inoue and Carl Stone  
Reviewed by Stefaan Van Ryssen

Publicity's Secret: How Technoculture Capitalizes on Democracy,  
by Jodi Dean  
Reviewed by Chris Cobb

Reload: Rethinking Women + Cyberculture, edited by Mary Flanagan  
and Austin Booth  
Reviewed by Michael R. Mosher

./swank, by Interface  
Reviewed by Stefaan Van Ryssen

Shine02.org  
Reviewed by Luisa Paraguai Donati

Hanging Out in the Virtual Pub: Masculinities and Relationships  
Online, by Lori Kendall  
Reviewed by Chris Cobb

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< New Works of St. Petersburg Composers Treating Biblical Subjects >

11 November, 2002, Composers' House Concert Hall, St. Petersburg, Russia

Reviewed by M. Zalivadny, galeyev@prometey.kcn.ru

The multimedia concert "New Works of St. Petersburg Composers  
Treating Biblical Subjects" took place on 11 November, 2002, at  
the Composers' House concert hall in St. Petersburg. It was  
organized by the St. Petersburg Composers' Union and the city's  
Jewish Communal Center and supported by the Joint Committee in

the USA. Among the creative bodies who helped prepare the performance were the electronic music studio of the Composers' Union and the Ayin video art studio of the Jewish Center.

Irrespective of the program title, the compositions performed at the concert were not intended as consecutive interpretations of Biblical stories, but rather as independent works of art that included Biblical motifs and concepts. The first piece, \*Ecclesiastes - Chapter One,\* by Anatoly Korolyov (for solo cello, electronics and visual image series) appeared as a "poetic cinema" work creating a kind of plot-free, contemporary-life panorama accompanied by Biblical text (spoken and in print). In this panorama, the "live" meditative" cello solo part (performed by Taras Trepel) played an important unifying role, binding up heterogeneous sound and visual elements into a single integrated whole.

The other two compositions - \*Banishing from Eden,\* by Sophia Levkovskaya (for chamber ensemble, electronics and visual images - mainly, projected photo portraits) and \*The Water of Meribah\* (based on an episode from the book of Exodus) by Yuri Krasavin (for instrumental ensemble, magnetic tape and "computer paintings") - were for the most part less convincing in applying electronic technologies and correlating them to more traditional components of the music. However, in the climax of the \*Meribah\* piece, highly-colored abstract computer-animation sequences produced an undoubtedly positive aesthetic effect, comparable to those seen in light-and-music films (Maxim Ephros of the Ayin studio was a co-author and performer in the visual part of all the compositions). As a result, the concert may with good reason be considered a serious step in mastering and propagating multimedia art possibilities, especially among musicians.

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< The Mathematics of Oz: Mental Gymnastics from Beyond the Edge >

by Clifford A. Pickover, Cambridge University Press, New York, NY, 2002. 351 pp., illus. Trade, \$29.00. ISBN: 0-521-01678-9.

Reviewed by Dene Grigar, dgrigar@twu.edu

Clifford Pickover's \*The Mathematics of Oz: Mental Gymnastics from Beyond the Edge\* is a collection of 108 puzzles that requires readers to identify patterns and processes, solve mathematical and logic problems, wind themselves in and out of mazes, break codes, and predict sequences and computer source code. That the puzzles are set in a narrative structure and the book utilizes rhetorical strategies found in literary texts to provide context and engage readers sets \*The Mathematics of Oz\* apart from other books of its genre.

As the title suggests, the book makes use of Frank Baum's \*The Wonderful Wizard of Oz,\* borrowing the characters of Dorothy and the Wizard to tell the story of a young Kansas girl who, through a series of rigorous tests administered by a Wizard, gains knowledge and understanding of the world around her. The story is set in motion when Dorothy and Toto veer too close to a monolith and are abducted by a somewhat nefarious Dr. Oz. In Pickover's conceit this wizard, though a genius, is not human at all but an alien being with multiple tentacles - a "Trochophore," who as the name suggests, resembles a kind of mollusk larvae (a cocky Dorothy refers to him as a "squid"). Octavia Butler's Oankali

from her trilogy, *Lilith's Brood*, comes to mind in our first encounter with him. By the time we are introduced to his sidekick, Mr. Plex, a robot that looks suspiciously like a "Pac-man," we are prepared for the allusions to fantasy and science fiction literature, film and popular culture. To be certain, the book is sprinkled with references to *Alice in Wonderland*, *Star Trek*, *Star Wars*, *2001: A Space Odyssey* and *Charlie's Angels*, to name a few.

Readers afraid Pickover's puzzles might be lost in narrative will be happy to know that they remain the real focus of this book. Though presented as an ongoing part of the story of Dorothy's struggle against Dr. Oz and his tests, each stands alone and offers an array of difficulty, from "challenging" to "outrageously difficult" - that is, beyond the reach of human beings to solve. The answers to all can be easily found at the end of the book. A travel guide at the beginning of *The Mathematics of Oz* classifies the puzzles into categories (i.e. geometry; mazelike problems; sequences, series, sets, and arrangements; physical world; probability and misdirection; and number theory and arithmetic) with the corresponding puzzle number, making it easy for readers to locate the kind of puzzle they wish to solve.

Another aspect of the book that makes it an enjoyable experience is the use of quotations found at the beginning of each chapter. Words of wisdom from Richard Feynman, Pearl S. Buck, William James and others introduce each puzzle, adding to the conceit that Oz is not simply another place or "dimension," but an embodiment of intelligence, sometimes a bit onerous but certainly never dull or unfairly exacting.

It should be noted that, as in many narratives, there is an ending. The epilogue tells us what happens to Dorothy once she has passed the tests, as well as the fates of Aunt Em, Uncle Henry and Toto. Some readers may be put off by the retro-nineteenth century romantic, "happy" ending Pickover leaves us with, but they cannot deny the wit, humor and intelligent challenges he demands of them. Those who love solving puzzles and mathematical and logic problems will surely appreciate the whimsy and the sport.

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< Shine02.org >  
<http://www.shine02.org/>

Reviewed by Luisa Paraguai Donati, [luisa@iar.unicamp.br](mailto:luisa@iar.unicamp.br)

The website Shine02' is presented by Amnesty International USA, curated by Downtown Arts Projects and designed by Doublespace. Based on the theme of light, it celebrates Amnesty International's 40 years of commitment to human rights. The 12 artists presented on the website have created individual digital projects on the theme, some of which emphasize the Web's collaborative modes of creation and operation. These possibilities reflect a vision of a community based on common interests that are no longer limited to and dependent on physical frontiers. This potential for international networking is raised by Amnesty International, in its endeavor to ensure that its activism is supported by people around the world.

Consequently, the website is designed to emphasize the artistic

aspects of the works, setting aside a specific area for them as well as linking to other web pages. As part of this design, a constant horizontal movement presents all the artists and projects and becomes a visual externalization of the flux of actions involved: artists' proposals, users' interventions and institutional participation. Users can define the velocity of the scrolling, according to the location of their mouse on the screen, making for an interesting and unusual form of control. The use of pastel colors and the opportunity to open new windows creates an environment that is able to display and contain all the works without visual conflicts.

The website brings together many interesting proposals, most of which show artists using the potential of users' interactions as possible interferences and disruptions in the works' content and form. Of the 12, the few listed below seem to most exemplify the objectives of the project.

Maciej Wisniewski, for example, is an artist and a programmer, who understands the Internet as a flux of distributed applications and who has developed his artistic works as aesthetic tools' to empower users to explore and use the information in different contexts. Wisniewski and netomat inc., with the piece \*Streaming Conscience' \* have created an opportunity for users to choose a stream of information and to incorporate it into their own website. The information is delivered within the size of a banner unit, which is elaborated by a conscientious use of different layers of texts, colors and movements, so enabling the message to be spread on the Web.

Similarly, Shu Lea Cheang's work, \*Stop,\* plays with the possibility of using the user's mouse to interfere and control a graphical animation comprised of white lines and texts on a black background. Users can determine movements and speed of these graphics, thus creating their time for reading and thinking about human conflicts and also to evoke a moment for stopping.

In contrast, Gary Simons, in his work \*Wake,\* reverses the users' procedure of erasing as the possibility of (re) occupying different spaces defined by images presented. Initially, users have only a white page, but the more intense the movement of their mouse on the screen, the more the space is gradually revealed. This process of revelation takes place over time, rendering it impossible to have the whole image at once. Then, users can visually experience the vestige of "someone's presence" maybe occupying the "empty spaces" showed by their memories. The sound used - songs hummed by male and female voices - brings tactile references to the perception of the non-presence and comprehension of loss.

Finally, Leo Villareal, working with sequenced light, proposed \*Sequencer 1.0,\* establishing a direct connection between users' interactions on the Web and a physical space - The Sandra Gering Gallery in New York. Users are invited to play with pulsing lights and to create different patterns of behaviors, which could be uploaded to "Strobe Matrix" in the windows of the gallery. Thus participants on the Web had their actions as visual interferences in the gallery, transforming viewers' space and according to the artist, "becoming active members in a system."

The potential of the Web for extending an international community organized around a specific theme of the defense of human rights is also emphasized by other artists and projects based on the possibility of non-metaphorical individual actions. I found this

website an interesting space to visit and would recommend it as a place to see innovative artistic production on the Web.

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Eduardo Kac: \*GFP Bunny\*

The author describes his transgenic artwork, \*GFP Bunny\*, and discusses the theoretical and practical implications of creating a new mammal in the context of art. Weaving together insights from philosophy, molecular biology, natural history, cognitive ethology and art, the author places primary emphasis on the welfare of the transgenic rabbit he has created. The author rejects biological determinism and states his goals of developing a dialogical relationship with the bunny based on love and care.

< General Article >

Celia Pearce, Sara Diamond and Mark Beam: BRIDGES I: Interdisciplinary Collaboration as Practice

Today, a worldwide community of innovators is engaged in the convergence of art, technology and science, as are a number of vital and active organizations, yet there seems to be very little discourse about the process of doing interdisciplinary work. The BRIDGES Consortium seeks to create a collaborative forum for the study and development of interdisciplinary collaboration as a practice. At the first Bridges Summit, held in June 2001, participants discussed a broad range of topics, including: preceding historical developments, the role of language, institutional hurdles to collaboration and the value of art/technology-based research. The event concluded with recommendations for aggregating, validating and strengthening the interdisciplinary community through the creation of a new form of collaborative organization.

< Theoretical Perspective >

Bulat M. Galejev: Evolution of Gravitational Synesthesia in Music: To Color and Light!

The author presents a detailed history and theory of a basic form of synesthesia, little studied to date, connected with the associative perception of gravity in music. This synesthesia appears to be common to all other kinds of art as well.

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< Historical Perspective >

Lawrence Fane: The Invented World of Mariano Taccola: Revisiting a Once-Famous Artist/Engineer of fifteenth-Century Italy

The Sienese artist-engineer Mariano Taccola left behind five books of annotated drawings, presently in the collections of the state libraries of Florence and Munich. Taccola was well known in Siena, and his drawings were studied and copied by artists of the period, probably serving as models for Leonardo da Vinci's notebooks. However, his work has received little attention from scholars and students in recent times. The author, a sculptor, has long been interested in Taccola's drawings for his studio projects. Although Taccola lacked the fine drawing hand displayed by many of his contemporaries, his inventive work may appeal especially to viewers today. Based on examination of the original drawings, the author discusses the qualities that make Taccola's drawings unique and considers what Taccola's intentions may have been in making them.

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< Technical Article >

Tibor Tarnai and Koji Miyazaki: Circle Packings and the Sacred Lotus

How must non-overlapping equal circles be packed in a given circle so that the diameter of the circles will be as large as possible? This paper presents an account of this problem and its putative solutions and related configurations in lotus receptacles, classical Japanese mathematics (wasan) and traditional Japanese design. Particular emphasis is placed on the connection between the conjectural solutions of this discrete geometrical problem and the fruit arrangements in the receptacles of lotuses, because in most cases the actual fruit arrangements are identical to the mathematical solutions. As the lotus is an important symbol in Buddhism and lotus decorations are quite common in Japanese Buddhist art, packings of circles in a circle have been represented in Japanese art for centuries.

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< A-Life Art >

Jon Bird, Paul Layzell, Andy Webster and Phil Husbands: Towards Epistemically Autonomous Robots: Exploiting the Potential of Physical Systems

The authors outline one path towards constructing interactive artworks with the potential for displaying novel behavior. They use Peter Cariani's taxonomy of adaptive robotic systems as a framework for comparing the capabilities of systems that interact with their environments. The authors then describe two examples of structurally autonomous systems that are able to construct

their own sensors independently of a human designer. The first device, the evolved radio, is the result of a recent hardware evolution (HE) experiment conducted by the authors. The second device, the electrochemical ear, was constructed almost 50 years ago by the British cybernetician Gordon Pask. The emergent behavior in both systems is only possible because many conventional engineering constraints were relaxed during their construction. Using existing technology, artists have the opportunity to explore the potential of structurally autonomous systems as interactive artworks.

Jordan B. Pollack, Gregory S. Hornby, Hod Lipson and Pablo Funes:  
Computer Creativity in the Automatic Design of Robots

This article demonstrates the possibility that robotic systems can automatically design robots with complex morphologies and tightly adapted control systems at a low cost. These automatic designs are inspired by nature and achieved through an artificial coevolutionary process to adapt the bodies and brains of artificial life-forms simultaneously through interaction with a simulated reality. Through the use of rapid manufacturing, these evolved designs can be transferred from virtual to true reality. The artificial evolution process embedded in realistic physical simulation can create simple designs often recognizable from the history of biology or engineering. This paper provides a brief review of three generations of these robots, from automatically designed LEGO structures, through the GOLEM project of electromechanical systems based on "truss" structures, to new modular designs that make use of a generative, DNA-like representation.

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ISAST NEWS
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< LEA educators initiative >

Faculty and Students: Receive your FREE subscription to the LEA e-mail digest at <http://mitpress.mit.edu/lea/e-mail>.

Job Opportunities submitted to LEA are posted in the fineArt forum, the LEA news outlet. The Leonardo Bibliographies project provides reading lists on emerging and key topics in the field. The Leonardo Pathbreakers and Pioneers Art History Project provides key primary information for art historians. The LEA Archive provides comprehensive resource and documentation information. Access to the password-protected archive is provided with your LEA subscription.

LEA is creating an abstracts index listing of Masters and PhD theses in the art/science/technology field. Students interested in contributing should contact [leo@mitpress.mit.edu](mailto:leo@mitpress.mit.edu). LEA maintains a discussion list open only to faculty in the field. Faculty wishing to join this list should also contact [leo@mitpress.mit.edu](mailto:leo@mitpress.mit.edu).

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< Rejane Spitz joins Leonardo's International Advisory Board >

We are pleased to announce that Rejane Spitz, Associate Professor in the Department of Art and Design at Rio de Janeiro Catholic University (PUC-Rio) in Brazil, has been elected to the ISAST/Leonardo International Advisory Board. Currently a Visiting Scholar at the University of California at Berkeley's Space Sciences Lab, Spitz also coordinates the Electronic Arts Unit, an experimental research laboratory working with art and technology at PUC-Rio. Educated in Brazil and England, Spitz has worked with computers in the arts since 1983.

Spitz's interactive projects include websites, CD-ROMs, musical collaborations, and installations. Her work has been awarded the "Scientists of our State" grant, and gold and platinum records. Spitz's work has been exhibited in Australia, Brazil, Canada, Chile, England, Finland, France, United States, and Uruguay. She has also curated several exhibitions on electronic art and has written extensively on social and cultural issues related to the use of computers in developing nations. Spitz is on the International Advisory Committee of ISEA (Inter-Society for the Electronic Arts,) the Advisory Board of the Digital Art Museum (DAM) and is the South American representative of SIGGRAPH Education Committee. In addition to joining the International Advisory Board, Rejane Spitz serves on the editorial board of Leonardo.

The ISAST/Leonardo International Advisory Board works with the ISAST/Leonardo Governing Board to develop plans and policies. With input from across the globe, the International Advisory Board helps to extend Leonardo's scope beyond the reach of its regional representatives.

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< Leonardo Award for Lifetime Achievement - Call for Nominations >

Leonardo/ISAST offers one or more awards every year to recognize outstanding work in the areas of art, science and technology. Following the vision of Leonardo founder, kinetic artist and astronautical pioneer Frank J. Malina, the Frank J. Malina Leonardo Award for Lifetime Achievement recognizes eminent artists who, through a lifetime of work, have achieved a synthesis of contemporary art, science and technology. Former recipients of this award include: Gyorgy Kepes, Nicolas Schöffer, Max Bill and Takis.

We want to hear from you, our associate members, to find out who deserves recognition for a lifetime of activity, exploration and achievement in art, science and technology. If you would like to nominate an artist/scientist for the Lifetime Achievement Award, please send an email with the name of the candidate and a brief statement describing your reasons for nomination to [isast@well.com](mailto:isast@well.com). All nominations will be sent to the Leonardo Awards committee for consideration. The recipient will be announced late in 2003.

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< College Art Association 2003 Annual Conference >

More than 5000 artists, art historians, curators and critics met in New York for the 2003 College Art Association annual conference. Several of the more than 150 conference sessions

focused on the convergence of art, science and technology. In addition to papers about copyright issues on the web, video art and a laptop networking meeting, the conference also featured a session entitled "Complexity and Emergence," which dealt with studies into seemingly random systems that suggest reconsideration of traditional ways of understanding art, media and philosophy. Chaired by Philip Galanter, speakers included Andrea Polli, Paul Hertz and Ellen K. Levy. Also of interest was a session on "Art and the 'War on Terrorism,'" chaired by Norman Cowie and including papers by Paul Chan and Ricardo Dominguez, among others. Another notable session was "Some Stories Concerning the Construction of the New Observer," chaired by Warren Neidich and including papers by Lev Manovich, Raimundas Malasauskas, Christiane Paul, Christine Wang and Joseph Dumit.

The Exhibitor's Hall at CAA expanded over 2 floors of booths by university and museum presses, artist supplies manufacturers, and arts service industries. MIT Press had a large, well-situated booth where it offered \*Leonardo\* at a discounted rate and featured many publications from the Leonardo Book Series.

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< New in the Leonardo book series - \*Uncanny Networks\* >

Geert Lovink's \*Uncanny Networks: Dialogues with the Virtual Intelligentsia,\* the latest volume in the Leonardo Book Series, includes interviews with artists, critics and theorists who are intimately involved in building content, interfaces, and architectures of new media (see an excerpt in this issue). Order your copy at <http://mitpress.mit.edu/catalog/item/default.asp?ttype=2&tid=9545>.

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< Bill Seaman wins Leonardo Award for Excellence >

Bill Seaman has won the 2002 Leonardo Award for Excellence for his article "OULIPO / VS / Recombinant Poetics," published in \*Leonardo\* (Issue 34:5, 2001, Digital Salon Special Issue). In his discussion, Seaman explores alternative avenues of creativity and redefines them through visual and sonic digital media.

Download the article at <http://mitpress2.mit.edu/e-journals/Leonardo/isast/awards.html>

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< Leonardo Music Journal News >

LMJ \*Pleasure\* issue now available

Pop music is unabashedly driven by the pleasure principle. "Serious" music, however, is usually perceived as more refined, or, to put it another way, repressed. But are pleasure and thoughtful invention necessarily at odds? Can there be no "bump and mind?" Find out in \*Pleasure,\* Vol. 12 of the \*Leonardo Music Journal.\* Included with the journal is the CD, \*From Gdansk till Dawn: Contemporary Experimental Music from Eastern Europe,\* curated by Christian Scheib and Susanna Niedermayr. The CD features works from throughout Eastern Europe by Tigrics, Olga+Jozef, Wolfram, and many more.

Order at <http://mitpress.mit.edu/catalog/item/default.asp?ttype=4&tid=3>

Call for Papers: Leonardo Music Journal Vol. 14 (2004)

"Composers inside Electronics: Music after David Tudor"

"In my electronics . . . I try to find out what's there - not to make it do what I want but to release what's there. . . . The object should teach you what it wants to hear." With this simple but subversive recipe, David Tudor articulated a profound shift in the aesthetics of electronic music. Inspired by Tudor (and other composer/luthiers like David Behrman and Gordon Mumma) and aided by the Lego-like modularity of integrated circuits, the experimental music community in the 1970s adopted a new working method based on seat-of-the-pants electronic engineering. The circuit - whether home-made, self-hacked or store-bought but scrutinized-to-death - became the score.

A generation later, aspects of the Tudor aesthetic have spread well beyond the avant-garde: hip-hop, house and other forms of dance music and electronica share a similar obsession with the quirks intrinsic to specific pieces of audio gear. Every pop producer has a signature gizmo. The latest software plug-ins emulate obsolete but beloved hardware. We've become virtuosos of Tudor's practice of listening to the object, but the regularity and repetition of Techno could not be further from the tangle of Tudor's music.

For this issue of the \*Leonardo Music Journal,\* we invite authors to submit articles on any aspect of the work of David Tudor (both in its historical context and as it applies to music and art today), on the influence of Tudor's ideas on their own work, or on the role of technological idiosyncrasies in their composition, performance or production.

Deadlines: 1 November 2003: rough proposals, queries 1 January 2004: submissions of finished articles

Address inquiries to Editor-in-Chief Nicolas Collins at:  
ncollins@artic.edu

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