Leonardo Electronic Almanac Volume 15, Number 7 - 8, 2007
http://leoalmanac.org
ISSN #1071-4391

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LEONARDO REVIEWS, August 2007

Judging by the current publishing trend we are all fast approaching middle age or even our dotage: by all, I mean those of us who participated in the secessionist hey days of 'media art' and thought that art, perception, and the world would be changed by new technologies. Now we know, at least from the three MIT publications highlighted in Leonardo Reviews here, that nothing changes. After the brief wild party, the historians have come in to sweep up the pieces into a sensible heap. This

is not to decry writing history, an enterprise that I hope I also have contributed to. It is merely to point out that at least as far as publishing in the field of science, art and technology is concerned it is about time to quietly abandon the word 'new' when we talk of media - even when it is willfully confused with technology.

The three featured reviews below identify distinct historical methods for conceptualizing the relationship between art and those technologies that some choose to call media. Our reviewers collectively address this topic and their dialogue sets up the debate about how future histories are to be written. Histories in which the assumptions, parallelisms and the tenuous associations of coincidence of populist writing are replaced by the rigor of researchers trained to avoid the seductions of their own rhetoric.

Not only in these three reviews but also throughout the recent postings at http://www.leonardo.info/reviews/books.html the maturation of our practices, discussions and reflections concerning the intersection of art, science and technology is increasingly evident. We hope that the early warning radar of this trend will be reflected in our future reviews for the benefit of the
Leonardo community

Michael Punt
Editor-in-Chief
Leonardo Reviews

< Deep Time of the Media: Toward an Archaeology of Hearing and Seeing by Technical Means by Siegfried Zielinski, Gloria Custance > reviewed by Sean Cubitt

Siegfried Zielinski offers a new take on the long history of media technologies, taking his readers on a tour of forgotten archives and forgotten innovators. Familiar names appear, among them a fascinating repositioning of Athanasius Kircher. By refusing to accept the normative histories, Zielinski recovers a lost trajectory that involves a long tradition of magical and quasi-rational thought from Empedocles to the Illuminati and, thence, to the late 19th century reinvention of time. Among those recovered from obscurity are Giovan Battista Della Porta, Purkyne, Lombroso and the extraordinary Aleksej Kapitanovich Gastev. In his conclusion, Zielinski not only draws together the legacy of Ramon Llull, but proposes a new cartography of media 'anarcheology', whose centres are no longer London, Paris, Berlin and New York but Petersburg, Prague and places south and east. It is a marvelous book in the most literal sense of the word, and a wonderful read in its own right, quite apart from the scholarship and the revelation of new trajectories for media historiography. One reason for this is that the book opens onto a landscape of strangely familiar if obscure beauty: the history of the magical tradition as an intellectual pathway now left in darkness, but once a shining path for intellectual and technological enquiry.

Zielinski's passion for the hermetic tradition steers clear of the worst excesses of Jungian mysticism while recalling the line, from Robert Fludd to Vilém Flusser, that situates a history of media in the gnostic tradition in Western Europe. He reminds us that Newton's dark obsession with alchemy is of a piece with his physics and optics; and that Copernicus is as much the heir of Pico della Mirandola's solar worship as he is

the ancestor of scientific rationalism. It is an attractive thought, that right knowing of material science sails so close to the perennial philosophy; and that however materialist this history is, it addresses, if only by rejection, the repressed chronotope of the eternal wisdom.

What has always repelled materialists from the hermetic tradition is not its whimsy but on the contrary the solemnity with which its priesthood has historically erected ever more complex cathedrals of theodicy and theogeny on the intuition that something 'more' inhabits, locates and frames the givenness of the world. It is sad therefore to note that materialism has often - though not universally - eschewed any address to the sacred. By this I do not mean that materialism in any way fails for lack of a theology, nor that the sacred forms some ontological ground on which the material world is more deeply founded. Rather, what has been often lacking is a commitment to understanding that affect which we recognise under the rubric of sacredness, an elevation beyond not merely the instinctual but also the intellectual pleasures, a yearning apart from the desire for justice, peace and plenty for all. Since the term sacred has, moreover, been tainted by centuries of mouthing in institutions that have done little for justice, peace or plenty, we need another term, one that might displace the materialist reluctance to address affect in general and this affect in particular. I propose a mediological enquiry into the nature of wonder, a task admirably launched by Zielinski's book.

Quite properly Zielinski calls this tradition 'magic'. It is hard nowadays not to evoke Arthur C Clarke's dictum that any sufficiently advanced technology appears as magic. What neither Clarke nor Zielinski undertake is an analysis of the curiously braided destinies of magic and familiarity. As Don Ihde observes, technologies that at their invention appear magical can, with widespread adoption, become 'embedded' and transparent, as signs written in one's native language are transparent. Embedded technologies like television, once marvellous, become the invisible vehicles of messages whose mediation we notice only when the machinery breaks down. The braiding of magic and the mundane occurs when familiarity breeds contentment. The internet is a case in point. Early adopters not only found the technology marvellous: we found it interesting. The early adopter generation tended to be computer literate, at least at the level of understanding (and wondering at) the processes of packet switching, the efficacy of html, even the duplicity of cookie technology. But for the internet generation who grew up with them, these marvels are the more truly magical because they are not understood. Comprehension of how the net works is today a specialist discipline, or the domain of nerds, and while nerds command a higher degree of peer respect than in previous generations, their knowledge is regarded as arcane, and only its instrumental use in problem solving genuinely prized. For the rest, the web, e-mail, IRC are apparitions whose arrival might as well be the result of angels fluttering in Intel Core Duos as of the massive infrastructure of satellites, fibre-optics, domain name servers and internet access points.

Not only does this leave internet governance at the mercy of cultures of expertise; nor merely open the doors to the exercise of power through control of code and protocol. It can also be damned for condemning us to good-enough solutions, like web-safe colours. At the same time, this state of affairs echoes with the same magical apparatuses that Zielinski points us towards. The difference is that while embedded internet appears without

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

explanation or the need for it, it rarely evokes the sense of wonder that Zielinski's protagonists and their audiences so graphically experienced. It is a task - perhaps preliminary, but vital - of critical enquiry to restore that sense of wonder in the face of technologies that have become banal.

There is a further refinement required to the concepts of the hermetic tradition and of magic that such a project requires. Hermeticism's reliance on correspondences - on similarities held to embody a deeper linkage between phenomena at some metaphysical level - has a tendency to proliferate connections, drawing ragged collocations of words, numbers and things into mystic configurations. Pilloried by Umberto Eco in his novels, and defended as the root of radical (and contemporary) art practice by Barbara Maria Stafford, the practice of analogy can be as ludicrous as it is illuminating. Critical studies of technology seeking to induce a sense of the strangeness of their objects need to be alert to both the poetic affordances of analogy and its capacity for mystification. The methodological brush with magic reminds us that the world still has surprises in store for us. Should the word 'surprise' seem too redolent of fairground attractions, Tom Gunning has taught us that this is no bad thing. If we are to retain our capacity for amazement, we have to remain open to the chance encounter of the sewing machine and the umbrella stand on the operating table. If this encounter explains nothing, we must place it alongside more licit engines of interpretation which, it appears, increasingly can offer only approximations, intimations, abstractions of or from reality. Fractal geometry, the uncertainty principle, string theory all move away from claims to describe nature and natural processes. Without abandoning the claim to some kind of relation to reality, such theoretical and mathematical models no longer offer one-to-one transcriptions of the real. The relation is neither one of utter deracination nor of simulacra lacking an original. On the contrary, such expressions mediate between reality and ourselves using processes that often enough arise equally from natural and artificial domains. Zielinski's book traces processes of mediation that have found some material form that would allow some mode of conformation or congruence between terms. His achievement is to have noted that proximity is no guarantor of truth: the fleck in my own eye is as strange as, if not stranger than, the beam in my ancestor's.

< From Technological to Virtual Art by Frank Popper > reviewed by Amy Ione

Technological and virtual art have become so prevalent in recent years that I find it difficult to conceptualize a world in which static media were the norm. Frank Popper's From Technological to Virtual Art chronicles the trajectory that brought about this revolution. Defining virtual art as art that allows us, through an interface with technology, to immerse ourselves in the image and interact with it, the book surveys the originality and power of recent projects and offers some historical antecedents as well. A well-respected art historian, long at the forefront of art and technology studies, Popper is an appropriate figure to present this material. Among those who have taken the art/ science/technology interface from the fringes and into the mainstream, his expertise is vividly translated into this well-documented and comprehensive study of the paradigmatic change. Here he argues that the move toward technologically based projects, largely begun in the twentieth century, has humanized technology due to an emphasis on interactivity. It is also noteworthy that many of the artists

Popper focuses on see their commitment to art in larger terms. As the book details, this brings them in touch with politics, the community, and various social dimensions. Reading through the publication is like visiting an exhibition with a smorgasbord of themes, a global sweep, and sensitivity to the personal relationship artists establish with their projects.

Popper sets the stage with an impressive history of technology-inspired work from 1918 to 1983 that immediately demonstrates the wealth of material packed into this volume. Accounting for about a third of the book, Part I includes historical antecedents and key figures. This section begins to make it clear that the artistic imagination sometimes finds the "right" technology through incremental experimentation. Surveying technologies that include lasers, holography and eco-technological, computer and communication art, the overview also offers a fine foundation for the coverage of contemporary technological/virtual art and artists, which comprises the bulk of the publication. Part II is subdivided into sections on materialized digital-based work, off-line multimedia and multisensoral works, interactive digital installations, and multimedia online works (net art). Covering 1983-2004, the second part examines plastic and cognitive issues, sensory experiments, interactivity, and experimental modalities more recently pursued. Well-crafted vignettes of key innovators, in both sections, underscore that many practitioners who bring science and technology into their research are sensitive to aesthetic values. What sets them apart is that formal elements are addressed in tandem with investigations of everything from politics to philosophical questions about the real, their own virtual "space," connections between the real, the virtual, and the imagined, and multisensory experience. Indeed, the juxtapositions of themes and formal goals accounts for the work's strength and power.

Given its sweep, From Technological to Virtual Art is a hard book to evaluate critically. Popper shows a willingness to let the artists speak for themselves and honors their intentions by explaining their aspirations non-judgmentally. This style of authorship successfully outlines artistic histories and the movement's growth but does not contextualize the kinds of critical themes that are apt to arise in a general academic discussion of the art, science, and technology interface. It is my impression that when critical questions were introduced in depth it was because an artist brought this dimension into a discussion with Popper. This minimalistic approach led me to relish the few parts where deeper issues were more fully brought into play. One of these exceptions was in the chapter on Interactive Digital Installations; perhaps the strongest in the book. Here there is some discussion of how the transcendental approach of immersive, virtual projects (such as Char Davies) intersects with the historical view. Stepping aside from his theme driven biographical survey style, Popper mentions how transcendence, as discussed by Plato, Kant, and other philosophers who have thought about this topic, differs from the common presentation of virtual art. Including more developed commentary throughout the book on how the field has re-visited philosophical issues and artistic questions would have added a nice tension to the chapters.

Overall, the book works best as a tribute to the art/science/technology paradigm and as an invitation to seek out the pieces presented. I was delighted with the background material on a number of artists whose work I have encountered

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

over the years, and on figures I know more by name than from exposure to their contributions. For example, Leonardo readers will particularly appreciate Popper's summary of the life, inventive mind, and artistic contributions of Frank Malina. Also of note were summaries on Patrick Lichty, Nina Czegledy, Catherine Ikam and Louis Fléri, Roy Ascott, Orlan, and Rafael Lozano-Hemmer. On the other hand, even a thorough introduction cannot include the wealth of talent within this community. In this case, I was sorry there was no mention of Margaret Dolinsky's work and wished that Victoria Vesna's research, particularly with nanotechnology, had received a fuller treatment. I also found myself surprised by some of the examples Popper chose. Jenny Holzer, for instance, is not someone I think of in terms of technological or virtual art, although her neon sign projects are well known and definitely qualify as technological artifacts. Just as I was ruminating on the Holzer section, I learned that she now has new silk-screen works on display at the Venice Biennial. Her latest turn to this older technology is a reminder that as the virtual becomes more a part of the art world, artists still move in and out of diverse media, at times returning to more traditional forms.

Perhaps the book's greatest contribution is its expansion of the art/science/technology literature. Popper mentions early in the book that his intention is to present the history of technological and virtual art in a manner that goes beyond the contributions of Oliver Grau and Christine Buci-Glücksmann. In this he is successful. Grau makes a compelling case that media art has a history that is receiving more (well-deserved) attention, and Buci-Glücksmann demonstrates that technological art now has a place at the table. By contrast, Popper highlights the characters who have brought about our current vision. His much-needed history of key players brings Vasari's sixteenth-century Lives of the Artists to mind. This is not a trivial comparison. On the one hand, both authors present brief overviews of the revolutionary artists of an era. On the other hand, both authors offer presentations that need to accommodate the technological realities of their time. Vasari's descriptions were primarily textually based due to the limitations in printing visual images in the sixteenth century. Although the second edition included woodcuts of the faces of most of the artists mentioned, there were no reproductions of the artworks he described. Ironically, the Popper book is similarly limited in relation to the artworks. One or two small black and white static images accompany the short sketches of the various artists. While numerous, these are a far cry from the actual installations.

Having said this, it should surprise no one that the distance between an illustrated text and physical reality was foremost on my mind as I read the book and prepared this review. During this period, coincidentally, I visited Anthony McCall's installation, You and I, Horizontal (2005) at the San Francisco Museum of Modern Art. Although McCall is a figure Popper does not include, he could easily have found a place in the mix. Interacting with this piece, which emphasized the sculptural qualities of a light beam as it comes in contact with a changing geometrical projection and particles in the air - here, vapor from a theatrical haze machine - I could not help but think how poorly this active piece would translate if presented as a small black and white reproduction, even though it is a monochromatic work. Spending time digesting its magical qualities, as the haze seemed to continually change its "physical" form(s) in real time and physical space, underscored how necessary the unfolding

experience is to our comprehension of technological art, virtual art, and art in general. To be sure, Popper's words convey that he recognizes how hard it is to articulate all that "embodiment" adds in the book form. Fortunately he did try to address this limitation through the artist list at the end of the volume, which provides URLs that supplement the print medium.

Finally, it is important to underscore that a short review cannot even begin to touch on the many wonderful tidbits of information Popper packs into this history. Without a doubt, his knowledge of the field and personal acquaintance with the range of artwork discussed elevates his exposition of motives, technology, and the creative problem-solving involved in moving a piece from idea to actuality. Even given the distance between the publication and the actual experience of the work, Technological to Virtual Art (particularly with the supplementary material) provides a nice overview of the field. It would be a wonderful choice for a textbook in a course exploring the professionals who have nurtured the current art/science/technology climate. Educators could enlarge the book with the URLs, onsite visits, and other media examples that more fully convey the artistic projects outlined in the text. Indeed, and to Popper's credit, much of the material about the work has genuineness to it that came about through his extensive reliance on personal interviews rather than secondary sources. Crafted to touch upon key themes within the work and the creative problem solving that motivated the artistic imagination and technological development needed to bring an aspiration to fruition, the book is a welcome addition to the field. Those who are new to the art/science/technology discipline will find the sweeping survey offers a nice map. Those who know the terrain will no doubt learn more about groundbreaking practitioners and appreciate the wealth of detail that illuminates how we got to this point in time. Libraries now building collections that cover the emergence of recent virtual and media projects should definitely put this book on their shelves. From Technological to Virtual Art is a book that marks the arrival of the art/science/technology perspective and presents the work of many of the innovative people responsible for its ascendancy. I highly recommend it.

< Digital Performance: A History of New Media in Theater, Dance, Performance Art, and Installation by Steve Dixon >
reviewed by Dene Grigar

It's hard to imagine a bolder or more in-depth book on digital performance than Steve Dixon's Digital Performance: A History of New Media in Theater, Dance, Performance Art, and Installation.

Exhaustive without being exhausting, Digital Performance includes 800 pages that outline histories as well as theories surrounding digital performance, with large sections of the book paying detailed attention to such topics as the "body," "space," "time," and "interactivity." Along with providing a history of digital performance, Dixon addresses assumptions and critiques views taken by some at face value. Little escapes Dixon's lens, for it is a book with roots in a long-running research project undertaken, from 1999-2001, by Dixon and Barry Smith that "document[ed] developments in the creative use of computer technologies in performance." Called The Digital Performance Archive (DPA), the web-based archive included "live theater and dance productions that incorporate[d] digital media to cyberspace interactive dramas and webcasts. . . [and] collate[d] examples of the use of computers technologies to document,

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

discuss, or analyze performance, including specialist websites, e-zines, and academic CD-ROMs" (ix).

The book begins with a revised perspective of the postmodern take on art, challenging Lev Manovich's stance on new media art, which Dixon says "fetishizes the technology without regard for artistic vision and content" (5) and views that ignore the influence of Italian Futurism (and those movements connected to it) on digital performance (47). Section one of the book traces this influence as well as the development of digital performance in three periods, looking first at the avant-garde in the early 20th C, then to multimedia theater from 1911-1959, and finally to technology infused performance work from 1960 onwards.

Section two concerns itself with the "Theories and Contexts" surrounding digital performance, starting with the "liveness problem" (115), then "Postmodernism and Posthumanism," "The Digital Revolution," and "Digital Dancing and Software Developments." Here Dixon critiques postmodern theories that he says "can . . . operate doctrinally to impose specific and sometimes inappropriate ideas onto cultural and artistic works" (135) - and takes on the theorists who propose them. Jay David Bolter and Richard Grusin's "remediation," Dixon says, though not a new idea (it is itself repurposed from the "disposal and recycling industries") does shed light on "inherent dialectical tensions at play within computer representations and simulations" (136). George Landow, Dixon tells us, possesses "evangelical zeal typical of the writers at the time" (137). Dixon points to Diane Gromala's utilization of Lyotard's language game to talk about new technologies and, then, Deleuze and Guttari's theories to explain her views of virtual reality and, next, to Gregory Ulmer's focus on Derrida, Lacan, and Wittgenstein for theories of hypertextuality. A whole section is devoted to Jean Baudrillard, whose nihilistic and cynical view of technology, while "seductive and compelling," is "over the top" and in the end offers a view that is for the most part one-sided and incomplete (140-143). There is a section, also, on Derrida, whose theory of deconstruction (particularly, that the "world [is] constant flux") does not really fit "the liveness of theater," which "conspires to fix time and space" (author's emphasis, 145).

It would be easy to react to Dixon's critique of theory as simply as one of a Monday morning quarterback able to make better claims in hindsight than those living in the moment of action, as he picks apart past ideas, showing them to be hyperbolic or faulty. When he writes, for example, that "an inescapable fact about the progression of software is that after the initial miracle of new computer 'life,' a certain sameness and staleness creeps in through the repetition that replaced the initial awe and wonderment" (208), we have to ask, isn't this problem true for all new things? Is it just a problem with software? I say this because I remember having to explain to a roomful of college students why Piet Mondrian's Composition in Blue, Yellow, and Black is, paraphrasing their comments, "a big deal, considering that the painting was just lines and squares that anyone can do with PhotoShop." The fact does remain that postmodernism does (or did, depending on one's perspective) offer an alternative to ancient Greek philosophy and worldviews that have dominated the Western world for over two thousand years and don't necessarily work for a contemporary world that is vastly larger and more technologically advanced than that of 5th century Athens. At some point we do get excited about something new and must be able to map new views onto our new

world. But the question Dixon forces us to remember is, when and which ones?

But this questioning of Dixon's perspective on postmodernism does not mean that his insights are off base. Far from the truth: They are right on target for those performers and performance scholars who have long wondered about the wisdom of placing so much importance on theories not born out of performance practice. Dixon's views will be perceived as sensible and be felt as breaths of fresh air.

The next sections, as stated previously, look at the body, space, time, and interactivity. There is a lot to like in the next 600 pages, starting with Dixon's position that "bodies are not animated cadavers . . . . Bodies embody consciousness" (212), to the dream quality of performance (337), to the notion of "media time" (517), to his definition of and categories for interactivity (563), to cite just a few of the hundreds of pages of ideas and insights he offers.

Readers looking to consult the DPA database introduced at the front of the book will be disappointed that it is not currently available. Some may wonder why Dixon did not cite Mike Phillips' wry work concerning Shakespeare's works and monkeys but simply alluded to it (166) or question his spelling of Margarete Jahrmann and Max Moswitzer's work, the "nibble-engine-project" (611) when they themselves write of it as "nybble-engine." Women who have been working with computers for decades may take umbrage at Dixon's own assumption that the internet was populated by cowboys, forgetting about us cowgirls (160) or grrls, as many of us called ourselves.

Despite these issues, Dixon's book possesses both depth and breadth that performance theorists and practitioners will find not only useful but also necessary for research and teaching. As such Dixon's book is not a history of digital performances but rather a book about the whole concept of digital performance.

Leonardo Reviews, August 2007

< Bullshit by Pea Holmquist and Suzanne Khardalian > Reviewed by Jonathan Zilberg

< Cartographic Cinema by Tom Conley > Reviewed by Jan Baetens

< Clarence John Laughlin: Prophet Without Honor by A.J. Meek > Reviewed by Allan Graubard

< Deep Time of the Media: Toward an Archaeology of Hearing and Seeing by Technical Means by Siegfried Zielinski and Gloria Custance > Reviewed by Sean Cubitt

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

R. Behrens

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< Native Moderns: American Indian Painting, 1940-1960 by Bill Anthes > Reviewed by Jonathan Zilberg

< Notes on Marie Menken by Martina Kudlacek > Reviewed by Roy R. Behrens

< Ohne Schnur: Kunst und Drahtlose Kommunikation Edited by Katja Kwastek > Reviewed by Stefaan Van Ryssen

< Our Daily Bread by Nikolaus Geyrhalter > and < The Gleaners and I by Agnes Varda > Reviewed by Roy R. Behrens

< Shigeru Ban: An Architect for Emergencies by Michel Quinejure > Reviewed by Roy R. Behrens

To read all the reviews posted for August 2007, visit Leonardo Reviews at: <http://www.leonardo.info/ldr.html>.

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< Research on and from within Creative Practice > by Ernest Edmonds

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Special Section: The Fire Arts of Burning Man

< Introduction: A Passion to Burn > by Louis M. Brill

< Curator Overview: Playing with Fire > by Christine Kristen (a.k.a. LadyBee)

ABSTRACT: Fire as an art form is evolving in the Black Rock Desert of Nevada, where many Burning Man artists explore the creation and manipulation of fire in their installations. Sculptors, engineers, geeks and pyromaniacs experiment with open fires, pressurized gases and pyrotechnics to produce mesmerizing and beautiful works of art.

< Burning Man Artists' Statements > by Joe Bard and Danya

Parkinson, Tim Black, Larry Breed, Paul Cesewski and Jenne Giles, Bill Codding, Dan Das Mann, Wally Glenn, Lucy Hosking, Syd Klinge, Tamara Li, Dan Ng, Andrew Sano, Jack Schroll, Eric Singer, Nate Smith, Charlie Smith and Jaime Ladet, Kal Spelletich, Kasia Wojnarski

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General Note

< The Use of Artistic Analogies in Chemical Research and Education > by Balazs Hargittai and Magdolna Hargittai

ABSTRACT: This compilation presents examples of artistic artifacts that have served as successful visual analogies to aspects of chemistry. The authors have used them in various college-level chemistry classes, outreach programs and chemistry textbooks, as well as in journals and monographs. They include ancient Chinese, Turkish and Thai sculptures, modern sculptures and a medieval fresco. These examples illustrate the chemical concept of chirality, the periodic table of the elements and molecular systems such as buckminsterfullerene, nanotubes and quasicrystals.

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Transactions

< Interactive Experience in Public Context: Tango Tangle > by Zafer Bilda

< Constraints and Creativity in the Digital Arts > by Linda Candy

< Interaction as a Medium in Architectural Design > by Joanne Jakovich and Kirsty Beilharz

< A Pleasure Framework > by Brigid Costello

< Fundamental Insights on Complex Systems Arising from Generative Arts Practice > by C. Burraston

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Special Section: ArtScience: The Essential Connection

< Deconstructing the Genome with Cinema > by Gabriel A. Harp

ABSTRACT: Evidence from language, history and form suggest an analogy between the cinema and the genome. The author describes some of the relationships between cinema and the genome and points to opportunities for discovering unmarked categories within the genome and new methods of representation. This is accomplished by evaluating existing metaphors presented for the understanding of genetics and revealing how current scientific understanding and social concerns suggest a cinematic alternative. The formal principles of function, difference and development mediate discussion and serve as heuristics for investigating creative opportunities.

< Fractal Graphic Designer Anton Stankowski > by Vladimir A. Shlyk

ABSTRACT: The author introduces an outstanding master of graphic design and photography, Anton Stankowski, as a fractal

artist. Stankowski saw his challenge as inventing a visual graphic language capable of depicting natural and technological processes and abstract notions in an aesthetic and comprehensible way. Many of Stankowski's works demonstrate fractal-like characteristics. Analysis of his theory of design provides convincing evidence that this is not accidental. Stankowski used these features consciously. He devised and applied a principle of organizing forms in pictures by means of two components, branching and regeneration, both of which are properties of self-similarity and the underlying bases of fractals.

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From the Leonardo Archive

< Introduction > by Darlene Tong and Roger F. Malina

< Caricature Generator, the Dynamic Exaggeration of Faces by Computer and Illustrated Works > by Susan Brennan (Reprinted from Leonardo Vol. 18, No. 3, 1985)

ABSTRACT: The author has researched and developed a theory of computation for caricature and has implemented this theory as an interactive computer graphics program. The Caricature Generator program is used to create caricatures by amplifying the differences between the face to be caricatured and a comparison face. This continuous, parallel amplification of facial features on the computer screen simulates the visualization process in the imagination of the caricaturist. The result is a recognizable, animated caricature, generated by computer and mediated by an individual who may or may not have facility for drawing, but who, like most human beings, is expert at visualizing and recognizing faces.

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Leonardo Reviews

Reviews by Kathryn Adams, Wilfred Niels Arnold, John F. Barber, Martha Blassnigg, Andrea Dahlberg, Sean Cubitt, Amy Ione, Mike Leggett, Michael Punt, Eugene Thacker, Stefaan Van Ryssen, Jonathan Zilberg

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LEONARDO NETWORK NEWS

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< Leonardo/OLATS Awards the Leonardo-EMS Award for Excellence to criticalartware >

We are pleased to announce that Leonardo/OLATS and the Electroacoustic Music Studies Network (EMS Network) have awarded the Leonardo-EMS Award for Excellence to criticalartware (Jon Cates, Ben Syverson and Jon Satrom) for their paper "likn: A Flexible Platform for Information and Metadata Exchange" which they presented at the Electroacoustic Music Studies Conference in Beijing, October 2006.

criticalartware's likn project is an artware application that addresses the nature of knowledge, ideas and language in the era of globalization. More specifically, likn is a functional online

collaborative environment which wages a persistent critique of the desire to standardize and universalize meaning, and offers an alternative by applying postmodern and postcolonial theories to the challenge of organizing discourse and media. The paper can be accessed online at

http://www.leonardo.info/isast/announcements/LeoEMS2006_announce.html

The Leonardo-EMS jury convened on Thursday, October 26 after the official closure of the third Electroacoustic Music Studies Conference. The Leonardo-EMS jury, consisting of Marc Battier, Kenneth Fields and Ricardo dal Farra, was thrilled at the high quality of presentations by young researchers during the Beijing event and the final decision was difficult to reach.

The EMS Network has been organized to fill an important gap in electroacoustic music, namely focusing on the better understanding of the various manifestations of electroacoustic music. Areas related to the study of electroacoustic music range from the musicological to more interdisciplinary approaches, from studies concerning the impact of technology on musical creativity to the investigation of the ubiquitous nature of electroacoustic sounds today. The choice of the word "network" is of fundamental importance, as one of the goals of the EMS Network is to make relevant initiatives more widely available. More about the Electroacoustic Music Studies Network can be found at http://www.ems-network.org

Leonardo/OLATS has established a collaboration with the EMS network through which annual Leonardo-EMS Awards for Excellence will be made for the best contribution to the EMS symposium by a young researcher as decided by a joint jury.

< MutaMorphosis Conference Speakers Announced >

The MutaMorphosis conference is part of the Leonardo 40th Anniversary celebrations and of the e n t e r 3 festival. The festival will feature performances, screenings and exhibitions at various locations around Prague 8 - 11 November 2007, including the first retrospective of Frank J. Malina (artist, scientist and founder of Leonardo).

Scheduled Plenary Speakers at this time are:

Roy Ascott
Terror Incognito: Steps toward an Extremity of Mind

Albert-László Barabási
The Architecture of Complexity

Louis Bec

Václav Cílek
Climate as the Last Wilderness

David Dunn & James P. Crutchfield
Insects, Trees, and Climate: The Bioaocustic Ecology of Deforestation and Entomogenic Climate Change

Roger F. Malina
Limits of Cognition: Artists in the Dark Universe

Stelarc

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

Alternate Anatomical Architectures: Extruded, Empty and Absent Bodies

Victoria Vesna & James Gimzewski
The new territory of nano

Plenary speakers abstracts are available on line at:
http://www.mutamorphosis.org

Join us in Prague November 8 - 10, 2007 for this outstanding international event!

MutaMorphosis concentrates on the growing interest - within the worlds of the arts, sciences and technologies - in EXTREME AND HOSTILE ENVIRONMENTS. More than 60 renowned practitioners in the arts, sciences, engineering and humanities will speak about the limits and extremes in our conceptions of life, space and cognition.

Feel free to BROWSE the abstracts at our web site http://www.mutamorphosis.org where you can also REGISTER and BOOK your hotel at special conference prices. Please note that the capacity of the conference halls is limited.

- Early registration: June 1, 2007 - July 31, 2007
- Regular registration: August 1, 2007 - October 15, 2007

The international conference MutaMorphosis: Challenging Arts and Sciences is organized by CIANT - International Centre for Art and New Technologies in Prague and co-organized by Leonardo/ISAST, Hexagram - Institute for Research/Creation in Media Arts and Technologies and Pépinières européenes pour jeunes artistes.

Should you require further information do not hesitate to contact us at mutamorphosis@ciant.cz.

< Leonardo Abstracts Service (LABS) opens new Chinese language database >

Leonardo is delighted to announce the opening of the Chinese language
Leonardo Abstracts Service (LABS) database, following the establishment
of the English language and Spanish language LABS databases.

The Chinese language LABS, organized by Ken Fields at the China Electronic Music Center at China's Central Conservatory of Music, is for abstracts of art/science/technology MA or PHD theses written in Chinese and can be found at: http://china-labs.daohaus.org

The Chinese-language peer review panel for 2006/2007 includes:

Ma Gang, Central Academy of Fine Art, Beijing
Zhang Peili, China Academy of Fine Art, Hangzhou
Zhang Xiaofu, Central Conservatory of Music, Beijing
Zhu Qingsheng, Peking University, Beijing
Lothar Spree, Tongji University, Shanghai
Kenneth Fields, Central Conservatory of Music, Beijing

Thesis Abstract submittal forms for Chinese language abstracts can be
found at: http://china-labs.daohaus.org.

Leonardo Abstracts Service (LABS)
Bi-annual submission deadlines (on-going) are: 30 June and 31 December

Leonardo Abstracts Service (LABS), consisting of the English-language
database, Spanish-language database and Chinese-language database, is
a comprehensive collection of Ph.D., Masters and MFA thesis abstracts
on topics in the emerging intersection between art, science and technology. Individuals receiving advanced degrees in the arts (visual, sound, performance, text), computer sciences, the sciences
and/or technology that in some way investigate philosophical, historical or critical applications of science or technology to the
arts are invited to submit abstracts of their theses for consideration.

Further information on LABS:
http://www.leonardo.info/isast/journal/calls/labsprojectcall.html

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LEONARDO NETWORK NEWS COORDINATOR: Kathleen Quillian
kq [@] leonardo [dot] info

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BYTES

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< Digital Humanities Chair Position available at Dartmouth College >

Dartmouth College invites applications for a newly endowed chair in the Digital Humanities. The successful candidate should be committed to interdisciplinary collaboration, technological innovation, and creating curricular links within the Humanities and across divisions. The position offers the opportunity to define a new area of research and teaching, and to build on Dartmouth's existing strengths in the Humanities and Computing.

The field of research and teaching is open; we seek candidates with practical and/or theoretical expertise in one or several of the following fields in the Arts and Humanities: visual arts, visual culture, new media, screen studies, performance arts, music and sound, film, TV/Video, literature, and human-computer interaction. Expertise in computer hardware and/or software will be welcome but is not essential.

The role of the Chair in Digital Humanities is intended to be broad in scope, potentially incorporating current or future initiatives in cyber-culture and the creation, performance, and critical study of digital arts, including a consideration of the socio-political and theoretical implications of new artistic technologies. The endowment for this Chair provides additional funds for projects involving research, teaching, and program building in the Digital Humanities.

Our intention is to hire at the rank of associate or full

professor with tenure. The successful candidate will be located in a single Dartmouth department or program, or jointly appointed to one or more departments or programs. Considerable flexibility exists regarding joint appointments, which may cross departmental or even divisional boundaries.

Dartmouth College combines a commitment to innovative scholarship, creative practice, and excellent teaching, primarily but not only of undergraduate students. One of the most diverse institutions of higher education in New England, Dartmouth College is an equal opportunity/ affirmative action employer and has a strong commitment to diversity. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including women, persons of color, persons with disabilities, and veterans.

The Search Committee will begin reviewing applications after October 1, 2007. Applications will be considered until the position is filled.

Applications should be submitted in digital form. Please send letter of application, CV, and the names of three references to: digital.search@dartmouth.edu

Please contact Mark Williams, Chair of the Search Committee with any questions
Mark Williams (Mark.J.Williams@Dartmouth.edu)
Dept. of Film and Television Studies
317 Wilson Hall
Dartmouth College
Hanover, NH 03755 USA

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Editorial Address:
Leonardo Electronic Almanac
PO Box 850
Robinson Road
Singapore 901650
keshvani [@] leoalmanac [dot] org

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Leonardo Electronic Almanac is a free supplement to subscribers of Leonardo and Leonardo Music Journal.

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* ~ * ~ * ~ * ~ * ~ * ACKNOWLEDGMENTS * ~ * ~ * ~ * ~ * ~ * ~ *

LEA acknowledges with thanks the Rockefeller and Ford
Foundations for their support to Leonardo/ISAST and its projects.

< End of Leonardo Electronic Almanac >