RE:SEARCHING OUR ORIGINS
Special Histories Issue of the Leonardo Electronic Almanac (LEA)

co-edited by
Paul Brown and Catherine Mason
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In this e-mail:

Introduction

April's issue of LEA is the first in a two-part special that explores the theme: RE: Searching Our Origins. Guest Editors Paul Brown and Catherine Mason are at the helm, and in their editorial, introduce the notion of digital computing and the associated theories of cybernetics, logic and formal systems/linguistics.

As their piece progresses, they reflect how "it is refreshing at this dawn of a new millennium to discover a renewed interest in the 'lost' histories of the late modern and especially those exploring the interdisciplinary collaborations of the mid to late 20th century."

The overwhelming response meant that the material had to be significantly culled, and here they've shortlisted five of those essays.

To start, Jennifer Gabrys talks about how technological failure is central to the logic of innovation, and through the consideration of how failure emerges at this moment in art and technology, suggests that the program of failure potentially reveals more about the drive of the automated machine than its recognized successes.

Following that, Rodrigo Alonso takes us through the early years of art and technology in Argentina.

In *Movements And Passages: The Legacy of Net Art*, Elisa Giaccardi explores net art as a form of thought and practice. The paper stresses how a transdisciplinary analysis of the aesthetical patterns characterizing net art as a "trans-genre" can lead beyond the entrapment of self-referential criticism and allow an understanding and promotion of the legacy of net art in a broader cultural context.

Then Riccardo Dal Farra takes us through a lyrical journey to "discover a world of sound that had been partially hidden, if not completely lost", and explains how recently, two actions to preserve, document and disseminate 50 years of Latin American electroacoustic music were realized: Extensive research focusing on the composers and their work in this field, and a musical archive.

Finally, Kristine Ploug and Petri Raappana delve into the latter's digital artwork *Timeline [Who writes the history?]*, which is a reaction to the ways of the media today, and addresses questions concerning economic gains, media reform, and the role of the Internet.

>From LEA's archives, One From the Vault resurrects Simon Penny's *Critical Issues in Electronic Media* and Paul Hertz's *Culture, Democracy and Computer Media*, which were both first published in LEA in April 1995.

Leonardo Reviews has Michael Punt paying tribute to one of the more active members of the panel, Stefaan Van Ryssen, who has returned six reviews this time round, all of which are featured here. Four of these are audio offerings: *Tara's Room: Two Meditations On Transition And Change*, *Electrotheraphy*, *Frequency, Altitude and Time* and *Middle of the Moment*; while the remaining two are publications: *Invisible Cities, A Metaphorical Complex Adaptive System*, a daunting and entertaining mixture of a respectful remake of Italo Calvino's masterpiece; and *Style In The Technical And Tectonic Arts; Or, Practical Aesthetics*, which Van Ryssen proclaims a "magnificent translation, a beautiful book and the result of a bold and adventurous editorial enterprise."

In ISAST News, we welcome Meredith Tromble to the Leonardo Advisory Board, and continue our series on the *The Pacific Rim New Media Summit: A Pre-Symposium to ISEA2006*, with statements from two of the working group chairs

Finally, with Bytes (featuring announcements and calls for papers), find out more about LEA's upcoming special on Wild Nature and Digital Life and how you can contribute.

PARTING WORDS FROM MANAGING EDITOR, PATRICK LAMBELET

It is with a certain amount of sadness that I announce that this will be my last LEA issue as managing editor. Of course, it also means the beginning of new things, new opportunities, a different path, for which I feel no small amount of uncertainty. I have been part of the LEA team for more than four years, having originally been tapped by Roger Malina as sort of an "interim" part of the team. Well, that interim lasted a while, and we managed to produce one issue after another until Nisar Keshvani came on board as editor-in-chief in 2002.

Over the past three years, it is my hope that we've managed to bring to LEA a greater sense of diversity, efficiency and respectability, producing an e-journal that represents some of the best and newest material emerging from the hybrid worlds of art, science and technology, from every corner of the world.

With Nisar on board, we've expanded in new directions, both geographically and thematically. I would like to thank Nisar for his patience, enthusiasm and sense of humor; I also want to thank Andre Ho, Roger Malina, and all the other contributors, writers, and artists with whom I've worked and corresponded, directly and indirectly, to participate in producing LEA.

And finally, I want to welcome our new editor Natra Haniff. Natra is a writer, copywriter and editor and comes to LEA with a decade of experience. We look forward to her injection of fresh ideas, and wish her the best of luck in working with this amazing and multi-faceted team.

Patrick Lambelet
Pisa, Italy

EDITORIAL

RE: SEARCHING OUR ORIGINS

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Although artists were using analog mechanical and electronic systems earlier in the twentieth century, it wasn't until the 1960s that they first began to get involved in the world of digital computing and the associated theories of cybernetics, logic and formal systems/linguistics. By 1968, it was possible for Jasia Reichardt to curate a survey of work in the area in the influential Cybernetic Serendipity exhibition held at London's Institute of Contemporary Art - the ICA. >From the late 1960s, many early arts and computing collaborations in the United Kingdom were enabled by the formation of the interdisciplinary field of Polytechnics, which amalgamated colleges of art with colleges of engineering, furniture, printing, etc. For the first time, it was possible for art students and faculty to learn computer programming, although the notion of artists working with computers was still in its infancy. By the early 1970s, many such arts computing programs had emerged at Polytechnics like

Coventry, Middlesex, Leicester, Liverpool and elsewhere. The Royal College of Art's postgraduate Design Research Department had begun working in the area, as had the Architectural Associations School. In 1972, the Slade School of Fine Art at University College London purchased a Data General Nova 2 minicomputer system for their new Experimental and Computing Dept. - possibly the first installation of a "high-performance" dedicated computer system in an art school anywhere in the world.

The concept of user-friendly applications was still way in the future and using a computer meant, for most artists, either learning how to program or building up a working relationship with engineers and technicians. The computer itself was at a formative stage and achieving anything was fraught with complexity and the unreliable nature of the early systems. Working with computers was not easy and only appealed to certain minds. The resulting work owed much to the traditions of constructivism and the then-popular systems and conceptual art that was the dominant aesthetic in many European postgraduate programs like the one at the Slade. This directly informed their decision to spend what was a considerable amount of money on an in-house dedicated computer system in preference to experimenting with the central time-share and multi-user systems provided by University College and the University of London Computer Centre.

Similar initiatives were happening elsewhere in the developed world and a new generation of artists emerged who took the computational and generative systems as their primary working methodology. However, times were changing. Late modernism was replaced by what has become known as post-modernism, which relatively quickly became the dominant critical and curatorial aesthetic. The computer-based work was problematic - it challenged the understanding of the humanities-trained theorists (who would not at that point in time have had any exposure whatsoever to computer systems). In consequence, the computational work was identified with technological absolutism and the modernistic emphasis on intrinsic media qualities. If it had occurred later, it might have been more correctly identified with more postmodern concerns like non-linearity and emergence. However, these concepts were, at that time, almost unknown outside a small scientific community.

Another problematic aspect for the mainstream was the participation of many scientists, programmers and technologists who had little, if any, knowledge of art history or theory or of the workings of the mainstream art world of dealer/gallery networks. This aspect had been acknowledged and encouraged by Jasia Reichardt in the Cybernetic Serendipity show, which included the work of scientists and engineers alongside that of professionally trained artists. This egalitarian nature of the art/science/technology interaction is one of its attractions for many participants and contributes to its richness and diversity. However, the challenging nature of the computer arts and their problematic relationship to the art world remains an ongoing and unresolved stumbling block.

The historian and archivist Patric Prince, who curated the 1986 SIGGRAPH Art Show, discussed this problem in her catalogue essay for the show [1]. According to Prince, these practitioners are in fact "naives" in the art sense of the word. However, the art world expects work by naives - like Arthur Wallis or Grandma Moses - to be crudely constructed and unsophisticated. By contrast, the

computer-based works by people from a technical background are often exquisitely crafted and finished. This was another quandary for the mainstream, who responded by simplistically rejecting the work and condemning the field. The conceptual artist Sol LeWitt was a major influence on the early computer arts scene. His 1967 statement - "the idea becomes a machine that makes the art" [2] - has obvious resonances with the field and is often quoted. In 1978, theorist Rosalind Krauss expressed an important contemporary critical position when she dismissed LeWitt's work as obsessive - the "babble" of serial expansion which fails to summarize by using "the single example that would imply the whole" [3]. For me, this glib dismissal illustrates both Krauss' unwillingness or inability to engage with the work on its own level and also her failure to consider the context from which it emerged. She simply projects her own limited opinion of what constitutes art and then, when she fails to comprehend Lewitt's intellectual pursuit, decides to exclude him from her pantheon.

Nevertheless, Krauss was influential and in her words we see, if not the origin, then the essence of the mainstream viewpoint that has led to so much neglect of this period of art history.

So it is refreshing at this dawn of a new millennium to discover a renewed interest in the "lost" histories of the late modern era and especially those exploring the interdisciplinary collaborations of the mid to late twentieth century. In April 2005, the Creativity and Cognition 05 Conference - C&C05 [4] is to take place at Goldsmiths College in London and features a stream dedicated to "Retrospectives in Creative Practice and Research." In September 2005, Refresh! The First International Conference on the Histories of Media Art, Science and Technology [5] is to take place at Banff, Canada.

This two-part special issue of LEA is timed to coincide with C&C05 and includes contributions by contemporary critical theorists and historians as well as first-hand accounts by the pioneers themselves. The response to our call for participation in this issue was overwhelming. We would like to thank our peer-reviewers for their hard work and apologize to our authors for having to constrain their contributions to fit the limitations of the LEA format. We hope that the complete, full-length papers will now form the basis of a print volume in the not-too-distant future and encourage other potential contributors to contact us.

REFERENCES

1. Patric Prince, *SIGGRAPH '86 Art Show Catalog* (Dallas, TX: ACM SIGGRAPH 86, 1986).

2. Sol LeWitt, "Paragraphs on Conceptual Art," in *Artforum* 5, p. 80 (Summer 1967)

3. Rosalind Krauss, "LeWitt in Progress," in *October*, No. 6, pp. 46-60 (Fall 1978); quoted by Pamela M. Lee in N. Baume, ed., *Sol LeWitt: Incomplete Open Cubes*, (exhibition catalog, Wadsworth Atheneum Museum of Art, Hartford, CN);

Cambridge, MA; London: MIT Press (2001) p.53.

4. Creativity and Cognition 05, 12-15 April 2005, Goldsmiths College, London, England. For information: http://research.it.uts.edu.au/creative/CandC5/

5. Refresh! The First International Conference on the Histories of Media Art, Science and Technology; 28 September - 2 October 2005, Banff New Media Institute, Canada. For information: http://www.banffcentre.ca/bnmi/events/refresh/

FURTHER RESOURCES

CACHe - Computer Arts, Contexts, Histories, etc.
http://www.bbk.ac.uk/hafvm/cache/
Contact: Nick Lambert, info@cache.bbk.ac.uk

Synthetics: Towards a History of Computer Art in Australia Stephen Jones, "Synthetics: The Electronically Generated Image in Australia," *Leonardo*, Vol. 36, No. 2 (April 2003).

Stephen Jones, "The Evolution of Computer Art in Australia," in *Computer Art Journal*, Vol. 1, 2003, Europia Editions, France.
Contact: Stephen Jones sjones@culture.com.au

The Leonardo/Olats: Pionniers et Pricurseurs (Pioneers and Pathbreakers)
http://www.olats.org/setF4.html
Contact: Annick Bureaud, annickb@altern.org

ISEA Digital Archive Project
http://www.isea-web.org/eng/projects.html
Contact: Sue Gollifer, s.c.gollifer@bton.ac.uk
See also http://www.vads.ac.uk

compArt - a Structured Space for Computer Art
http://www.agis.informatik.uni-bremen.de
Contact: Frieder Nake, nake@informatik.uni-bremen.de

***Virtual Art - From Illusion to Immersion*, by Oliver Grau**
(Cambridge, MA: MIT Press, 2003), ISBN: 0-262-07241-6.
Information: http://www.arthist.hu-erlin.de/arthistd/mitarbli/og/og.htm , go to database (English version)
Contact: Oliver Grau, Oliver.Grau@culture.hu-berlin.de

THE DANIEL LANGLOIS FOUNDATION FOR ART, SCIENCE AND TECHNOLOGY
CENTRE FOR RESEARCH AND DOCUMENTATION (CR+D)
http://www.fondation-langlois.org/e/CRD/index.html
Contact: info@fondation-langlois.org

The Digital Art Museum - DAM
http://www.dam.org/
Contact: Wolfgang Lieser, Digitalartmuseum@aol.com

fineArt forum - The Art and Technology Netnews
http://www.fineartforum.org
Contact: editor@finartforum.org

ISEA - the Inter-Society for the Electronic Arts
http://www.isea-web.org
Contact: info@isea-web.org

Leonardo Electronic Almanac
http://mitpress2.mit.edu/e-journals/LEA/
Contact: Nisar Keshvani, lea@mitpress.mit.edu

Ars Electronica
http://www.aec.at/
Contact: info@aec.at

Computer Arts Society
http://computer-arts-society.org
Contact: Christos Logothetis, christos@logothetis.co.uk

SIGGRAPH History of Computer Graphics and Art
http://www.siggraph.org/education/cgHistory/history.html
Contact: Anna Ursyn, ursyn@arts.dot.unco.edu

AUTHOR BIOGRAPHIES

PAUL BROWN is an artist and writer who has been specializing in art and technology for 30 years.

>From 1984-88 he was the founding head of the UK's National Centre for Computer Aided Art and Design. He returned to Australia in 1994 after a two-year appointment as Professor of Art and Technology at Mississippi State University to head Griffith University's Multimedia Unit. In 1996 he was the founding Adjunct Professor of Communication Design at Queensland University of Technology.

>From 1997-99 he was Chair of the Management Board of the Australian Network for Art Technology and he is currently a member of the Editorial Advisory Boards for LEA, the e-journal of the International Society for the Arts, Sciences and Technology, and the journal *Digital Creativity*. From 1992 to 1999 he edited *fineArt forum*, one of the Internet's longest established art 'zines and is currently moderator of the DASH (Digital ArtS Histories) list.

His computer-generated artwork has been exhibited internationally since 1967 and is currently on show in Europe, the USA and Australia.

During 2000/2001 he was a New Media Arts Fellow of the Australia Council and in 2000 was artist-in-residence at the Centre for Computational Neuroscience and Robotics at the University of Sussex in Brighton, England. He is currently a Visiting Fellow in the School of History of Art, Film and Visual Media at Birkbeck, University of London, where he is working on the CACHe (Computer Arts,

Contexts, Histories, etc...) project.

A dual-national, CATHERINE MASON was brought up in the United States and has spent the past 15 years in London, immersed in the world of art. Her early days working as an assistant to an art dealer encouraged her to pursue her interest in art to degree level, gaining a BA (Hons) in History of Art at Birkbeck College, University of London in 1993. She then went on to obtain a Masters degree in Museums and Gallery Management from City University, London.

>From there she set out to communicate her enthusiasm for art by running adult education courses at various colleges and museums, including Birkbeck's Faculty for Continuing Education and the Workers Educational Association. In 1998, she joined NADFAS (The National Association of Decorative and Fine Art Societies) and continues to lecture to art societies, clubs and groups around the British Isles on a regular basis.

Catherine has also worked as a consultant, organizing exhibitions, running public relations campaigns and promoting artists. She founded The Art Partnership with Alexandra Billam and over the years, worked with many of the major London art dealers and galleries.

Her specialities are 20th century visual arts and contemporary art - the art of our own times.

Currently, she is engaged in researching the early history of computer-based arts in the UK from the 1960s to 1980, supported by the AHRB.

FEATURES

MACHINES FALL APART: FAILURE IN ART AND TECHNOLOGY

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KEYWORDS

failure, art and technology, automation, side effects, obsolescence, Experiments in Art and Technology (E.A.T.), Jean Tinguely, Gustav Metzger
ABSTRACT

Technological failure is central to the logic of innovation; it exhibits the scope of the machine's profuse promises unfulfilled, while generating new assurances against a landscape of side effects. Artists working with technology at the inception of widespread automation, including Jean Tinguely and Gustav Metzger, focused particularly on machines geared toward failure. At the same time, E.A.T., an organization founded for the collaboration between artists and engineers, encountered failure at times unintentionally and attempted to recast the role that failure plays in experimentation. By considering how failure emerges at this moment in art and technology, this article suggests that the program of failure potentially reveals more about the drive of the automated machine than its recognized successes.

SELF-DESTRUCTING MACHINES

Failure has struck the "largest machine in the world" several times over. The North American northeastern power network, which broke down most recently in 2003, and before that in 1977 and 1965, is a single synchronous system that is capable of causing what have been called the biggest blackouts in history, silencing the motors of half a continent with its sudden collapse [1]. Writing in "The Great Northeastern Power Failure," Billy Kl|ver, engineer at Bell Labs and co-founder of Experiments in Art and Technology, suggested of the 1965 blackout that "the whole thing could have been an artist's idea - to make us aware of something. [2]" Failure is a special skill of artists; pushing a system toward collapse is a practice for which they are ideally suited. But the power failure, which *could* have been attributed to an artist, was instead the work of technology - the result of one faulty switch and a succession of automated crashes. Power grids, phone lines and computer networks continually threaten and trigger episodes of mechanical disintegration. Computer breakdown is so synonymous with disaster that it constitutes a risk against which one can purchase insurance coverage. But the failure of machines and their networks simultaneously presents opportunities for new insight. Reflecting on the 1965 power failure, Kl|ver proposed, "in the future there will exist technological systems as complicated and as large as the northeastern power grid whose sole purpose will be to intensify our lives through increased awareness". If a system is to reveal its critical operations, it must fail. Technological failure is central to the logic of innovation; it exhibits the scope of the machine's profuse promises unfulfilled, while generating new assurances against a landscape of side effects. Failure is a decisive component of technology, but often it is art that most blatantly exposes the machine's inexorable drive toward its own termination.

Experiments in Art and Technology, or E.A.T., had its beginnings with a collaboration between Kl|ver and artist Jean Tinguely. The project, *Homage to New York*, staged the self- destruction of a machine in the sculpture garden at the Museum of Modern Art in New York in 1960. From scouring for materials in the New Jersey garbage dumps to designing electrical circuitry to overheat and collapse, Kl|ver and Tinguely pushed the usual boundaries of art and technology by playing with the life and death of the machine. In this historic performance of mechanical disintegration, the deliberate failure of the machine reveals one of its

most compelling uses: its ability to waste itself. In "The Garden Party," an essay written two days after the MOMA event, Kl|ver gave a minute-by-minute description of the machine's self-destructive performance [3]. Recounting the chain of aesthetic disasters that were triggered during the 27- minute escapade, Kl|ver suggested that machines that fail to function according to plan correspond with the unpredictability and provocation of a city such as New York (and from this derives the "homage"). In a society of complete control, where everything must function according to plan, Kl|ver contends that failure is impermissible. The *Homage* pays tribute to failure, as Tinguely's machine sputters toward a chaotic version of artistic and technological freedom.

As "l'art ephemere," the *Homage* sought to capture the shifting terrain of a world that is constantly remade. Failure here reveals the logic of transience. In fact, ephemeral art points to ephemeral technology, where innovation requires endless change. Within the objectives of modernity, change is imperative and stasis impermissible. In this sense, a society of complete control would be a society of constant change - and by extension, perpetual failure. Failure ensures the demise and erasure of the existing to make room for the new. Later documented and published in the catalog for the exhibition, *The Machine at the End of the Mechanical Age*, Tinguely's *Homage* and Kl|ver's essay captured this shift within the technological from mechanical to informational. The curator for the show, Pontus K. Hultin, made another type of homage to the mechanical machine at the moment of its presumed historic demise. He begins the catalog with an essay that remarks, "This exhibition is dedicated to the mechanical machine, the great creator and destroyer, at a difficult moment in its life when, for the first time, its reign is threatened by other tools" [4]. Those "other tools" are of course information machines - including the computer - that were replacing and controlling the more archaic mechanical devices. At the end of the mechanical age, an exhibit- as-burial is staged in order to put these rejected machines to rest. But the central dynamic of self-obsolescing technology remains fully operative, and so the end of machines is continually repeated as a demonstration of the code and motor of failure.

PROGRAMMED FAILURE: THE BLACK BOX

In his manifesto-for-failure, Kl|ver elaborated on the rationale for *Homage*, arguing that it was not motivated by an anti-technological agenda, but rather that it captured the machine's constant oscillation between on and off, between creation and destruction. In other words, he notes, "The self- destruction or self-elimination of the machine is the ideal of good machine behavior" [5]. In this case, the "ideal" machine Kl|ver describes functions as an information machine, a device capable not only of the transfer of signals, but also of self- modification and regulation. Discussing these machines, which effectively shut themselves off only to turn on again, Kl|ver references the work of Claude Shannon, who had also been employed at Bell Labs. With respect to the mechanism of self-destruction, Kl|ver writes, "this idea has already been expressed by Claude Shannon in the 'Little Black Box,' in which, when you pull a switch, a lid opens and a hand emerges that throws the switch in the off position, whereupon the lid closes again over the hand" [6]. Shannon has devised a machine to operate on machines, an abstract device that is programmed for termination. In this program, destruction is automated. "You"

pull the switch, but the automatic "hand" turns it off. Such a dynamic suggests an internal and correcting impulse that necessarily oscillates toward the off position. Tinguely's machine operates within this same logic. At the beginning of the *Homage*, Kl|ver flips a switch, and from that point on the automated machine is allowed to perform its inevitable itinerary toward destruction. Failure is in fact a correcting device. It is an operative form of feedback and control. Within automation, feedback constitutes the programming of machines, and as Marshall McLuhan suggests, this feedback is what differentiates the "computer-programmed 'machine'" from linear, mechanical machines. Within the loop of feedback, "the programming can now include endless changes of program" [7]. Through programming, a machine may then be directed toward a performance of self- elimination, an oscillation that makes way for new and improved forms of innovation. Elimination is an unexamined program that Tinguely's machines attempt to draw out, but even this encounter cannot fully account for the process of machinic transformation that hinges, secretly, on failure. Because art, as it turns out, is equally subject to the forces of failure.

ART OF FAILURE

Art writes expanded programs for technological failure. It is drawn to the machine's terminal moments. The failure of technology is even the mark of successful art. Jack Burnham, writing in "Art and Technology: the Panacea that Failed," addresses "machine-driven" constructions such as Tinguely's, "which are programmed in many instances to break down or malfunction." The question Burnham considers is why, particularly at this moment (in the 1970s), "should the only successful art in the realm of twentieth-century technology deal with the absurdity and fallibility of the machine?" [8]. Art, in its encounter with technology, forces and delights in failure. But failure is not always clearly discernible as a deliberate performance of destruction. Following Tinguely and Kl|ver's collaboration on *Homage*, E.A.T. moved to implement a number of projects infused with technological optimism. Artists submitted technical questions to engineers, asking whether assistance could be provided in becoming weightless or harnessing dreams. In the presence of such utopian aspirations were a number of unintentional technological breakdowns. Writers and artists, including Lucy Lippard and Jack Burnham, have commented on the "failures" within E.A.T.'s projects, noting the degree to which technological feats do not go according to plan. Writing on E.A.T.'s *Nine Evenings* performance in 1966, which staged the integration of theatre and engineering through elaborate technical performances, Lippard commented on the noticeable inability of machines to actually do much of anything at all. She complains not only of pervasive technical failure, but also of an impossible grandiosity of purpose, and ultimately of a failed meeting of art and technology [9]. Similarly, Burnham suggested that much of *Nine Evenings* was full of expectant delays, where the audience lingered for hours waiting for the machines to demonstrate their marvels. But the theatre of the machine ultimately proved to be a theatre of failure. Robert Breer, one of the participating artists, admitted when interviewed at a later date that with respect to the technological aspects of the performance, "Nothing worked" [10].

IMPOSSIBLE FAILURE

Despite the criticisms of E.A.T.'s deployment of art and technology, Kl|ver has suggested that failure is a necessary mechanism that allows innovation to occur. He wrote of Tinguely's *Homage* that "in the same way as a scientific experiment can never fail, this experiment in art could never fail." Failure was impossible because the project did not attempt to fulfill functional criteria. Functioning and failure become equally useless factors in Kl|ver's equation. He privileges the experiment to such an extent that failure actually takes precedence. This perspective comes from the research labs of technology and engineering, where scientists are expected to fail repeatedly. As Kl|ver asserts, "Most industrial firms consider that a research man who fails 96 percent of the time is more valuable than one who succeeds more often, because he is involved in truly important experimentation. Success in art is very easy; how to fail is the problem" [11]. The revised formula of progress:
success is a dead-end, failure a golden opportunity. Failure, in an assessment that could have been written by Thomas Kuhn, precipitates discovery. Kuhn considers how anomaly and crisis not only tip the balance toward invention, but also how "the changes in which these discoveries were implicated were all destructive as well as constructive." In order for the full contribution of innovation to register, accepted practices and knowledge must be discarded. The breakdown of the usual criteria allows for a new approach. In this sense, as Kuhn notes, "failure of existing rules is the prelude to a search for new ones" [12].

This is the mechanism of failure, where breakdown accelerates the corresponding rate of innovation. Such an observation resonates with Gordon Moore's delineation of the doubling of technological capabilities every 18 months. The dynamic of innovation and obsolescence exposes the mechanisms of excess central to computing and information technology. Moore reveals that if followed to its logical conclusion, the law would reach its crisis point. He states, "any exponential like that predicts a disaster if you extrapolate it far enough." The hypothetical disaster that emerges here is the result of the endless duplication of technological innovations. Failure in the form of overload is directly connected to the failure that emerges from the necessity to innovate. In an interview where Moore recounts his early years at Intel, the interviewer states, "I think that's one nice thing we can say about Silicon Valley is it's OK to fail. We've all done it...." To this Moore agrees, revealing just
how central the structure of failure is to new technology. He recounts, "There was really no stigma at all to failing and that's been an important part of this area... just, all the new companies that have formed with relatively no concern about the risks" [13]. Failure has its "fallout," and every failed invention suggests as many directions for new developments. Failure is systematized as part of the logic of innovation.

That failure which is central to the "structure of scientific revolutions" also constitutes the moment in which art realizes its closest affinity to technology: in the drive not only to make, but also to unmake the world. In this sense, art is not a practice apart from technology and its associated markets, but is instead integral to these very mechanisms. But this assessment does not point toward the closure of the supposed non- instrumentality of art. Instead, it indicates that those apparently rational and deterministic systems of technology are as random as a sputtering out-of-control gadget assembled from the dregs of a dump for artful dissimulation. Failure is just this side of entropy and catastrophe. It

performs while containing and recuperating moments of destruction. And this is how failure constitutes a program, defining as it does the limits of functionality while allowing for a return to further production. Failure necessarily occurs within the limits of the system that
defines it as failure. It does not level that system, but rather renders it momentarily inoperative. But this is the recuperative function of failure, because from breakdown a new space of innovation emerges. The point of this article is not to suggest the catastrophic run of technology, so much as to demonstrate how failure becomes a mechanism of adaptation, a delineation of excess, and a revelation of limits. Because failure reminds that as much as the promise of complete collapse lingers as a definitive fulfillment and terminal point, technology is instead composed of adaptive, self-destructing and remaking mechanisms: a patchwork of dismembered and reassembled parts.

FAILURE TO FAIL

In this sense, failure has the capacity to set off a range of unintended consequences, and in this zone of side effects, failure may even fail to fail. Tinguely's *Homage* staged the performance of a machine that failed to operate according to plan, even though the plan entailed a course of self- destruction. Such an automated device triggers a set of chain reactions that amplify and expand beyond the original intention. Writing just after the 1960 performance, John Canaday points out in the *New York Times* that on the whole the *Homage* did not fulfill the mechanical functions that it promised. Comprised of 15 motors, which were geared to produce automatic drawings and to burst balloons, the mechanism failed to perform fully its intended functions [14]. In failing to make good on its promise of extreme and novel capability, the self-destructing machine emulates the characteristic quality of all machines - informational and otherwise - to fall short of expectation, failing even in
the promise to fail. We expect machines to go out with a bang, but instead they gasp and tilt, and are narrowly held together without quite collapsing completely. In the failure to fail, technology loses its sublimity. Destruction ceases to be grandiose, and instead verges on lampooning self- mockery.

Such a form of destruction tips toward the accidental. A project such as Tinguely's reveals the automated machine's tendency to activate innumerable unintentional consequences. Kl|ver writes that "as a functional object, the suicide carriage was supposed to move; as a work of art, it wasn't. This was typical of Jean's relation to the motor" [15]. Intention wavers in the space between art and technology; the attempt to build unintention into the process reveals that it was a dynamic inherent to the machine all along. Such a discovery resonates with Langdon Winner's discussion of "technological drift." Between the extremes of control and breakdown lies the more common event of unintended consequence. Winner writes, "The picture of technological change that begins to emerge from our discussion is not that of a law-bounded process grinding to an inevitable conclusion. It is rather that of a variety of currents and innovation moving in a number of directions toward highly uncertain
destinations" [16]. The question is then how we make use of unintention, which ultimately becomes a site of productivity: "*technology is most productive when its ultimate range of results is neither foreseen nor controlled*. To put it differently, technology always does more than we intend; we know this so well

that it has actually become part of our intentions." Side effects lead to innovation. The unforeseen, as a condition of risk and failure, gives rise to adaptation and technological advance. As Winner writes, "in effect, we are committed to following a drift - accumulated unanticipated consequences given the name *progress*" [17].

Another type of accumulation emerges, however, in the drift of technological failure. In a larger environment that is replete with admonitions about the end of time, technological commodities perform smaller versions of this ending, the brink of cultural suicide on which we are always poised, through the engine of obsolescence. Commodities - particularly technological commodities - are produced with a rapidly diminishing expiration date. They are subject to "planned failure," a term synonymous with obsolescence. Failure is planned through the lapsed usefulness and desirability of commodities. As Moore's law makes evident, technological commodities are the ideal site for this performance of obsolescence. A form of programmed failure that occurs both systematically and at the level of individual gadgets, obsolescence ensures that the engine of failure is capable of driving markets as much as inventions. If production is to increase, then innovation must accelerate, and a corresponding increase in failure and breakdown must result. A side effect of such rampant production and obsolescence is, of course, the colossal amount of rubbish that accumulates as the material discarded in the pursuit of failure.

Rubbish forms the larger and increasingly more prevalent "fallout" of failure. Perhaps this is why rubbish figured so largely in Tinguely's self-destructing machine. Assembling a quasi-functioning mechanism from the junk of New Jersey garbage dumps, Tinguely reanimated the remains of failed devices and abandoned scrap. He recuperated the debris only to have it disintegrate once again. Art in its meeting with technology exposes the remains of this drive to fail. It arrives at even grander and more extravagant examples of breakdown. In this sense, failure is revealed as a space of imagining, encompassing the drive of art, technological innovation, and markets. But in the wreckage remaining after Tinguely's performance (which was duly returned to the dump), the failure of the machine announces just how far technology drifts toward a landscape of side effects. The leftovers from the *Homage* indicate the imperfection of obsolescence. Ideally, no trace should be left in the transformation from innovation to failure and back again. But failure fails to fail, and we are finally left to contend with the debris of our automated aspirations.

REFERENCES AND NOTES

1. See Rachel Emma Silverman, "Power Failures," in *The Wall Street Journal Millennium (A Special Report): Futurology* (December 31, 1999) R12.

2. Billy Kl|ver, "The Great Northeastern Power Failure" (New York: College Art Association Annual Meeting, 1966).

3. B. Kl|ver, "The Garden Party," in K.G. Pontus Hultin, Ed., *The Machine as Seen at the End of the Mechanical Age* (New York, NY: Museum of Modern Art, 1968).

4. Pontus Hultin, "Introduction," K.G. Pontus Hultin, Ed., *The Machine as Seen at the End of the Mechanical Age* (New York, NY: Museum of Modern Art, 1968) p. 6.

5. B. Kl|ver [3] p. 171.

6. B. Kl|ver [3] p. 171.

7. Marshall McLuhan, "Automation," in *Understanding Media* (Cambridge, MA: MIT Press, 1964) p. 356.

8. Jack Burnham, "Art and Technology: The Panacea that Failed," in Kathleen Woodward, Ed., *The Myths of Information: Technology and Postindustrial Culture* (Madison, WI: Coda Press, 1980) p. 201.

9. Lucy Lippard, in *Art International Journal* (20 January 1967).

10. Robert Breer, telephone interview with Harriet DeLong, 12 February, 1973. E.A.T. archives at the Daniel Langlois Foundation.

11. See Douglas Davis, "Billy Kl|ver: The Engineer as a Work of Art," in *Art and the Future: A History / Prophecy of the Collaboration between Art and Technology* (New York, NY: Praeger Publishers, 1973) p. 145.

12. Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago, IL: University of Chicago Press, 1996 [1962]) pp. 66- 68.

13. Gordon Moore, interview 3 March 1995, *Silicon Genesis: An Oral History of Semiconductor Technology*, Stanford and the Silicon Valley Project (accessed at http://silicongenesis.stanford.edu/complete_listing.html , 5 March 2005).

14. John Canaday, "Odd Kind of Art: Thoughts on Destruction and Creation after a Suicide in the Garden," in *New York Times* (27 March 1960) X13.

15. B. Kl|ver [3] p. 170.

16. Langdon Winner, "Engines of Change," in *Autonomous Technology* (Cambridge, MA: MIT Press, 1977) p. 88.

17. L. Winner [16] pp. 98-99.

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ART AND TECHNOLOGY IN ARGENTINA: THE EARLY YEARS

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Argentine art, kinetic art, expanded cinema, computer art, conceptual art, video art, hydro sculpture, environments, new media

ABSTRACT

The relationships between art and technology have a long history in Argentine art. Experiments begun in the 1940s with light and movement were the precedents to the many trends developed during the 1960s, including kinetic art, video art and incursions into expanded cinema. Mechanical and electronic devices, light, machines, new materials, photographic and cinematographic projections, sound systems, video and computers came to appear very often in the works and reflections of young artists, stimulated by a favorable political climate and a fluid dialogue with the international art circuit.

At the end of the nineteenth century, Argentine artists began to have a slow but constant dialogue with Europe. Going to Italy or France to improve artistic knowledge was an ordinary practice among young art students, encouraged by public grants that supported their expenses.

In the 1920s, Emilio Petorutti and Xul Solar shocked Buenos Aires with the exhibition of the result of their studies in Europe. The former had incorporated the analytical gaze of the cubists and futurists, showing a rational, rather than intuitive, approach to the world. Xul Solar preferred a lyrical approach, but his imagery, full of fantastic architectures, mechanical structures and flying machines, depicted a world forged in the heat of technological progress. References to science and technology would increase in the thinking of the artists of the Concrete group, the first Argentine avant-garde movement that developed during the forties.

Their *Manifiesto Invencionista* (1946) proclaimed: "Scientific aesthetics will replace the age-old speculative, idealistic aesthetics... The metaphysics of 'the beautiful' have died by withering. What matters now is the physics of beauty." References to science took shape formally in the exaltation of geometric and mathematical structures; this was intended as a means of suppressing individualism in favor of an art with social impact. This scientific basis would persist and even increase in the different groups that emerged from the original Concrete nucleus: the Perceptism and Madi movements. Within the latter, it would emerge as the first specific experiences with technology.

The *Manifiesto Madi* declared: "By Madi Art we mean an organization of the proper elements of every art in their continuity. This involves presence, mobile dynamic arrangement... playfulness and pluralism as absolute values, any interference by expression, representation and meaning being consequently abolished." Reclaiming an art of "mobile dynamic arrangements" independent of "expression and representation" encouraged the production of works with movement, not only as representation but also as concrete reality.

The same manifesto declared that "The Madi sculpture will be tridimensional, without color. Total form and solids within an environment, with articulation, rotation and translation movements. The Madi architecture will be mobile, displaceable environments and forms." One example of these premises was the articulated sculpture, *Royi*, by Gyula Kosice, a piece that not only allowed its shape to be changed, but which invited the spectator's active participation in this process. Kosice started doing neon sculptures in 1946; with these sculptures began the dialogue between art and technology in Argentine art. That same year, Kosice made a sculpture with fluorescent tubes, even though he apparently did it for utilitarian purposes.

Shortly thereafter, Lucio Fontana presented *Concetto Spaziale* (1951), his first neon sculpture, at the ninth Milan Triennial. This was the first of a series of experiments with lighting that would bring him to work also with fluorescent paint and black light. The following year, with his colleagues from the Spatial movement, he drafted the *Spatial Movement for Television Manifesto*, which he read in front of the cameras of the Italian TV station RAI, and which became one of the precedents of the future development of video art.

Meanwhile Kosice was producing his first hydrosculptures. They began with a mobile sculpture, *A Drop of Water Cradle at High Speed* (1948) and a series of plastic works that incorporated water as a sculptural element. In 1959, the artist also wrote a manifesto, *Water Architecture in Sculpture*

TECHNOLOGICAL EXPERIMENTS IN THE SIXTIES

The 1960s were characterized by an uncommon expansion of art means, with broad experimentation and development of hybrid forms. This effervescence occurred in a booming art circuit fueled by galleries, museums and other art institutions, which stimulated a fluid dialogue between Argentina and the world. Argentine artists took part in this dialogue both inside and outside the country. Searching for means to produce their work, many Argentine artists left the

country to develop their ideas in a suitable context.

As had happened before, the interest in science and technology appeared not only in technological artworks. Sculptors and painters alike were also interested in addressing the deep influence of industrial and technological developments on everyday life. This interest was evident both in artistic and discursive productions. Within the first, there was a strong production of art pieces that made use of new materials, together with a defined tendency of "op-art" artists. Within the second trend, there were some programmatic writings, like the *Generative Art Manifesto* (1960) and some important reflections, like the unpublished text by Luis Felipe Noe, *Art between Technology and Rebellion* (1968), where the author meditated on the impact of mass media and technology on both society and the arts. Simultaneously, many artists openly researched with mechanical and electronic technologies, light, machines, new materials, photographic and cinematographic projections, sound systems, video and computers.

Kinetic art was one of the most important areas of research among Argentine artists during the sixties, in terms of both the size of its production and its international impact. In Paris, Argentine artists Julio Le Parc and Horacio Garcma Rossi, together with Francisco Sobrino, Frangois Molleret, Jokl Stein and Yvaral, founded GRAV (Group for Research in Visual Art) in 1960. They were paralleled by other Argentine artists living in Paris, such as Gregorio Vardanega, Martha Boto and Hugo Demarco, whose works also became reference points in the history of kinetic art. GRAV was formed around the idea of abolishing the conception of the artist as an individual genius.

Adopting multi-production to replace the single, individual work of art, their interest was in collective, anonymous creation. They organized numerous public events that they called *Labyrinths*. For them, the context of the exhibition and the place of the audience were fundamental, and this conviction led them to experiment with optical and kinetic effects aimed at the "human eye," while they denounced the elitism of traditional art that appealed to the "cultivated eye". Through the use of technology, GRAV sought a way to erode the limits between art and life.

FROM IMAGE TO ENVIRONMENT: "EXPANDED CINEMA"

In the 1960s, television had entered into homes and was redefining the relations between the audience and moving images, thereby de-ritualizing the cinematic experience. Nevertheless, the deconstruction of cinema was to occur in places - museums and art galleries - in which cinema was still a stranger. Influenced by pop and minimalism, some artists gave rise to experiments that incorporated cinematographic images into space.

These pioneering works oscillated between two contrasting poles. At one end, works were influenced by the sensory "recuperation" of the hippie movement and exalted the sensorial aspect of the image-subject relation. At the other end, artists belonging to the incipient conceptual trend singled out the informational component of the image, its capacity to refer to reality and its mediation between reality and the audience.

In 1966, after absorbing the hippie culture and the theories of Marshall McLuhan in the United States, Marta Minujin began a series of works that exalted the mediatization of everyday life, submerging the audience in the visual, hyper-fragmented universe of the mass media. The first of these works, *Simultaneity in Simultaneity*, was produced that year in Buenos Aires' Instituto Di Tella. For its creation, Minujin invited 60 media stars to be filmed, photographed and interviewed before taking their positions in front of a television, which they had to look at while listening to a radio. Eleven days later, the same people in the same positions saw the photographs and films taken the first day projected onto the walls, heard their interviews over the room's loudspeakers, saw the first day's images on the television and heard a special radio program about the event. In this way, the protagonists of the event were invaded by themselves, translated into the multi-languages of media. The work privileged the physical aspects of the media above their information content, their "simple presence" rather than their communication value.

The following year, Minujin carried out a similar experiment, *Circuit*, at Montreal's Expo '67, a more complex environment, but one that continued to privilege the sensory aspects of the media. There were, however, a number of significant variations. This time, participants with similar characteristics were selected by a computer on the basis of a newspaper questionnaire. The setting incorporated information about the participants projected in the room, while closed-circuit television enabled certain groups to observe the behavior of others.

Interest in the behavior of social groups increased in *Minucode* (New York, 1968). Here, Minujin made three cocktails with people from different social groups - entrepreneurs, media personalities and artists - which she recorded with a hidden camera. Some days later, the recordings were projected onto the walls of a room into which the same participants were invited. In the final situation, each participant was interacting not only with the images, but with the actual people of the different groups.

This determination to introduce bodies within the image had precedents in theatrical and choreographic works created at the Di Tella Institute, where stage sets were often replaced with slide projections. In *Symphonia* (1969) by Oscar Araiz, the bodies of the dancers served as screens for cinematographic projections that transformed them into dancing wraiths. Meanwhile, certain artists who were beginning to venture into conceptualism were using the film image to explore its meaning- building mechanisms.

In 1967, Oscar Bony presented *Sixty Square Meters of Wire Gauze and its Information*, an installation made up of 60 square meters of wire gauze laid out on the floor of a room and a projector showing a fragment of the same wire gauze on the wall. The work compared the sensory experience of the metallic gauze that the spectator had to walk on to enter the installation with the same material transformed into visual information. The idea was to establish a concept: that of the image stripped of all its aesthetic attributes and transformed into a simple (tautological) representation of reality.

In *Silence* (1971), by Leopoldo Maler, the relation between the object and its information is metonymical. Here, the image of a sick woman replaces a real one, and is projected onto a bed watched over by a nurse. The work combines a performance with what we would nowadays call a video installation, due to the horizontal placing of the image that would be odd in normal film projection.

Lea Lublin used cinema projections in *Inside and Outside the Museum* (1971), a work that sought to establish a dialogue between political, social and cultural events and the accompanying developments in the arts. For this, Lubin set up screens showing art documentaries in front of a museum, and placed diagrams inside comparing significant historical events with artistic developments over the same period. Cinema here was not just an informational medium, but the most suitable one for reaching a public that did not consist of museum-goers.

Meanwhile, David Lamelas was using film to analyze a space and the actual narrative model of cinema in *Film Script* (1972). A short film showed the actions of a gallery employee, while three slide projectors varied the narrative sequence of it. The first projector kept up a continuous sequence of selected stills; the second modified the order of two scenes and the third kept the most important parts and left out one of the scenes. In this way, the film came face to face with the actions that the employee was in reality carrying out during the exhibition, and with its own narrative logic.

THE ELECTRONIC IMAGE AND THE ORIGINS OF VIDEO ART

The history of video art in Argentina began in 1966 with *Simultaneity in Simultaneity*. There had, however, been a major precedent in *La Menesunda*, an environment that Marta Minujin and Ruben Santantonin presented at the Di Tella Institute in May 1965. The work included what was possibly the first closed-circuit television in the history of art. The device was between two monitors, which were broadcasting normal programs: the visitor was thus confronted with his own image as part of the fragmented discourse of television. Despite this fact, the work cannot be considered the starting point of video art, since the effect mentioned was only one of many in *La Menesunda*. It was not until *Simultaneity in Simultaneity* that the electronic image had a clear main role for the work to be considered as initiating the genre.

In 1967, David Lamelas presented *Situacisn de Tiempo* (Time Situation), a room lit by 17 television sets transmitting vague noises and sound signals. The installation called attention to the temporal nature of the electronic medium. This work was connected with another of 1968, where Lamelas arranged two cinema projectors in a room; these only projected light, the basic condition for the cinematographic image. In 1969, two other pieces again used the electronic image: *Especta*, by Frontera Group and *Fluvio Subtunal* by Lea Lublin. The first was a communication experiment with a mini-recording studio and six television sets. Spectators answered questions as they were recorded on video. On the way out, they could see themselves replying on the screens among the rest of the public. One year later, this work was part of the exhibition *Information* at the New York Museum of Modern Art.,/p>
***Fluvio Subtunal* was a journey into nine zones. One of these, the technological zone, included 15 television sets in closed circuit showing what was happening in**

the other zones. The audience became aware of the magnitude of the work, and of their own participation, when they saw others doing what they had been doing minutes earlier. The "technological zone" enabled visitors to transcend the playful mood and reflect on their own part in the action.

COMPUTERS AND INTER-MEDIA

As mentioned above, as early as 1967 Marta Minujin used a computer to select participants for *Circuit*. At about the same time, the Di Tella Institute had a sound laboratory equipped with computerized media for sound experiments. But it is 1969 that can be stamped as the year of origin for computer art in Argentina, when the exhibition *Art and Cybernetics* showed the works produced in Buenos Aires by six Argentine artists alongside works from North America, England and Japan.

The following year, the *Art and Communication Centre* (CAYC) organized the event *Argentina Inter-medios*. In the catalogue, Jorge Glusberg explained: "In *Argentina Inter-medios* electronic music, experimental films, poetry, projections, dance, and pneumatic and kinetic sculpture are used to constitute a total environment where a dynamic exchange between different stimuli places the media at the service of audiovisual perception. The intention of events of this type is to draw the attention of experts and scientists in the social disciplines, as well as of the informed public, to the advantages of an interdisciplinary integration that improves and broadens the scope of human interests".

These objectives were different to those promoted by GRAV, since the appeal here was to specialists and not to ordinary people. Nevertheless, the intention in both cases was to promote the impact of art on the social environment.

THE SCIENTIFIC PARADIGM IN THE CONCEPTUALISM OF THE SEVENTIES

1968 marked the creation in Buenos Aires of CAYC, an interdisciplinary center whose objective was to promote projects where "art, the technological media and the interests of the community combine in an effective exchange that highlights the new unity of art, science and the social environment in which we live". The institution was inspired by Experiments in Art and Technology (E.A.T.), an organization founded by Robert Rauschenberg and Billy Kl|ver in 1966, but whose influence began to fade with the growing interest in local and Latin American conceptualism.

In any case, a great number of experiments in art and technology took place at the Centre. In fact, CAYC was particularly supportive of this kind of production, helped by the fact that it had a number of relevant facilities. The availability of video equipment and closed-circuit television made it possible for artists to experiment with electronic imaging. In the same way, CAYC brought together many local and international artists involved in technological research.

A number of the Centre's artists were engaged in a process of constant reflection on the relations between art, science, technology and life. Luis Benedit investigated animal behavior by producing artificial environments. His work combined architectural and engineering projects with scientific thought, with a

view to generating proposals where the production of observation-based information and knowledge provided the foundations of artistic experience. Victor Gripo researched the processes of energy transformation using very simple technical resources. In contrast, Leopoldo Maler's *mises en scene* were spectacular and called for complex technological devices.

But the use of technology in the work of these three artists acquired a different meaning from that intended by their forerunners. Technology was not used as a means to transform life, but as a paradigm of the production of information and knowledge. Utopic visions were replaced by systematic studies, which made it possible to investigate reality from a detached viewpoint. With the instruments that technology provided, the artist now became an observer of reality, an analyst of its constituent systems, media and processes, and an exegetist of discursive, material and ideological constructions.

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MOVEMENTS AND PASSAGES: THE LEGACY OF NET ART

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ABSTRACT

This paper explores net art as a form of thought and practice. By deconstructing the interactional and creative strategies that net art has been exploring with radical experimentalism from the middle of the 1990s, the paper stresses how a transdisciplinary analysis of the aesthetical patterns characterizing net art as a "trans-genre" can lead beyond the entrapment of self-referential criticism and allow an understanding and promotion of the legacy of net art in a broader

cultural context.

HISTORIES AND EXPERIMENTALISM: AN INTRODUCTION

In the mid 1990s, the art experimented by means of the interconnective properties of the Web was like a laboratory where new modalities of creation and social interaction were explored and proposed. Those investigations suggested the new scale at which the way of conceiving the arts, forming communities, and being a society were going to change [1]. At the dawn of the "net condition" engendered by information technologies [2], those early projects of net art contributed to open up a global creative dimension still unexplored and to promote new artistic and social practices. Today, after a decade, net art has been absorbed into the niches of the art system. Its legacy must be treasured not only as a matter of art history (or in relation to the history of technology), but also as a lesson of interaction design.

Our histories and interpretative frameworks of the electronic arts, however, often fall into a type of self-referential criticism serving the institutionalization of art and are inadequate to understand and promote the value and implications of experimentalism outside the domain of art [3]. The gap between history as a formalized discipline and a critical understanding of art experimentalism as a research-in-practice must be filled by a disposition to transdisciplinary investigation and the creation of new knowledge spaces [4]. To keep active the experimental heritage "buried" in art history, a *transdisciplinary dialogue* is needed among different disciplines (from aesthetics to interaction design), revealing patterns that help us to navigate the conceptual complexity of art and move away from the semantics of the individual disciplines [5].

NET ART AS "TRANS-GENRE"

In this paper, net art is intended as "primarily a form of thought and practice based on the concept of weaving and not simply an interactive mode of art based on networked technology" [6]; that is, net art is a kind of "trans-genre" [7]. This paper does not refer to net art as an established genre or ideology (for example, the "net.art" whose origins seem to go back to a malfunctioning piece of software [8]).

The experimentalism of net art inherits concepts and forms that were elaborated in art decades earlier [9][10]. An interesting aspect of this inheritance is related to the aesthetical shift from the idea of *participation* to that of *interaction* accomplished by the electronic arts in the 1970s. This shift corresponds to the different kind of creative relationship the viewer establishes with a "finite artwork" versus an "intelligent system" [11]; only in the second case can the viewer mutually interact with the artwork and eventually with the artist or other viewers.

Seeds of a relational principle of "interaction" may be discerned also in contemporary art, particularly in relation to those art forms grounded on the crisis of form and meaning as traditionally conceived [12][13]. However, net art

questions the issue of the author as a privileged creative subject more radically than contemporary art or the participatory practices of communication and telecommunication art from the 1970s to the beginning of the 1990s. In net art, the convergence of information and communication technology supports a new "open- ended field of creative endeavor," in which the viewer participates in the ultimate unfolding and meaning of the artwork, and the artist is more a systems designer than a conventional author [14].

According to the analysis presented here, net art comprises three interdependent *movements* (or stages) in its ontogenetic development: interactive exchange, morphogenesis, and emergence of meaning [15].

MOVEMENT #1: INTERACTIVE EXCHANGE

Traditionally, interaction identifies a particular action that involves several subjects. Specifically, interactivity can be defined as the peculiar property of computational tools and systems that qualify the user as an agent, able to start and perform actions alternately with the actions performed by the system or by other users in a dialogue via the system.

In net art the place of this exchange-where users meet and relations develop-makes the interaction itself the real "object" of creative production. Therefore, the kinds of interactivity that can be performed, the quality of the actions allowed by the interactive properties of the system, and the general conditions for the interaction process are matters of the greatest importance. Different kinds and qualities of *interconnectivity* can affect the capabilities of the system and, thus, the scope and complexity of the space of creation [16].

An initial distinction is made between "interactivity of selection" and "interactivity of content" [17]. *Interactivity of selection* allows users to exercise an active intervention inside a field of given choices. Conversely, *interactivity of content* engages the user into the "appearing" of the work [18]: Users do not simply realize an option, but create content.

**Examples of interactivity of selection include early works such as *404.jodi* (1997) or *Superbad* (1997), which conceptually have their own "self-contained" Internet sites [19]. They work with the browser software and transmission speed of the Internet, but they do not invite exchanges; their interactivity is limited to allowing the user to navigate these sites in various ways by mouse-click. Other example projects based on discursive content rather than pure "machinic" abstraction include *Link X* by Alexei Shulgin, *_readme.html* by Heath Bunting, and *My Boyfriend Came Back From the War* by Olia Lialina (all 1996), which stimulate the viewer's reading to extend a narrative over multiple pages and spatialize the text by its irregularity and dispersal across web pages [20]. Similar is also the work of David Blair (*WAXWEB*, 1994) and Mark Amerika (from *Grammatron*, 1997 to *Filmtext*, 2001), as well as early online experiments of reactive graphics such as *Evolutionzone.com*
(1995) by Marius Watz.**

Unlike these artworks, projects based on interactivity of content are oriented toward wider connections and collaborations and concerned with producing

situations that invite social interaction [21]. This kind of interactivity can take place in virtual communities such as *Internationale Stadt* (1994-1998) and *Digitale Stad* (1994-present), in "context-based systems" for critical discussion and experimentation such as *Nettime* (1995-present) and *7-11* (1998), or in others meant to promote new kinds of artistic content such as *THE THING* (1991- present), *dda'web* (1995-1998), and *Rhizome.org* (1996- present).

The same kind of interactivity can be explored also in relation to specific "art systems" [22]. An important distinction here is between the different qualities of creative interaction that the system encourages, fundamentally between the interactivity based on *structured processes of participation*, or "participatory interactivity," and that interactivity based on *situated processes of collaboration*, or "collaborative interactivity" [23].

When the quality of interactivity is participatory, the actions that a user can perform consist of a personal contribution to the a priori schema of the project. *The File Room* (1994) by Antoni Muntadas and *The World's First Collaborative Sentence* (1994) by Douglas Davis are historical examples of this kind of interactivity: The first is an open archive and database that collects cases of censorship submitted by the visitors, the second is an endless sentence composed of the entries of Internet participants. A more recent example is *One Word Movie* (2003) by Beat Brogle and Philippe Zimmermann, which organizes the flood of images on the Internet into an animated film on the basis of the search terms supplied by visitors.

When the quality of interactivity is collaborative, the artwork "appears" [24] throughout a situated process of collaboration. Creation is the result of interactive strategies promoting various possible patterns of social relations, from interpersonal dialogues to collective mechanisms [25]. For instance, *Renga.com* (1992) by Toshihiro Anzai and Rieko Nakamura comprises several collaborative methods and systems, by means of which "quoting" from or adding directly to the partner's work becomes the source of inspiration for new works. Another example is *10_dencies* (1997-1999) by Knowbotic Research, which translates urban data into electronic arenas open to collaborations that can take place either locally or in the new public space of the Internet. Other cases, involving distributed applications for visual interaction, are the *Poietic Generator* (1994) by Olivier Auber and *Open Studio* (1999) by Andy Deck, which enable users to engage in the real- time production of visual images and narratives.

The aforementioned qualities of creative interaction may be mixed, and they often are. For example, *SITO* (1992-present) is a virtual community that mixes participatory and collaborative interactivity. In SITO's collaborative art projects, under the category of works named Synergy, artists work on individual images and blend them inside prearranged structures; however, the blending between images is highly situated, and the time for the realization of the individual pieces is often very short. Projects such as *HyGrid* (1995) and *Gridcosm* (1997) promote a "contingent synchronicity" [26] in which the artists are connected in the same time frame and follow the rapid progress of individual images, reacting to them and creating new images as a response. Moreover, as an active community of artists and programmers, interaction schemes and computational

scripts are often modified according to the back talk of the creative situation the members of the community experience over time, and new structures are created to explore new forms of creative collaboration.

MOVEMENT #2: MORPHOGENESIS

The work of net art is intrinsically not self-sufficient and is subject to a constant process of morphogenesis. Sometimes this morphogenesis consists of growing the content of the work or increasing the complexity of its structure. Users' intentional or at times unintentional contributions change the stored data, their way of being linked, and the occupied space in memory, modifying in this way the time and space of access to the artwork and thus its semiotic emergence. *Last Entry: Bombay, 1st of July* (1997) by Andrea Zapp and *9 (Nine)* by Mongrel (2003) are examples of collaborative storytelling based on a dynamic network of personal experiences, memories, and interventions. A similar "open work" is *Communimage* (1999) by calc and Johannes Gees, a growing and disruptive juxtaposition of visual images created and uploaded by the participants. Unintentional contribution (if we look at it from this perspective) can be identified, for instance, in *Life_Sharing* (2001) by 0100101110101101.ORG, in which all kinds of computer data (from documents to private e-mail) become transparent to the visitors, and in some original projects of telepresence such as *Net Sound* (1996) by Sensorium.

At other times, change is similar to the changing rhythm of waves. The body of the artwork is better described as a flow of activity generated by the process of interaction rather than as an open structure. Time and space of the creative activity are collaboratively modified by the pace, duration, and patterns of the interaction process. This is the case of non-verbal communications enabled by distributed applications for visual and audio interaction, such as *Net Rezonator* (1998) by Koji Ito. A different, interesting case is *Mouchette* (1996), a virtual persona taking on a life of her own through the social interaction generated around her website and activities (personal emails, public "manifestations," etc).

Morphogenesis draws attention to the fact that the authentic material of net art is in the convergence of processes of information treatment and collaborative activity; that is, it consists of a new kind of *synthesis process*. Paraphrasing Duchez [27], the material (or "processes-material") becomes the outcome of participants' activity and, at least to a certain extent, it becomes their very activity: The more participants are involved, the more they are engaged in determining their own material.

MOVEMENT #3: EMERGENCE OF MEANING

This movement concerns how participants make sense of the unfolding of the artwork. In the processes-material of net art also the emergence of meaning is at stake, and once again matter seems to be constituted of different materials and generations of reality. Participants do not deal simply with the interpretative breaks of every artwork: Meaning "makes" the artwork as well as the computational data.

The meaning that participants find in the unfolding of the artwork is both a

driving force and a result of this unfolding. In such a process, the creative activities of the first movement and the semiotic activities of the present movement intertwine and create a shared and dynamic context for the process of interaction. Then, in the larger context of existence of the participants, this meaning objectifies itself in the discourses and practices that it is able to generate over time by blending generative and critical dialogue into a single "back-and-forth continuum" [28].

Even though net art always comprises all the three movements described in this paper, interesting examples of emergence of meaning are those projects usually grouped as works of data visualization and data banking, tactical media and activism, or game design. *They Rule* (2001) by Josh On and Futurefarmers, *the works by Critical Art Ensemble and etoy, and agoraXchange* (2004) by Jacqueline Stevens and Natalie Bookchin are some of good pointers.

The combination of interactive exchange, morphogenesis, and emergence of meaning makes the value (and evaluation) of net art complex. Even in these days, in which net art has been integrated into the art system and institutionalized, a dimension nevertheless lasts that is somehow programmatically "out of control." This dimension carries aesthetical and cultural leaps (or *passages*) that lie in the convergence of these three movements.

PASSAGE #1: FROM AESTHETICS TO POIETICS

The leap that net art has performed from the art object to the socio-technical environment, meant as an interconnected place for creative activities and emergent processes, induces a shift from the art domain to broader inquiries into the nature and scope of the creative dimension engendered by networked computing.

In the decentralized environments supported by net art, the event producing the "artwork" reflects a relational horizon, and is therefore essentially irreducible. The aesthetical judgment, based on the evaluation of an "external" outcome, becomes meaningless. Only the participants in the socio-technical environment can attribute a value to the event and make sense of it, at the same time as they contribute to its unfolding. By experiencing the network of relationships that the system brings about and taking part in the interaction process, the participants discover a creative dimension in which to be collectively engaged. The passage from *aesthetics* (as a category of perception) to *poietics* (as science and philosophy of the creation processes) [29] is completed: "If perception allows a boundary between feeler and felt, the *being into* makes it vanish, generating the image of living instead of feeling, of being instead of knowing" [30].

The involvement promoted by net art portends new collective practices and social behaviors in which men and women do not simply express themselves but are *engaged*. However, if the artistic creation exemplifies the whole civilizing creation [31], then the passage from a self-referential analysis of net art to the understanding of its broader implications is critical for an empowerment of our abilities of interaction and creation and the development of our future socio-technical systems.

PASSAGE #2: FROM DESIGN TO METADESIGN

How to manage democratically a creative political function is not simply a matter of what technologies should be used and in which way. Rather, it portends a new kind of design dealing with the processes by which people produce the world they inhabit; that is, it is a matter of creativity [32].

The kind of creative and collaborative design suggested by net art affects the enactment of the world men and women inhabit in the same way as the ownership of the means of production, or the control of the media, affect the production of our material and immaterial world. Given that new forms of reality and sociability will ground on our future relational embodiment as biological and historical beings [33], and since interaction design is going to increasingly deal with the experiential conditions of our relationships with things and beings, then learning from the strategies and patterns of interaction and creation that net art has been able to inquire and investigate from the very first contributes to the passage from *design* (as the conception and planning of the artificial) to *metadesign* (as a distributed design enterprise based on principles of co-creation and emergence) [34].

CONCLUSIONS

This paper identifies three interdependent stages (or *movements*) in the ontogenetic development of a work of net art: interactive exchange, morphogenesis, and emergence of meaning. They suggest aesthetical and cultural leaps (or *passages*), the analysis of which induces a shift from simply artistic inquiry toward broader creative investigations in the convergence between art and design. As a result, this paper contributes not only to a critical history of the electronic arts, but also to the contemporary debate about complex and challenging issues considered "beyond art" (and actually "beyond design" as well), including the design of new spaces for human communication and interaction.

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REFERENCES,/p>

1. D. De Kerckhove, "Networked Art and Virtual Communities," in C. Faure, M. G. Mattei and F. Torriani (eds.), Arslab: I Sensi del Virtuale, Milano: Fabbri Editore, pp. 103-110 (1995).

2. P. Weibel and T. Druckrey (eds.), Net_Condition: Art and Global Media, Cambridge, MA: The MIT Press (2001).

3. An exception is: D. Gromala and J.D. Bolter, Windows and Mirrors: Interaction Design, Digital Art, and the Myth of Transparency, Cambridge, MA: The MIT Press (2003).

4. B. Nicolescu, "Levels of Complexity and Levels of Reality," in The Emergence of Complexity in Mathematics, Physics, Chemistry, and Biology, Vatican City, October 1992, available at http://perso.club-internet.fr/nicol/ciret/bulletin/b15/b15c4.htm.

5. A. Judge, "Metaphors as Transdisciplinary Vehicles of the Future," in Science and Tradition: Transdisciplinary Perspectives on the Way to the 21st Century, Paris, December 1991, available at http://www.laetusinpraesens.org/docs/transveh.php.

6. T. Ueno, "The Work of Art in the Age of Cyber Technology," in Nettime, 20 February 1996, available at http://www.nettime.org/Lists-Archives/.

7. See [6].

8. T. Druckrey, "[...] j8~g#|\;Net.Art{-^s1 [..." in Weibel and Druckrey [2] pp. 20-29.

9. D. Davis, Art and the Future: History/Prophecy of the Collaboration Between Science, Technology, and Art, New York: Praeger (1973).

10. F. Popper, Art of the Electronic Age, London: Thames and Hudson (1993).

11. F. Popper, "De la Participation ` l'Interactiviti Dans les Arts Plastiques," in Vers une Culture de l'Interactiviti? - Actes du Colloque, Citi des Sciences et de l'Industrie La Villette, Paris, 19-20 May 1988.

12. N. Bourriaud, Pour une Esthetique Relationnelle, Dijon: Les Presses du Riel (1998).

13. F. Carmagnola, Parentesi Perdute: Crisi della Forma e Ricerca del Senso nell'Arte Contemporanea, Milano: Guerini e Associati (1998).

14. M. Lovejoy, Postmodern Currents: Art and Artists in the Age of Electronic Media, Upper Saddle River, NJ: Prentice Hall, 2nd edition (1997).

15. E. Giaccardi, Evolvendo: Esperienze di Network Art in Atto sul World Wide Web, MA Thesis, Department of Arts and Humanities: University of Turin (1998).

16. See [15].

17. N. Vittadini, "Comunicare con i New Media," in G. Bettetini and F. Colombo (eds.), Le Nuove Tecnologie della Comunicazione, Milano: Bompiani (1993).

18. R. Ascott, "From Appearance to Apparition: Communications and Consciousness in the Cybersphere," in Leonardo Electronic Almanac, Vol. 1, No. 2 (October 1993).

19. T. Baumgdrtel, "On the History of Artistic Work with Telecommunications Media," in Weibel and Druckrey [2] pp. 152- 161.

20. R. Greene, Internet Art, London: Thames & Hudson Ltd (2004).

21. See [19].

22. S. Cornock and E.A. Edmonds, "The Creative Process Where the Artist is Amplified or Superseded by the Computer," Leonardo, Vol. 6, No. 11, (1973) pp. 11-16.

23. See [15].

24. See [18].

25. E. Giaccardi, "Interactive Strategies of Network Art: Relationships and Agency," in Proceedings of the Third Conference on Computers in Art & Design Education (CADE '99), University of Teesside, UK, 1999, n.p.n.

26. L. Verle, Novas Imagens Para Um Novo Meio: Um Estudo de Caso do Website de Arte Interativa SITO, MA Thesis, Pontificia Universidade Catolica do Rio Grande do Sul, Brasil (1999).

27. M.-H. Duchez, "Il Concetto di Materiale nella Tecnologia Musicale Contemporanea," in A. Di Scipio (ed.), Teoria e Prassi della Musica nell'Era dell'Informatica, Bari: Giuseppe Laterza Editore (1995).

28. D. Ross, "21 Distinctive Qualities of Net.Art," in Switch, Vol. 5, No. 1 (1999), available at http://switch.sjsu.edu/web/ross.html.

29. R. Passeron, Pour une Philosophie de la Criation, Paris: Klincksieck (1989).

30. P. Vidali, "Esperienza e Comunicazione nei Nuovi Media," in G. Bettetini and F. Colombo (eds.), Le Nuove Tecnologie della Comunicazione, Milano: Bompiani, p. 133 (1993).

31. See [29].

32. E. Giaccardi and G. Fischer, "Creativity and Evolution: A Metadesign Perspective," in Sixth International Conference of the European Academy of Design on Design, System, Evolution, University of the Arts, Bremen, Germany, 29-31 March 2005.

33. J. F. Varela, E. Thompson and E. Rosch, The Embodied Mind: Cognitive Science and Human Experience, Cambridge, MA: The MIT Press (1991).

34. E. Giaccardi, "Metadesign as an Emergent Design Culture," Leonardo, Vol. 38, No. 4 (August 2005).

URLS (LAST ACCESSED 19 NOVEMBER 2004):

_readme.html, http://www.irational.org/heath/_readme.html

10_dencies, http://www.krcf.org/krcfhome/

404.jodi, http://404.jodi.org/

9 (Nine), http://9.waag.org

dda'web, http://adaweb.walkerart.org/

agoraXchange, http://www.agoraxchange.net/

Communimage, http://www.communimage.ch/

Critical Art Ensamble, http://www.critical-art.net/

Digitale Stad, http://www.dds.nl/

Etoy, http://www.etoy.com/

Last Entry: Bombay, 1st of July...,
http://residence.aec.at/lastentry/

Life_Sharing, http://0100101110101101.org/home/life_sharing/

Link X, http://basis.desk.nl/~you/linkx/

Marius Watz, http://www.evolutionzone.com/

Mark Amerika, http://www.markamerika.com/

Mouchette, http://www.mouchette.org/

My Boyfriend Came Back From the War,
http://www.teleportacia.org/war/

Net Rezonator, http://netrezonator.imgsrc.co.jp/

Nettime, http://www.nettime.org/

One Word Movie, http://www.onewordmovie.ch/

Open Studio, http://www.artcontext.org/draw/

Poietic Generator, http://poietic-generator.net/

Renga.com, http://www.renga.com/

Rhizome, http://www.rhizome.org/

Sensorium, http://www.sensorium.org/

SITO, http://www.sito.org/

Superbad, http://www.superbad.com

The File Room, http://www.thefileroom.org/

THE THING, http://bbs.thing.net/

The World's First Collaborative Sentence,
http://ca80.lehman.cuny.edu/davis/

They Rule, http://www.theyrule.net/

WAXWEB, http://www.iath.virginia.edu/wax/

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Elisa Giaccardi has a background bringing together humanities, media and design. She has a bachelor degree in Modern Humanities (University of Turin, Italy), a master degree in Media and Communication (SPICS, Italy), and a doctoral degree in Interactive Arts (Planetary Collegium, ex CAiiA-STAR, University of Plymouth, UK). An abstract of her doctoral dissertation is available on LABS at: http://leonardolabs.pomona.edu/.

She combines academic and professional activities in interaction design, media arts, and cultural management. She has been a Research Fellow in Communication Sciences at the University of Turin since 1998 to 2000, and Head of New Media at Fondazione Fitzcarraldo in Turin since 2000 to 2003. She is currently a Research Associate at the Center for LifeLong Learning and Design (L3D), University of Colorado at Boulder, USA.

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She has lectured and published her work on several occasions. She has been also an art curator and a conference organizer, including the symposium *Colloquium on Metadesign* (Boulder, 2004) and the international art conference *E-naissance: New Configurations of Mind, Body, and Space* (Turin, 2001). She is a member of editorial boards and committees for MIT Press (Leonardo Digital Reviews), The European Journal of Higher Arts Education, ACM Multimedia, and DART.

RECENT ACTIONS TO PRESERVE, DOCUMENT AND DISSEMINATE FIFTY YEARS OF LATIN AMERICAN ELECTROACUSTIC MUSIC

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KEYWORDS

electroacoustic music, Latin America, music history, preservation and dissemination

ABSTRACT

Electroacoustic music has in Latin America a long, interesting and not very well known development. In some countries experiences started around 50 years ago, but availability of recordings and information about electroacoustic music works in this region have been always a problem. Recently, two actions to preserve, document and disseminate electroacoustic music by Latin American composers were realized: Extensive research focusing on the composers and their work in this field, and a musical archive.

INTRODUCTION

The development of electroacoustic music seems to be associated with a few countries where the pioneering activities started (e.g. France, Germany, Italy, United States). But musical creations using an experimental and/or academic language and involving electronically modified or generated sounds has also been of great interest to composers living in Latin American countries since the 50s and before. However, there is a significant lack of information in this respect, and little research has been conducted in this area.

Having started to work in the electroacoustic music field during the mid 70s in my native country of Argentina, I found it very difficult to obtain information on related activities in surrounding countries and even in my own city. Although challenging, it was nevertheless possible to find recordings by composers living in Europe or North America, but it was very difficult to locate any by local or regional composers. It took me a very long time to obtain a few electroacoustic music recordings by composers living or working in Latin American countries and to discover a world of sound that had been partially hidden, if not completely lost.

MUSIC AND TECHNOLOGY EVERYWHERE

According to Hugh Davies' 1968 *Ripertoire international des musiques ilectroacoustiques/international electronic music catalogue* [1], Mauricio Kagel (b. Buenos aires, 1931) composed eight electroacoustic studies in Argentina between 1950 and 1953. Then, from 1953 to 1954, he created *Mzsica para la torre* (also known as *Musique de Tour*), a sonorization of some 108 minutes, which

included an essay on *musique concrhte*, for an industrial exhibition in Mendoza.

Reginaldo Carvalho (b. Guarabira, 1932) composed his first *concrhte* pieces on tape between 1956 and 1959 at *Estudio de Experiencias Musicais* (musical experiences studio) in Rio de Janeiro. Among them were *Si bemol* from 1956, probably the first *musique concrhte* work realized in Brazil.

In Chile, Lesn Schidlowsky (b. Santiago, 1931) composed *Nacimiento*, a *concrhte* piece on tape, in 1956. At the time, Juan Amenabar (b. Santiago, 1922 - d. Santiago, 1999) and Josi Vicente Asuar (b. Santiago, 1933) were experimenting with electroacoustic techniques at Radio Chilena in Santiago. Amenabar composed *Los Peces* in 1957, a piece based on tape manipulations of recorded piano sounds, structured according to the Fibonacci series. The same year Asuar proposed to write his engineering thesis about *Mechanic and Electronic Generation of Musical Sounds*, composing and premiering his *Variaciones Espectrales* in 1959.

Kagel was not the only Argentinean composer interested in the many possibilities of electroacoustic technologies and techniques during the pioneering years. Tirso de Olazabal (b. Buenos aires, 1924 - d. 1960) lived in Paris during the 50s, and composed an *Estudio para percusisn* for tape in 1957. He also organized one of the first concerts of electroacoustic music in Argentina in 1958. At the end of that year, the Estudio de Fonologma Musical was founded at the University of Buenos Aires by Francisco Krvpfl (b. Timisoara, Romania, 1931) and Fausto Maranca; it was in this lab that between 1959 and 1960 krvpfl composed his first works using electronic sounds: *Ejercicio de texturas* and *Ejercicio con Impulsos*. During that same period, Cisar Franchisena (b. General Pinedo, Chaco, 1923 - d. Csrdoba, 1992) was also experimenting with electronic sound sources at the National University of Csrdoba radio station and composed *Numancia*, his ballet music for tape, in 1960. Horacio Vaggione (b. Csrdoba, 1943) also started to experiment in Csrdoba with electroacoustic technologies at this time, composing *Mzsica Electrsnica I* for tape in 1960 and *Ensayo sobre mezcla de sonidos*, *Ceremonia* and *Cantata I* in 1961. In Buenos Aires, Miguel Angel Rondano (b. Godoy Cruz, 1934) was also using electroacoustic media in his work during the early 60s; among other pieces he composed *La batalla de los angeles* for tape in 1963.

Prior to this and using only electronic sound sources, Hilda Dianda (b. Csrdoba, 1925) composed *Dos Estudios en Oposicisn* for tape in 1959, working at the Studio di Fonologia Musicale of RAI (Italian Radio and TV) in Milano. Another Argentinean composer, Mario Davidovsky (b. Midanos, 1934), composed tape pieces *Electronic Study No.1* in 1960 and *Electronic Study No.2* in 1962 at the Columbia-Princeton Electronic Music Center in New York. In 1962 he began writing a series of mixed pieces under the generic name of *Synchronisms* and went on to receive a Pulitzer Prize in 1971 for his *Synchronisms No.6* for piano and electronic sound.

In Cuba, Juan Blanco (b. Mariel, 1919) composed *Mzsica para danza* in 1961, using an oscillator and tape recorders. His first mixed work for orchestra and tape was *Texturas*, composed between 1963 and 1964. In 1964, Blanco began to create electroacoustic music for massive public events and large venues, being

an example the *Mzsica para el Quinto Desfile Gimnastico Deportivo* for symphonic orchestra, sound toys group and tape from 1965.

In Brazil, Jorge Antunes (b. Rio de Janeiro, 1942) composed *Valsa Sideral* in 1962 using only electronic sound sources; it is considered the first piece of its kind realized in brazil. Antunes also composed mixed and multimedia works, including *Ambiente I* for tape, lights, static and kinetic objects, incense and food in 1965; and *Cromoplastofonia I* for full orchestra and tape in 1966.

Back in Argentina, the Centro Latinoamericano de Altos Estudios Musicales (CLAEM) in the Instituto Torcuato Di Tella (Latin American Higher Studies Musical Center of the Torcuato Di Tella Institute) was a major meeting point for students and composers from Latin America. Peruvian composer Cisar Bolaqos (b. Lima, 1931) arrived in Buenos Aires in 1963 to study at CLAEM and was in charge of its electronic music lab for a number of years from its creation. In 1964, Bolaqos composed *Intensidad y Altura*, the first electroacoustic work for tape produced at CLAEM.

Carlos Jiminez Mabarak (b. Tacuba, 1916 - d. Mexico City, 1994) is widely accepted as the first Mexican composer to create a piece on tape: *El paramso de los ahogados* from 1960. Hictor Quintanar (b. Mexico City, 1936) composed several pieces using electroacoustic techniques during the 60s and 70s, including *Aclamaciones* for choir, orchestra and tape in 1967, and *Smmbolos* for chamber group, tape, slides and lights in 1969.

In Uruguay, Corizn Aharonian (b. Montevideo, 1940) and Conrado Silva (b. Montevideo, 1940) also started to work with electroacoustic resources in their pieces in the early 60s. Bolivian composer Alberto Villalpando (b. La Paz, 1942) first began experimenting with electroacoustic techniques in his music in Buenos Aires during the early 60s. Back in Bolivia in 1965, he continued his work with tape techniques and analog synthesizers and composed *Mmstica No.3* for double string quartet, French horn, flute, double bass and tape, and *Mmstica No.4* for string quartet, piano and tape, both in 1970. In Guatemala, Joaqumn Orellana (b. Guatemala City, 1937) composed *Contrastes*, ballet music for orchestra and tape in 1963, and *Humanofonma* for orchestra and tape in 1971. Ecuadorian composer Mesmas Maiguascha (b. Quito, 1938) was already actively incorporating electroacoustic media into his music in the mid 60s when he moved to Germany; some of his early works are *El mundo en que vivimos* for electronic and *concrhte* sounds on tape from 1967, and *Ayayayayay* for tape from 1971.

The Estudio de Fonologma Musical of the Instituto Nacional de Cultura y Bellas Artes (INCIBA), established in Caracas in 1966- 1967 by Josi Vicente Asuar, is considered the birthplace of electroacoustic music in Venezuela. Alfredo del Msnaco (b. Caracas, 1938) composed his *Cromofonmas I* for tape in 1966- 1967 working at that lab, becoming the first Venezuelan composer to create an electroacoustic piece.

Jacqueline Nova (b. Ghent, Belgium, 1935; d. Bogota, 1975) moved to Bucamaranga, Colombia, when she had only a few months. She composed *Resonancias 1* for piano and electronic sounds in 1968 and *Sincronizacisn* for

voice, piano, harmonium, percussion and electronic sounds in 1970.

The above is just a brief introduction to the vast musical productions by Latin American composers during the 50s and 60s. Most composers worked in precarious conditions but had enormous interest and enthusiasm to experiment, research and create new music using cutting edge composition techniques and the latest available technologies.

UNESCO DIGI-ARTS REPORTS

Almost every recording and piece of information I have collected since the mid 70s was obtained by contacting each composer directly. Over time, I began to build a small but growing personal archive with electroacoustic music recordings.

I had been thinking about how best to organize and make available the materials I had gathered over more than 20 years. At the same time I was looking to delve deeper into this research about musical creations using electroacoustic media by Latin American composers.

Then, in 2002, I was invited by UNESCO to participate in the first international Digi-Arts meeting held in Paris, when the project was still at an early planning stage. UNESCO commissioned me to research and write several reports about electroacoustic music and media arts. The resulting two key reports were *Historical Aspects of Electroacoustic Music in Latin America: From the Pioneering to the Present Days* [2] and *La mzsica electroaczstica en Amirica Latina* [3], published online in 2003 on the UNESCO Digi-Arts Knowledge Portal. These are not English and Spanish versions of the same text, but rather complementary writings on the historical aspects of the electroacoustic music development in Latin America, with extensive references to composers and their work.

Table 1 lists the number of composers named in the English report and their related countries, i.e. where they were born or pursued a portion of their professional careers.

TABLE 1: NUMBER OF COMPOSERS PER COUNTRY CITED IN THE RESEARCH TEXT HISTORICAL ASPECTS OF ELECTROACOUSTIC MUSIC IN LATIN AMERICA: FROM THE PIONEERING TO THE PRESENT DAYS

Argentina: 191
Bolivia: 14
Brazil: 90
Chile: 39
Colombia: 39
Costa Rica: 5
Cuba: 44
Dominican Republic: 3
Ecuador: 11
El Salvador: 5
Guatemala: 6

Mexico: 73
Panama: 3
Paraguay: 4
Peru: 15
Puerto Rico: 12
Uruguay: 27
Venezuela: 35

LATIN AMERICAN ELECTROACOUSTIC MUSIC COLLECTION

In order to provide the public with access to information and musical works that could be of interest, while keeping the large amount of material I had already collected as safe as possible, I was searching for a place where the preservation of documents was not only important but also possible.

I applied to the Daniel Langlois Foundation for Art, Science, and Technology Researcher in Residence program and proposed developing an archive [4] and database based on my personal collection of recordings and documents. The all-digital archive would be preserved and made available for listening at its Centre for Research and Documentation (CR+D), and the database would provide public access through the Internet.

Two consecutive grants during 2003 and ongoing work in 2004 have allowed me to work for some 24 months with recordings on open reel, analog cassettes, DAT tapes, vinyl LPs and CDs, digitizing and/or converting from different formats, editing and baking as needed, and filling the database of the Foundation with all of the available information on the pieces involved (title, composer, year of composition, instrumentation, program notes, production studio, version, duration, composer bio, etc). To date, March 2005, there are 2,150 digital audio files archived at the Foundation's CR+D.

The music archive [5] includes pieces for fixed media (ex. tape) as well as mixed works for acoustic instruments or voices and fixed media or live electronics/interactive systems.

Those 2,150 audio files correspond to 1,720 electroacoustic works (the difference comes from 111 pieces that have separated recordings for their musical movements). Concerning the database, from the 1,720 works: 1,677 are dated; 1,029 specify the instrumentation (e.g. tape, or orchestra and live electronics); 479 indicates the realization studio; 370 have information about the performers and/or place and date of the recordings (for the mixed pieces); and 266 have associated research notes. There are also 365 program notes in English, 263 in Spanish and 36 in French.

The 1,720 works were created by 387 composers associated with 17 Latin American countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Paraguay, Peru, Puerto Rico, Uruguay and Venezuela. The database has basic information about the aforementioned 387 composers (place and date of birth, etc), and 199 among them have also a biography or professional profile there.

A significant number of compositions from the 60s and 70s have been archived as well as many more from the 80s, 90s and recent years [6]. Only a few pieces from the 50s were found and included.

Given the aforementioned difficulties the public has in accessing this music, I find it a major achievement that free access exists to listen to the recordings included in this archive at the Daniel Langlois Foundation's CR+D. I hope that in the near future, this archive will be mirrored in other research and/or educational centers and that other institutional archives will also be opened to the public.

A short selection of pieces, ranging from the mid 1950s to 2004, is also available for listening through the website [7]. Some of the texts included in the database were originally written for the UNESCO reports mentioned above.

The archive also includes some digitized LP record sleeves, historical photographs, scores, and a full series of recordings with interviews to electroacoustic music pioneers from Argentina, Bolivia, Brazil, Chile, Mexico, Peru, Puerto Rico, Uruguay and Venezuela.

This archive integrates the results of more than 20 years of research, building bridges for communication and confidence.

CONCLUSION

Hopefully, this text will invite you to explore the wonderful world of music created by hundreds of Latin American composers over the past several decades.

Please, keep these projects alive both by using them well and by sending any additional information, suggestions, comments, updates and corrections to my email address: ricardo@dalfarra.com.ar

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NOTES AND REFERENCES

**1. H. Davies, (1968). *Ripertoire international des musiques ilectroacoustiques/International Electronic Music Catalogue*.
A cooperative publication of le Groupe de recherches musicales de l'O.R.T.F., Paris, and the Independent Electronic Music Center, New York.**

2. R. Dal Farra, (2003). *Historical Aspects of Electroacoustic Music in Latin America: From the Pioneering to the Present Days*. UNESCO Digi-Arts

Knowledge Portal:
http://portal.unesco.org/digiarts

3. R. Dal Farra, (2003). *La mzsica electroaczstica en Amirica Latina*. UNESCO Digi-Arts Knowledge Portal:
http://portal.unesco.org/digiarts

4. It must be noted that the meaning of "archive" in this text refers to the place where an ordered group of documents and information of special interest or value are guarded for preservation

5. R. Dal Farra, (2004). *Ricardo Dal Farra, Latin American Electroacoustic Music Collection*. Daniel Langlois Foundation for Art, Science and Technology:
http://www.fondation-langlois.org/flash/e/index.php?NumPage=542

6. R. Dal Farra, (2004). *Latin American Electroacoustic Music Collection. List of compositions and composers*. Daniel Langlois Foundation for Art, Science And Technology:
http://www.fondation-langlois.org/flash/e/index.Php?Numpage=557

7. R. Dal Farra, (2004). *A selection from the Latin American Electroacoustic Music Collection, by Ricardo Dal Farra*. Daniel Langlois Foundation for Art, Science and Technology:
http://www.fondation-langlois.org/flash/e/index.php?NumPage=556

BIBLIOGRAPHY

Behague, G. (1983). *La musica en America Latina*. Venezuela: Monte Avila Editores.

CDMC-BRASIL/UNICAMP (1996). *Guia da Mzsica Contemporbnea Brasileira 1995-1996*. Brazil: Musicon CDMC Unicamp.

Dal Farra, R. (1996). "A Southerner's Perspective." In *Computer Music Journal*, Vol. 20, Number 3, 36-37. United States: The MIT Press.

Dal Farra, R. (1996). "Electroacoustic and Computer Music in Latin America." In *Proceedings of the International Computer Music Conference 1996*, 165-168. Hong-Kong: International Computer Music Association.

Ficher, M., Furman Schleifer, M. and Furman, J. M. (2002). *Latin American Classical Composers. A Biographical Dictionary*. United States: The Scarecrow Press.

AUTHOR BIOGRAPHY

Ricardo Dal Farra (b. Buenos Aires, Argentina, 1957) has been conducting activities in the merging fields of arts, sciences and new technologies for more than 25 years as composer, multimedia artist, educator, researcher, performer and curator.

He has been Coordinator of the Multimedia Communication National Program at Argentina's National Ministry of Education, Science and Technology (1996-2003); appointee Director of the Electronic Arts Experimental and Research Center, Buenos Aires (2002); Consultant/Director of Musical Production specialty at ORT Technical School, Buenos Aires (1992-1999); Director of the Electroacoustic Music Studio (1978-2003); Consultant for UNESCO's Digi-Arts Project (since 2002); and professor of multimedia and music at several universities and conservatories.

Dal Farra's music has been played in concerts and symposiums in more than 40 countries and has been recorded in 15 different editions. He has also performed using live interactive systems since the late 70s. His work has been distinguished with grants and commissions by the International Computer Music Association, the International Arts Biennial of Sao Paulo, the Concours International de Musique Electroacoustique de Bourges, the Centro di Sonologia Computazionale from the University of Padua and the Daniel Langlois Foundation for Art, Science, and Technology.

Dal Farra has been directing radio series on electroacoustic music on the National Radio of Argentina and the Municipal Radio of Buenos Aires for more than 10 years. He has been a member of the Board of Advisory Editors of the Journal of New Music Research since 1988 and International Editor for Leonardo Music Journal since 1995. He is also a fellow of Colegio de Compositores Latinoamericanos de Mzsica de Arte.

TIMELINE [WHO WRITES THE HISTORY?] - ARTIST STATEMENT

by Petri Raappana
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with Kristine Ploug
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KEYWORDS

timeline, media criticism, digital art, media conglomerates, democracy, net art

ABSTRACT

This article describes the digital artwork *Timeline [Who writes the history?]* by Petri Raappana. The work is a reaction to the ways of the media today with the dominating media conglomerates and attempts to promote alternative media. The article addresses questions concerning economic gains, media reform, and the role of the Internet.

INTRODUCTION

***Timeline [Who writes the history?]* was created by Petri Raappana. It was shown for the first time on the art website http://www.artnode.org in 2004.**

The work is a reaction to the ways the media work today. It can be claimed that mainstream media are increasing in power and decreasing in quality, all of which can potentially be fatal for democracy. The deficient coverage of the mainstream media is being countered by alternative media that, however, are not as well known and do not have the recognition and familiarity of the mainstream media. *Timeline [Who writes the history?]* aims at being more than just an artistic comment on society and functioning as an internet community for the gathering of links to alternative news media.

THE STRUCTURE AND THE PRINCIPAL IDEA

The work consists of a Shockwave file and a database. The Shockwave file starts out with a timeline that mimics the timeline in video editing software. On the timeline are logos from the mainstream news media. By moving the timelines curser the logos move horizontally back and forth in unison. If the timeline is stretched, a 'swarm' of logos from alternative news media shows up moving vertically across the timeline. If the user clicks on one of these, the chosen site opens in an external window. The user can also click his or her way into an "icon maker", where an icon can be designed. When the user starts creating icons, a question mark appears next to the icon maker. When clicking on it a new window appears with the question "Who writes the history?" and a form appears where the user can add an alternative news media (URL, description and category). The user can also view the list of links provided by others. When the user returns to the icon maker and clicks the button 'OK', the provided link is added to the swarm. The icons themselves are not saved; their function is merely symbolic. The link will stay on the list though.

The swarm is a metaphor for a number of different players who together are creating a (hi)story. The movement of the swarm of alternative news media also gives the timeline a static and uniform look. The swarm consists of a number of sites. The user can thus participate with a subjective contribution to the writing of history.

BACKGROUND

Through an extensive selection of news media on the Internet, we have the possibility to follow what goes on in the world from our computers. Most of us will click onto the well known news pages of the mainstream media to follow the political agenda, debates, and various other things going on locally and abroad.

We might consider their news coverage objective and neutral due to their long history and familiarity. But as time has gone by the news coverage of these media have become to a large extent populist and sensationalist, focusing on e.g. famous people's personal lives. The news coverage of some media can even be

claimed to look like advertisements. And how come many important issues are only covered by alternative media? Could the selection of news in the mainstream media be based on political and financial interests?

These are questions that are important to ask today when the mass media are gaining increasing power in society and are creating the basis for the future. With these developments in mind, an obvious further question becomes whether these media are indeed giving us an objective and neutral news coverage, or if they are governed by hidden agendas (other than selling news)?

ECONOMICAL GAINS

Financial gains are needed in any business. This is also true in the media industry. The objective of the mass media is to draw in as many people as possible in order to produce economic surplus. Because of this, the method is often based on the lowest common denominator to please as many as possible. This has caused both form and content to approach the entertainment genre. Journalistic ambition has been replaced by commercial interests. Economic efficiency demands that the journalism be cheap as opposed to the serious news coverage that costs time, knowledge and money. According to the French sociologist Pierre Bourdieu, the entertainment journalism that is the result not only attracts the masses, it also causes a so-called de- ideologization of the citizens.

MEDIA REFORM

In *Timeline [who writes the history?]* there are two links, both located at the bottom of the links page you arrive at via the icon maker. One is to http://www.corporations.org (Media Reform Information Centre) and the other is to an article at ETC (a Swedish journal). The article is a dialogue between ECT's Dan Josefsson and Robert W. McChesney (the author of the book *Rich Media, Poor Democracy*).

The following is a brief outline of the article:

In 1993, the media critic Ben Bagdikian published the book *Media Monopoly* and revealed that global media is owned by only 750 businesses. The book generated a big discussion about whether the concentration of power could damage the democratic debate in society.

Seven years later it turned out that a fast concentration of power was taking place and that the media were now owned by only nine media giants. These media giants are conglomerates, which means that they consist of a number of smaller publishers working in different branches of the media industry.

Everything points in a direction which suggests that we have only seen the beginning of the impact of these media conglomerates. It is surprisingly easy to buy up small national media businesses that cannot compete with the giants. In one country after another the media are transformed into the marketing channels of the media conglomerates. The smaller media are not able to compete with the giants and are often bought up.

The power concentration of the media can be compared to the control of the media in the Soviet Union with the sole difference being that it is a business and not the state creating the rules. This power concentration means that a true debate is never possible and that the democracy has been put out of action.

THE MESSAGE

***Timeline [Who writes the history?]* communicates these tendencies. The aim of the work is also to function as a forum, communicating websites that present alternatives to the mainstream media in a way where the work is not dictating the alternatives but are leaving it open to the users to add sources.**

The work has links to different news media that are constantly working with questions concerning human rights, with local news coverage, and gender and ethnic questions. Websites that are often overshadowed by the growing populist news coverage. The user can participate by adding links to the database and by navigating through the links to different media provided by other users.

The Internet can be seen as one of the more democratic and non- hierarchal media existing today. *Timeline [Who writes the history?]* presents the mainstream media and the alternative - less famous - media side by side, which is how things are on the Internet. The Internet is also giving room to even smaller newscasters in the shape of e.g. Weblogs.

***Timeline [who writes the history]* is constantly expanding and can potentially generate awareness of the existence of the alternative news media and promote a more nuanced way of understanding the concept of news.**

*** IMAGES ACCOMPANYING THIS ARTICLE CAN BE SEEN AT THE LEA WEBSITE: http://lea.mit.edu**

BIBLIOGRAPHY

Bagdikian, Ben *Media Monopoly* (Beacon, 1993)

Bourdieu, P. *Sur la television* (Raison D'agir, 1996)

**Josefsson, D.
www.etc.se/arkivet/textarkiv/Dans_artiklar/dj_000210_mediejattarna.html**

McChesney, Robert W. *Rich Media, Poor Democracy - Communication Politics in Dubious Times* (University of Illinois Press, 1999)

AUTHOR BIOGRAPIES

PETRI RAAPPANA (b. 1966) was educated at the Danish Academy of Fine Arts in Copenhagen between 1991 -1998 and at Hochschule Fur Bildende Kunste (HFBK)

in Hamburg from 1994-1995.

Petri Raappana's art has been shown on the Internet and at more traditional exhibitions spaces both in Denmark and internationally.

She is a Swedish citizen who works and lives in Copenhagen.

KRISTINE PLOUG (b. 1975) is a founder and co-editor of the Danish ezine www.artificial.dk covering the world of computer- based art forms. She has written widely on digital art and is active in creating a forum for digital arts in Scandinavia.

Kristine is the coordinator of the Danish National Academy for Digital, Interactive Entertainment that educates people in creating computer games (www.dadiu.dk).

Kristine has an M.A. in Danish Language and Literature from the University of Copenhagen and was a visiting scholar at New York University in 2000. Her thesis entitled *Small Bumps on the Information Highway* investigated the development and characteristics of net art.

Kristine lives and works in Copenhagen.

One From The Vault: From the LEA Archives

CRITICAL ISSUES IN ELECTRONIC MEDIA
First published: (LEA 3:4), April 1995
http://mitpress2.mit.edu/e-journals/LEA/TEXT/Vol_2/lea_v3_n04.txt

by Simon Penny (Editor)
Pittsburgh, Pennsylvania
penny+@andrew.cmu.edu
(This introduction reprinted with permission)

INTRODUCTION

It would be difficult to refute the suggestion that technological change has been the major force for cultural change for at least a century. As we move out of the first technological era, that of industrial production, into the era of the digital, a profound warping and rifting occurs across the cultural surface. This collection seeks to sketch the changing topology of culture as it enters electronic space. And to specifically addresses questions of art practice in that space. Electronic technology mediates our relations with the world. Although this book is outwardly a traditional object, it, like all others produced in the last decade, was electronically typeset, electronically designed and printed by computer-controlled machinery. The texts have been formulated and edited on digital word processors and the contributors have communicated through Fax and Email networks. None of this technology existed a generation ago.

Since Sputnik, the planet has become wrapped in a blanket of electronic communications, the ~datasphere~, facilitated by satellite and fibre-optic links between computer ~nodes~. International satellite data communications and TV broadcast networks have completely re-organised the flows of information, inter and intra-state. As long ago as the LA Olympics, press photographs were shot on still video cameras, beamed via satellite to Japan to be distributed back over international press networks to appear in LA newspapers. This transformation has been so rapid and so total that few areas of western life are untouched by it.

The electronic mediascape is about to go through another resounding change of state. Telephone, computer networks, television and interactive gaming will be digital, and thus, connectable. The exponential growth of digital network communications has sent computer companies, cable TV companies, networks and telephone companies all scrambling for a piece of the interactive TV action. The ~information superhighway~ looks poised to become a gargantuan virtual Mall. The pace of these changes is itself causing cultural dislocation. Between the time this anthology was conceived and the time of publication, technologies which were major have become obsolete and others that two years ago were high end research tools have become consumer commodities. In 1990 at the SIGGRAPH conference and elsewhere, Virtual Reality came out of the research closet. Four years later, Sega released its domestic computer game VR interface. Cultural changes follow these technological changes. Who, in 1990, could have predicted that, under the influence of the rapid growth of the videogame industry, Hollywood would be imploding in 1993.

CULTURE, DEMOCRACY AND COMPUTER MEDIA
First published: (LEA 3:4), April 1995
http://mitpress2.mit.edu/e-journals/LEA/TEXT/Vol_2/lea_v3_n04.txt

by Paul Hertz
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All normal persons possess some degree of creative insight and the desire to express it. In some societies, there are no artists because everyone is an artist. Only in societies where culture has been reduced to a thing apart from daily life can people develop the conviction that they have no creative insight or ability, or that only certain persons (a few of whom encourage such thinking) are so gifted. A society which has congealed its art into "cultural wealth" and rationalized it into a code of "cultural values" makes culture unattainable by the common person, and imposes a respect and worship of culture, or more precisely of those who are privileged to bask in its light. But culture is living matter, daily activity, and cannot be possessed. One may possess books, paintings, or season tickets,

but culture is alive only in hearing, seeing, or understanding. Music in particular is, in the words of John Cage, "a celebration that we own nothing," receding as it strikes the shore of the ear. Living culture celebrates not the euphoria of possession but the joy of communication.

In our age, new technologies have made cultural products accessible to the multitude of people as never before. Mechanical reproduction permitted art to leave the museum, and music to leave the concert hall. Printing, photography, and audio recording made the objects of culture available to ordinary individuals. In the process, the value and mystery surrounding the original work of art-what Walter Benjamin called its "aura"-was diluted in a sea of similar images. Yet despite this apparent democratization, culture remains a sign of privilege. We have mass culture for the masses, and high culture for the cultured. Mass culture pushes quantity, while high culture extols quality. For both, the use of the cultural object as a sign of individual identity and status precedes its capacity to inform. The division of culture and the contradiction between culture as commodity and culture as communication is determined not by any differences in the intelligence or creative capacity of persons,
but by the ownership of the technologies of production and distribution.

[THESE TEXTS CAN BE VIEWED IN THEIR ENTIRETY BY LEA/LEONARDO SUBSCRIBERS AT:
http://mitpress2.mit.edu/e-journals/LEA/archive.html

LEONARDO REVIEWS 2005.4

This month marks the beginning of a strenuous time at Leonardo Reviews as we begin to move the office to its new site on the campus at the University of Plymouth. There will be no moving of furniture or visible effects but it will mean a much more geographically coherent process will provide opportunities for further development.

Already it is noticeable that we are now publishing three times as many reviews per month than we did a couple of years ago. This month is no exception with nineteen new postings. Regular readers will I am sure recognise some names of the more active members of the panel and this month I thought I would devote all the LEA space to a single author. Stefaan Van Ryssen regularly returns four or five reviews and included here are all his submissions for February.

The rest of the reviews and the archive can be found at:
http://leonardoreviews.mit.edu

Michael Punt
Editor-in-Chief
Leonardo Reviews

REVIEWS POSTED MARCH 2005

Cloud Atlas
by David Mitchell
Reviewed by George Gessert

College Art Association Annual Meeting 2005
Atlanta, GA, February 16-19, 2005
Reviewed by Amy Ione

Documentary Film at the Junction between Art, Politics and New Technologies
IDFA, November 2004
Reviewed by Martha Blassnigg

Electrotherapy
by Scott Smallwood
Reviewed by Stefaan Van Ryssen

Frequency, Amplitude and Time
by Aaron Acosta
Reviewed by Stefaan Van Ryssen

How to Draw a Bunny
by John Walter and Andrew Moore
Reviewed by Roy R. Behrens

Interactive Futures
In conjunction with the 11th Annual Victoria Independent Film and Video Festival
Reviewed by Dene Grigar

Invisible Cities, A Metaphorical Complex Adaptive System
by Chloi E. Atreya
Reviewed by Stefaan Van Ryssen

Lumia Music In St.Petersburg: Life Is Going On
St. Petersburg Scientific Centre of the Russian Academy of Sciences
Reviewed by Mikhail S. Zalivadny

Marguerite Wildenhain: A Diary to Franz
by Dean L. Schwarz, Editor
Reviewed by Roy R. Behrens

M.C. Escher: Visions of Symmetry
by Doris Schattschneider
Reviewed by Rob Harle

Middle of the Moment
by Fred Frith
Reviewed by Stefaan Van Ryssen

Music from the Ocean
by Bob L. Sturm
Reviewed by Stefaan Van Ryssen

The Past is Not Dead: Facts, Fictions, and Enduring Racial Stereotypes
by Allan Pred
Reviewed by Michael R. (Mike) Mosher

The Psychology of Art and the Evolution of the Conscious Brain
by Robert L. Solso
Reviewed by Robert Pepperell

Santiago Calatrava's Travels
by Christoph Schaub
Reviewed by Rob Harle (Australia)

Spirit into Matter: The Photographs of Edmund Teske
by Julian Cox
Reviewed by Andrea Dahlberg

Style in the Technical and Tectonic Arts; or, Practical Aesthetics
by Gottfried Semper; introduction by Harry Francis Mallgrave
Reviewed by Stefaan Van Ryssen

Tara's Room: Two Meditations on Transition and Change
by Pauline Oliveiros
Reviewed by Stefaan Van Ryssen

TARA'S ROOM: TWO MEDITATIONS ON TRANSITION AND CHANGE

by Pauline Oliveiros
Deep Listening, New York, 2004 (1987)
Audio CD-ROM, 2 tracks, 52'33", $16.00
DL CD 22-2004
Distributor's website: http://www.deeplistening.org/.

Reviewed by Stefaan Van Ryssen
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Pauline Oliveiros is a composer and performer of international renown who has devoted her life to opening her own and others' sensibilities to the many faces of music and sound. As a composer, teacher, and mentor, she has deeply influenced American music since the 1960's, leading the way for what one might

call 'meditative music'. As a performer, she has given the accordion a new status and shown the way for at least two generations of improvising musicians. Her work emphasizes subtlety and attention to the sound as such, whatever the source or the overall structure of a piece. She is founder of Deep Listening.

With their definite New Age-like atmosphere, it is worth mentioning that *Tara's Room* and *The Beauty of Sorrow*, the two tracks on this CD, were composed and performed by Oliveiros and recorded in May 1987 already. (They were previously only available as a cassette and long out of print).

According to the composer, "*The Beauty of Sorrow* is intended to assist the listener in connecting and relaxing with deep feelings." It was played by the composer on a small accordion tuned in just intonation and using Lexico delay processors in a version of her Expanded Instrument System (EIS).

***Tara's Room* "is an invocation for wisdom especially during an unfamiliar journey". It is a multi-track recording with all materials played and sung by the composer. Oliveiros dedicates the pieces "to all who have lost loved ones whose lives were taken by war".**

As an example of Oliveiros' art and craftswomanship, this is definitely an important release, and for people with a bend towards meditative moods, the repeat button on their CD player should be pressed when listening to *The Beauty of Sorrow*. Being a down-to-earth pragmatist myself, I enjoy the purity of the accordion sound and the unpresumptuous feeling of 'being there'. I suppose that, if anyone would ask what it feels like to be an accordion, I would suggest listening to this piece.

ELECTROTHERAPY

by Scott Smallwood
Deep Listening Publications, New York, 2004
Audio CD-ROM, 13 tracks, $16.00
DL CD 29 -2004
Distributor's website: http://www.deeplistening.org

Reviewed by Stefaan Van Ryssen
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Diathermy machines, ultra violet ray oscillators, sectorless wimhurst machines and five-inch induction coils hold a special attraction for historians of science, collectors, and physicists, I suppose. Apparently, they also attracted Scott Smallwood's attention sufficiently to inspire him for a CD full of processed noises from these machines.

In 13 tracks, with names like *renulife*, *energex*, *sunkraft* and *electraply*,

Scott Smallwood explores the sonoric space constituted by the noises of these machines. Ranging from monotonous clattering to noise, white noise, and more noise, this space is quite limited, so the overall impression of the CD is one of a walk through a vast landscape of very self-similar white and pink noises and inconspicuous machine sounds. On second listening, the noises acquire some identity - unfortunately Smallwood doesn't give any information on the sources of the sounds in each track - and a kind of music glimmers beneath the surface. And I think it really takes a third hearing to finally appreciate the diversity and the intrinsic beauty of this sonorous space.

Admittedly, this is not an easy listening CD, with its dominant monotonous white noises and obsessive rhythmless 'beats'. We are forced to carefully listen to extremely small variations and unobtrusive modifications of sounds from a realm we are utterly unfamiliar with. As such, I think the CD will be scavenged by DJs, collectors of samples, sound engineers and the like for whatever reasons they deem necessary. It wouldn't pay full respect to the work Smallwood did, but I'm afraid that will be its fate. Meanwhile, let's listen again, for the fourth time, and appreciate the music.

FREQUENCY, AMPLITUDE AND TIME

by Aaron Acosta
Aaron Acosta, Santa Fi, 2004
Audio CD-ROM, 13 tracks, $15.95
Artist's website: http://www.home.earthlink.net/~benkei/

Reviewed by Stefaan Van Ryssen
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Basically, the thirteen tracks on this CD all follow the same simple plan: An introduction with sounds from a certain class of sources, some modification, mixing and modulation of these recognisable samples, addition of an electronically generated bass or drum line and a short finale with the original sounds. The sound sources are easily recognisable: Traffic, medical, earth, wind, fire and water, and phone noises. The compositions are simple and unsurprising, easy to follow and pleasant. Nothing is experimental; there are no deeper layers of meaning or structural complexity. In fact, the tracks can hardly be called compositions at all. With their pop song-like structure and elementary beats, they are at most amusing or cute little fait-divers.

The CD cover says: "Aaron Acosta is a graduate from the College of Santa Fe with a BA in Sound Design in Media in 2002. This is a self-designed major that consists of studies in Theatre, Film, and Music. He enjoys designing soundscapes for theatre and film and he has many skills as far as theatre and film production are concerned. What he loves most is sound. Sound helps us interpret the world in a unique way with frequency, amplitude and time: He

chooses to explore these realms. He is involved with electro acoustic composition as well as more traditional composition. He is currently working as Technical Director/ Resident Designer for Santa Fe Performing Arts."

INVISIBLE CITIES, A METAPHORICAL COMPLEX ADAPTIVE SYSTEM

by Chloi E. Atreya
Festina Lente Press, Ann Arbor, 2004
172 pp., 50 illus. b/w. Paper, $25.00
ISBN: 0-9754347-0-5.

Reviewed by Stefaan Van Ryssen
stefaan.vanryssen@pandora.be

It takes some courage and maybe even presumption to name a book squarely after Italo Calvino's masterpiece *Invisible Cities*, so it was with some reluctance and suspicion that I started browsing through Chloi Atreya's latest publication. What I found is a daunting and entertaining mixture of a respectful remake and an analysis of the original, an introduction in the field of complex adaptive systems, and at times poetic, and at times scientific reverie and, finally, a blueprint of the workings of an associative mind. As the author says in the accompanying letter to the editor of Leonardo Digital Review: "Invisible Cities: A Metaphorical Complex Adaptive System is distinctive for its narrative structure and because it gives equal weight to Invisible Cities and complex adaptive systems: Arts and sciences. The goal of the book is to provide a novel and accessible means of contextualizing existing knowledge within an interdisciplinary framework and to demonstrate how art and science inform each other."

Chloi Atreya has a PhD in pharmacology and earned a certificate in visual arts from Princeton. She is a visual artist as well as a scientist. The inspiration for this book came from her interest in the work of John H. Holland, the founder of the domain of genetic algorithms, on complex adaptive systems (cas).

In this book, she uses the many-layered formal structure of Calvino's book as a template and a metaphor to explain and illustrate the main elements of a theory of cas: Non-linearity, building blocks, tags, rules, slack, flows, homeostasis, novelty and evolution. With a chapter devoted to each element, and ordered in precisely the same way as the original, she guides the lay reader through the complexity of the theory, inviting her to follow an intuitive and associative interdisciplinary path with many loops and leaps, crossings, sidesteps and picturesque cul-de-sacs. Most of the examples she is taking from, fields as widely different as molecular biology, games and folk art, are appropriately chosen even though at times the connection between the theme and the illustration is hard to discern. Here she is taking us through her own understanding of philosophy, the history of art, and the meaning of the world rather than through a well-ordered system of proofs and

**proven or provable
connections. To a certain degree, Atreya's enthusiasm for cas turns into a belief, an all-encompassing worldview containing a mixture of scientific 'truths', moral and political imperatives and forced kinship. Of course she has the full right to do so, as an artist and even as a scientist, since she doesn't pretend to be doing science. It is for the reader to decide how far she will follow Atreya's iterations through this delightful proof of how science and art can become inseparably intertwined. Maybe we should read this book in a cas way: Non- linear, with some slack, following the flow, tagging the nicest pages and illustrations and savouring its novelty.**

MIDDLE OF THE MOMENT

**by Fred Frith
ReR, Denver, 2004
Audio CD-ROM, 14 tracks, $15.00
LC-02677, ReR/FRO 05
Distributor's website: http://www.rermegacorp.com/**

**Reviewed by Stefaan Van Ryssen
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**I have always found it extremely difficult explaining in words what the differences are between a moderately well done collage, a collection of nice soundscapes, a fine collection of transformed and manipulated sounds, an excellent piece of concrete music and a brilliant electro-acoustical composition. Of course, there are different sources of the sounding material, the transformations and manipulations of that source material takes many forms and the relative importance of the so-called original, unadulterated material - which is never really original since it has been recorded, filtered, enhanced and otherwise digitally or analogically changed - and the added, synthesized or purposefully performed sounds varies widely. But, when listening to the end product, the audience may find it very hard to distinguish one musical category from the other. It is then a bit cheap to revert to avoiding the question altogether and asking: "Is it any good?" or, cheaper still and missing the point
of musical appreciation entirely: "Does it sound nice?"**

If we take all the things described above as one big broad category, what are the criteria to apply? Obviously, any reader with a more than fleeting interest in aesthetics will know that there is no definitive answer. Or rather, giving an answer is similar to entering a minefield where every step in a predefined direction, any appraisal given with a degree of certainty and conviction and based on explicit principles may explode in one's face at the next turn of the CD in the player. I can hear you shout: "Come back! Retrace your steps. Be pragmatic for once, and leave it to the academic miners to clear the field!" But, not being an American and feeling the heavy weight of Kant's and Adorno's heritage on my shoulders, I have

to draw a line. I can't avoid it: There has to be some guideline, some set of rules I can hold on to when saying: This is worthwhile, and that isn't. And, thank all the gods and seraphims in the musical heavens that there is at least the music of Fred Frith (among others, of course) to help me find some beacons.

***Middle of the Moment** is a musical journey in 14 stages through Tuareg country, along the Northern Sahara. Each stage involves a different way of listening. At some points we hear the unedited singing of a group of Tuareg somewhere in the desert, at other places Frith added elements from entirely different sources: The sound of the surf at some coast, "trucks and trains, wells, winds, filmmakers, flies, fire and thunder, camels, goats and the jackal, the audience, the argument, and other ghosts" (CD-cover) and violins, accordions, Tibetan rattles, drums, percussion and woodwinds. In some indefinable way - Frith's way, certainly - one gets the impression of actually moving along with a group of Tuareg on a seemingly endless journey:*

"On all journeys you find your way by the stars, the way they rise above us and disappear in one line. You follow them until the last one has risen and disappeared again, behind us. [...] We loaded the camels and set out into the Ti ni ri, and we were very thirsty. We walked, and walked, and walked for five days, but the well was dry. Then, we unloaded the baggage and continued for five days to the next well. We fetched water, and then again five days back to our baggage. And then again five days from there to where we are now..." (CD cover).

And at any point, the sound betrays nothing of what lays behind or of what lies ahead. At each stage, one is, literally, in the "middle of the moment". Here and now.

***Middle of the Moment** is much more than the soundtrack of a film about the desert dwellers of the Sahara (the film is available on DVD on the famous German Winter & Winter label). It is a landmark, a touchstone for collages and soundscapes because each single track shows how the blending of materials can be done with respect for the original recordings, with imagination and with an eye on the overall end result. Recorded and composed sounds find each other; they interact and enter in an intriguing dialogue of support, contrast and mutual enrichment. And it takes Fred Frith to make them do so.*

STYLE IN THE TECHNICAL AND TECTONIC ARTS; OR, PRACTICAL AESTHETICS

by Gottfried Semper; introduction by Harry Francis Mallgrave
Getty Research Institute, Los Angeles, 2004
992 pp., illus. 359 b/w, 19 col. Trade, $80.00
ISBN: 0-89236-597-8.

Reviewed by Stefaan Van Ryssen

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Style is the long overdue translation of the classic text by the nineteenth-century architect and scholar Gottfried Semper. Before anything else it must be said that this is a magnificent translation, a beautiful book and the result of a bold and adventurous editorial enterprise. Applause from all ranks for the Getty Research Institute, which has once again proven to be unfailing in its endeavour to make important artistic sources available to a wider English-reading audience.

Well, 'available' is maybe a bit too optimistic because the book itself is quite monumental and certainly not an easy read. Semper wasn't an easy guy either, and his 1850's German - remember German culture was at its idealist height with authors like Hegel dominating the philosophical scene - was pretty well-developed. A phrase is a phrase is a phrase, and it continues sometimes without end. So, another round of applause for Harry Mallgrave and Michael Robinson who turned this magnum opus into more or less readable English without losing the general atmosphere that swings between exalted aestheticism, pedantic social criticism, and engineerish practicality.

So who was this Semper (1803-Rome 1879)? The son of a middle class family based in Hamburg, he excelled in maths and classic languages and followed an erratic course through practically all- European countries, studying architecture and engineering in Germany and France and visiting Italy and Greece on several occasions. He became a successful architect, building among others the monumental Hoftheater at Dresden. After participating in the 1848-1849 uprising in that city (alongside that other idealistic rebel Richard Wagner), he was obliged to leave the country and seek his fortune elsewhere. Via Paris he was stranded in London where he pursued his historic, archaeological, and architectural studies in the same reading rooms of the British Museum where Karl Marx was scribbling Das Kapital (1876). In London, he was hired by Henry Cole as a teacher at the School of Practical Art. This position saved him from a journey to the United States and gave him time to develop his ideas on the basic elements of art and architecture.

In summary, Semper's thesis is that practical artistic and architectural forms can be understood by looking at the raw materials used: Textiles for binding and covering (walls), ceramics for molding and strengthening in an adequate form (the hearth), tectonics and carpentry for scaffolding and thatching (roofs and furniture), and stereotomy, masonry and so on for structural strength (pillars, support). Each of these classes of materials follows its own natural laws and the elements or ornaments made from them of necessity take specific forms. Themes derived from one class can of course be transposed to other materials, just as materials are not limited to their natural usages. Weaving for example can be used to make baskets, serving a function that is more naturally ceramic. Only metal, which is by nature malleable, strong, flexible and rigid, can serve all functions, albeit in a less typical way.

Style than, is the harmonious and internally logical application of the whole range of materials and their derived forms, brought together under the internal pressure of the material and the external pressures of the cultural, historical and personal context of its creation.

Semper intended to write a book in three volumes: The first two dealing with the materials and their evolution in oriental, pre- classical, classical and contemporary architecture (internal pressures) and the last one capping it all with an analysis of architecture as a consequence of both the internal and the external pressures. This third volume was never finished, only the first draft of about 40 pages was written. So we are left with Semper's discussion of textiles, ceramics, tectonics, stereotomy, and metallurgy "[c]onsidered in Themselves and in Relation to Architecture".

Fortunately, Harry Mallgrave offers us a peek into the possible content of that famous third part in his thoroughly researched introduction to the life, work, and philosophy of Semper. Maybe the architect himself felt that by the time he was writing, some of his ideas were already becoming obsolete. At the height of his fame as a practicing architect, his views were already challenged by younger theorists, philosophers, and scientists, so it may be just as well that the grand man didn't finish his book. Anyway, the two volumes at hand are a fascinating journey through architectural form and through the mind of an engineer in idealist times. That in itself, with Mallgrave as a guide who knows all the intimate details, is more than worthwhile.

ISAST NEWS

Dear Leonardo Enthusiast,

We invite you to join the Leonardo community with an annual membership in Leonardo/the International Society for the Arts, Sciences and Technology (ISAST).

Since 1968, Leonardo has documented the work of artists who continually push the boundaries of innovation by working at the frontiers of art, science and technology. When the non-profit organization the International Society for the Arts, Sciences and Technology (ISAST) was formed in 1982 to further the mission of the journal, Leonardo grew into an expanded network of artists, educators, scientists and researchers with the common goal of sharing ideas and projects through dialogue with other members of this fascinating and unique community.

Your membership will open the door to a wealth of writings on the arts, sciences and technology and how they impact contemporary culture in twenty-first-century society. A Leonardo/ISAST membership also provides access to a wide range of benefits, including an annual listing in the Leonardo Electronic Directory (available on Leonardo On-Line); 20% off all titles in MIT Press's Leonardo Book Series; the right to nominate artists for the Leonardo Awards Program; invitations to join us at upcoming conferences and symposia such as the prestigious College Art Association annual conference; the first annual New Media Art History Conference at Banff Center, Canada; and the Pacific Rim New Media Summit (pre-conference to ISEA 2006) in San Jose, CA.

Becoming a member is easy! By subscribing to one of our publications you

become a member of Leonardo/ISAST.

There are several options for you to choose from:

Supporting membership - $77 (Leonardo/Leonardo Music Journal annual subscription + benefits)
Student/retired membership - $48 (Leonardo/Leonardo Music Journal annual subscription + benefits)
Associate membership - $35 (Leonardo Electronic Almanac annual subscription + benefits)
Music membership - $32 (Leonardo Music Journal annual subscription + benefits)

Topics, titles and special sections featured in upcoming issues include: "The Raw Data Diet: All Consuming Bodies and the Shape of Things to Come" by Lynn Hershman; "370C: From the Inside of a Being to the Thin Line of Life" by Polona Tratnik; Live Art on the Internet special section, guest edited by Martha Wilson; ArtScience, the Essential Connection special section, guest edited by Robert Root-Bernstein; and The Word: Voice, Language and Technology (LMJ 15), special issue edited by Nicolas Collins.

Join the Leonardo community with an annual membership and subscription today and help shape the arts of tomorrow!

Start your benefits by subscribing via our website:
http://leonardo.info/members.html or contacting our publisher MIT Press directly: journals-orders@mit.edu; (617) 253-2889.

Pamela Grant-Ryan
Managing Editor, Leonardo

MEREDITH TROMBLE JOINS LEONARDO ADVISORY BOARD

The Leonardo Advisory Board welcomes Meredith Tromble to its ranks. Members of the Advisory Board communicate on an ad-hoc basis to guide Leonardo/ISAST in its projects and collaborations.

Tromble pursues a triple-threat career as an artist, teacher and writer-editor. She received her MFA from Mills College in 1991 and in the ensuing years has taught art history, interdisciplinary and studio art courses at institutions including the California College of Arts and Crafts (now California College of the Arts), Mills, the University of Santa Clara and the San Francisco Art Institute.

She is a veteran of three art magazine startups. She participated in the development of *LIMN magazine of art and design* and served as its art editor from 1998 to 2000. As editor-in-chief of the original NextMonet.com, she created the on-line magazine *Mark* in 2000-2001. Before developing these publications she served as editor-in-chief of *Artweek* from 1996 to 1998.

She edited a book on the new media artist Lynn Hershman, which will be

published by the University of California Press in 2005. Hundreds of her essays, interviews and reviews have appeared in publications ranging from the Flintridge Foundation Awards catalog to such books as *Yesterday, Today and Tomorrow: Women Artists in California*. From 1985 to 2000 her commentaries on art were a public radio staple as part of the internationally syndicated program *Sedge Thomson's West Coast Live*. Tromble maintains a studio at the Hunters Point Shipyard in San Francisco, where she is currently at work on a new series of paintings.

LEONARDO NETWORK NEWS COORDINATOR: Kathleen Quillian
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THE PACIFIC RIM NEW MEDIA SUMMIT (PRNMS)
A PRE-SYMPOSIUM TO ISEA2006
7-8 August 2006, San Jose, California

The ISEA2006 Symposium is being held in conjunction with the first biennial ZeroOne San Jose Global Festival for Art on the Edge in San Jose, California, 5--13 August 2006. As part of the ISEA2006 Symposium, the CADRE Laboratory for New Media at San Jose State University will host a 2-day pre-symposium entitled the *Pacific Rim New Media Summit*, co-sponsored by Leonardo.

With a purview encompassing all states and nations that border the Pacific Ocean, the Pacific Rim New Media Summit is intended to explore and build interpretive bridges between institutional, corporate, social and cultural enterprises, with an emphasis on the emergence of new media arts programs.

In preparation for the summit, seven working groups are currently laying the groundwork for the main areas of investigation to be pursued in depth at the summit: Creative Community, Curatorial, Education, Directory, Eco-Social Activism, Mobile Computing and Urbanity, and Latin American- Pacific/Asia New Media.

We are pleased to publish the following statements from two of the working group chairs, and will continue this series as a build-up to the conference.

PRNMS WORKING GROUP ON DIRECTORY

by Irina Aristarkova, Directory Chair
ISEA2006/ZeroOne San Jose
Cyberart and Cyberculture Research Initiative (USP)
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The group aims to develop both a conceptual and technical backbone for the Pacific-Rim New Media Directory. We hope that a prototype or a first version of the Directory would be available for presentation at the Summit. It will serve as a platform for the exchange of information on the development of new media arts and initiatives in all countries represented at the Summit, and become a virtual meeting point for diverse approaches to new media in the vast region of Asia-Pacific.

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PRNMS WORKING GROUP ON LATIN AMERICAN-ASIA NEW MEDIA INITIATIVES [PACIFIC RIM NEW MEDIA DEVELOPMENT: EMERGING CROSS-COLLABORATION]

by Josi-Carlos Mariategui, Initiatives Chair
ISEA2006/ZeroOne San Jose
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CONCEPT/SCOPE

The Pacific Rim has been basically described as an economic- oriented (commerce, markets) way of looking at the exchange between the Asia-Pacific countries. In this respect, one of the first issues that need to be addressed is how the 'knowledge market' among different realities that participate in a huge economic-regional market builds up exchanges and 'negotiations' that will further enrich the market with ideas more than with just 'branded products'.

The three most influential generators of productivity within new media are in the Educational, Cultural and Industry sectors. These groups are not working together to develop joint strategies that could be useful within a regional context. In that sense the idea of this working group is to develop relations, strategies and processes among these different groups with a group of professionals in both Asia and Latin America 'emergent markets'.

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BYTES

LEA SPECIAL ISSUE: WILD NATURE AND THE DIGITAL LIFE

*** Worldwide Call for Submissions ***

Guest Editors: Sue Thomas and Dene Grigar
digitalwild@astn.net
http://mitpress2.mit.edu/e-journals/LEA/LEA2004/authors.htm#digiwild

The Leonardo Electronic Almanac (ISSN No: 1071-4391) is inviting papers [and artworks] themed around Wild Nature and the Digital Life.

Wild nature has traditionally been perceived as the preserve of the physical world and may seem to have little to do with the abstract spaces of the digital. But what can be described as "wild nature" at a time when much of the earth's land is

being annexed by cities, brought into production, and turned into tourist meccas or eco-excursions? How are humans reinventing "the wild" digitally? What is the relationship between humans and wild nature, and has it changed with the advent of the computer technology? Is the notion of wild nature limited to the physical world, and if not, then where else can we find it? How do those who are most immersed in the digital integrate it with the physical?

While a critical response to these questions is highly encouraged, we are equally interested in the wide-angle view and in the intimate. Specifically, we welcome essays, interviews, reports and other genres of writing that speak to the ways in which we reconcile and integrate the relationship between wild nature and the digital life; that address the part that wild nature plays in our work; looks at the ways the functionality of our body in the digital compares with the way it works in the mountains, in the ocean, or other physical spaces; and explores the changes that the wired life has brought about to our domestic and professional habitat, how it may have changed our health, or shifted our understanding of ecosystems and of other species on this planet and elsewhere.

Topics of interest might include (but are not limited to):
- Projects combining art and natural history
- Art and nature collaborations
- Telematics and consciousness
- Historical context
- Connectedness studies
- Embodiment theory
- Emergence studies
- Anthropology and social networks
- Ecology and the environment
- Natural magic and spirituality

The twin conceptual territories of bits and atoms are closer than they may at first seem. This call invites papers and works that explore ways in which the wired sensibility has led us full circle towards an enhanced engagement with wild nature.

LEA encourages international artists / academics / researchers / students / practitioners / theorists to submit their proposals for consideration. We particularly encourage authors outside North America and Europe to send proposals for essays / artists statements.

As part of this special, LEA is looking to publish:

- Critical Essays
- Artist Statement/works in the LEA Gallery
- Bibliographies (a peer reviewed bibliography with key texts/references in Digital Life)
- Academic Curriculum (LEA encourages academics conducting course programs in this area to contact us)

Expressions of interest and outline should include:

- A brief description of proposed text (300 words)
- A brief author biography (250 words)
- Any related URLs
- Contact details

In the subject heading of the email message, please use "Name of Artist/Project Title: LEA Wild Nature and Digital Life - Date Submitted". Please cut and paste all text into body of email (without attachments). Detailed editorial guidelines at: http://mitpress2.mit.edu/e-journals/LEA/submit

Deadline for expressions of interest: 8 July 2005

TIMELINE

8 July 2005 - submission of abstracts
22 July 2005 - short-listed candidates informed
2 September 2005 - contributors to submit full papers for peer review
3 - 30 September 2005 - Peer Review Process
1 - 21 October 2005 - Authors to make changes
November 2005 - Ready to publish papers

(Please note the timeline is subject to changes)

Please send proposals or queries to:
Sue Thomas and Dene Grigar
digitalwild@astn.net

and
Nisar Keshvani
LEA Editor-in-Chief
lea@mitpress.mit.edu
http://lea.mit.edu

CORRECTION

In last month's LEA, the Leonardo Journal section, featuring *Leonardo, Vol 38. No. 2 Table of Contents and Selected Abstracts*, was stated as being from February 2005. It should read April 2005. We apologize for the error.

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Nisar Keshvani, Editor-in-Chief

Providing an online forum for those who are interested in the realm where art, science, and technology converge.
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