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LEONARDO REVIEWS, October 2007

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< Introduction >

One of the great pleasures of editing Leonardo Reviews (and I hope reading them) is the unexpected and the appearance of the difficult to see. In this selection I want to draw attention to a few items that have a particular fascination, a sort of compulsive attraction. For example Roy R. Behren's review of *Camouflage and Art: Design for Deception in World War 2* by Henrietta Goodden takes us into a rather specialised world of camouflage in such a way that one wonders what other connections there are to be made behind the drab daubs on military hardware that are designed for us to ignore. Jan Baetens' discussion of Tom Conley's new book *Cartographic Cinema* also deals with the scarcely visible. Conely, always a provocative thinker, turns his attention to some aspects of the cinema that might simply be running in the background to our normal engagement with a movie. As Baetens points out, in these he finds considerable significance and argues for their status with great compulsion. In doing so he claims a special place for all cinema- not just the landmark art house productions. Finally John Barber turns his attention to the invisible in *Much Ado About Almost Nothing: Man's Encounter with the Electron*, by Hans Camenzind. As Barber points out the cultural invisibility of electricity (as distinct from its effects) is underpinned by a long and fascinating history. Driven by a heterogeneous collection of oddballs and eccentrics the "taming" of the electron, as he puts it, has provided the scenario for Camenzind's comprehensive narrative which reveals to us a depth and complexity of an invisible entity that we all use but few of us acknowledge. These reviews and others which conceal equally fascinating treasures can be found at Leonardo Reviews along with the archive.

Michael Punt  
Editor-in-Chief  
Leonardo Reviews

*Camouflage and Art: Design for Deception in World War 2*  
by Henrietta Goodden  
London: Unicorn Press, 2007  
192 pp. 120 illustrations, color and b&w. Trade, \$55.00  
ISBN: 978-0-906290-87-3.

Reviewed by Roy R. Behrens  
Department of Art, University of Northern Iowa, USA.  
<http://www.bobolinkbooks.com>, [ballast@netins.net](mailto:ballast@netins.net)

The current heightened interest in camouflage can be at least partly attributed to Charles Darwin. In *The Origin of Species*, first published in 1859, he hypothesized that the evolution of species occurs not through divine intervention but by autonomous natural selection, and that the likelihood of survival is weighted in favor of those that are better fitted than others. By the turn of the century, the study of natural camouflage (known then as "protective coloration") became a research

theatre for the confirmation of Darwin's theories. Knowing that, it is of additional interest to find (as this book ably documents) that one of the chief participants in wartime British camouflage was Robin Darwin (1910-1974), a painter and descendent of the famous naturalist.

During World War II, Robin Darwin became secretary to the British Camouflage Committee, where he spoke in favor of using artists as camouflage experts, along with architects, engineers and scientists. Later, a few years after the war, when the Royal College of Art was reopened and reorganized, Robin Darwin was appointed its director. One of the achievements of this book is to reveal the surprising extent to which artists associated with the college (whether before or after the war) were also directly connected with the development of camouflage: indeed, in the years that followed the war, nearly all the school's faculty in graphics, printmaking, industrial and furniture design, and jewelry, along with a number of tutors and guest artists, had in some way served as camouflage advisors.

A further purpose of the book is more inclusive: divided into 10 chapters (with specific subject areas as Civil Camouflage, RAF Camouflage, Army Camouflage, Desert Camouflage, Admiralty Camouflage and so on), it provides a more generalized overview of the whole of British camouflage during World War II, as undertaken by a wide range of artists, not just those with direct links to the RCA. The roster of camouflage artists is lengthy and includes (among numerous others) such more or less familiar names as artists Frederick Gore, Stanley Hayter, Roland Penrose, Edward Wadsworth, David Pye, Edward Seago and Julian Trevelyan; architects Hugh Casson and Basil Spense; stage designers Robert Medley and Oliver Messel; fashion designer Victor Stiebel; and zoologist (and scientific illustrator) Hugh B. Cott.

Few people are better suited for putting this book together than is Henrietta Goodden, a British authority on fashion design, who currently teaches at the Royal College of Art and who is the daughter of the late Robert Goodden, one of the RCA teachers who also served as a naval camouflage advisor.

At the moment there is a frenzy of on-going research about camouflage, both natural and military, much of it still in the interests of understanding natural selection. Anyone who knows the existing literature will appreciate the significance of this book: It provides us for the first time with a tirelessly researched, well-written account of a slice of the oddball connection between Modern-era art and camouflage (especially British Modernism), a part that was there but not fully explored. Plentifully supplemented by camouflage-related artwork, historic wartime photographs, government documents, and hand-drawn field instructions (many of which appear in print for the first time), this book is a rich, indispensable source for future work within this field.

(Reprinted by permission from Ballast Quarterly Review, Volume 21 Number 1, Autumn 2007.)

Cartographic Cinema

by Tom Conley

University of Minnesota Press, Minneapolis, MN, 2007

264 pp. illus., 40 b/w. Trade, \$75.00; paper, \$25.00

ISBN: 0-8166-4357-1; ISBN: 0-8166-4356-3.

Reviewed by Jan Baetens  
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In the steadily growing literature on maps and mapping in the fields of literary theory, visual studies, and critical thinking, Tom Conley's book can be called a major achievement, both for the clarity and profoundness of its theoretical insights and the exceptional brio of its close readings. Moreover, *Cartographic Cinema* is not just a book that makes a strong plea for close-reading but succeeds in demonstrating the theoretical necessity of this approach, provided it is articulated with strong theoretical perspectives. As such, Tom Conley has written a book that is a major contribution to film studies (and other related fields) as well as an exciting collection of essays on the history of 20th Century cinema, starting from René Clair's *Paris qui dort* (*The Crazy Ray*, 1923) to Ridley Scott's *Gladiator* (2000).

How does Conley define the notions of "map" and "mapping"? A specialist of cartography himself, on which he has widely published, inside and outside the field of film studies, Conley argues first of all that maps are not just items or images that can be shown or mentioned in movies, but that movies themselves have to be considered maps (in the rest of *Cartographic Cinema*, this two-sidedness will be the leading thread of each analysis), i.e. visual structures that shape the imagination of the spectator and can be used as tools for the deciphering of the world that is referred to by the movie. The meaning of maps and mapping is, therefore, much broader than mere geography (a map offers or imposes also a worldview), while it cannot be reduced to a linguistic approach of the world (maps do not transcribe speech, even if they happen to include many verbal and written elements). As a matter of fact, it is not only the film seen as a whole that can function as a map, but also each of its images, as they gradually unfold and change before the eyes of the spectator. For Tom Conley (and almost all the close readings of the book will provide evidence of the rightness of this conviction), "everything" can obtain a cartographic dimension: the logo of the film company, the credits and intertitles, the very images (with or without visible maps), and so on. In all these occasions, movies do function as actual maps, by showing "where" we are and by linking our identities to that cartographic issue ("who" we are cannot be separated from "where" we are), and just like maps this showing function is not only referential but also ideological, for maps and movies disclose relationships that go otherwise unnoticed. In that regard, it would be unfair to reduce the cartographic function of maps to the appropriative, controlling, and administrative functions they are generally associated with.

Conley's theoretical preferences and convictions go clearly into the direction of the singular and the event. Claiming that film studies should follow the hypothesis "to each film its map", *Cartographic Cinema* builds mainly on the work of two other major theoreticians, André Bazin (who had already developed a theory of movies as maps) and Gilles Deleuze (whose writings on Deleuze remain an essential contribution to the modern theory of mapping). From Bazin's defence of neo-Realism and his ideal of film as representation of the real, Conley uses the idea of the "image-field" which is not the (secondary) background for what really matters, namely the action, but an existential space in which all places are as important as any other and which is shifting itself through time. From Deleuze's ideas on the work

as "open totality", Conley borrows the suggestion that the spatial field on screen is capable of producing events that modify our perception of the world itself. This openness to what may happen on screen, instead of being statically reproduced by the images, makes that Conley's focus--following in this also the majors beliefs of Deleuze and Bazin--is actually less on the map than on mapping, less on the display than on the making of history, less on the map (and the film) as representation than on the map (and the film) as becoming.

It is this active dynamic that is foregrounded in the close-readings of the book, which are often breathtaking. In 10 chapters, Conley makes clear that the choice of the map as a privileged reading tool of cinema can be extremely illuminating and that the selection of films including maps is a very original and profound way to inscribe the reading of movies into the larger process of cognitive mapping, which is, for Conley and Jameson whom the author is following here, a way of linking the close-reading of often tiny details with contextual, historical, and political issues. The reader of *Cartographic Cinema* will, therefore, always hesitate between two types of admirations, appreciating both the cleverness and hermeneutic power of the reading of so many details linked with maps (or made visible thanks to the emphasis put on fragments containing maps or fragments read as maps) and the author's capacity to link these details with a larger inquiry on the historical and ideological positioning of the analyzed movies. In particular, one should mention here the exciting rereading of Renoir's *La Règle du jeu*, Rossellini's *Roma, città aperta*, Truffaut's *Les 400 Coups* (three films one thought to know by heart, but which Conley manages to "reinvent" completely) or Kassovitz's *La Haine* (whose dialogues and various inscriptions the author decodes with the same love and intelligence as did Stanley Cavell with the allegedly insignificant screwball comedies in *The Pursuit of Happiness*, a book which I think has quite some analogies with *Cartographic Cinema*). But all analyses by Conley are convincing and rewarding, and since the author happily mixes "art movies" and "commercial movies" (from film noir to post-cinema neo-cinema of attractions movies) it is no exaggeration to hope that his cartography may become a major paradigm in critical film studies.

Much Ado About Almost Nothing: Man's Encounter with the Electron  
by Hans Camenzind  
BookLocker.com, Bangor, ME, 2007  
240 pp., illus. 59 b/w. Trade, \$14.95  
ISBN: 978-0-615-13995-1.

Reviewed by John F. Barber  
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Electricity, available on demand, is so much a part of our everyday lives as to be transparent, nondescript, seemingly without a story. But, as Hans Camenzind makes clear in his new book, *Much Ado About Almost Nothing: Man's Encounter with the Electron*, the history of electricity, electrical invention, and the application of electricity in a myriad of contexts, is both long and interesting.

Camenzind, a microchip designer, has an affinity for the oddballs and eccentrics who discovered and tamed electricity. Scientists, engineers, inventors, self-promoters, professors,

visionaries, speculators, moguls, geniuses, politicians, venture capitalists, and con artists all receive coverage.

There are the well-known historical figures: Benjamin Franklin, Michael Faraday, Samuel F. B. Morse, Alexander Graham Bell, Nikola Tesla, Thomas Edison, and Guglielmo Marconi, as well as the lesser-known but still important contributors like Lee de Forest (the self-proclaimed "Father of Radio") and John Baird, who built the first television set in his attic in 1923. Camenzind briefly sketches the lives, education, achievements, fortunes and misfortunes of these and dozens of other electrical explorers. The results are (to pun) illuminating.

For example, Benjamin Franklin's experiments with electricity are well known. Less known is that following his famous experiment flying a kite into an electrical storm, Franklin championed lightning rods to protect buildings and people from lightning strikes. But Puritan church leaders rallied against the rods, calling them the devil's instrument, until they realized their churches, with their high steeples, were favorite targets for lightning bolts.

Lee de Forest helped invent the vacuum tube, a component instrumental in the development of radio broadcasting. Calling himself "Father of Radio," de Forest rode the entrepreneurial wave of fortune before settling down with a Hollywood starlet.

Using an old tea chest, a biscuit box, darning needles, wood scrap, secondhand vacuum tubes, a bicycle lamp lens, and a used motor, John Baird built the first television set in his attic in 1923, which he then demonstrated in London's Selfridge's department store for £25 a week. He presided over the first trans-Atlantic television broadcast in February 1928. In quick order afterwards he got rich building and selling his television sets, but went broke in the late 1930s when a competing system was chosen by the BBC as the basis for their television broadcasts.

Augustus H. Garland, neither scientist nor inventor, but rather Attorney General under President Grover Cleveland, used his office to wage an 11-year challenge against the patents of the Bell Telephone Company, all while holding a 10% "gift" stake in a competing telephone company.

It is these stories, and others, that make *Much Ado About Almost Nothing* a rich and informative read. Camenzind bounces like a charged electron through the history of electronic discovery, discussing topics like electricity, magnetism, electromagnetism, X-rays, cathode rays, subatomic particles, transmitters, receivers, amplifiers, vacuum tubes, transistors, integrated circuits, telegraph, telephone, radio, television, microchips, calculators, and computers.

Camenzind's historical overview shows how the electron at first bothered those that discovered or knew of its existence and implications. But, as more and more of the electron's secrets were discovered, the power and potential of electricity became desired and useful. Today, electricity dominates our lives, far more so than fuel for our automobiles.

Like the invisible electron, its subject, *Much Ado About Almost Nothing* speaks to a story much deeper and richer than might be first realized. Requiring no prior knowledge of technology, the end result of this book is to provide an understanding of

electricity and the technology it has wrought.

New Leonardo Reviews

October 2007

The Democratic Revolutionary Handbook  
First Run/Icarus Films, Brooklyn, New York, 2005  
Reviewed by Jonathan Zilberg

The Exiles of Marcel Duchamp  
by T. J. Demos  
Reviewed by Kieran Lyons  
Eye Contact: Photographing Indigenous Australians  
by Jane Lydon  
Reviewed by Brook Andrew

Felix Werder: The Tempest  
by Felix Werder  
Reviewed by Stefaan Van Ryssen

Forever  
by Heddy Honigmann  
Reviewed by Rob Harle (Australia)

Freedom of Expression: Resistance and Repression in the Age of  
Intellectual Property  
by Kembrew McLeod  
Reviewed by Hugo de Rijke

Looking for an Icon  
by Hans Pool & Maaik Krijgsman, Directors  
Reviewed by Amy Ione

Pop Art Book  
by Corinne Miller, Nadine Monem and Margaret Nugent, Editors  
Reviewed by Fred Andersson

Residual Media  
by Charles R. Acland, Editor  
Reviewed by John F. Barber

Tambogrande: Mangos, Murder, Mining  
by Ernesto Cabellos & Stephanie Boyd  
Reviewed by José-Carlos Mariátegui

Thousand Year Dreaming / floating world  
by Annea Lockwood  
Reviewed by Stefaan Van Ryssen

T:BA:07  
Sponsored by The Portland Institute for Contemporary Art  
Reviewed by Dene Grigar

(Un)common Ground: Creative Encounters between Sectors and  
Disciplines  
by Cathy Brickwood, Bronac Ferran, David Garcia, Tim Putnam,  
Editors  
Reviewed by José-Carlos Mariátegui

September 2007

Art for a House of Mathematics

by Anna Campbell Bliss  
Reviewed by Rob Harle

The Big Fish. Consciousness as Structure, Body and Space  
by Anna Bonshek  
Reviewed by Rob Harle

The Blind Spot  
by Alec K. Redfearn and the Eyesores  
Reviewed by Michael R. (Mike) Mosher  
Camouflage and Art: Design for Deception in World War 2  
by Henrietta Goodden  
Reviewed by Roy R. Behrens

Can't Do It In Europe  
by Charlotta Copcutt, Anna Weitz and Anna Klara Åhrén  
Reviewed by Kathryn Adams

Cartographic Cinema  
by Tom Conley  
Reviewed by Jan Baetens

Collectivism after Modernism: The Art of Social Imagination  
after 1945  
by Blake Stimson and Gregory Sholette, Editors  
Reviewed by Jan Baetens

Descartes. The Life and Times of a Genius  
by Anthony C. Grayling  
Reviewed by Martha Patricia Niño M.

For  
by The Claudia Quintet  
Reviewed by Michael R. (Mike) Mosher

For  
by The Claudia Quintet  
Reviewed by Stefaan Van Ryssen

Gods in the Bazaar  
by Kajri Jain  
Reviewed by Stefaan Van Ryssen

Henry Cow: Concerts  
by Henry Cow  
Reviewed by Stefaan Van Ryssen

The Image in French Philosophy  
by Temenuga Trifonova  
Reviewed by Jan Baetens

I Am a Strange Loop  
by Douglas R. Hofstadter  
Reviewed by Richard Kade

Much Ado About Almost Nothing: Man's Encounter with the Electron  
by Hans Camenzind  
Reviewed by John F. Barber

Museum Frictions: Public Cultures/Global Transformations  
by Ivan Karp, Corrine Kratz, Lynn Szwaja and Tomas Ybarra-  
Frausto, Editors  
Reviewed by Jonathan Zilberg



Stots

by Lukas Simonis

Reviewed by Stefaan Van Ryssen

Surviving Death/Alive Why?

by Bill Brovold and Larval

Reviewed by Stefaan Van Ryssen

The Topography of Chance

by Stewart Lee, Curator

Reviewed by Stefaan Van Ryssen

Tribulation 99: Alien Anomalies under America

by Craig Baldwin

Reviewed by Stefaan Van Ryssen

Tube Mouth Bow String

by Nick Didkovsky

Reviewed by Stefaan Van Ryssen

Vali Myers: A Memoir

by Gianni Menichetti

Reviewed by Allan Graubard

To read all new and archived reviews, visit Leonardo Reviews

at: <<http://www.leonardo.info/ldr.html>>.

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< The Electroacoustic Music Studies Network > by Marc Battier

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#### Historical Perspective

< Computer Graphic--Aesthetic Experiments between Two Cultures

> by Christoph Klütsch

ABSTRACT: The author presents a summary of his work on the Stuttgart School and information aesthetics as developed by Max Bense in the 1950s and 1960s. Three artists, Frieder Nake, Georg Nees and Manfred Mohr, adopted the use of information aesthetics in computer graphics. The author investigates the relation between artistic practice and aesthetic theory.

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#### Artist's Note

< The Teleporter Zone: Interactive Media Arts in the Healthcare Context > by Paul Sermon

ABSTRACT: The author discusses the recent development and implementation of The Teleporter Zone, a permanent interactive art installation commissioned by Guy's and St Thomas' Charity for the new Evelina Children's Hospital in London. The article places the production and conception of this installation in the context of the author's research in telematic and telepresent art over the past 15 years, alongside current research reports on the effects and influences of the arts on healthcare. The author also draws upon personal experiences in order to provide

practical insights into the objectives and outcomes of this work in the healthcare context.

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#### Artists' Articles

< Meaning without Borders: likn and Distributed Knowledge > by Ben Syverson

ABSTRACT: This paper serves as a narrative companion to likn, an artware application about the nature of knowledge, ideas and language. According to the advocates and engineers of the "knowledge representation" project known as the Semantic Web, electronic ontologies are "a rationalization of actual data-sharing practice"; but where do artists and intellectuals fit into this data-oriented model of discourse? likn critiques the Semantic Web from a postmodern perspective. This account describes how postmodern theory was scrutinized, interpreted and ultimately expressed as "features" in likn.

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#### Special Section: Lovely Weather: Art and Climate Change

< 0-24 Licht: A Project Combining Art and Applied Research > by Andrea van der Straeten and Angelo Stagno

< Between Reason and Sensation: Antipodean Artists and Climate Change > by Janine Randerson

ABSTRACT: The author, drawing on her experience as a New Zealand artist who has collaborated with meteorologists, suggests that artists may enter climate change discourse by translating (or mis-translating) scientific method into sensory affect. She examines three recent art projects from Australasia that draw on natural phenomena: her own Anemocinegraph (2006--2007), Nola Farman's working prototype The Ice Tower (1998) and Out-of-Sync's ongoing on-line project, Talking about the Weather. The author cites Herbert Marcuse's 1972 essay "Nature and Revolution," which argues that sensation is the process that binds us materially and socially to the world.

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#### Color Plates

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#### Extended Abstract

< The Singing Shamail: A Computer Sound Installation > by Bulat M. Galeyev

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#### Special Section: In the Light of History: Papers from the 2005 Refresh! Conference

< Special Section Introduction > by Sean Cubitt

< Peter Donebauer, Richard Monkhouse and the Development of the EMS Spectron and the Videokalos Image Processor > by Chris Meigh-Andrews

ABSTRACT: The author details the development of two early color video synthesizers, the EMS Spectron and the Videokalos Image Processor, and examines their influence on video-based art. The Spectron, developed by Richard Monkhouse for Electronic Music

Studios, influenced both its creator and various artists in the development of video-based art and images. Artist Peter Donebauer collaborated with Monkhouse to produce the Videokalos, leading to several artworks and a series of live performances.

< Re-Writing the History of Media Art: From Personal Cinema to Artistic Collaboration > by Ryszard Kluszczyński

ABSTRACT: The author reinterprets the artistic phenomena that composed historical avant-garde art. His method of interpretation is an intertextual strategy that approaches the historical artifacts through recent phenomena. The first case study is of structural film; its most important attributes appear to be artistic strategies questioning the structural/material integrity, durability and permanence of the film work. The second case study is of the avant-garde strategy of collective work, reinterpreted through the open-source work and interactive art of today. The author identifies three steps in the development of the 20th-century concept of joint creative work: avant-garde general strategies of artistic collaboration; avant-garde film works oriented toward creative collectivism; and collaborative artistic practices that manifest themselves in non-hierarchical strategies of contemporary interactive art.

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#### Theoretical Perspective

< Toward Other Epistemologies of Interface Culture: Dependent Origination, Tantra and Relational Being in an Age of Digital Reproduction > by Ajaykumar

ABSTRACT: The author formally and thematically reconsiders the Buddhist philosophical concept of dependent origination in the context of technological practice. In this context, he discusses historical attempts in Tantric art to develop an integrated practice and conceive a dynamic "entity" of the body (that of the artist or the spectator), science, technology, art, architecture, philosophy, space-time and nature; and the veracity of such concepts in the context of particular new scientific insights. Furthermore, he reconsiders notions of relational being and nonanthropocentric being, and a polyphonic "I." The article aims to interrogate new ways of evolving current practice and thinking on themes related to the socialization and mediatization of "difference."

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Special Section: ArtScience: The Essential Connection  
Robert Root-Bernstein: Certain of Heisenberg's Arts

< Looking Beneath the Surface: The Radial Spread of Ink in Water > by Pery Burge

ABSTRACT: The author discusses her use of ink in water to create three-dimensional radial spreads (outward movements of liquid about a central point). The radial spreads form patterns as the ink moves across and in the water. The patterns have both scientific and aesthetic aspects and form the basis for speculation in both areas. They also provide an exciting new dimension to the artist's work relating to fluid flow: Unique patterns, often seen only by the eye of the camera, can be generated and preserved within one photograph or a photographic sequence.

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## General Note

< Governing Artistic Innovation: An Interface among Art, Science and Industry > by Jean-Paul Fourmentraux

ABSTRACT: The author presents an analysis of the workings and tensions involved in the integration and articulation of academic research, artistic creation and industrial production. He makes use of the results of a study conducted among creator-researchers of a Canadian prototype for the organization of these relationships: the Montreal, Canada-based interuniversity consortium Hexagram.

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From the Leonardo Archive

< Introduction > by Michele Emmer

< Scalebound or Scaling Shapes: A Useful Distinction in the Visual Arts and in the Natural Sciences > by Benoit B. Mandelbrot (Reprinted from Leonardo Vol. 14, No. 1, 1981)

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## Leonardo Reviews

Reviews by Kathryn Adams, Jan Baetens, John F. Barber, Geoff Cox, Rob Harle, Amy Ione, Mike Leggett, Michael R. Mosher, Michael Punt, Stefaan Van Ryssen, Jonathan Zilberg

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## Transactions

Andrew Johnston and Benjamin Marks: Partial Reflections

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## Leonardo Network News

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## LEONARDO ABSTRACT SERVICE

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Leonardo/The International Society for the Arts, Sciences and Technology is pleased to announce the publication of the top-rated abstracts in the Leonardo Abstracts Service Databases during the 1st half of 2007.

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

Top-rated abstracts in both the English and Spanish language databases are chosen twice annually by peer-review panels under the guidance of Sheila Pinkel, Pau Alsina and Kenneth Fields and published in the Leonardo Electronic Almanac.

The top-rated abstracts in the English-language database for the 1st half of 2007 are Noah Wardrip-Fruin, David Burraston,

Sarah Jane Pell, Pamela Jennings, Eric Kabisch and Michael Hohl. Abstracts by these authors are included below. To access abstracts in all of the databases, and for more about the project, visit:

<http://www.leonardo.info/isast/journal/calls/labsprojectcall.htm>

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< Expressive Processing: On Process-Intensive Literature and Digital Media > by Noah Wardrip-Fruin

ABSTRACT: Most studies of digital media focus on elements familiar from traditional media. For example, studies of digital literature generally focus on surface text and audience experience. Interaction is considered only from the audience's perspective. This study argues that such approaches fail to interpret the element that defines digital media -- computational processes. An alternative is proposed here, focused on interpreting the internal operations of works. It is hoped that this will become a complement to (rather than replacement for) previous approaches. The examples considered include both processes developed as general practices and those of specific works. A detailed survey of story generation begins with James Meehan's Tale-Spin, interpreted through "possible worlds" theories of fiction (especially as employed by digital media theorists such as Marie-Laure Ryan). Previous interpretations missed important elements of Tale-Spin's fiction that are not visible in its output. Other story generation systems discussed include Minstrel, Universe, Brutus, and Terminal Time. These reveal the inevitably authored nature of simulations of human behavior. Further, the persistently anthropomorphizing approach to computational processes present in traditional artificial intelligence (and many critiques) is contrasted with authorship. Also discussed is Christopher Strachey's love letter generator for the Manchester Mark I -- likely the first work of digital literature, and arguably the first digital art of any kind. As with Tale-Spin, an interpretation of its processes offers more than output-focused approaches. In addition, this study considers works with algorithmic processes carried out by authors and audiences (rather than within the works) created by Raymond Queneau, Tristan Tzara, and Claude Shannon. Prior theoretical concepts are engaged, including Espen Aarseth's "cybertext," Michael Mateas's "expressive AI," and Chris Crawford's "process intensity." A set of concepts and vocabulary are proposed, beginning with the simple distinction between "surface," "data," and "process." Further chapters introduce the terms "implemented processes," "abstract processes," and "works of process." The most unfamiliar new term, "operational logics," names behavioral elements of systems that can be as elemental as gravity or as high-level as a quest structure. The computer game Fable embodies the strengths and weaknesses of using the same logics to drive graphical and linguistic behavior.

< Generative Music and Cellular Automata > by David Burraston

ABSTRACT: Complex systems such as Cellular Automata (CA) produce global behaviour based on the interactions of simple units (cells). They are fascinating objects, producing more pattern than a single human is capable of observing within their own lifetime. Their evolution is specified by local interaction rules that generate some form of ordered, complex or chaotic behaviour. This wide variety of behaviour represents an important generative tool for the artist. However, chaotic behaviour dominates rule space, which has serious implications

for application and investigation. The main contribution of this thesis is a new perspective into a recognised key problem, the structure of rule space. This is achieved through empirical observation of a fundamental connection between state space and rule space. The methodology combines experimental music composition and reflective practice in its approach. The techniques are based on recent perspectives of CA theory, called global dynamics, and music composition practice. The significant problem of identifying rule space structure is approached from an artists perspective to obtain mixtures of behaviour, which differs from the traditional method of grouping together similar dynamics. A detailed account exposes the main process of creating mixed, but related groups of CA rules. The approach taken provides an interesting and alternative method of studying CA rule spaces in general, independent of musical application. Further contributions are made throughout the thesis and provide a significant foundation for the main contribution relating to rule space structure. An extensive review of CA and their application in music presents a balanced view of the field to set the work in context. The methodology proposes criteria for evaluation of this new approach to rule space structure. Important concepts of global dynamics are utilised in composition practice for the first time, enabling the key observations on the state and rule space connection. Fundamental connections between well known rules and music composition technology are introduced to establish links between the fields. This approach to produce generative music is fundamentally different from previous work and several descriptions of CA music mappings are presented in a practice-based context. New generative music compositions, a significant amount of CA data and an electronic copy of the thesis are included on the CD-ROM. The state/rule space connection identified in this thesis has the potential to open new directions, in both science and music.

< Aquabatics as new works of Live Art > by Sarah Jane Pell

**ABSTRACT:** This practice-based thesis (comprising of an exegesis, exhibition, performances and their documentation) traces a myriad of cognitive and sub cognitive processes that converge towards a complex practice referred to as 'Aquabatics'. In broad terms, Aquabatics describes the research nexus of occupational diving and contemporary performance. The purpose of this body of research has been to explore underwater performance, behaviour and boarders, in order to both devise new works of live art and to develop new methodologies and approaches to art-making. Aquabatics, as a performance strategy, seeks to critique, contest and explore the liminal natures of human performance, and the role and context of live artists, in contemporary life.

The exegesis attempts to underscore the complex process of semiosis and the dissemination of experiential knowledge in, and through, human performance activities, behaviours and biotech fission engagements with, in, and related to, an underwater environment. The theoretical framework is best described as liquid and consequently the rationale for the exegesis is explained as one that traverses a multitude of 'borrowed' pedagogies to contextualise a knowledge system of newly proposed faculties\*. Part One discusses the nature and condition of Aquabatics in terms of biological, ecological, technological, metaphysical, political and societal factors. Throughout, these natures are described as an active tool to suggest treatments for looking at, and understanding the acts/actions/activisms themselves and their possible functions to point towards

liminality. The more complex issue of the inherent aqueous nature in/of/for performance is proposed as the vital link connecting Aquabatics to existing cultural texts and contexts. The multi-medial texts function to make sense of the aesthetic and utilitarian performance described by examining the intersections of performance praxis, theorem and the functional operations of occupational diving through a series of original live(d) engagements, hypothesis and proposals in Part Two.

In undertaking and discussing these works, I propose that I enter into a zone of irreducibility; a permanently spirally vortex of forms, dissolving and evolving into an absent-present state of existence as the performer/ inhabitant/ pilot of this research. By documenting and re-memembering this process herein, the notion of 'performance' along with liberty, identity, culture, art and politics also regularly collapses in meaning, status, form and function. Finally, considering Aquabatics, pre and post performance, offers insight into the spatial and temporal factors, beliefs and actions leading to, and arising from, this research. It introduces a new episteme that transgresses traditional transgressions and proposes a liminal juncture of research, and performance behaviours that constitutes an awareness of where, at depth, underwater, the self collapses into its priori opposite.

< Interactive Technologies for the Public Sphere: Towards a Theory of Critical Creative Technology > by Pamela Jennings

ABSTRACT: Digital media cultural practices continue to address the social, cultural and aesthetic contexts of the global information economy, perhaps better called ecology, by inventing new methods and genres that encourage interactive engagement, collaboration, exploration and learning. The theoretical framework for critical creative technology evolved from the confluence of the arts, human centered computing, and critical theories of technology. Molding this nascent theoretical framework from these seemingly disparate disciplines was a reflexive process where the influence of each component on each other spiraled into the theory and practice as illustrated through the Constructed Narratives project. The traditional reductionist approach to research requires that all confounding variables are eliminated or silenced using methods of statistics. However, that noise in the data, those confounding variables provide the rich context, media, and processes by which creative practices thrive. As research in the arts gains recognition for its contributions of new knowledge, the traditional reductive practice in search of general principles will be respectfully joined by methodologies for defining living principles that celebrate and build from the confounding variables, the data noise. The movement to develop research methodologies from the noisy edges of human interaction have been explored in the research and practices of ludic design and ambiguity (Gaver, 2003); affective gap (Sengers et al., 2005b; 2006); embodied interaction (Dourish, 2001); the felt life (McCarthy & Wright, 2004); and reflective HCI (Dourish, et al., 2004).

The theory of critical creative technology examines the relationships between critical theories of technology, society and aesthetics, information technologies and contemporary practices in interaction design and creative digital media. The theory of critical creative technology is aligned with theories and practices in social navigation (Dourish, 1999) and community-based interactive systems (Stathis, 1999) in the development of

smart appliances and network systems that support people in engaging in social activities, promoting communication and enhancing the potential for learning in a community-based environment. The theory of critical creative technology amends these community-based and collaborative design theories by emphasizing methods to facilitate face-to-face dialogical interaction when the exchange of ideas, observations, dreams, concerns, and celebrations may be silenced by societal norms about how to engage others in public spaces. The Constructed Narratives project is an experiment in the design of a critical creative technology that emphasizes the collaborative construction of new knowledge about one's lived world through computer-supported collaborative play (CSCP). To construct is to creatively invent one's world by engaging in creative decision-making, problem solving and acts of negotiation. The metaphor of construction is used to demonstrate how a simple artifact - a building block - can provide an interactive platform to support discourse between collaborating participants. The technical goal for this project was the development of a software and hardware platform for the design of critical creative technology applications that can process a dynamic flow of logistical and profile data from multiple users to be used in applications that facilitate dialogue between people in a real-time playful interactive experience.

Rorty's persona of the liberal ironist is presented as the spirit by which this text and research has been approached. Shear and Varela's concept of first person methodology as a viable place from which to cultivate scientific research is discussed and followed with the description of a travel experience by the author which instigated the development of the theory of critical creative technology. The critical social cartography that informs the theory and the Constructed Narratives includes the following philosophical premises. Thompson's theory of enactive cognition and empathy set the foundation from which inquiry into the role of empathy, intentionality and intersubjectivity in supporting discourse, initiated from the author's person story, evolves to a theory of research and practice in digital media. Habermas's models of the theories of society, in particular his fourth model for communicative theories founded on intersubjective experiences sets the stage for the development of the theory of universal pragmatics and ideal speech acts. Alternative theories of communication and society that fit the specifications of the fourth model, which Habermas does not address, are discussed including Wittgenstein's "language games," Bakhtin's "speech genres," and Vygotsky's "constructivism. A metaphor for visualizing the polemic theoretical positions on the nature of discourse from Habermas's validity claims to Rorty's liberal ironist stance based on Davidson's concept of "passing theories" is presented.

Models and theories of the public sphere are examined. Dewey's concept of the public sphere as the locus of political decisions is followed by Broeckmann's argument for engaging the public domain. Habermas's infamous theory on the bourgeois public sphere is addressed along with comments from several of his critics. Alternatives to the bourgeois public sphere are explored including Mouffe's agonistic democracy and Negt and Kluge's proletarian public sphere. Habermas' reprieve to his critics and an enlightened view to the nature and potentialities



of the public sphere as a place to influence policy in a "siege-like manner" leads the text to consider Feenberg's theory of critical technology. Feenberg's analysis of the two main camps of critical theories of technology, instrumental and substantive, is examined. Instrumental theory is illustrated with an analysis of Vannevar Bush's article "As We May Think", Englebart's H/LAM/T theory, Wiener's cybernetics, and Weiser's ubiquitous computing framework. The substantive theoretical platform is supported with Heidegger and Habermas's concerns, or lack of concern, on the impact of technology on society. Feenberg's position on the critical theory of technology his elaborations on the bias and neutrality factors of technology leads to discussion about and elaboration on his dialectics of technology. Feenberg's dialectics of technology and its four core components; concretization; vocation; aesthetics; and collegiality, are explored, dissected and augmented with examples from contemporary digital media, interaction design, human computer interaction and pedagogical practices. Among the theories and practices brought forth in support of his theory is the New London Groups theory of multiliteracies, Fuller's critical software, Fogg's persuasive computing, Dourish's embodied interaction, Ascott's behaviorist art; Rokeby's transforming mirror; Fischer's metadesign, and digital divide community empowerment efforts. The discussion leads to the connection of Feenberg's dialectics of technology to the theory of critical creative technologies proposed in this dissertation.

From this academic exercise, three main principles in the design of applications in the spirit of critical creative technologies are described. Principle 1: Place as Connected Space is supported by theories that differentiate the terms space and place as one that defines logistics and the other which defines contextual attributes. Research methods, such as Hillier's space syntax, designed to analyze and assign attributes of quality to the quantified data are examined in comparison to Deleuze and Guattari's rhizome as a metaphor for place. Principle 2: Empathetic Intersubjective Experience takes its lead from the discussion on Thompson to further elaborate on situational requirements for an empathetic experience. Principle 3: Discourse and Play seeks to define a notion of "deep play," by examining the important western historical and philosophical platforms in which play was relegated as an important element of society or treated as an unnecessary distraction to rational discourse. The principles lead to the main goals involved in developing applications for critical creative technology in the form of tangible social interfaces (TSI). The Constructed Narratives project was initiated as an experiment in the design of tangible social interfaces for facilitating communication between people in public spaces.

< Landscape Denatured: Digitizing the Wild > by Eric Kabisch

**ABSTRACT:** This paper presents motivation and documentation of four technologically enabled artworks. These artworks explore ways in which digital technologies impact society and culture, focusing particularly on the impacts of information technologies on physical and cultural geography. A framework is provided for analyzing these works of art. This framework addresses the impacts of technology as a three-part cyclical process that includes (1) sensing elements of the environment, (2) analyzing and creating narratives from the captured data, and (3) the propagation of these methods and representations back into the world. SignalPlay is an interactive installation that employs

wireless sensors to control a spatialized sound environment, allowing participants to explore a distributed collaborative system. Unexceptional.net is a web-based application for visualizing and sonifying network, database and player information of a multi-modal online role-playing game. Sonic Panoramas utilizes image sonification, immersive projection and camera-based machine vision to allow users to create an interactive musical experience from panoramic landscape imagery. Datascape is a periscope-like system for the visualization of geographic information. This system allows users to explore a 3D topography and musical soundtrack that are generated from geospatial information such as marketing demographics. In addressing the impacts of digital technologies on culture, these artworks employ the very technologies being investigated. Through the production and exhibition of this work, I hope to engage the public with these important issues and to help shape the ways that technological methodology embeds itself in our world and in our daily experience.

< This is not here: Connectedness, remote experiences and immersive telematic art > by Michael Hohl

ABSTRACT: This practice-based enquiry engages in the disciplines of Art and Computer Science. It explores participants experience of live data from remote locations, especially experiences of global consciousness or global awareness. The vehicle for the research is a software application called Radiomap. This photorealistic interactive map is used to listen to a selection of live radio programs from all over the planet. The research was conducted in two iterative studies, one with a screen-based application, the other with an immersive, telematic environment. Methods and Methodologies were informed by Human Computer Interaction, Art History and the Social Sciences.

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#### LEONARDO NETWORK NEWS

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< Meredith Tromble Elected Secretary of Leonardo Governing Board >

Meredith Tromble was elected secretary of the Leonardo Governing Board in April of 2007. Her duties as Board secretary include keeping track of the paperwork for Leonardo/ISAST and helping make decisions as part of the Board Executive Committee. Meredith was a member of the Leonardo Advisory Board from 2005 to 2007. In January 2007 she was elected to the Leonardo Governing Board. More about Meredith can be found on the Leonardo Electronic Directory: <[www.leonardo.info/led.index.html](http://www.leonardo.info/led.index.html)>

< Transactions Section Offers Rapid Publication Forum in Leonardo Journal >

Transactions is a new section in the print journal Leonardo that publishes fully refereed papers on a fast track to dissemination of key new results, ideas and developments in practice.

Papers are solicited under the stated aims and scope of Leonardo, but are restricted to two pages of published material. A rapid refereeing process is employed in which the result is restricted to acceptance or rejection. If a submission is rejected, the submission of a revised version will be treated as

a new paper.

The announcement of results or developments in a Transactions paper will not exclude that work from subsequent publication as a full Leonardo paper. However, any such submission will be considered by Leonardo, in the normal way, as a new paper.

Papers should be submitted electronically, in final camera-ready form, according to Leonardo's editorial guidelines. Incorrectly formatted papers will be rejected, so take great care. Refer both to the general editorial guidelines and also to the specific guidelines for Transactions papers.

Visit the Transactions web site to review guidelines, submit a paper and sign up to receive updates and announcements:  
<[www.leonardo-transactions.com](http://www.leonardo-transactions.com)>.

< Leonardo in Argentina: CEIArtE Lecture and Workshop series (2007--2008) >

We are pleased to announce a Leonardo collaboration with the Electronic Arts Research and Experimenting Center in Buenos Aires, Argentina as part of the Leonardo 40th Anniversary celebration.

The Electronic Arts Research and Experimenting Centre (CEIArtE) at the National University of Tres de Febrero in Buenos Aires, Argentina, is organizing the "Research and the Arts" series of lectures and workshops running through 2007 and 2008 and is joining Leonardo in its 40th anniversary celebration.

For information on current and upcoming events on this series, check the CEIArtE's web site at: <[www.ceiarte.untref.edu.ar](http://www.ceiarte.untref.edu.ar)>

< Recent Events and Projects of the Leonardo Scientists Working Group >

The Leonardo Scientists Working Group (SWG) was initiated in 2005 by Leonardo Board member Tami Spector to further Leonardo's mission of bridging "the two cultures" of arts and sciences with projects, events and collaborations of mutual interest to both communities. One of the first projects was to compile a database of nearly 100 scientists who have shown a strong commitment to the arts. About 20 of these members from the San Francisco Bay Area were brought together in April 2007 for an event organized by Spector, Christian Simm and Piero Scaruffi and hosted at swissnex in San Francisco. Here they began discussions about current interests and future activities, collaborations and events with the group. At the event it was discovered that there was a particular interest in bringing science/art connections to younger people in schools, universities and other community settings. The SWG is also currently working on a special project, "Nanotechnology, Nanoscale Science and Art" under the direction of Spector and Exploratorium artist-in-residence Tom Rockwell. Leonardo, in collaboration with the Exploratorium under the auspices of the Nanotech Informal Science Education Network (NISE), will publish a special section in periodic installments over the next several years exploring the intersections of nanotech/science and art. Further information about the Leonardo Scientists Working Group can be found on the Leonardo web site: <[www.leonardo.info/isast/sci-workgroup.html](http://www.leonardo.info/isast/sci-workgroup.html)>.

< Leonardo Organizational Membership Program Flourishes >

The Leonardo/ISAST Organizational/Corporate Membership Program, initiated in 2004, is one way that Leonardo seeks to strengthen its engagement with educational institutions and corporations committed to the art, science and technology field. We work with faculty, students and researchers in these organizations on projects of mutual interest including publication projects, internships and special events.

Current members of the Leonardo Organizational Membership program include the Center for Digital Arts and Experimental Media at the University of Washington; the Digital + Media Department at Rhode Island School of Design; the Daniel Langlois Foundation; Ontario College of Art & Design; School of the Art Institute of Chicago; the Art & Technology Department at the University of Texas, Dallas; California Institute of the Arts School of Music; UCLA Art|Sci Center; swissnex; UTS Creativity & Cognition Studios; OMF-MINT at University of Paris IV-Sorbonne; and University of Plymouth.

Leonardo/ISAST Organizational Membership benefits include participation in the Leonardo Organizational and Corporate Member Advisory Group moderated by Leonardo Executive Editor Roger Malina, full-page ads in Leonardo and Leonardo Music Journal, opportunities to collaborate with Leonardo on special projects and events, plus a number of other benefits. Memberships are by invitation only to educational and corporate organizations involved in the intersection of art, science and technology with projects of mutual interest. If you would like to become an organizational member of Leonardo/ISAST, please contact Roger Malina <rmalina@prontomail.com> with your suggestions of areas for collaboration.

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BYTES

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< Digital Humanities Chair Position available at Dartmouth College >

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

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

The role of the Chair in Digital Humanities is intended to be broad in scope, potentially incorporating current or future initiatives in cyber-culture and the creation, performance, and critical study of digital arts, including a consideration of the socio-political and theoretical implications of new artistic

technologies. The endowment for this Chair provides additional funds for projects involving research, teaching, and program building in the Digital Humanities.

Our intention is to hire at the rank of associate or full professor with tenure. The successful candidate will be located in a single Dartmouth department or program, or jointly appointed to one or more departments or programs. Considerable flexibility exists regarding joint appointments, which may cross departmental or even divisional boundaries.

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

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

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

Please contact Mark Williams, Chair of the Search Committee with any questions

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