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EDITORIAL

This month in LEA, we feature highlights from the Leonardo 2002 Excellence Awards, in anticipation of the 2003 Awards. We reprint in full the text of a nominated article, "Sculpting Ionized Plasma," by Jean-Louis Lhermitte, as well as the abstract of the winning article, "OULIPO | VS | Recombinant Poetics," by Bill Seaman. We look forward to publishing material related to the 2003 Awards in an upcoming issue of LEA, one of the many ways that Leonardo/ISAST continues to promote and recognize excellence in research and work in the field of art/science/technology. In this month's Leonardo Digital Reviews, we feature reviews from Diana Gromala, discussing Human-Computer Interaction (HCI), Joseph Magolis, who reviews a work on the philosophy of pragmatism, and Stefaan Van Ryssen, who reviews a musical CD by William Kleinsasser.

Patrick Lambelet
LEA Managing Editor

FEATURES

THE LEONARDO AWARD FOR EXCELLENCE

The Leonardo Award for Excellence recognizes excellence in an article published in the journal Leonardo. Excellence is defined as originality, rigor of thought, clarity of expression and effective presentation. The Leonardo Award for Excellence was originally established by chemist and inventor Myron Coler and publisher Robert Maxwell. Leonardo/ISAST has continued the tradition. Past recipients include Rudolf Arnheim, Otto Piene, Charles Ames, Frieda Stahl, Donna Cox, George Gessert, Janet Saad-Cook, Alvin Curran, Karen O'Rourke, Eduardo Kac, Hubert Duprat and Christian Besson, and José Carlos Casado and Harkaitz Cano.

In 2002, Leonardo/ISAST gave the 2002 Leonardo Award for Excellence to Bill Seaman for his article "OULIPO | VS | Recombinant Poetics," published in Leonardo, Vol. 35, No. 5 (2001). In his article, Seaman discusses Ouvroir de Littérature Potentielle (OULIPO), a literary and artistic association founded in the 1960s, within the context of an approach to emergent meaning that is used in generative virtual environments and other computer-based combinatoric media forms.

* For more about the 2002 awards, see:
<http://mitpress2.mit.edu/e-journals/Leonardo/isast/awards2002excellence.html>.

* For more about past winners, see: <http://mitpress2.mit.edu/e-journals/Leonardo/isast/awardwinners.html>.

The other nominees for the 2002 Leonardo Award for Excellence

were: Jean-Louis Lhermitte, "Sculpting Ionized Plasma" (Leonardo 34:3); Sheila Pinkel, "Thermonuclear Gardens: Information Artworks about the U.S. Military-Industrial Complex" (Leonardo 34:4); Ando Arike, "What Are Humans For?: Art in the Age of Post-Human Development" (Leonardo 34:5, Digital Salon Special Issue); and David Toop, "Not Necessarily Captured, Except as a Fleeting Glance" (Leonardo Music Journal 11). Panelists included Lynn Hershman, chair; Lisa Bornstein, Nina Czegledy, Fran Dyson and Edward Shanken.

Below, we reprint the abstract for Seaman's article as well as the full text of "Sculpting Ionized Plasma," by Jean-Louis Lhermitte.

ABOUT THE LEONARDO AWARDS PROGRAM

Leonardo/ISAST, established in 1982, serves the international art community by providing channels of communication for artists, scholars, technologists, scientists, educators, students and others interested in the arts, with an emphasis on documenting the voices of artists all over the world who use science and developing technologies in their work. As part of our mission of encouraging the innovative presentation of technology-based arts, Leonardo/ISAST recognizes artists and organizations interested in the use of new media in contemporary artistic expression through cash awards given via the Leonardo Awards Program.

OULIPO |VS |Recombinant
Poetics

By Bill Seaman, Ph.D., Dept. of Design | Media Arts, UCLA, 1300
Dickson Arts Center, Box 951615, LA, CA 90095, U.S.A.
seaman@ucla.edu
<http://www.cda.ucla.edu/faculty/seaman>

ABSTRACT

This paper compares and contrasts approaches to combinatorics in OULIPO and Recombinant Poetics. OULIPO, also known as Ouvroir de Littérature Potentielle, is a literary and artistic association founded in the 1960s whose combinatoric methods and experimental concepts continue to be generative and relevant to this day. Recombinant Poetics is a term that I coined in 1995 in order to define a particular approach to emergent meaning that is used in generative virtual environments and other computer-based combinatoric media forms. Combinatoric works enable the exploration of sets of media elements in different orders and combinations. The meaning of such work is derived through dynamic interaction. Another group exploring combinatorics uses digital audio techniques. The abbreviation "VS" ("versus") is often used in techno-audio remix culture to designate the remix of one group's music by another, often having only an oblique relation to the original.

* To read the full text of this article, go to
<http://mitpress2.mit.edu/e-journals/Leonardo/isast/articles/2001Seaman.pdf>.

SCULPTING IONIZED PLASMA

Jean-Louis Lhermitte (landscape artist, sculptor), 230 rue St. Charles, 75015 Paris, France.
jllherm@club-internet.fr

This text is based on excerpts from F. Bastien and J.L. Lhermitte, "Topologie de l'imaginaire, Sculpter Ionique" (unpublished, 1988).

Translated by Peter De Craene and M. Mioni.

ABSTRACT

The author investigates an imaginary world between art and science, looking back on 20 years of his exploration of "material light" in sculptures created using plasma ionized by electric current.

A Dialectic of Artistic and Scientific Praxis

My research into form in art using plasma (i.e. light) has led me to explore areas too far removed from scientific theory or practical application to retain the attention of the physicist. Plasma is a state of matter - ionized gas - which is the most widespread in the universe (in, for example, the sun) but rarely occurs naturally on earth (as lightning), except as humans have recreated the conditions to make its presence possible. Nevertheless, light, which appears in the depth of the sculptural surface, constitutes a magnificent example of sculptable "matter." This article analyzes the development of my artistic approach, which has allowed me to advance from a two-dimensional (2D) visual system to a three-dimensional (3D) system, i.e. a tangible object of sculpture that requires new knowledge and new tools to produce other types of forms.

The Subconscious and the Imagination

On one hand, developing the creative potential of my system has involved diverting and perverting the parameters of the system through a kind of culture of play and of the impossible. On the other hand, this work has required me to consciously and unconsciously question myself and my senses in order to search for new forms in strict accordance with the concept and praxis of my project.

From Sign to Meaning, from Memory to Light

The subconscious origin of my work with light is essentially situated in my experience in arc-welding for the metalworking industry. Later, I asked myself what a series of abstract forms turned upside-down would represent [1]. Even inversion is a function of direction and orientation. This brought to my work the principle of balance between two forms, or "conceptual opposites."

My project of "ionic sculpture" (an ironic reference to a well-known style from ancient Greece) originated in 1977 with my research into trace and memory, which resulted directly from my ideas concerning conceptual opposites.

I had explored with a number of people various constructions of spatial memory. The purpose was to try to find passageways to unknown places through gestures integrated into artworks, which I intended to become concrete, specific creations in plastic form, using recognizable signs. This involved, for example, tracing a path through a field and trying to follow this path back; or drawing circles and then trying to find their centers.

Drawing a wineglass and filling it with "drawn wine" was another example. I did all this as if blind, or as though my eyes were covered. I recorded this mapping of fleeting traces with light-sensitive film in a stationary camera. As a revelation of the unconscious, the traces appeared to me as a succession of light events positioned in space. This allowed me to imagine the idea of the "continuous and discontinuous messenger" found in *Le marcheur lumineux* (The Luminous Wanderer) (1977).

What remains in our memories after we have tried to cut loose from the inhibitions that result from a graphic gesture rendered on a piece of paper? This question, which arose during what I call my "light trace" period, brought me to my first plasma sculpture in 1982.

Material Plasma

New questions about the power of signs as a means of expressing the subconscious occurred to me between the conceptual phase of this work and that of concrete implementation. Which materials and which systems could fulfill my conditions, namely to be light and matter at the same time?

How to Curve Light in 3D Space

The concepts of tension and ionization, to mention only the most important, became my common visual denominators, with electricity as their energy source. From those first transcriptions of light inscriptions on film surfaces in 1982, I moved toward 3D volumes. I made a flat mural sculpture containing ionized and electrically excited gases. The system's constraints were to serve as generative obstacles.

The "illuminated gases" - clouds lit in different colors, produced in glass enclosures - were linked to each other by passageways, areas of pressure and depression, areas of transition between being and non-being. Subsequently, I called this principle "illuminated thermodynamics." The same concept inspired me to create the sculpture *+ et -* (+ and -) in 1996.

I originally intended this first glass enclosure to be flat, but ultimately it became an egg-shaped shell fitted with five electrodes (while common sense on this matter would have dictated only two). The resistance of the glass to the atmospheric pressure both allowed and constrained the construction of a scenic field.

Following this experiment, I obtained varying forms of plasma by manipulating rare gases under differing pressures in the laboratories of a neon-sign company. I called these forms "luminous strings."

In this work, a continuous link between traces in a landscape, such as threads of light, became, through plasma, strings that organized themselves into webs, with knots as their linkages. These arcs would have only a spectacular value, however, if they did not generate a network structure between themselves. This totality of symbolically related dynamic interconnections would constitute for me a basis for research into new plastic forms.

Sculpture and Plasma

In order for physicists to discover what they would come to call "plasma," it was necessary for them to conceptualize its

physical behavior and identify the laws by which it worked. This was made possible by the discovery that the extraction of an electron from an atom caused an *ion* (Greek for "the one that goes") to be formed.

A material form presupposes links between different elements. The form of plasma is constrained by a field of force that conditions its aesthetic existence. In the case of a solid medium, its short-distanced intermolecular field plays the principal role. Its form thus remains uniformly attracted by a gravitational field. With plasma, the use of a magnetic field allows the exploration of new forms inaccessible under normal conditions.

Plasma exists under different conditions. That is to say, it is in a transitory zone between "object" and "non-object" to a far greater extent than is a solid body, and so has a far more diffuse form. A sculpture in plasma, an ionized gas, is generated by an electrical field and the capacity for long-distance interactions between its ions. The existence of the form will thus offer a sort of discontinuity, which opens the question of links and messengers.

The temporal existence of plasma requires a balance or quasi-balance: the difficulty of realizing this quasi-balance makes creations fleeting. Electrical fields can reduce the effect of Earth's gravitational field to a negligible level. Visually, at least, and with the exception of the phenomenon of convection in the string phase, the forms appear to escape gravity.

Some forms of plasma, then, have characteristics unattainable in solid matter because they exploit another force, that of electricity. But the existence of an electrical field inside a volume of gas presupposes that new and somewhat unusual rules will apply. An artificially maintained technological environment is also required to establish the necessary conditions.

Perception is generally linked to an interpretation of existing knowledge. The transitory forms of my work can thus be a field of exploration for both the creator and the observer.

Strings of Light

In *Machine a Cinétique Molle* (Weak Kinetic Machine), I produced strings of light using relatively precise gas pressures to generate a variety of colors, ranging from very beautiful shades of blue through sometimes unnerving shades of very pale green to pink and white. They have particular characteristics I find extraordinary.

These thread-like electric arcs are very elastic. They are linked together at certain points by pulsating "knots;" they are also susceptible to breaking up under the action of invisible forces and then reforming new configurations. This phenomenon presents a dynamic network of forms and forces trying incessantly to find a balance according to nature, i.e. in the pressure and temperature of the gas mixture inside the installation. Moreover they are particularly supple and swift in three dimensions and always direct themselves toward the sky, probably due to a convection effect linked to gravity. Thus a magnet can attract or repel them into precise configurations through the glass. This very unstable state of matter could fulfil the conditions of a substance, light, fit to be sculpted at the limits of chaos, which in the first instance needed to be mastered.

Initially, without knowing what would happen, I used five electrodes arrayed like the fingers of a hand, where logic would have suggested six, or in any case, an even number. The fact that one of the feed wires could not be connected to an electrode forced me to link it to one of the poles of the system, thus creating additional instability. The electrical curves searched incessantly for a new balance, fluctuating all the time.

My approach is primarily intuitive, and the space affected by technological intervention offers an imaginary world for the behavior of electric variables inside gas. In this way I organize forms by empirically determining these behaviors and by speculating about changing these behaviors, without knowledge but with a desire to understand. My object is not a scientific demonstration, but an experimental research into new visual signs as foundation stones of spaces and as sources of revelation.

Contrary to the scientific approach, my artistic perspective authorizes an uninhibited madness that allows me new forms of reasoning about future concepts. These lines of tension can be interpreted as forces but also as visual signs representing known and unknown forms. The whole of my work can be seen as a representation, or even an electrical model with regard to the forms and the forces at work.

Voile de Lumière

For the project **Voile de Lumière** (Veil of Egg-Shaped Light), commissioned in 1983 by the Cité des Sciences et de l'Industrie in Paris, I created a luminous 3D veil floating in space. I used the sound produced by the plasma tube, as well as radio music captured by tiny standard receptors to interact with this image, and to give a more vibrant edge to the whole creation.

I placed 10 electrodes around an egg-shaped enclosure, or bulb, that was flat enough to allow a powerful magnet to act on the strings without distance becoming too important a factor. The high tension had to be commuted at a high frequency in order to make one or more arcs move from one pair of electrodes to the other. As the high tension could not be commuted in the spaces reserved for the public, I decided in the end to display the chronology of these events through switching the electrical arcs in a succession. The organization of the forms into a network resulted from the disposition of the existing potentials. The first bulb I used, being too flat, did not resist the atmospheric pressure. I replaced it with a solid glass sphere and fitted it with 10 electrodes. Once I finished the sculpture, I invited the public to generate forms from a desk equipped with relays; this created a quite astonishing interactivity. The resulting forms were not reproducible and depended on the on-off order of lighting the feeding wire couples.

At rest, this creature of electricity and light searches for balance in a stable form, while at the same time roaring with the noises that superimpose themselves on the words and music picked up from the radio stations, giving it the semblance of a creature from another world.

"Try to manipulate the strings and to calm the plasma by searching for a point of balance" is the indirect suggestion the work proposes to the public, which quickly baptized this

creature "the medusa" or "the brain."

La Cascade Annulaire: Art, Nature and Electricity
Practical experimentation with the known laws of electricity has allowed me to continue developing this type of art. With the project *La Cascade Annulaire* (The Annular Cascade) (1986), I realized a collaborative work with physicist François Bastien [2]. Conceived in 1984, *La Cascade Annulaire* was the result of a successful experiment in March 1986 in the laboratories of the French national company Electricité de France. The project was later interrupted for a conjunction of reasons, notably economic ones.

From the first moments of the project, the idea was to use lightning to evoke the unity of earth and sky - as the electrical arc being possibly the fundamental instrument of the sculptural form, the light its expression, and the artwork as a whole, a reflection of nature; this art at the same time can no longer imagine the world without considering the innovations and consequences of technology.

The happening, according to Marcel Duchamp, is a space in which onlookers are placed in equilibrium between attraction and repulsion concerning the event they witness. In certain aspects, technology can be interpreted as a metaphor by which art expresses itself, not only because of the need for daily comfort that it provokes, but also in terms of its resulting negative ecological consequences. We experience, as a result, conscious and unconscious vacillations between the poles of a system in search of equilibrium. That is why *La Cascade Annulaire* can be considered a "happening of technology."

As the most modern matter on our planet (because it involves electricity), but also as the most widespread matter in the universe, plasma, I propose, is representative of these concepts of attraction-repulsion, a metaphor of electricity. The experimental propagation of electrical charges also presents a unique characteristic of the system.

The verticality of the thin tube in *La Cascade Annulaire* complements the different plasmas so that there appears an "electrical smoke" of red, blue and sometimes yellow light. The ionized volumes thus produced are very diverse but can be grouped into five categories. The first three are linked to low-pressure effects; the last two, to average-pressure effects.

I have named the different forms seen in the ionized volumes:

* "birds": spontaneous streaks in a positive column of luminescent electrical releases

* "bubbles": other fixed or mobile streaks

* "full light": a positive column without streaks

* "electrical smoke": a turbulent arc associated with low pressure

* "torch" or "flame": a type of light string typical of a low-pressure arc.

In this work I seek to contain in a laboratory test tube a tamed and softened lightning, kept "alive" to evoke the confidence and responsibility necessary between people to master

and produce the immense energies that will probably be required in the future. The universe organizes itself in an enchanted system of energy; the discovery of electricity has set the stage for a totally abstracted idea of nature. This matter, electricity, could be considered the second main conquest of humankind after fire. From captured fire to created fire, the whole of human history is encapsulated. From fire's orange-red to the blue of electricity, these images represent past ages when fears and hopes were often mythical. In less than two centuries, 400,000 years of history have been annihilated following the discoveries of electricity and the atom.

Subtle osmoses, superpositions of weft, our death or our life belong only to ourselves. Technology attracts us but repulses us at the same time because of the reality it imprints on the world; technology forces us to invent between the attraction and repulsion.

L'Ordre n'est qu'une étape du désordre

In my work **L'Ordre n'est qu'une étape du désordre** (Order Is Only a Stage of Disorder), created in 1988, two regimes of energy are in dialogue. One is formulated by coal and the other by a plasma of the same type used in **Voile de Lumière**, generated from six electrodes. The fundamental basis of this sculpture is an exaggeration of the process of establishing an equilibrium between electrical arcs. When that equilibrium attains relative stability by forming a figure linking the eight arcs, the system then swings back toward disorder. This state of chaos will last until a new equilibrium is found, and so on - this in a totally unpredictable manner with regard both to the trajectories of the arcs and to the realization in time of the chain of processes. Given that the internal atmosphere exerts only a weak pressure, convection paths are formed, offering new passageways for the release of tension. This search for stability can be interpreted as an attempt to use dispersed energy as efficiently as possible.

This very living phenomenon becomes a way of describing space and time through their anchor point, energy. I realized the importance of this type of figure while manipulating the pressure and the nature of my gases to obtain a slow instability in this piece. The title occurred to me as an allusion to those worldviews of absolute order in which social thought is petrified.

Sculpting Ionized Electrical Fields

The objective of my public installation **+ et -**, initially intended for children, was to produce threadlike electrical arcs that could be manipulated from a distance with the use of stationary magnets.

The flat shape of **+ et -** was chosen to stabilize as much as possible the convection effect of the electrical arcs. The installation maintains an atmosphere of rare gas under low pressure in a cavity of 10-cm-thick glass. Seven pairs of electrodes receive current. Threadlike arcs naturally form between the electrodes when the difference in potential is sufficient. The tension creates a network in equilibrium.

At rest, the installation seems alive; the strings of light move as slowly as snakes between the pairs of electrodes. These threadlike arcs, linked by bridges, search for equilibrium,

attracted by the electrical potential of the neighboring field.

The strings of light are a visible manifestation of the forces at play where the electrical pathway through the gas is least resistant. What I call "the ballet of the short circuits" suggests some explanations for this effect.

Under the influence of high-tension electrical streams, a population of ions is created in the rare gas under low pressure. Locally heated, ions react against the constraints imposed by the environment - which is strongly electrified by different electrical sources - to create potential differentials. Lazy but in tension the plasma, through its heat, helps generate the next pathway. Like an electric cortège behind its leaders, these ionic conductors make a furious effort to resist the pressure of followers, pushing to the limits of imbalance.

A child, with the help of stationary magnets, can manipulate the light strings through the glass. The total length of the network can be increased to the limits allowed by the electrical tensions generated by the feeds.

These sculptural forms provide an intuitive, interactive display of the science of morphogenesis through play and observation. As for the sculptor, it allows me to play with the variations of forms induced by the tensions at work.

To Conclude and Continue

On the question of the imaginary and the mystery of creation: The understanding and interpretation of forms derive from the structures (innate or acquired) and cultures that give them meaning. That which we can attribute, beyond a common comprehension, to objects or events, has its value only in the imagination of the one whom Marcel Duchamp called the "onlooker."

Nevertheless, comprehension of a form is not acquired beforehand, even though, at times, spontaneous sentiments can develop. What added value can we as onlookers contribute on the emotional level? What dimension would this value have? Does our incomprehension of a form also come from a search for the identification of already acquired knowledge?

That which retains our interest is primarily that which we have not discovered, experiences we have not yet confronted. On another level of exploration, there may be a method of constructing a system so permeable that its mere existence would naturally generate a space into which each onlooker could be projected. There are several spaces in which we can move on a strictly aesthetic level while attaching ourselves to known and identifiable meanings by discovering in the thickness of the surface new spaces in which to project ourselves.

To evoke energy through plasmas seems an abstraction that brings us closer to the entire universe because it brings us nearer to the state of initial creation. Everything about plasma brings us back to the origin. Beyond that, the encounter of a material form with another system presupposes reciprocities that go through atomic and energetic commonalities. Different systems can be built simultaneously in differing space-and-time dimensions to finally evolve into a new balance of form and matter. The chronology of the events and the resulting tension constitute the proper structure of the art, the basis to new

questions about memory.

The global apprehension of the cosmos is a creative mystique. It is best achieved by a scientific rigor informed by the introspection of dreams or the revelation of ideas. This border area between the world of ideas and the world of reality interests me as a space of discovery and as an area that inspires questions about my own lack of knowledge and about how to transform my reactions to it into works that can be understood by others. Electricity, then, is for me an element of coordination because it subtly transfers information. The question remains, nevertheless, from what moment does electricity become a force of transformation and for which types of forms?

Sculpture, on the research level, must connect with the origins of all forms. As a simple form of recognition, sculpture does not evade the profound questions raised by the scientific imagination. The thought goes from upheaval to upheaval toward a new balance: entropy or negation of entropy. And from one choice or another a sum of consequences and behaviors will result, in the face of which our own potentials can or cannot respond.

Uncertainty offers itself, then, as a universe to be explored. Do we not each contain our own mirror?

ACKNOWLEDGMENTS

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NOTES

1. This phase occurred at Les Beaux Arts de Metz.
2. François Bastien is a physicist at the University of Franche-Comté, Besançon, France.

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Panchèvre, J.C. *La cascade annulaire* video, 7 min (1992).

GLOSSARY

ionization - the process that transforms atoms into ions.

ionized plasma - gas formed by charged particles (ions and electrons) and whose components share a common behavior.

plasma - the fourth state of matter: neither solid, nor liquid nor gas; the most common material state in the universe.

LEONARDO DIGITAL REVIEWS 2003.06

Amy Ione opens this month's *Leonardo Digital Reviews* with a polemical response to *Other American Voices,* a film from First Run/Icarus that situates the reaction to the attacks on the World Trade Center in New York in the context of recent actions in the Middle East. It is polemical because the review itself raises questions about the legitimate arenas of action, both for filmmakers and for journals such as this. More mainstream but no less current is Maia Engeli's review of *Pause and Effect: The Art of Interactive Narrative,* by Mark Stephen Maedows. Engeli sees this contribution as a mixed blessing in the discussion of interactive narratives and practice. Of Dene Grigar's three contributions this month, her review of *Media Worlds: Anthropology on a New Terrain,* by Faye D. Ginsburg, Lila Abu-Lughod and Brian Larkin, provides an erudite insight into the anthropology of media, which she suggests does indeed open up a new terrain. Her review of *Making Sense of Taste: Food and Philosophy,* by Carolyn Korsmeyer, on the other hand, revisits the question of the gustatory sense, which challenges the very notions underlying objectivity in relation to the way we think about the senses and art, particularly the sense of taste and the art of food and wine. Stefaan van Ryssen also offers three lively reviews: *Fix It In Post (Live, 1997-2001),* by The Freight Elevator Quartet, *From animals tot animats 7,* by Hallam, Bridget, Dario Loreano, John Hallam, Gillian Hayes and Jean-Arcady Meyer, and *Available Instruments,* by William Kleinsasser. Taken as a whole, these provide an insight into the intellectual vitality of one of our most prolific reviewers in recent months, and despite his suggestion, "Some of my students at the Conservatory question my sanity," it is clearly a mindspace that we (and I suspect his students) are privileged to

share.

In an insightful review, Diana Gromala, LDR's most recent member to contribute, looks at **Where The Action Is: Foundations of Embodied Interaction,** by Paul Dourish. From the perspective of HCI (Human-Computer Interaction), her take is, as one would expect, economical and "user friendly" to a phenomenological world view. By coincidence, Ian Verstagen's review of **Reinventing Pragmatism: American Philosophy at the End of the Twentieth Century,** by Joseph Margolis, argues that we must revisit the foundations of pragmatism if we are to develop our understanding of the conceptual model. David Topper's review of **The Ambassadors' Secret: Holbein and the World of the Renaissance,** by John North, completes the philosophical diversion by contemplating the intriguing puzzle of Holbein's painting through North's analysis. Finally, as if to reiterate the historical persistence of the theme of meaning and action, which seems to offer some unity to this month's reviews, Mike Mosher looks at **Tan-Go: The Best of Tangerine Dream 1990 - 2000,** and asks with incredulity - are Tangerine Dream still around? Apparently, yes, and although not pleasing the old-timers so much, they are reckoned to be "cool" to a generation who votes by the act of piracy.

Michael Punt
Editor-in-Chief
Leonardo Digital Reviews

In this month's Leonardo Digital Reviews at
<http://mitpress.mit.edu/e-journals/Leonardo/ldr.html>:

The Ambassadors' Secret: Holbein and the World of the Renaissance, by John North
Reviewed by David Topper

Available Instruments, by William Kleinsasser
Reviewed by Stefaan Van Ryssen

Fix It In Post (Live, 1997-2001), by The Freight Elevator Quartet
Reviewed by Stefaan Van Ryssen

From animals tot animats 7, by Hallam, Bridget, Dario Loreano,
John Hallam, Gillian Hayes and Jean-Arcady Meyer (eds.)
Reviewed by Stefaan Van Ryssen

Improvisational Design: Continuous, Responsive Digital Communication, by Suguru Ishizaki
Reviewed by Dene Grigar

Making Sense of Taste: Food and Philosophy, By Carolyn Korsmeyer
Reviewed by Dene Grigar

Media Worlds: Anthropology on a New Terrain, by Faye D.
Ginsburg, Lila Abu-Lughod and Brian Larkin
Reviewed by Dene Grigar

Nomadic Transitions: Thinking about Art, Chaired by Drs. Jill
Scott and Sigrid Schade
Reviewed by Dene Grigar

Other American Voices, by Corinna Belz and Nel Hollander

Reviewed by Amy Ione

Pause and Effect: The Art of Interactive Narrative, By Mark
Stephen Maedows

Reviewed by Maia Engeli

Reinventing Pragmatism: American Philosophy at the End of the
Twentieth Century, by Joseph Margolis

Reviewed by Ian Verstegen

Sociology is a Martial Art, Directed by Pierre Carles

Reviewed by Michael Punt

Tan-Go: The Best of Tangerine Dream 1990 - 2000

Reviewed by Mike Mosher

Where The Action Is: Foundations of Embodied Interaction, by
Paul Dourish

Reviewed by Diane Gromala

REINVENTING PRAGMATISM: AMERICAN PHILOSOPHY AT THE END OF THE
TWENTIETH CENTURY

by Joseph Margolis, Cornell University Press, Ithaca, NY, 2002.
179 pp., \$39.95. ISBN: 0-8014-3995-7.

Reviewed by Ian Verstegen, Art History, Temple University,
Philadelphia, PA 19122, U.S.A.

iversteg@temple.edu

Pragmatism - the loosely defined philosophical commitment to the practical and here-and-now that emerged in the early twentieth century in America - today seems an apt compromise between arid scientific realism and extreme relativism. The term took on a new urgency when it was adopted by two very different and battling philosophers, Hilary Putnam and Richard Rorty. Whoever was right to have claimed the title, the winner guaranteed pragmatism's success, because both claimed its legacy. Pragmatism has always been popular in art education circles, due to the influence of John Dewey, and Joseph Margolis's *Reinventing Pragmatism* is an excellent vehicle for debating the very "pragmatism" that appears to be so attractive today.

This book is partly a raucous account of Putnam's and Rorty's philosophical battles over the past 20 years (Margolis speaks as a participant who has published alongside these thinkers for nearly 50 years), partly an assessment of contemporary philosophy (since the issues of naturalism versus non-reductive pragmatism animate all debates) and part personal solution, as Margolis spies the unexpected turns of some pretty acrimonious debate and offers many corrections.

Margolis' first point is that the pragmatisms espoused by Putnam and Rorty have little to do with the theories of Peirce, James and Dewey, in spite of their authors' claims. For that matter, there are sticky compatibilities between these founders, who were split on a number of issues. In spite of that, Margolis especially charges Rorty with a gross misreading of Dewey. While both claim an identity as pragmatists, Putnam takes the non-reductive side of pragmatism, while Rorty melds reductivism with

a pragmatist postmodernism. While Margolis' sympathies are more toward relativism and therefore, at least superficially, toward Rorty, he stands closer to Putnam against Rorty's outrageous claims to a final post-philosophy.

Putnam has, for the past 20 years, famously retreated from a scientific realism toward an internal realism and now pragmatism. Rorty, on the other hand, has strangely maintained scientific realist beliefs (touting his affinities with analyticians like Quine, Davidson and Dennett) but combined them with a pragmatic dismissal of foundational philosophical questions. For Margolis, Putnam's attempts to eradicate Cartesian dualism are too weak and sometimes unnecessary, while Rorty is guilty of simply re-labeling theorists as pragmatists in the cause and hoping that a rhetorical snap of dismissal will quiet philosophical debate. More radical, Margolis claims, is to reconsider more precisely the original proposals of Dewey. His Darwinized version of Hegel placed knowledge at an intermediate situation of practical, lived experience with the need to understand. According to Margolis, this reframing of the situation wipes out the very Cartesianism that Putnam and Rorty have been wrangling with.

Whatever we think of Margolis' proposal, it will lead us back to the texts and challenge our easy acceptance of the terms of the debates.

WHERE THE ACTION IS: FOUNDATIONS OF EMBODIED INTERACTION

by Paul Dourish, The MIT Press, Cambridge and London, 2003, 256 pp., Hardcover, \$35.00. ISBN: 0262041960.

Reviewed by Diane Gromala, Georgia Tech, Atlanta, GA, U.S.A.
diane.gromala@lcc.gatech.edu

In **Where The Action Is: Foundations of Embodied Interaction,** Paul Dourish offers the HCI (Human-Computer Interaction) and artistic communities an important proposition, one that is relevant to both groups. The premise of "embodied interaction" is to understand interaction in terms of a participative status "with computer systems that occupy our world, a world of physical and social reality, and that exploit this fact in how they interact with us." By drawing on the philosophical tradition of phenomenology, Dourish insists on accounting for the inextricable interplay of user, tool and context, and privileges engaged, natural practice over disembodied rationality and abstract cognition. In these ways, Dourish opens a user-centered approach to expansive physical and social realities.

The book is comprised of two parts. The first section provides a persuasive and thoroughly developed method of analyzing the assumptions upon which much of HCI rests, including a brief history of interaction. Rather than a history of computing technology per se, this is a history of the way computer scientists gradually incorporated human skills and abilities into the development of technology, turning their focus to the way humans and the everyday world work, rather than on how the machine works.

Dourish demonstrates the ways in which his proposed approach is

already partially at work by examining the assumptions of two specific HCI practices - Tangible Computing (also referred to as Everyday Computing and Ubiquitous Computing) and Computer-Supported Collaborative Work (CSCW). Tangible Computing capitalizes on the fact that every so-called virtual world is inextricably bound to the physical realities of user and world. CSCW takes into account the real, messy, improvisational social realities of computing, primarily in the context of work.

Yet Dourish clearly exceeds these accepted practices of mainstream HCI. His engaging history of interaction is paralleled by an equally clear and compelling articulation of the philosophical foundations of his proposition. Further, he includes the work of artists throughout the book, not merely as tangential asides, but as important examples that turn users' attention to matters of physical and social realities beyond the "purely" technical or the strictly work-oriented. The artistic examples are no mere applications, but are instances of technical development itself. This is not the main focus of the book; however, since Dourish does a remarkably good job of pointing out the importance of artists to the HCI community, it would behoove artists who work closely with computer scientists to familiarize themselves with the assumptions of HCI that he so clearly develops.

The second section of the book is a less-developed but nonetheless provocative attempt to outline initial principles of embodied interaction design. The reason Dourish makes this move - from merely proposing a theory to the putting that theory to work in practice - is driven by the philosophical approach itself. The phenomenological approach Dourish draws from is important for this reason: it turns our attention to how we encounter the everyday world as meaningful through active participation in it, as users and as creators. Besides the handful of computer scientists who practice Situated Action and Activity Theory research, very few are concerned with the issue of meaning. Since artists are primarily concerned with meaning, it is precisely here that a common ground is opened up for both communities. Dourish is demonstrably well aware of the conflicts of theory and practice, and does an admirable job of avoiding any facile, prescriptive approaches that often stifle current HCI practices. His approach promises to expand understandings of technological development that, in turn, will extend its scope, reorient its focus and put it to relevant and meaningful use.

AVAILABLE INSTRUMENTS

by William Kleinsasser, *Cycling '74*, San Francisco, CA, 2002.
Audio CD, 44' 27", C74-o07.

Reviewed by Stefaan Van Ryssen, Hogeschool Gent, Jan Delvinlaan 115, 9000 Gent, Belgium.
stefaan.vanryssen@pandora.be

Some of my students at the Conservatory question my sanity. That is a positive attitude in a student. They shouldn't take for granted that the teacher is in any way a normal person, much less that what he or she says makes sense. Teachers, by their experience, are biased and opinionated individuals who stick to guidelines of good conduct and standards of good taste originating in those days when the world was full of stuffy old things and devoid of the excitement that can be found on-line,

in the clubs and at the parties where students fraternize. Having, in one class, both would-be producers of popular music and students of classical instruments, both operatic singers and builders of harpsichords, it is easy for me to shake the beliefs of at least one group at a time, and that is what I love to do. I admit, it doesn't take much effort. Most of them believe that what they recently discovered is "new" and that their ideas of what music should sound like is really contemporary, if not the only road to the salvation of musical taste for the generations to come.

The producers generally think that electronics is where the action is, with acoustical sources of sound being only the occasion for some digital transformations. The classicals, on the other hand, believe that their sounds should not be tampered with and that nothing good can come from the mishandling of wood, string, brass or vocal chord. I forgive them. After all, they are students and they should take their trade seriously. What they find hard to believe, what they find hard to imagine even, is the possibility of superposing classical and electronic sounds and letting them interact, so as to enhance the quality and richness of both. Of course, the idea is as old as the theremin, but they are young and they have "radical" ideas.

The two pieces by William Kleinsasser on this CD are possibly the best pedagogical examples of what my students fail to believe. In both cases, the final mix is clear, understandable and balanced. In neither case does the acoustic/classical or the digital dominate and, in both, the combined result is more than a mere superposition. However, both pieces fail to excite. There is a smoothness and predictability that makes it hard to stay enthusiastic after the third listening or so. And that is fatal in the long run.

Available Instruments is a piece for piano and computer. It was recorded in May 2001, in the Center for the Arts Concert Hall at Towson University, with Kleinsasser on computer and Daniel Koppelman at the ivory keyboard. It is based on two ideas: temporal complexity through the development of musical material in several timescales and the contrast between highly abstract and expressive musical characters. Both the piano and the computer partake in these processes, so the old and culturally laden roles of the mechanical and the human, the emotional and the intellectual, are carefully and effectively avoided. Maybe it is exactly this careful approach that leaves the music rather soulless and unengaging.

In "Double Concerto," several modalities of performance are contrasted: the solo virtuoso concert, the chamber music context, large ensemble performances and the presentation of machine-realized music. A chamber orchestra, computer and two soloists (cello and viola), are conducted by Paul Rardin in this recording from August 2001 in the Center for the Arts Concert Hall at Towson University. Again, William Kleinsasser played the computer. All performers do an outstanding job and the overall impression is one of precision and professionalism. "Well done!", I would shout at the end. But there has been no event, no really moving or puzzling or memorable thing, apart from the mere fact that it was nice.

I wonder what would happen if Kleinsasser left behind the political correctness and pedagogical clarity in his compositions; if he applied the experience gained from these pieces and performances for the expression of some intra-musical

ideas? Surely his music would not be adopted by the house or techno scene and the clubs will not use it for a warm-up or a backdrop, but it might have more to say and it would be better remembered.

ANNOUNCEMENT

LEONARDO EDITORIAL STATEMENT - TEXTS RETRACTED DUE TO PLAGIARISM
by Roger F. Malina, *Leonardo* Executive Editor, 425 Market
Street, 2nd Floor, San Francisco, CA 94105, U.S.A.
isast@sfsu.edu

It has come to our attention that a text by Jean-Bernard Condat ("The Workshop of Bartók and Kodaly," *Leonardo* Vol. 21, No. 2, 217-218 [1988]) was heavily plagiarized from a review by Malcolm Gillies ("The Workshop of Bartók and Kodaly," *Music Analysis* 5 [1986] pp. 285-295). In addition, a second text by Jean-Bernard Condat ("Sound and Resemblance; Reflections on Musical Representation," *Leonardo* Vol. 21, No. 4, pp. 461-462 [1988]) was also significantly plagiarized from a text by R.A. Sharpe ("Sound and Resemblance: Reflections on Musical Representation," *Music Review* 46, No. 1, 70--71 [1985]).

Leonardo is retracting these texts and is removing them from on-line versions of the journal in addition to publishing this statement in a form that will be retrieved by on-line database searches. We have expressed our deep regret to Malcolm Gillies and R.A. Sharpe for this infringement of their research and for any harm thus caused. All scholarly communities depend on the good faith of authors who submit articles for publication vouching that their texts are original and have not been published elsewhere. This is the first instance of plagiarism in *Leonardo* brought to our attention in 37 years of publication and we hope it will be the last [1].

NOTE

1. Please note that we sought to give Jean-Bernard Condat advance notification of the publication of this notice, but were advised that he had very recently passed away. While we respect the bereavement of his family, the injury to Gillies and Sharpe is not a personal one but lies in the continuing presence of the plagiarized materials in the bibliographical record. On this basis, we decided to proceed with the notice as planned.

ISAST NEWS

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places bibliographies of interest to our art/science/technology audience on our web site. Types of bibliographies include reading lists for classes and courses of interest to educators; detailed bibliographies on specialized topics (e.g. Art and Biology); and bibliographies of single authors of interest to our readership (e.g. Rudolf Arnheim).

Recent bibliographies of note are: "Virtual Art and Artists" (compiled by Frank Popper); "Aesthetic Computing Dagstuhl Workshop Reading List" (compiled by Jon McCormack); "The Cultural Roots of Globalization" (compiled by Julien Knebusch); and "Pierre Schaeffer: A Survey of the Literature" (compiled by Carlos Palombini).

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We want to hear from you, our associate members, to find out who deserves recognition for a lifetime of activity, exploration and achievement in art, science and technology.

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CALL FOR PAPERS: LEONARDO MUSIC JOURNAL VOL. 14 (2004)

"Composers inside Electronics: Music after David Tudor"

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

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

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

Deadlines:

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

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



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Editorial Address:

Leonardo Electronic Almanac
Studio 3a, 35 Place du Bourg-de-four
1204 Geneva, Switzerland

E-mail: <lea@mitpress.mit.edu>

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