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< What's in a Word: Leonardo/ISAST Obtains U.S. Trademark on the Word "Leonardo" >
by Roger Malina

On 5 June, 2001, Leonardo/ISAST was registered as the U.S. Trademark holder for use of the word "Leonardo" in the following areas of commerce (classes 9, 16 and 42):

- 1) For electronic publications, including CD-ROMS, Internet-downloadable files and CDs of musical works. The registration cites our first use as 1991.
- 2) For printed materials, including books and journals. The registration cites our first use as 1968.
- 3) For websites featuring information on the arts, sciences and technology. The registration cites our first web site as being available in 1994.

Our success in obtaining the Leonardo trademark, covering our areas of activity, follows on the heels of our success in defending the lawsuit brought against us by Transasia and Leonardo Finance.

Again, we thank the community for their sustained support, which has allowed the Leonardo network to defend itself. We have now confirmed our use of the word Leonardo in connection with our activities.

This is ironic, since we never intended to seek universal control of the word Leonardo, which, it seems to us, is a word that is part of the common heritage of mankind. It was Joseph Needham, famed microbiologist and historian of Chinese science and technology, who - in 1966 - suggested the name Leonardo as the name of a new journal of the arts, sciences and technology, founded by Frank Malina. The name was chosen in reference, of course, to Leonardo da Vinci, who is viewed as a prototypical creator who navigated during his career between the arts, sciences and technology as his fields of endeavor. Much of the myth of the Renaissance has been re-written by new historians, but the myth is perhaps in this case more important than the reality.

When Leonardo/OLATS was sued in court by a venture capital company for our use of the word Leonardo it was, as pointed out by Pierre Levy, a semantic battlefield with far more than symbolic content. Words are the icebergs of ideological and commercial struggles whose outcome is unknown. Science and technology are not ethically or ideologically neutral, but rather unfold within the context of societal dreams and our access to resources.

We suspect that the Internet will have even broader societal ramifications than the invention of printing, the cinema and other communication technologies. The dot.com hysteria has seen all the symptoms of a new culture unfolding. We are pleased to say that the Leonardo network of artists, scientists and engineers has been able to survive this temporarily chaotic situation.

Now that we are the proud owners of the use of the word Leonardo in

U.S. Trademark Classes 9, 16 and 42, we will be putting the letter "R" in a circle after our use of the word Leonardo in our projects including the Leonardo journal, the Leonardo Music Journal, the Leonardo Book Series, the Leonardo Compact Disc Series, the Leonardo Electronic Almanac, Leonardo On Line, the Observatoire Leonardo des Arts et Technosciences, the Leonardo Space Arts Working Group, the Leonardo Virtual Africa Project and our other projects. As all proud trademark owners, we will defend our trademark against all those who would infringe it.

We do find this situation somewhat absurd since, as we stated above, our use of the word Leonardo was intended as a cultural meme and was used by a group of people asserting new ideas and artforms appropriate to our age. The idea was to spread that meme as widely as possible and indeed, the explosion of new art-making and institution-building in this field testifies to the success and currency of this cultural meme. The last thing we want to do is impede the spread of the ideas expressed by those in the Leonardo network. To be honest, we hope to expand our activities beyond the ones that are covered by our trademark. There are dozens of U.S. Trademark holders of the word Leonardo in the U.S. (including world-famous Leonardo macaroni); no, we do not plan to produce macaroni nor to infringe any of the other trademark holders' rights.

Our new schizophrenia requires us to defend our trademark and, if necessary, sue the infringers, yet at the same time disseminate as widely as possible the word Leonardo and the ideas behind it. Perhaps there is a way to open source, or "copyleft," the word Leonardo as part of the common heritage of mankind while allowing us to protect our new trademark so that no new "Leonardo Inc." can sue us in the future. Our lawyers are skeptical; we are open to your suggestions.

Special Announcement: Leonardo/ISAST in San Francisco has announced that it is searching for an Executive Director for the organization. A search committee is being put in place and a job announcement will be issued shortly. The position will begin in Spring 2002 and will be open to candidates interested in either half-time or full-time employment. If you are interested in this position send email to leo@mitpress.mit.edu.

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FEATURED TEXTS

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< Statements from the Burning Man Festival >

[Following are statements by artists who have participated in the Burning Man Festival, an annual arts/cyberculture festival in the Black Rock Desert of Nevada. See LEA Vol. 9, Nos. 4 and 6 for additional statements; more statements will be forthcoming in future issues.]

Dr. MegaVolt and the Genie in the Bottle
By Austin Richards

Dr. MegaVolt is a performance act that has appeared at three Burning Man festivals (1998--2000). It features a person in a metal mesh suit

interacting with artificially generated lighting. The Doctor sets objects on fire with electricity originating from large Tesla coils, spars with the electric arcs and exhorts the audience to worship the elemental force of electricity.

Dr. MegaVolt has its roots in my Tesla coil experiments, which began at age 12, when I built a coil that threw a 4-ft arc and used it in a Halloween show at my parent's house. The next incarnation of the coil made a 12-ft arc, scaring the neighbors' kids while jamming the reception of my parents' TV during Knott's Landing. I stepped up to the 10-kilowatt class of coil in graduate school, taking advantage of a bottomless pit of scrap material and power electronics discarded by the Dept. of Energy laboratory behind UC Berkeley, combined with the serendipity of my doctoral thesis advisor's absence while on sabbatical in Italy. Suddenly, I had a machine that could produce 10-ft arcs, leading to some notoriety with the UC police and the homeless who roamed the campus at night.

In 1996, members of Survival Research Laboratories built a metal cage in which one could stand while the cage received arcs from the largest Tesla coil in North America (built by San Francisco Bay Area resident Greg Leyh). I survived the ordeal, although a wit wired up the cage with hidden pyrotechnics that ignited during the show. A year later, I shrank the cage down to a metal body suit made of a bird cage, heating duct and flexible dryer duct. Dr. MegaVolt was born.

The doctor came to Burning Man in 1998 at the urging of my friend, Chris Campbell. He brought the coil to BM '98 and set it up; I went up a few days later to troubleshoot. We were to be plagued with technical difficulties that year, but the seed had been planted and we now knew enough to operate coils in a desert environment. That year, the coil was stationary, and only about 500 people saw it operate. The following year, Burning Man partially funded our operation. Dr. MegaVolt had become a team operation, led by myself, John Behrens and Gunthar Hartwig, designer of the website, www.drmegevolt.com. We installed the Tesla coil on the roof of a moving van covered in black carpet, while a generator towed behind the van provided power to the coil. Dr. MegaVolt toured the playa [Ed. Note: *playa* refers to the vast salt flats that are the setting for the BM festival], the van creeping along at idle while arcs shot off the coil. We ran four straight nights, and were probably seen by 15,000 people in total. The show culminated in a performance by John Behrens right next to the burn of the Burning Man. Burning Man 2000, however, was our magnum opus---we increased the output of my coil by fifty percent and built a second coil to those specs. The two coils were mounted on a 24-ft moving van towing a 150-horsepower generator. We pulled off some great shows, in spite of terrible weather and coil-damaging wet dust.

Dr. MegaVolt is very, very popular at Burning Man. We are treated like rock stars, complete with "groupies." It has been an opportunity to meet many interesting folks and experience their artistic visions and we have been praised as original performance artists, something I never would have imagined when I built my first big coil. The reason we do this show is simple: very few people ever get to see electricity at close range, and to see it in that way changes one's life forever.

Electricity is a humble servant, imprisoned in the copper cable infrastructure of the modern world; but raise the voltage high enough, and the genie escapes from its bottle and into the air itself, which becomes momentarily conductive. We cannot match the power of natural lightning, but we can capture the essence of it---

the truly random patterns of electrical arcs in air, the noise, the ozone and the lethal energy held back by paper-thin stainless steel mesh originally intended for industrial debris filters. During a show, Dr. MegaVolt becomes a sorcerer conjuring up an elemental, a force that, unlike the element of fire, can be put back into the bottle with the release of a switch. Electricity, not love, is the "Fifth Element."

The Golden Tower

by Susan Robb, E-mail: <goatmax1@hotmail.com>.

It is 10 AM on Monday morning. The smell of hot sugar hugs me as I walk past the Hostess baked goods factory in Seattle. I notice the sun shining into one of the factory's windows; something is causing the sun to splash golden waves on an inside wall. I approach the window and see, stacked on a desk, a little pyramid of filled urine-specimen jars. I am instantly touched by the fact that this liquid was once inside people who are now injecting cream filling into Twinkies and squirting chocolatey topping over naked Ding-Dongs. The careless way the jars are left in the window for the whole world to see, the body taken from being personal and private to being inspected-for-social-offenses makes me blush (just a little). Still, I am thrilled by the sun's accidental transformation of social/scientific scrutiny of the body into art. I want to see more; I want a whole tower of pee.

Two months later, when I learn that the theme of Burning Man 2000 is "the body," I am instantly interested. I have been cooking up an idea that started at the Hostess factory: the Golden Tower Project, an eight-foot tall, four-foot diameter tower of urine collected from artists all over the world. Metal posts hold up 16 columns of jars, which are supported by half plastic tubes. Lines of electroluminescent wire run down the back of each column, allowing the piece to be enjoyed at night.

By mid-summer, I start collecting artists' urine. I figure that artists, like the Hostess workers, are the ones who put the "creme filling" into life, dragging naked existence through the yummy syrup. I e-mail art-making friends all over the world and, very slowly, the pee starts trickling in. With the help of Seattle artist Jeff Miller, I design and build the tower structure. Unfortunately, time runs out. With only 1/4 of the pee we need, my posse and I head to Nevada.

Once in the desert, once the tower structure is set up, the playa works its magic: people heed their inner urge to participate, get a jar, go behind a car (or not), and hand back the specimen for labeling. The pee flows in; we have too much and have to turn away full bladders. Without the interactive element, the Golden Tower Project does not exist. The fact that I am asking for a donation of something very personal, a part of the body, the ignored distillation of what keeps us alive, seems to make people want to donate all the more. The tower becomes part of a performance art piece, where the donors are the artists performing for each other.

As more and more jars are added people, come to see "famous" pee by playa "celebrities" like Dr. Megavolt. They get their picture taken next to his jar, as one would next to Old Faithful or the Eiffel Tower. Like a war memorial, people scan the tower for specimens from donors they know. Like an x-ray held up to the light, there is much speculation as to the well-being of individual donors, what the wide variety of color means and who is "pissing clear."

The sun, moving and illuminating the tower from all sides, transforms the jars into sparkling, amber jewels. These subtle color variations turn the Golden Tower Project into a minimalist monument surrounded an equally beautiful, sparse desert. Even the night becomes a participant in hue. As it grows dark, the EL wire turns on. Now, the tower takes on a fluorescent glow and speaks eerily of "science." The edges of the jars and the lines of EL wire create an illusion of graph-like bands of light superimposed inside each jar, making them perfect for scrutiny. However, unlike the Hostess workers whose eliminations are taken and dissected by an authority searching for unauthorized activities, and unlike society, who claims what is waste and what has value, the participants of Burning Man, the desert, and the sun and moon reclaim the refuse and make it art. Biking by one night on my way to Spacelounge, I watch a group of people form a ring around the tower, hold hands, skip in a circle, and sing "we love pee."

The Plastic Chapel

by Finley Fryer, E-mail: <finleyfryer@snowcrest.net>.

WWW: <www.snowcrest.net/finleyfryer>.

The Plastic Chapel is an architectural sculpture constructed largely of recycled plastic. At the front is an open stage with a black background and fiber-optic lighting installation. The Chapel was created in 1998, in collaboration with a group of friends and artists, in Dunsmuir, CA. It is both a monumental and intimate creation, lit from within at night, glowing like a giant, domed stained-glass cube. Its multi-purpose usage fit perfectly into the wide spectrum of participation that is such an integral part of the Burning Man festival.

The original impetus for the chapel stems from a period when I worked as an itinerant stained-glass repairman. In the process of restoring damaged windows, I kept ending up with broken fragments of glass. At night in my hotel room, I would piece them together, using silicone. The windows grew out of this process and, over the course of my career, the glass gave way to plastic as the sculptures got larger and larger.

I created the 11 windows installed in the chapel over a 10-year period. Each window has its own title and story to tell. For me, the five larger, arched windows hinted at something to come, which was to someday build a structure to house these windows, a sort of wild roadside attraction. But it was a dream that remained in need of a physical location. In 1998, on a trip to the Channel Islands, off the U.K., I crossed paths with a creation that would resurrect and add new resolve to my getting on with this dream. On the Island of Guernsey, there is a small, miraculous creation called the Little Chapel, made by a monk. Made of shells, broken ceramics and years of hard work, it was all I needed to get me thinking a little bit more seriously about my own vision.

When a local non-profit arts organization, Shasta Mountain Playhouse, contemplated the creation of a stage for Burning Man 1998, it was the perfect catalyst. The idea that it would have to be portable, however, was a double-edged sword. On the one hand, it freed the Plastic Chapel from the confines of being a permanent piece of real estate, but it also created a whole slew of engineering and artistic hurdles to overcome.

Although the Plastic Chapel is first and foremost a work of art, it is also a portable venue for performance artists of all types. At

Burning Man, the stage was used for everything from musical performances to weddings, poetry slams to extemporaneous contests. Shows ran from dusk to late into the night. The Plastic Chapel was not burned, and has since been exhibited across the United States.

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LEONARDO DIGITAL REVIEWS 2001.08

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This month's LDR includes three longish reflections on important strands of the debates about representation (in each sense of the word), along with several other reviews (notably, from Robert Coburn and Mike Mosher). These can be read in context, along with our other work, at: <<http://mitpress.mit.edu/e-journals/Leonardo/ldr.html>>.

Michael Punt
Editor in Chief
Leonardo Digital Reviews

The Languages of the New Media

By Lev Manovich. MIT Press, Cambridge MA, 2001, 354 pp, illus. ISBN: 0-262-13374-1.

Reviewed by Sean Cubitt. E-mail: <seanc@waikato.ac.nz>.

First things first; let's get this out in the open: one *medium*, many *media*. TV is a medium, TV and radio are media. We might agree to differ on whether "multimedia" is a collective noun and therefore takes a singular verb. But if we are to mark an epochal shift in the media culture of the early twenty-first century, we might do worse than to observe a lucid, intelligent critic, creator and teacher writing in California, the very belly of the beast, in a book published by one of the most respected publishers in the media field, with a chapter heading enquiring "What is New Media?" Call me old-fashioned - you may have to - but that chapter title would have been a grammatical error a matter of hours ago. Is there such a thing as convergence? I disbelieve in any such aesthetic entity, outwith the synergetic corporation, and misdoubt the value of pursuing it. That does not alter the fact: the language is changing. "Media" is becoming singular, not just out of ignorance, but because "new media" and "multimedia" are being perceived as whole, discrete objects other than their constituent parts. Multimedia is now, in this English language, a medium.

For a brief moment, Lev Manovich turns his attention to the modernist pursuit of medium specificity, intellectually and in creative practice. This is the nub of the change signaled by the grammatical shift from plural to singular. Is there a medium of multimedia, digital media, new media, and is it or are they possessed of a singular collocation of specificities? There is good reason to ask. Too many curricula are overburdened with literary theory, film history, televisual narratology and art history, and all of us involved in teaching new media are hungry for texts we can signal to our students as specific to the emergent discipline, authentic in

their methods and direct in their applications to studio and laboratory practice. This book joins a select group of texts that are both quintessentially of the cyberculture and at the same time lucid enough for a reasonably articulate undergraduate to read for fun and profit. It is, simply, the first textbook for the next generation of media-makers, with enough schematic structure to please the note-taker.

Chapter one enumerates five distinctive qualities of new media - numerical representation, modularity, automation, variability and transcoding. Readers of Leonardo will recognize the centrality of the concepts, but not the originality or the clarity of explanation that Manovich brings to them. Meticulously disentangling the old from the new, Manovich argues carefully for a distinctive newness, discounting, among others, the "myth of interactivity." Subsequent chapters address the interface, long a passion of Manovich's, in discussion papers launched on <nettime> and Rhizome, as well as the operations that interfaces make most possible and the question of illusion and the characteristic forms of digital media, especially the database and the navigable 3-D space. In each case, there is characteristic innovation in the analysis and a freshness to the style of thought that justifies the book's dedication to Norman Klein, Peter Lunenfeld and Vivian Sobchack, three charismatic figures of the new media's best thinking.

Manovich is kind to his readers. He does not expect immense cultural reference, kindly explaining who Bertolt Brecht and Andr  Bazin were as gently as he holds our hands while explicating the nature of algorithms and their centrality to vector graphics. At the same time, he is unforgiving in his pursuit of a genuinely new critical paradigm, one that does not spend all its time glancing back over its shoulder to compare and contrast new and old media. There is none of the "Computers aren't books" paranoia or triumphalism of narratologists and neo-luddites; no cheery or glum farewells to family television. Instead, the book relentlessly pursues the distinctive qualities of digital media, archeologizing their emergence from older forms, but recognizing the moments at which butterflies emerge from chrysalises. The care for both accuracy and persuasion makes those distinctions sharp and historic.

That this is, without question, a vital work of new thinking in a new culture, should not however deter us from the necessity for further thinking: I suspect the author would be disappointed if it did. I cannot feel comfortable with the notion that essentialism might creep back into the media culture, just at the moment at which it has been banished from the halls of the world's art institutions. There are no mistakes in the argument to cling to: Manovich, typically, never asserts that new media are essentially binary, clearly alert to the possibility of a mass computing medium that no longer restricts itself to zeros and ones. Nor is he dismissive of the old media - abstract painting's turn to philosophical issues is, he recognizes, a noble ambition as yet undiscovered in the field of digital design. And yet, there is this nagging doubt: is new media, are new media, unified by an intrinsic quality or field of qualities? Or is it perhaps their very modularity, variability, transcoding, that marks them out as a loose aggregation without a single defining presence?

Enough said. Manovich has given us a book - the book - we had hoped for. We can disagree with it. We can and will find other examples, different to the wonderful range of games, net.art, installations and movies he works with. Cinema theorists and historians will enjoy the claims that all of this novelty is the flowering of a potentiality latent in film since its first steps, or before in the phantasmagorias and thaumatropes of the eighteenth and nineteenth

centuries. The ravishing breadth of digital reference is one of the book's strengths, and there is more than enough here to suggest to any instructor that the ideas can be debated in evolving contexts. If MIT Press relent in the usual practice of holding significant new titles in hardcover only for a year or two at a stretch, the book will be in every library, and students everywhere will be clutching it like Mao's Red Book, Diamat of the Immaterialist generation. Best of all, after Languages of the New Media, we can argue on our own terrain. The term "languages" in the title should not mislead: Manovich clarifies in the introduction that language is not the paradigm, but a metaphor, and its plural form the consequence of the complexity of the subject. I will cling to my grammarian propriety and believe these media are plural, but I will be using this book for myself as well as my students, because it makes that question, like so many others, urgent and productive.

Cosmic Evolution: The Rise of Complexity in Nature

By Eric J. Chaisson. Harvard Univ. Press, Cambridge, MA, U.S.A., 2001. 274 pp., illus. ISBN: 0-674-00342-X, \$27.95.

Reviewed by Robert Pepperell. E-mail: <pepperell@cwcom.net>.

One of the most puzzling aspects of physical law is the emergence of pockets of order in a universe that, according to the Second Law of Thermodynamics, should be gradually dissipating into formless noise (entropy). Even more puzzling is the fact that order (in the form of galaxies, planets, life and societies) not only emerges but seems to increase in complexity over time, certainly so if the evolution of life on Earth is any guide. Eric Chaisson is eminently qualified both to set out the terms of this paradox clearly and to offer some useful explanations without contravening the Second Law or appealing to new or non-science.

The explanation, it turns out, is relatively straightforward, although the mathematical proof is expressed in a way that would be opaque to most non-specialists. Put simply (and I hope accurately), the early period of cosmic time saw a universe consisting of essentially formless radiation that was fairly evenly distributed everywhere. But as the universe expanded and cooled, it gave rise to gradient shifts, or imbalances, in energy levels between different points in space, and this caused energy to flow from one place to another. In particular, the exertion of the gravitational force became increasingly decisive and eventually allowed the condensation of radiation into clumps of matter (galaxies, stars and planets). Each such shift, or concentration of energy, while generating form, simultaneously discharged some "noise" into the surrounding universe, in accordance with the Second Law. Thus the universe gives rise to form as it expands but at the expense of an overall increase in entropy.

This much seems compelling and contributes to Chaisson's overall thesis of cosmic evolution. Cosmic evolution is offered here as the "next big idea," following on from the cybernetic, catastrophe, chaos and complexity theories of recent decades. The book attempts (in an admittedly broad-brush manner) to synthesize a grand theory that unites cosmology with biology, or at least contemporary theory in these fields. The Darwinian (actually "Neo-Darwinian") model is scaled up to a cosmic level whereby processes of chance and determinism serve to account for the development of form, i.e. parts of the universe that are out of equilibrium with the rest. Much of "Cosmic Evolution" theory rests on the application of "open-system,

non equilibrium thermodynamics," which amounts to the study of energy flow in complex systems.

This is perhaps the most original, and for me the most exciting, emphasis in the book. Chaisson uses his considerable scientific muscle to construct a cosmic view based entirely on energy flow (thermodynamics). He offers the concept of "free energy rate density" as a quantifiable measure of the amount of energy flowing through a system in relation to its mass. The higher the rate of energy and the smaller the mass, the greater the free energy rate density and, for Chaisson, the greater the complexity of the system. What this means, in practical terms, is that although the sun turns over a huge amount of energy compared to a bird, in proportion to the sun's much larger mass the bird actually has a greater level of energy flow and, hence, a higher degree of complexity. Using this formula, the author charts an historical timeline - starting just after the Big Bang and ending today - of a universe traveling along a "time-arrow" in the direction of generally increasing complexity, in which islands of "order" emerge at the expense of an overall increase in entropy.

While I was able to follow much of the trajectory of Chaisson's argument, there were a couple of strands I seriously objected to. First, like other writers on the subject, the author globally conflates, on the one hand, the concepts of low-entropy, order, non-equilibrium, predictability and complexity and, on the other hand, their apparent opposites of high-entropy, disorder, equilibrium, randomness and simplicity. There have been many attempts to reinforce these oppositions, to objectively calibrate the orderliness of systems, and rid such measurements of any trace of human subjectivity. Yet all such attempts are, in my view, ultimately thwarted by the fact that order and disorder are relative, qualitative values placed upon the world by human perception, not intrinsic, absolute states of things in the world. At best, they can be defined probabilistically or statistically. Basic chaos theory has shown us that order and disorder lie on a continuum and are dependent for their appearance on viewing resolution.

Although Chaisson's adherence to an innate concept of order does not distract from his general thermodynamic argument he, like other scientific colleagues, is unable to let go of this fundamental assumption, especially at the outset of the book, where he describes a fairly standard model of thermodynamics. However, later on (p. 128) we are offered a more relativistic definition of order as "an absence of disorder" and even later (p. 133) he acknowledges the deficiencies of some of the most common methods used to define order - "information" and "negentropy." This sets the ground for the introduction of his own definition which, as we have described, uses energy through-put in relation to mass as an objective measure of complexity. While this approach yields some impressive and persuasive results, it also leads to the rather unconvincing conclusion that a Pentium II chip is more complex than the human brain (p. 202). Strangely, this is justified on the dubious grounds that the chip can do calculations faster than a brain, thus ignoring the magnitude of complexity variance between a linear digital processor and a hyper-parallel organic structure. This, I believe, exposes the limits of this latest attempt to objectively quantify order and complexity, powerful though the energy flow argument is in general.

Secondly, Chaisson's repeated sideswipes at mysticism and vitalism (pages 34, 40, 108, 122, 142, 217) are unnecessary. He seems to be unaware, for example, of the accord between his proposals and other widely held spiritual beliefs such as the "unity of the cosmos" (Tao) and the "eternal flow of energy" (Chi). For example, his thermodynamic analysis of the human head, revealing that the human

brain emits a similar amount of infrared radiation to that of a small light-bulb, is highly suggestive of the traditional depiction in art of the halos of the Buddha, Christ and Saints. His dismissal of vitalism (which is an extremely dirty word amongst today's biologists) is equally misplaced since the essence of his theory of life as a complex flow of organized energy is entirely sympathetic to the notion of an \square lan vital.

However, to be fair, one suspects that Chaisson is taking a somewhat defensive posture in anticipation of a backlash against his holism from some more reductionist colleagues. While the author is capable of explaining complex ideas with great clarity, the book's structure leads one to question who the target audience is. The reader who needs to be primed in the basics of the Second Law in the introduction is not the same reader who will be able to follow the pages of hieroglyphic formulae pertaining to cosmology in chapters one and two. Chaisson makes no apology for this, although one might suspect that, again, he is trying to head off criticism that his more speculative ideas may be taken as "unscientific" without a prior demonstration of appropriate mathematical rigor.

As a production, the volume is well supported by a summary of symbols used, a glossary, a comprehensive and annotated further reading list and a great bibliography for anyone interested in this field. The omission of Ren \square Thom's Structural Stability and Morphogenesis from this, however, was a little odd. For all this though, here is a book of broad vision, often free of scientific dogma, which makes a compelling case for interdisciplinary understanding and holism. I hope that the emphasis on energy flow will help to free us from the current orthodoxy of "informationism" and "mechanism" and open the way for a much more expansive and subtle view of existence.

Visualizations: The Nature Book of Art and Science

By Martin Kemp. Berkeley, CA and Los Angeles, CA: Univ. of California Press, 2000. 202 pp., illus., \$35.00. ISBN: 0-520-22352-7.

Reviewed by Wilfred Niels Arnold. E-mail: <warnold@kumc.edu>.

About 4 years ago, the editor of Nature, one of the world's best science periodicals, declared that the magazine would explore perceptions shared by scientists and artists in a weekly series of articles, under the heading "Science and image," with Martin Kemp as selector and essayist. In the winter of 1998, this feature assumed a monthly basis. It was a happy innovation, all told, and I have made a habit of looking for these pieces. Their attraction for me is based upon the power of the picture, the single-page format, the narrative and the alliterative title (e.g. "Vermeer's Vision," "Basically Brunelleschian," "Turner's Trinity"), in that order. Professor Kemp is very good at selecting appropriate and eye-catching images (both icons and rarities) and occasionally his analyses, albeit restricted to 500-600 words, include novel points of view. However, a major aspect to their success is surely the pleasant contrast between the feature and the remainder of the particular issue; others might even call it a pleasant relief from the normal fare. This does not detract one iota from the editorial concept nor the skills of the contributor.

Now, we have the book that includes all these pieces, up to August 1999. It is well-produced on quality paper and is, of course, ideal for the coffee table and for bedtime reading; rifling through the pages, one is again captivated by the images. Further inspection,

however, raises questions about the overall value of the vehicle. What worked beautifully as a weekly or monthly delectation for scientists has now become a collection - what is the goal? Is it the chance for readers to catch the ones that were missed in the journal? Is there any advantage to having free-standing originals juxtaposed with supposedly like items? I found myself reading a few each night, and now the lack of depth of the pieces began to creep up and one starts wondering why Kemp cannot write a little extra about this and that instead of being bound to the original format. I must admit that my reservation is probably influenced by the precedent of a related but much less successful collection, "The Art of the Journal of the American Medical Association," wherein 100 covers (photographs of the actual cover pages) and accompanying essays (very derivative and not updated) were bound together.

"Visualizations" has a selected bibliography, a fairly well organized index and a list of the original Nature articles, with corresponding volumes and page numbers, although one wonders if those with the book will need to go back to the journal. Such information might have been better placed in each chapter. A more serious concern is the lack of dimensions of the artworks. Such data are important both from scientific and artistic viewpoints. However, the wonderful pictures with many messages will capture the imaginations of readers, and those who labor at the interface of the hard sciences and the humanities will certainly welcome the appearance of this volume.

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ANNOUNCEMENTS

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< Casado and Cano Win Leonardo Award for Excellence >
Leonardo/ISAST is pleased to announce that the 2001 Leonardo Award for Excellence has been presented to multimedia artist Jose Carlos Casado and co-author Harkaitz Cano for their innovative article "Reality, Artificial Reproduction and Sexuality," published in Leonardo Vol. 33, No 5 (2000). The article discusses Casado's work La Caja de Pandora (Pandora's Box), in which digital video, 3-D animations and interactivity merge in a series of installations. The work also searches for the boundaries where belief starts, and asks what makes us accept what we see. (The abstract of the article follows below.)

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 Leonardo publisher Robert Maxwell. Leonardo/ISAST has continued the tradition of presenting the award.

Past recipients of the award include Rudolf Arnheim, Otto Piene, Charles Ames, Frieda Stahl, Donna Cox, George Gessert, Janet Saad-Cook, Alvin Curran, Karen O'Rourke and Hubert Duprat with Christian Besson.

For more information about the Leonardo Awards Program, contact Leonardo/ISAST, 425 Market Street, 2nd Floor, San Francisco, CA 94105, U.S.A. E-mail: <isast@sfsu.edu>. Web site: <<http://mitpress.mit.edu/Leonardo>>.

ABSTRACT

In this article, Multimedia artist Jose Carlos Casado, with the assistance of writer Harkaitz Cano, discusses his work in progress, La Caja de Pandora ("Pandora's Box"), in which digital video, 3D animations, and interactivity merge in a series of installations about "reality," artificial reproduction and sexuality. Casado's study searches for the boundaries where belief starts and asks what makes us accept what we see. It also investigates the new relationship between the mind and the body, and its relation to technologies.

The full article can be found in Leonardo's Digital Salon special issue (Vol. 33, No. 5, 2000)

ARTISTS' BIOGRAPHY

Jose Carlos Casado was born in 1971 in M#laga, Spain. He is a multimedia artist currently working in New York. He has done individual and group exhibitions in several cities in Spain, Italy, Finland, Britain and the U.S. His work has been awarded with several prizes, grants, and honorable mentions. The project La Caja de Pandora is funded by Fundaci-n la Caixa de Barcelona and Fundaci-n Picasso de M#laga, Spain. Harkaitz Cano is a novelist and a scriptwriter for radio and television. He also writes for several newspapers. His latest books are Telefono Kaiolatua (Ed. Irun, 1997), a collection of short stories, and a novel, Pasaia Blues (Ed. Zarautz, 1999)

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< Seventh International Conference on Virtual Systems and MultiMedia >

The International Society on Virtual Systems and MultiMedia and the Center for Design Visualization, University of California, Berkeley is pleased to announce the Seventh International Conference on Virtual Systems and MultiMedia in Berkeley, California, 25-27 October 2001. This year's conference theme is "ENHANCED REALITIES: Augmented and Unplugged."

At the crossroads of rapidly evolving wireless technologies and rich 3-D authoring tools, this conference explores the technologies and applications of enhanced environments, with a focus on the specific areas of: virtual heritage, immersive art and creative technology and virtual design (industrial, architectural and medical), plus a special session on emerging virtual entertainment directions.

More information can be found on the official conference website: <http://www.vsmm.org/vsmm2001>.

Further information is available in the WELCOME section of the VSMW website: <http://www.vsmm.org/vsmm2001/welcome.cfm>.

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| CORRECTIONS |
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In LEA Vol. 9:7, July 2001, David Tomas' s name was misspelled and the url of his website was incorrect: the correct url of David Tomas' s site is <http://www.cddc.vt.edu/encodedeye/>.

In LEA Vol. 9:7, July 2001, a talk by Stephen Jay Gould and Rosamond Purcell was listed as the keynote for the "ArtSci2001: Catalyst for Collaboration" November meeting. This talk was canceled. See <http://www.asci.org> for more details on the program.

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