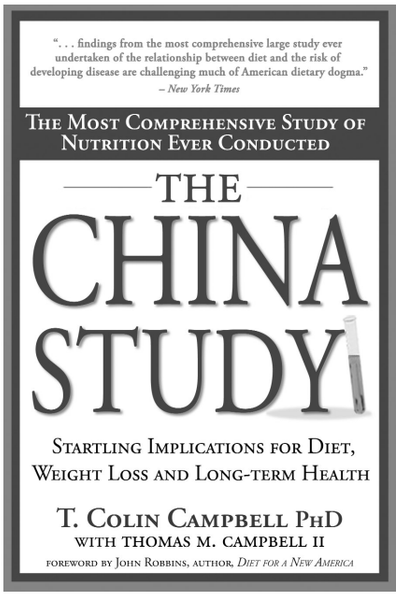
to inevitable oversights and omissions. A review of the index yields no mention of John Holland, the inventor of genetic algorithms; Marcos Novak and Gerhardt Schmitt, visionaries of virtual architecture; or even William Mitchell, who wrote the book's foreword. Given the book's scope, a comprehensive bibliography—rather than chapter notes—would also have been welcome to Kalay's readers. But these faults could be easily overcome in subsequent editions. Yehuda Kalay's book is a valuable contribution to the literature of architectural computation and an important marker in the field's still-evolving history.

The China Study

by T. Colin Campbell and Thomas M. Campbell. BenBella Books, Dallas, TX, U.S.A., 2005. 417 pp. Paper. ISBN: 1-932100-38-5.

Reviewed by Wilfred Niels Arnold, University of Kansas Medical Center, Kansas City, KS, U.S.A. E-mail: <warnold@kumc.edu>.

Any serious challenge to the "American Diet" is bound to elicit some academic, public and food industry opposition that will range from mild skepticism through agitated re-evaluation to bitter disdain. What makes this particular contribution exciting is that the authors anticipate resistant and hostile sources, sail on with escalating enthusiasm and furnish a working hypothesis that is valuable. In fact, the surprising data are difficult to interpret in any other way. Apart from the practicality of the subject, I recommend *The China Study* for its interdisciplinary approach and the integration of science, economics, politics and culture—themes for *Leonardo* readers.



The senior author is Professor Emeritus of Nutritional Biochemistry at Cornell University, Ithaca, New York. He has studied and written about food for more than 40 years, during which his initial and favorable regard for an American diet rich in animal protein (an almost universal opinion at the time) changed dramatically to the lonely position of alerting us to associations between animal protein intake and certain cancers and other diseases. One of the first pieces of experimental evidence along these lines came from the outcome of rats challenged with aflatoxin (of fungal origin) and then fed a constant calorie diet containing either 20% protein or 5% protein. (The protein was none other than casein, a major constituent of cow's milk.) Against all guesses at the time, the animals on 20% protein developed numerous cancerous foci in their livers, whereas the 5% protein group was virtually free of lesions. These observations seemed to echo the higher incidence of liver cancer (from aflatoxin-contaminated peanut butter) in the Philippines during the 1960s and 1970s among children from more affluent families (higher animal protein diets) as compared with those from poorer families.

The book's title hails from a 20-year research partnership among investigators at Cornell University, Oxford University and the Chinese Academy of Preventive Medicine to survey disease incidence and lifestyle factors in rural China and Taiwan. According to Campbell, one of the directors, "this project eventually produced [many] statistically significant associations between various dietary factors and disease." And "people who ate the most animal-based foods got the most chronic disease and people who ate the most plant-based foods were the healthiest and tended to avoid chronic disease" (p. 7).

Many of us will continue to find enthusiasm for the health benefits of low-calorie and low-fat diets, and for exercise. The Campbells do not deny this. The coincidence of higher fiber intake on the plant diet is also embraced, and the avoidance of xenobiotics will continue to find common support. But the most contentious issue in the book will be the claimed superiority of an adequate (underline "adequate") amount of plant protein versus the deleterious effect of animal protein. A restriction in amount, or a limitation in the rate, of synthesis of new protein in the organism seems to provide some incidental advantage in avoiding or ameliorating disease! This finding flies in the face of a better distribution of essential amino acids in animal proteins (for example, casein) compared with most (but not all) plant proteins. It may also evoke conniptions in some primary and secondary food industries.

The arguments within *The China Study* are at a level suitable for the "informed" reader, although I believe that a graded and more advanced development could have been added in some sections to good effect. The quantitative data (always a concern for a general audience) is straightforward and will be readily comprehended. The index would have benefited from more entries and a deliberate redundancy in terms. The volume is well produced and reasonably priced.

The authors are not shy about jousting with past, present and even anticipated critics. Faddish diets are deflated *en passant* by the Campbell sword. Readers without previous experience in nutritional research, or the nature of sponsorship by the National Institutes of Health and other agencies, or the manner in which U.S. federal recommendations (including school lunch programs) come to pass, will be a tad alarmed by chapters 13 through 18—and it is about time! This book will have an impact.

The Psychology of Art and the Evolution of the Conscious Brain

by Robert L. Solso. MIT Press, Cambridge, MA, U.S.A., 2003. 294 pp., illus. Trade. ISBN: 0-262-19484-8.

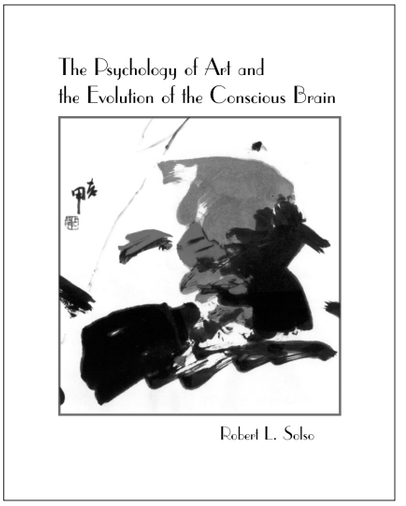
Reviewed by Robert Pepperell. E-mail: <pepperell@ntlworld.com>.

There has been a recent spate of titles in which eminent scientists of one sort or another have applied theories from their own field to the analysis of art (several have been reviewed in *Leonardo*). The art in question is almost invariably painting from the period prior to the second half of the last century, and mainly drawn from the corpus of the major European museums. So, we tend to get neurological accounts of Van Gogh or cognitive

accounts of Manet, and the like. To be fair to Robert Solso, *The Psychology of Art* does consider several examples of artifacts from Africa and Asia alongside those from Europe and North America, but otherwise it follows in much the same vein as others. It offers a "cognitive neuroscience account of aesthetics" based on a conventional evolutionary theory of mind (along the lines of "our perceptual systems evolved to find ripe berries and avoid tigers") while efficiently summarizing the current state of knowledge on perception, dealing with topics such as visual processing, cognition and illusion. All this is illustrated with frequent (although not always necessary) references to well-known paintings.

Solso's major theoretical contribution in the book is what he calls AWAREness, or "the five facets of consciousness." These include attention, wakefulness, architecture (the neural structures underpinning consciousness), recall and emotions, plus several other facets that combine to form a working definition of consciousness as "a state of attentional wakefulness in which one is immediately aware of his subjective sensations" (p. 27). His aim is to arrive at an objective scientific account of what is an essentially subjective experience by attempting to "reduce the variance in defining the subjective experience we call consciousness." "Variance" is a technical term from psychology referring to that which is controlled or minimized in experiments and is used here in order to create "an objective science of art" (p. 27). The notion of variance thus presented seems crucial to the methodology of Solso's project, and yet we are given little by way of further explanation; there are brief mentions (such as on p. 128) but no reference in the index, where the inquisitive reader would naturally look.

Much of the book is spent outlining a range of topics that gives empirical insights into the way we see and think, including neuroanatomy, the visual system, perceptual illusions and evolutionary biology. But while there is plenty of anatomical and empirical data to help us understand the primary processes of sight and perception, "the neurological trail goes cold," as Solso puts it, when we get to the bit that seems to matter—conscious experience itself. In order, then, to explain phenomena such as aesthetic experience, we are reduced to making "intelligent inferences" based largely on the



principles of evolutionary necessity (survival and reproduction), out of which the basic attributes of consciousness and aesthetic sensitivity somehow emerge. So, for example, our brute, primal reactions to objects of attraction like the smell of roses were initially tied to survival needs but later acquire "secondary valences" such that "things become 'beautiful', not just 'pleasing'. Food became 'delicious' more than simply consumable" (p. 255). Whether this forms the basis of an "objective science of art," or is just informed speculation, I found hard to judge.

As I was reviewing *The Psychology of Art*, I met an undergraduate art student who, by chance, was also reading the book. She had found it useful for its clear and well-illustrated presentation of topics and data from the contemporary psychology of perception. It is less useful, I feel, as a contribution to our theoretical understanding of art or its relationship to mind. Of the 100 or so bibliographic references in the book, only around 10 are books specifically on art, and several of these are general histories. What this fact reveals is a lack of depth and complexity in the author's appreciation of this aspect of his topic. There are moments where the book misleads (Léger is described as an "overtly abstract" artist [p. 250]), where the level of argument is reduced to truism ("Without light there would be no art, but without an eye to register the light there would still be no art" [p. 82]), or where the conclusions are simply banal ("Faces have dominated art, especially Western art" [p. 132]).

Naivety and banality are scarcely forgivable in a book purporting an academic study of art but perhaps understandable when the author is working well outside his field. What is less understandable, however, is the perpetuation of gross errors that have a bearing on the field in which the author has some specialist knowledge, namely the psychology of visual perception. For it has long been recognized that flat representations are quite unlike the real objects they represent, which is why we never mistake a photograph for what it depicts. Yet Solso asserts the most naive view of representation when he says:

> All art is representational . . . at least partly. In the case of "realist" art, as in illustrations by Norman Rockwell, a depicted object is made nearly identical with what the eye senses. Here a pumpkin looks like a pumpkin, a man like a man, a woman like a woman (p. 248).

"What! Small, square and flat?" as Picasso is reputed to have jibed when a stranger asked him why he did not paint women as they really were and produced a photograph of his wife for reference. Solso evidently has a soft spot for Rockwell, whose brand of "realism" he nevertheless recognizes as "somehow slightly 'idealised,'" which to judge by the two examples he presents is an epic understatement. The first is a mawkish and highly contrived assemblage of "faces of people from around the world" entitled *Do unto Others* (1961), and the second a G.I. homecoming scene featuring a serviceman peeling potatoes with his doting "Mom," entitled *Thanksgiving* (1945). (Solso chides art critics for not treating such works as "serious art.") The level of discussion here descends from the naive to the credulous, as the author abandons any semblance of scientific analysis or critical awareness: "This is Rockwell at his best. He shows people as they like to be seen and as we like to see them" (p. 249).

Given his irony-free enthusiasm for superficial Americana, it is no surprise that Solso is uncomfortable in the presence of contemporary art and criticism. His distaste for Lucien Freud's portrait of the Queen is telling: "How could such a picture be produced by such a talented artist?" (p. 158). So, despite its pretensions to universality, *The Psychology of Art* contains little to no analysis of recent art, with the exception perhaps of Humphrey Ocean, the rather conventional portraitist whose head Solso scanned in a recent highly publicized experiment to determine which parts of the artist's brain lit up when he drew. What we are left with

is a book that is useful in part for its accessible presentation of certain scientific ideas (although it is not the best of its kind) but that fails to carry any convincing thesis about the nature of art or our appreciation of it.

AUDIO CD

ELECTROTHERAPY

by Scott Smallwood. Deep Listening Publications, New York, NY, U.S.A., 2004. DL CD 29-2004.

Reviewed by Stefaan Van Ryssen, Hogeschool Gent, Jan Delvinlaan 115, 9000 Gent, Belgium. E-mail: <stefaan.vanryssen@pandora.be>.

Diathermy machines, ultraviolet ray oscillators, sectorless wimhurst machines and 5-inch induction coils hold a special attraction for historians of science, collectors and physicists, I suppose. Apparently, they also attracted Scott Smallwood's attention sufficiently to inspire him to make a CD full of processed noises from these machines.

In 13 tracks, with names like "renulife," "energex," "sunkraft" and "electraply," Scott Smallwood explores the sonoric space constituted by the noises of these machines. Ranging from monotonous clattering to noise, white noise and more noise, this space is quite limited, so the overall impression of the CD is one of a walk through a vast landscape of very similar white and pink noises and inconspicuous machine sounds. On second listening, the noises acquire some identity—it is unfortunate that Smallwood does not give any information on the sources of the sounds in each track—and a kind of music glimmers beneath the surface. And I think it really takes a third hearing to finally appreciate the diversity and intrinsic beauty of this sonorous space.

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

EXHIBITION

A MOMENT IN TIME: THE SARDARI LAL PARASHER RETROSPECTIVE

organized by the Sarnir Foundation and the Visual Arts Gallery, India Habitat Center, New Delhi, India. 1–13 August 2004. Web: <http://www.indiahabitat.org/vag/vag2k4/august2k4_f01.htm>.

Reviewed by Aparna Sharma. E-mail: <Aparna31S@netscape.net>.

A Moment in Time: The Sardari Lal Parasher Retrospective was a fortnight-long exhibition that brought together some of the rare works by one of modern India's significant visionaries, Sardari Lal Parasher (1904–1990). A series of discussions and panels throughout the event provided insight into the work of an artist and thinker sparsely mentioned in Indian art and history texts. Having participated in the most tumultuous times of Indian history (i.e. the independence struggle, partition and the subsequent massive nation-building efforts), Parasher speculated deeply on the idea of modernism and how modernity would be visualized in the Indian context. This project was indeed complex, and continues to be so; for the investment of India's cultural specificity cannot be accomplished without evoking the Indian philosophical thought that is embedded in all disciplines, including the arts. The points of contact and sharp variations between the tenets of modernism as it emerged in the West and the Indian tradition inject as much rigor as disputation into situating modernity within the Indian local.

Parasher's work is characterized by a sense of transition—one that resists resolution. His work emulates both the immediacies of the environment he encountered (having migrated to India upon partition and served as a commandant of a refugee camp in Punjab) and a timeless, spiritual, almost hypnotic quality. His *Partition Sketches,* the most moving series, reflects intensely the agonies that the end of the imperial era brought to the subcontinent. With great concern and dignity the sketches portray the silence, grace and resilience of those who migrated in the mass exodus. The rest of his works are also laden with an almost imperceptible sense of anxiety, felt in the vibrancy and tensions in the compositions.

The formal and material aspects of the work are subtly alluring. They are underpinned by a deep personal response to the Indian aesthetic tradition as enshrined in India's ancient texts. The curvilinear form and the motif of *shakti* (energy, the female goddess/principle) occur often. In one of his statements, Parasher termed his approach as *pranantarik* (*prana*, or life force, bound inwards): "It is individual, diffused . . . an upsurge of *prana shakti* or vital life force." One can hardly encapsulate the experience of participating in his work. And it is in precisely this way that the Indian tradition is invoked fully in Parasher, as the aesthetic experience is more than visual or pertinent only to the form or content of the work.

Responding to Parasher's thinking, the talks and seminars at the retrospective also delved into the question of modernity. They succeeded in injecting necessary complexity into the idea of modernity generally, and textuality more specifically. The first seminar, "Positing Modernity in India as a Question Mark," interrogated modernism as a universal and temporally consistent encounter. Author and art critic Gita Kapur succinctly emphasized ideological investigations for contextualizing modernity and extrapolating it from Western hegemonic discourses. The most active sites of contest, she noted, fall outside the West, where the experience of modernity has been disjunctive and dialogic for categories such as the subaltern. The moments of disjuncture, which are widely discussed within post-colonial studies, command possibilities for empowerment as they make occasions for "reinventing and reinscribing oneself in history and politics," according to Kapur.

The discussion following the panel concluded that modernity outside the European and North American nexus was variegated chronologically in comparison with the dominant West and within national formations where modernity has not been unified or blended either, thus hinting at the ignorance and universalizing and dom-