

they both address hypertext works of fiction and poetry thematically, structurally and the like; the reasoning for the third section makes sense since the first two essays look at hypertextual works that are not themselves literary but function as electronic environments in support of new media, and the third offers what could be described as a print-based hypertext. As such, they do follow Espen Aarseth's notion of cyber-text and ergodic reading (pp. 19–21).

So few books have emerged specifically about electronic literature that Van Looy and Baetens' book is a most welcome addition to scholarship in this area. Notable among the essays for clarity and quality of writing are Elisabeth Joyce's essay on *Patchwork Girl*, Raine Koskimaa's on *Califia*, Baetens's essay on *Eating Books* and Van Looy's on 253. The hypertext essay by Amerika, who remains one of the most interesting thinkers in electronic literature, stands out for its ideas and approach.

It would be remiss not to mention that the authors collapse hypertext with electronic literature and both of these with new media, for neither the introduction to the book nor their individual essays make it clear that (1) hypertext is but one type of electronic literature among many, (2) much electronic literature unites new media technologies with old media genres like fiction, poetry, drama and the essay and so remains kin to print-based literature, and (3) hypertext can occur in print media as well as new media. Additionally, the book does little to clear up the confusion surrounding the difference between net art and electronic literature. A case in point: Mark Amerika's *Grammatron*, evoked in the final essay of the book, was recently classified as net art at Ciberart 2004 but also appears as an example of electronic literature in the Electronic Literature Organization Directory.

Despite these issues, those looking for a text to use in the teaching of electronic literature at the graduate level will want to include Van Looy and Baetens's book on the list of required reading. Its message makes for a provocative discussion about approaches to analyzing new media texts.

NEUROLOGY OF THE ARTS: PAINTING, MUSIC, LITERATURE

edited by F. Clifford Rose. Imperial College Press, London, U.K., 2004. 452 pp., illus. Trade. ISBN: 1-86094-368-3.

Reviewed by Amy Ione, *The Diatropé Institute*, P.O. Box 6813, Santa Rosa, CA 95406-0813, U.S.A.
E-mail: <ione@diatropé.com>.

From the end of the 20th century a great deal of attention has focused on the brain. Many, as a result, have thought about whether neurology now might provide additional insight into the workings of the artistic mind. Specific cases accentuate this possibility. In the 1970s, for example, Oliver Sacks worked with an artist, Jonathan I., who became colorblind after his car was hit by a truck. Prior to the accident Mr. I. painted abstract, color-rich images and experienced colors when presented with musical tones. After the accident he lost his ability to see color and even lost the experience of color in response to sounds. Despite this, he continued to paint—in black-and-white, refusing to put aside the driving force of his life. More recently, while conducting a class critique in May 1997, the Berkeley artist and professor Katherine Sherwood was struck suddenly with a searing headache. Thirty seconds later, the right half of her body was paralyzed. A thin-walled collection of arteries in the left side of her brain had collapsed, and she suffered a massive stroke. Only 44 years old at the time, Sherwood was determined to return to painting and has done so. One of the most noteworthy aspects of Sherwood's story is the degree to which she, like Mr. I., was resolute in her determination to continue her artistic activities. In her case she did so despite finding that her painting hand was paralyzed; eventually she returned to teaching as well. Sherwood now claims that although her stroke erased some skills, it also led her to learn new ones, such as a new objectivity about her work.

These contemporary cases are recent additions to the literature connecting neurology and art. *Neurology and the Arts*, edited by F. Clifford Rose, brings many topics within this literature to light, combining them in a source book compiled from papers delivered at the 2001 Mansell Bequest Symposium of the Medical Society of London. These essays, I believe, offer great insight into case studies that have not received enough attention to date. Indeed, it is not easy to choose specific highlights from such a high-quality collection that reaches from anatomy to the neurological circumstances of historical artists such as da Vinci, Goya and van Gogh.

George K. York, a neurologist, sets the tone in the opening essay, where he notes that

thinking neurologically is a creative act in the same way that thinking artistically, musically or scientifically is creative. Neurologists may not be able to say where the artistic process is located in the brain, but they can at least have the pleasure of knowing what it is to be creative (p. 9).

These words not only encourage readers to think about creativity per se but also aid in taking the idea of creativity to another level when they come upon later essays that examine the art of well-known neurological figures. For example, Christopher Gardner-Thorpe's essay "The Art of Sir Charles Bell" points out that although best known as an anatomist, physiologist and neurologist, Bell's skills as an artist had a major impact on medicine and anatomical training in art. Indeed, his success in illustrating the body and offering medical descriptions communicated information that otherwise would have been hard to capture when he lived, before the advent of photography. In addition, Gardner-Thorpe's discussion of Bell's watercolor work offered more insight into his feeling for art, although I wish the reproductions had been in color.

Similarly intriguing are the range of ideas that point to neurological references and misconceptions often found within the literature. For example, it is often claimed that the disease depicted in Masaccio's *St. Peter Healing the Sick with His Shadow* (1426–1427) is polio. Yet this is one of several instances where the polio label is probably unlikely, since the first known epidemic of this disease dates to the 18th century. Similarly, there are so many stories surrounding van Gogh that separating the reality from the mythology is an art in itself. F. Clifford Rose's careful analysis of 10 possible diagnoses of van Gogh's aberrant behavior (e.g. schizophrenia, bipolar disorder, epilepsy, substance abuse, etc.) was quite illuminating. After reading through these summaries I felt better prepared to evaluate the various conclusions in relation to the artist's long list of maladies.

Perhaps the most noteworthy quality of the book is its style. Laypeople will find the articles accessible, while doctors and neurologists are likely to find the content fascinating. *Leonardo* readers will be particularly delighted with the balanced treatment the authors

bring to the subject matter. Almost without exception they reach far beyond the theoretical and metaphoric arguments that predominate in the humanities literature. "Normal and Pathological Gait as Inspiration for the Artist" is one of the many selections that will certainly engage *Leonardo* readers. Geneviève Aubert's research in this article was prompted by her interest in Arthur Van Gehuchten (1861–1914), a pioneer in the use of cinematography for documenting clinical neurology. She successfully integrates new works (such as the Belgium composer Renaud De Putter's interpretation of Van Gehuchten's neurological films) into the discussion of the topic.

Some material spoke to gaps in my own body of knowledge, a reaction that I am certain would be the same for other readers. For example, there are many sources that have suggested El Greco suffered from astigmatism (which would have caused his retinal images to be vertically narrower than they should be). The astigmatism argument has long been used to account for the elongation of his painted saints. Perceptual laboratory experiments, however, have documented the fallacy in this argument [1]. Until reading Rose's "The Neurology of the Arts: An Overview," I was unaware that there is an alternative scientific interpretation to El Greco's elongated style. Rose cites J.R. Heron's "El Greco and Muscular Dystrophy?" [2], wherein Heron argues that the distortions in El Greco's paintings might not be artistic license so much as deriving from the neuromuscular disorders of the inpatients of St. James Hospital, Toledo. The examples include the dystrophic facial muscles of San Sebastian, the hand wasting of Santiago el Mayor, the *pes cavus* of the angel in *The Crucifixion*, the peroneal muscular atrophy of St. John in *The Baptism of Christ* and the facioscapulo-humeral dystrophy in *Adoration of the Shepherds*.

Finally, even in the rare instances when an author became a bit technical, I found the articles engaging and useful. Some topics, such as epilepsy, are included in both the visual arts and literature sections. This gives the reader an opportunity to consider the condition from more than one perspective. Although I tend to focus on visual arts in my own work, I found the sections on literature and music equally compelling. The music section, for example, includes essays that cover the parts of the brain linked to perception and

memory, as well as *amusia* (a neurological deficit in music perception, recognition or production, attributable to a central cause), and the effect of music on intelligence and learning (the Mozart effect). The section on literature relates to Shakespeare, Dostoyevsky, Conan Doyle, James Joyce and the poetry of one of England's most famous neurologists, Henry Head. In summary, I highly recommend *Neurology of the Arts* to all who are looking for a greater understanding of how the brain and the nervous system work together. It is an accessible book, and one that a reader need not read from cover to cover to enjoy, although all of the contributions can be recommended.

References

1. S.M. Anstis, "Was El Greco Astigmatic?" *Leonardo* 35, No. 2 (2002) p. 208.
2. J.R. Heron, "El Greco and Muscular Dystrophy?" in *British Medical Journal II* (1979) p. 256.

ESSENTIAL SOURCES IN THE SCIENTIFIC STUDY OF CONSCIOUSNESS

edited by Bernard J. Baars, William P. Banks and James B. Newman. MIT Press, Cambridge, MA, U.S.A., 2003. 1,163 pp., illus. ISBN 0-262-52302-7.

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

Essential Sources in the Scientific Study of Consciousness is a massive compendium of articles and papers spanning some 50 years of scientific research into the nature and operation of human consciousness. Within the nearly 1,200 pages and almost 70 chapters a huge range of issues are given detailed discussion, including perceptual consciousness, attention, memory, internal data, unconsciousness and dreaming. All the papers are in some way significant to the developing history of consciousness studies, and have been drawn from some of the key journals in the field.

In contrast to many other books on this subject that take a philosophical line of inquiry, the papers here are almost exclusively empirical and experimental in nature, although a selection of more theoretical articles are included from contributors such as Gerald Edelman, Antonio Damasio and Bernard J. Baars. In fact, Baars, one of the editors and best known for his "global workspace" theory of con-

sciousness, is a prominent presence, providing not only the introductory text but also four other papers.

In his comprehensive introduction (which in itself would serve as a useful set text for a wider audience) Baars argues for consciousness to be treated as a variable rather than as an absolute state. By this he means that consciousness can be measured as being more or less present in relation to other states, such as between wakefulness and sleep, alertness and coma, new and habituated events, and so on. In this way, and in opposition to those who deny consciousness can be scientifically (that is, experimentally) studied at all, Baars and his colleagues propose that hard empirical data can be reliably gathered about the processes of consciousness, and thus contribute to the building of a coherent scientific theory of this most enigmatic of human attributes. The favored methodological approach seeks to correlate internal, subjective experiences with objective experimental techniques so that, as Baars says, "in modern science we are practicing a kind of verifiable phenomenology" (p. 8).

This volume would be a highly useful reference and source book for any serious scholar of the science of consciousness, which nowadays includes many from beyond the purely scientific community.

SHOOTING KENNEDY: JFK AND THE CULTURE OF IMAGES

by David M. Lubin. University of California Press, Berkeley, CA, U.S.A., 2003. 355 pp., illus. Trade. ISBN 0-520-22985-1.

Reviewed by Andrea Dahlberg. E-mail: <andrea.dahlberg@bakernet.com>.

In her recent essay on the photographs of Americans torturing prisoners at Abu Ghraib, Susan Sontag reminds us that for about the past 60 years photographs have played a central role in determining how conflicts are judged and remembered. Photographs now have a special role in constructing historical memory. We seem to be so aware of this today that we look for the iconic image that will define an event, as Sontag does in her essay by arguing that the Abu Ghraib photographs will become the defining images of the Iraq war. At the same time, there is increasing uncertainty as to what such images