I must admit when I first saw the title of this book, I was a little skeptical as to whether anything much “new” could be said about poetry and poetics, especially in respect to an analysis of how the latest neuroscience findings can be applied to the creative poetic impulse. However, the book covers a huge amount of ground and does discuss some new and important aspects of the nature of poetry creation.

New Guide to Poetry and Poetics has 19 chapters and an excellent index and extensive bibliography. It is, in one sense, a truncated history of modern poetry that brings to the reader’s attention some quite obscure writings and quotations from famous poets. Chapters are arranged so they discuss all aspects of poetry making and appreciation, starting with creative impulses and how poems begin, and assessing the relevance of the conscious and unconscious mind. It then moves on to imagination, poetic vision, madness, emotion and thought in poetry. These are followed by Chapter Nine, “Meaning in Poetry” (p. 147), which, in my view, is the most important chapter in the book. I discuss this chapter later on in this review. Then the book covers discussions on imagery, rhyme, rhythm, technique, and poetry and reality, and finishes with a chapter on how reading poetry engages and then connects the reader and the poet.

Aitchison set for himself a mammoth, ambitious task in writing this book. Given the scope and complexity of the issues involved, he has managed to achieve his goal fairly successfully, and the resultant book is an important addition to the literature. I have two criticisms of the book: The first, perhaps a subjective one, is that he concentrates too much on the traditional, famous “greats” of poetry—Wordsworth, Keats, Yates, Coleridge, Eliot and so on. The very little attention Aitchison pays to contemporary avant-garde, post-post-modernist poets gives the book a kind of “been there, done that” feel. Poets such as Charles Simic and Les Murray and poetry of non-English origin—Japanese haiku, for example—do not get a mention.

The second criticism is more important: The book purports to show how the latest findings in neuroscience, involving as they do both brain and mind, inform the process of poetics and how and why the poet produces a poem. This area is discussed fairly narrowly and superficially. Again a few of the popular gurus in this discipline—Damasio, Sacks and Dennett—are discussed, and I suspect other readers will gain no real in-depth insights into how the brain actually works in the process of artistic creation. For example, Aitchison does not mention the cholinergic-amnergic neurotransmitter system of the brain discovered by Hobson. I have done fairly extensive research in this area myself, and I believe Aitchison’s understanding of how the brain functions in creative mode would have benefited from a reading of my published papers in this regard [1]. My unpublished thesis “The Myth of the Freudian Unconscious and its Relationship with Surrealist Poetry” [2] would also have been quite an eye opener for Aitchison, especially as he discusses Freud in some detail and, to his credit, shows the absurdity of certain aspects of Freud’s doctrine regarding literature and creative writers.

In Chapter Nine, “Meaning in Poetry,” Aitchison engages his finest analytical powers in indicating just how absurd much of modern literary theory and theorists are. Aitchison writes: “Literary theorists’ fear of meaning and the language in which they express that fear, show their own incoherence”.

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[1] Review by Rob Harle. Email: <harle@robharle.com><http://www.mitpressjournals.org/doi/pdfplus/10.1162/LEON_r_00948>
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MATTER AND CONSCIOUSNESS, THIRD EDITION


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When I read the second edition of *Matter and Consciousness* (1988) sometime in the 1990s, consciousness was a blossoming field of study. There was much excitement around the topic and I was delighted to find a short and well-organized overview. The pivotal year was 1994, when the group now known as the Center for Consciousness Studies [1] at the University of Arizona organized their first conference on the subject, “Tucson I.” (The Toward a Science of Consciousness [TSC] conference in April 2014 celebrated 20 years since that inaugural event.) One outgrowth of “Tucson I” was the formation of the Association for the Scientific Study of Consciousness (ASSC). This group, which is still active today, saw itself as a forum for transdisciplinary research, comprised of researchers who were directed toward understanding the nature, function and underlying mechanisms of consciousness. Thus, ASSC aimed to encourage research on consciousness in cognitive science, neuroscience, philosophy and other relevant disciplines in the sciences and humanities. The *Journal of Consciousness Studies* also began publication in 1994. Moreover, these events were not happening within a vacuum. In the United States, for example, the growing interest in consciousness and cognitive studies was increasingly connected with the rapid expansion of brain research. Indeed, it was common to hear people associate the developing consciousness awareness with President George H.W. Bush’s call for The Decade of the Brain (1990–1999) “to enhance public awareness of the benefits to be derived from brain research” through “appropriate programs, ceremonies, and activities” [2].

Many have jumped onto the consciousness bandwagon in the 25 years since the second edition of *Matter and Consciousness* was published. Since consciousness is not my primary academic interest and I have not really kept up with all the ins and outs in the field, I was excited to see that an updated version of Paul Churchland’s 1988 *Matter and Consciousness* was available. The book had become a classic introductory text due to its clear, concise and readable format. It seemed like a perfect way to see what the field now looks like.

The new book retains the structure of previous editions. Since Churchland is a well-known philosopher and consciousness specialist, it is probably not surprising that he begins with a philosophical discussion. Here Churchland is concerned with traditional philosophy of mind topics as they relate to ideas about consciousness. These include: the Ontological (Mind-Body) Problem, the Semantical Problem, the Epistemological Problem, and the Methodological Problem. Sections on artificial intelligence and neuroscience follow, with a closing chapter on expanding our perspective. All of the philosophical chapters follow a similar pattern: Each chapter has sections providing overviews of each topic, followed by sub-topical sections that offer the pros and cons of each argument. There are short bibliographies after most sections, each with about five or six references. The chapters on artificial intelligence (AI) and neuroscience are also organized topically but, rather than offering pros and
cons, the discussions are expository in nature, with useful diagrams to enhance the text. Like the philosophical chapters, those on AI and neuroscience are divided into sections, with suggested readings at the end of most of the sections. The book also includes a five-page index.

As Churchland states in the short preface, he has added notations about key thought experiments that have tried to move the debate forward since the last edition was published. These additions are an important update in the book. They include more text on Thomas Nagel’s bat, entries about Frank Jackson’s neuroscientist Mary who studies colors but cannot see them, David Chalmers’s humanlike zombies and John Searle’s Chinese room. In addition, Churchland has also deleted some of the discussion on Behaviorism and there are a few paragraphs about Siri and AI, including a nice comparison of Weizenbaum’s Eliza and Siri. The sections on artificial intelligence and neuroscience now include new sections on Churchland’s work with 3D vision and color. There is also a new entry in the philosophy portion of the book in which he asks what it is to be conscious of anything at all. Overall, the newly added philosophical material has become so basic to the field that I can’t imagine a current treatment without these sections. The revisions in the AI and neuroscience sections seemed to be intended to support his inclination toward reductive and eliminative versions of materialism.

In many ways, however, and despite the word “consciousness” in the title, the book now feels as if it is more about philosophy of mind problems as they relate to cognition than consciousness itself. This is because Churchland retained much of the earlier text unchanged. Instructors can provide supplemental materials for topics that are missing, so I think the third edition is sufficient for classroom purposes. Unfortunately, while the second edition offered a nice overview of what was then a fledgling field, the third edition is not an update of the field and thus is less valuable for the general reader. I found it most disappointing that Churchland failed to provide a worthwhile overview of significant developments in the field in the past quarter century, and I believe that these omissions diminish the value of the book.

The book’s dated quality is most evident in the suggested readings sections. The bibliographic citations were hardly updated from those in the 1988 edition. Although there are about 100 citations, only eight are dated later than 1988. Of these, only two are by people outside of the Churchland family. One, The Conscious Mind by David Chalmers (1996), while a classic, is almost 20 years old. (Churchland’s citation is also inaccurate. Chalmers’ book was published by Oxford, not Cambridge [3].) I suppose S.M. Sherman’s 2005 article on “Thalamic Relays and Cortical Functioning” [4] should win some kind of prize for its inclusion, since it is from a thinker outside the Churchland family and less than 10 years old. In other words, despite all the publications on consciousness since 1988, key bibliographic suggestions are not included in this revision.

The question of why he neglected so much of the post-1988 research trajectory in terms of self-consciousness, the mind-body problems, etc., is never explained. I kept going back and forth in my mind as to whether this or the minimal re-writing mattered. I think it does matter in terms of a critical review, since the book no longer surveys work related to matter and consciousness in the same way. I do not know precisely what recent topics an introductory book on matter and consciousness should mention, but it does seem odd that research on phantom limbs and mirror neurons was not considered for inclusion, particularly since he claims that experimental results in neuroscience and cognitive science are important for a philosophy of mind. Another reason to explain the omissions is that he asserts in the preface that “the intellectual situation is now even more engaging and taut with controversy than it was thirty years ago, when the issues compelled me to write the first edition of this text” (p. viii). This reads like a throwaway line given how much I was able to identify as missing, even without being a consciousness aficionado. One omission that stood out is that, although both Daniel Dennett and John Searle publish frequently, and their older work is included in the bibliographies, none of their recent work is cited. Others who are omitted despite being important players in the field of consciousness today include Stuart Hameroff, Roger Penrose, Christof Koch, Giulio Tononi, Bernie Baars and David Eagleman.

Other limitations were also striking. It was amusing to see that sentences with phrases like “recent studies” or “as this book is written” are in paragraphs that are identical in the 1988 and 2013 editions. Because the book is intended as an introductory text, much of the material is generalized and superficial, so perhaps the failure to revise time frames doesn’t matter on that level. What does matter, at least to me as a reader, is when information that a revision should include is omitted, thus giving the readers a wrong impression of what information is
available currently. For example, even though Chalmers’ zombie thought experiment is added, there is no reference to his naturalistic dualism, an idea Chalmers put forth after the publication of the second edition of Matter and Consciousness. More specifically, at one point Churchland asks the reader a number of questions related to what dualism does not do and concludes that dualists cannot do any of the things he mentioned in his questions because no detailed theory has ever been formulated. He writes that this is an "empty space waiting for a genuine theory of mind to be put in" (p. 31). If Chalmers’ proposal of a naturalistic dualism (Chapter 4, The Conscious Mind, 1996) [5] does not fill this empty space, Churchland should explain why.

An overview at the end of the book, one that teased out some of the issues since 1988, would have sufficed if he didn’t want to do a more complete revision. As it stands now, 25 years after its initial publication, the text still ends with a chapter called “Expanding Our Perspective,” that ends with the same final paragraph found in the last edition, with the word undoubted added, as follows:

I would suggest, then, that the genuine arrival of a materialist kinematics and dynamics for psychological states and cognitive processes will constitute not a gloom in which our undoubted inner life is eclipsed or suppressed, but rather a dawning, in which its marvelous intricacies are finally revealed—even, if we apply ourselves, in self-conscious introspection (p. 282).

Let me end by saying that I absolutely have no objection to books that feature an author’s work rather than the field as a whole. Most books present an author’s research and/or point of view, rather than offering an exhaustive survey. My problem here is that Churchland’s revision seemed to compromise the book’s value. It is no longer a representative introductory text of the field of consciousness as a whole, although perhaps “philosophy of mind” is not consciousness. While the second edition did reflect philosophy and the inroads of cognitive science into philosophical studies at the end of the 20th century, the third edition does not reflect the lay of the land today. An analogy might be when politicians in the two-party political system of the United States switch parties. On these occasions, they almost always say that they didn’t leave their party because they changed; rather, the standard line is that they switched parties because their party changed and no longer represented their views. Churchland’s revision gives me the sense that he thinks current consciousness fashions are moving the field away from the kind of materialistic approach he favors. Indeed, as he writes in the preface, “the philosophical literature has become enriched... but, perhaps surprisingly, away from materialism, in one direction or another” (p. viii).

References
1 Center for Consciousness Studies, see: <www.consciousness.arizona.edu>. 
5 Chalmers [3].

THE ATLAS OF CLIMATE CHANGE:
MAPPING THE WORLD’S GREATEST CHALLENGE


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The current climate crisis appears as a difficult phenomenon for the layman to appreciate and as a mess to be socially and economically assessed by the expert observer. Some activists object that climate change is almost a matter for psychoanalysts rather than for climatologists [1]; it is, in fact, difficult to understand how a well-educated sapiens sapiens population is capable of continuing to ignore such evidence of pending troubles such as those due to the blowup of climate. Consider the first months of 2014: While California sees the looming impacts in the form of an epic drought, in Southern England and Wales residents are seeing an opposite but related effect, experiencing a total rainfall in the region in January 2014 amounting to more than three times the average. According to the world’s longest-running weather station (Radcliff Meteorological Station, Oxford University), more rain fell there in January 2014 than during any winter month since daily recording started in 1767.

But the pictogram of climate change has not yet entered the public imagery, and most people fail to appreciate the amplitude and endangerment of its extension. If it is impossible to react immediately and reverse the problems oppressing us, one can at least prepare a catalog of the troubles. This is the case of The Atlas of Climate Change, a textbook that illustrates in terms and numbers
the inventory of what is actually happening in our atmosphere and, as its immediate consequence, on water fluxes. Since its first edition was issued in 2006, the information gathered in the Atlas has constituted an insightful guide to analyze the problem of climate, an issue that is climbing higher up the global agenda. The here considered 2011 edition is separated into eight parts. After the introduction, the Atlas goes on to discuss the signs of the changing climate (parts I and II). It then catalogues climate change’s driving agents (Part III) and the expected consequences (Part IV). Then the Atlas provides possibilities of personal and collective actions (Part V), along with the international policies (Part VI) adopted to respond and, possibly, find solutions (Part VII) to the global challenge of climate. The authors also illustrate the latest developments in research to mitigate and adapt to changes under the auspices of the UN Framework Convention on Climate Change (UNFCCC).

The Atlas resumes general evidences and information resources in its last part (Part VIII) in the shape of tables offering easy-to-understand details on such data as total population, per capita income, human development index, greenhouse gas emissions and percentage of population at risk from sea-level rise on a country-by-country basis.

In addition to addressing the reduction of pollutant emissions and the need for adequate funding for climate change studies, inviting local and regional authorities to develop policies, and advocating the use of renewable energy sources, the Atlas also advocates conformist solutions to the issue, such as trading in carbon credits to share the burden of reducing emissions globally. But sections on health impacts, as well as those on agriculture and water security, are rather instructive and worrisome. The expectation in a warming world is an increased frequency of heat waves and greater moisture in the atmosphere leading to extreme precipitation events that are both intense and frequent. Flooding is expected to be the greatest threat for the immediate future, but a large number of “unsettled themes” that apply to the consequences the wet weather will have on communities remain. These consequences are not straightforwardly quantifiable in terms of vulnerable populations, or health and economic impacts. Addressing these unsettled themes calls for increasing the capacity of nations to cope with climatic hazards, raising public awareness and building a more resilient and healthy infrastructure. In this way, this booklet can be a great resource for climatologists, researchers, postgraduate and undergraduate students, and for anyone interested about the issue. The Atlas provides the technical data and also interprets them in a broader perspective, explaining the scientific terminology and inviting thoughts and actions to mitigate the complex effects of the path of climate change, whose final destination is so far unforeseeable.

**Reference**


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**CONSTRUCTING AN AVANT GARDE: ART IN BRAZIL, 1949–1979**


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To anyone unfamiliar with the interventions made by avant-garde artists into the art world and occasionally wider society during the middle of the 20th century, this volume delivers a very readable account. The artists, the objects they made and the discussions they generated are selected here in relation to the particular practices and contexts emergent in Brazil following the chaos of World War II (during which the country remained neutral). In keeping with a historiographical approach—rather than an art historical account—the author introduces an initial group of Brazilian artists attracted to ideas concerned with the nature of the object in art and the abstraction of space and time in two and three dimensions.

The mathematics, proportion and design with which an earlier group of artists were concerned was tempered later by philosophies generated by artists such as Duchamp and Mondrian, Brazilian writers such as Duarte, and the poets Ferreira Gullar and Augusto de Campos. From these convergences the author sets out to “construct a viewpoint that will enable a more productive appreciation of the highly original set of artistic concerns.”

This approach can be characterized through the title of a manifesto of the time: “From the Phenomenology of Composition to the Mathematics of Composition.” The *concrete* tradition in Brazilian visual art and poetry, a dynamic version of the more formal European constructivist movements, culminated in *Tropicalia*, a major show in 1956 at the Museum of...
Modern Art in Rio de Janeiro. The exhibition and associated events not only mapped differences between artists in São Paulo and Rio but also precipitated delineations between “constructivity” in art and architecture, and social activism movements that were responding to increasingly oppressive government.

This was a time when the world knew of Brazil through the dramatic shapes—a development of the abstraction traditions—being built in the Amazonian jungles and becoming the national capital Brasília. In São Paulo, the second city, a Biennale was instituted to bring the world to the party designed to celebrate Brazil’s new maturity. Gullar would condemn the direction the arts were taking and identify, instead, with the Popular Center of Culture (CPC) by engaging more positively with left-wing symbolic activism on the one hand and through the support of a group of younger artists developing the rhetorical strategies of conceptualism on the other. In part this response was brought on by the difficulties of living beneath the generals’ military coup brought on by the difficulties of living beneath the generals’ military coup.

The final chapter completes the “snapshot” of this period of Brazil’s avant-garde with a discussion of a “humiliminimalist” work entitled Southern Cross, a cubic centimeter of spliced pine and oak, displayed in an extremely large space. The metaphor refers to “the encounter between Jesuit missionaries and Tupi natives”; “the fire created by rubbing the two timbers,” and a “form of evocation of the divinity” of the native peoples corrupted by the colonizers. As is the case with much of the contemporary art today, meanings are not hidden, but individual research is required to extract intention from amongst material presence and the immaterial.

A cited champion of contemporary Brazilian art for many years from outside the country is Guy Brett, a curator and writer based in London, which is where the thesis on which the book is based was supervised. The author has restricted the discussion to a dozen or so main artists, thus enabling a new reader to the field to follow the arguments deployed. The book is not a narrative of development but a description of ideas and spatiality. The illustrations and design are excellent. There is no bibliography, but it does include copious and carefully edited footnotes from which sources in several languages can be traced.

THE SIXTH EXTINCTION

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By the end of this century somewhere between 20 and 50 percent of all species alive today will be gone. Nothing like this has happened since the dinosaurs disappeared some 66 million years ago. Many writers and scientists have raised warnings—Peter Matthiessen in Wildlife in America, E.O. Wilson in The Future of Life and Paul Shepard in Nature and Madness are notable examples—but the story needs to be retold because losses continue and above all because this time the asteroid is us.

In The Sixth Extinction, Elizabeth Kolbert lays out the evidence. Kolbert, who is a staff writer for The New Yorker, where she has done exemplary reporting on climate change, marshals facts from a multitude of sources and disciplines. She avoids generalities and abstractions and focuses, instead, on visits to bat caves, underwater CO2 vents, and other places where forces driving mass extinction can be easily observed. This part of the book is masterful and so well written that it is something of a page-turner, in spite of the extraordinarily grim subject matter. Her description of the apocalypse that overwhelmed the dinosaurs is nothing less than spectacular—the best I have ever read of that fantastical event. At the same time she maintains a certain emotional distance. Up to a point, this is reassuring. No need to freak out; her presentation seems to say we’re over here, and the event under examination is still somewhere over there.

This stance works for a while, but I doubt that anyone can consider mass extinction for long without emotion—denial and numbness included. Also questions intrude, urgent ones, such as: What am I to do? What is anyone to do? Is it too late? Scientists are not obliged to address questions like these, but popularizers can be. Kolbert avoids the questions and yet they become more and more pressing as the book proceeds, especially after she notes that some scientists think that we may be facing our own extinction. Most of us are adept at distancing ourselves from the extinction of other species, but our own is another matter.

With these concerns hovering over the narrative, Kolbert examines a few efforts to save endangered species. Among the projects are an attempt to artificially impregnate a Sumatran rhinoceros and the establishment of the Frozen Zoo, a cryogenics facility where samples of an extinct Hawaiian bird are stored in liquid nitrogen in the hope that someday the bird can be reconstituted. Kolbert’s descriptions are amusing and respectful, but at the same time she makes it clear that the projects are likely to fail. Even project leaders acknowledge that what they are doing is probably too little, too late.

Then why continue? Kolbert does not explore this question. The reader is left to wonder if participants persevere out of professional inertia. Are they like soldiers in The Iliad, battling under the sway of malignant and capricious gods? Could the scientists be bearing witness? Is The Sixth Extinction an act of witness? Is that our best option, too—to bear witness?

Despair is understandable. Anyone who thinks seriously about what is happening is almost certain to experience it. The Sixth Extinction is not a study of the psychology of extinction awareness and not a how-to book about saving the biosphere.
Kolbert aims to bring scientific findings to a mass audience and yet, by observing the conventions of hard science—when as a popularizer she does not need to and, at times, should not—and by emphasizing projects that seem very likely to fail, Kolbert conveys despair. She mentions only in passing hopeful attempts to avoid the worst, such as marine and nature reserves and legislation to protect wildlife. She says nothing about the work of organizations like the Nature Conservancy, the Sierra Club or radical environmentalism. These omissions, but above all her failure to address despair, lend it unnecessary strength. We cannot afford unexamined despair any more than we can afford false hopes.

Toward the end of *The Sixth Extinction* Kolbert raises a philosophical question: Who are we as a species? She considers the possibility that we may harbor a madness gene, DNA that causes suicidal destructiveness. This concept, as treated in the book, strikes me as melodramatic and something of a diversion even though it comes from Sante Paabo, a paleo-geneticist.

Another diversion (although it did not have to be) is Kolbert’s attempt to identify when the sixth extinction began. The disappearance of mega-fauna from Australia, the Americas and certain islands at about the time that Homo sapiens first entered them strongly suggests that species loss due to human activities began about 40,000 years ago. However, Kolbert does not adequately distinguish between the elimination of paleolithic megafauna, a phenomenon that involved perhaps a few score of species over the course of 30,000 years, and what is happening today, when the same number of species may be disappearing every few weeks. Thirty thousand years is not very long in evolutionary time but should not be conflated with a few weeks.

We have no evidence that ancient hunter-gatherers understood that they were driving species to extinction. Today we know very well what we are doing. In many cases we know exactly which of our activities are responsible for what losses. By inadequately distinguishing species loss caused by hunter-gatherers from wholesale devastation unleashed by industrial society, Kolbert deepens the sense that our species is by nature ruinously destructive.

Science is sublimely neutral with respect to outcomes. As a consequence, it allows for many possibilities, ranging from the destruction of all life, to sea changes in culture, to ecologically beneficial but humanly catastrphic events, such as timely pandemics or economic collapse. Science accommodates such possibilities and so do certain other strands within our culture, but not the greater part of society. What depth and breadth of change would be necessary to halt mass extinction? *The Sixth Extinction* may be most valuable for questions it raises, yet avoids.

**CONVERSATIONS ON COGNITIVE CULTURAL STUDIES: LANGUAGE, LANGUAGE, AND AESTHETICS**


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Cognitive studies and cultural studies are neither natural allies nor sister disciplines. To a certain extent, one could even say that the debate between these fields is one of the many contemporary forms of the “two cultures debate” launched by C.P. Snow in the 1950s. The following claim by Patrick Colm Hogan is almost a literal repetition of Snow’s famous regret that scientists are expected to know all about Shakespeare whereas no literary scholar is supposed to know the second law of thermodynamics:

The crucial point is that discursive and institutional constraints inhibit the degree to which criticism from any theoretical orientation can ignore history or culture. In contrast, there seem to be no constraints whatsoever on the degree to which criticism can ignore neuroscience, cognitive and affective research, developmental studies, group dynamics, or any other forms of understanding that contribute to our sense of cross-cultural and trans-historical commonality. In other words, it is simply not the case that cognitivists grossly ignore culture and history. But it is commonly the case that culturalists grossly ignore cognitivist and related research (p. 163).

Things have changed a lot, however, since the 1950s, the most important change being of course the dramatic decrease of influence and prestige of literary and cultural studies. The continuing lack of a common terminology, a badly understood notion of democracy in the field of interpretation (where anything continues to go), the futility of many scholarly debates, the narcissism of some of those working in the profession—I am paraphrasing here the words of the authors, but these are issues that they do not invent—bring Frederick Luis Aldama to the following, both logical and shockingly polemic, claim: “I would say that truth is what motivates the work of most scientists and some scholars in the humanities as well” (p. 185) [emphasis by the authors].
These “conversations” may be an attack against the flaws of some humanists, yet they are not at all a war-machine against the humanities. What Aldama and Hogan are looking for is a new way to start doing new forms of research that brings the best of both worlds together, while also fostering new insights within each of the respective disciplines. Despite their common passion for general, if not universal laws, Aldama and Hogan are not making a plea for the integration of the humanities in the newer cognitive studies (and therefore the vanishing of the former and the sole promotion of the latter), but for the humanist enhancing of cognitive research on the one hand and the cognitive deepening of humanist studies, currently in great need of a new and more solid basis, on the other hand.

It should be stressed that this book is not to be seen as the encounter between a cognitivist voice and a humanist voice, for both authors are committed cognitivist humanists. In this sense, the unity of the book is very strong. There are, however, also divergences between Aldama and Hogan, who frequently take different stances and positions on key matters in the field. For example: Aldama tends to put a stronger emphasis on narratology than Hogan; he also feels more sympathetic to the quest for a “unified” general science, whereas Hogan is more eager to open his theoretical work to history and context. Finally Aldama sees the (artistic) work as a “blueprint” that establishes a relationship between author, work and reader (listener, spectator) while Hogan’s approach underlines more the idea of simulation and the use of the work as a “building.”

However, these (important) differences do not involve fundamental tension or opposition between the two researchers. Hence, the perfectly well-chosen term of “conversations.” This book, indeed, is not a “dialogue” in the Socratic sense of the word: Such a project would suppose a certain dissymmetry between a person who A) knows (although claiming that he doesn’t know anything at all; we know the trick) and a person who B) doesn’t know yet (but who will learn how to learn and know thanks to the maieutic power of the dialogue). Nor is this book an “interview,” which would suppose a more or less lively and natural circulation of the word. What the book proposes, instead, is a thoroughly constructed and neatly organized overview of all major issues raised in today’s cognitive research, completed with a presentation of its most important and often most controversial topics. Both authors give their opinion on all of these debates, often in very long interventions, while reacting also to each other’s perspectives, nuances and queries. Thus this book becomes a kind of “personal and twice-told encyclopedia” that can be read from A to Z and also in any order whatsoever, starting from the key words listed in the detailed index. Actually, the best way to read this book is to read it in different ways and to continue to reuse it as a compendium. I can strongly recommend for instance the item “habituation,” which will lead the literary scholar to extremely fruitful insights on the practice of rereading.

Aldama and Hogan have not written a book of scientific vulgarization. Their conversations are often very technical approaches of cutting edge research, yet always presented with exceptional didactic talent and flair and an open eye to cultural complexity and diversity in the broadest sense of the word. One of the great qualities of the book in this regard is the authors’ familiarity with non-Western cultures (Indian culture for Hogan, Latin-American culture for Aldama). This openness is not a way of demonstrating a sense of political correctness (on which the authors have many thought-provoking things to say), but a way of putting into practice the values and questions of cultural studies for cognitive studies (and vice versa).

**ON LISTENING**


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As Marshall McLuhan noted, we have no earlids, no way to close our ears against the surrounding, ever-present and constant soundscape. We have, however, trained ourselves not to foreground the ever-present stream of aural broadband information. When we do listen, the dynamic shimmer of sounds can problematize discrete sources, and thus understanding. Additionally, there are places where we cannot listen.

Within this context, listening has become a popular subject of study by a broad swath of academics. On the other hand, reflexive listening takes place in a number of everyday settings. This new book, *On Listening*, edited by Angus Carlyle and Cathy Lane, seeks to bridge this gap, connect the scholarly with the experiential and extend our discourse about the act of listening.

Carlyle and Lane, co-directors of the Creative Research in Sound Arts Practice program at the University of the Arts in London, have collaborated previously on *In the Field: The Art of Field Recording* (reviewed July 2013). This time they have commissioned works from artists, activists, scholars and scientists (40 total) and curated their writings about listening into multidisciplinary perspectives ranging from anthropology to bioacoustics, to geography, to literature, to community activism, to sociology, to religion, to philosophy, to art history, to conflict mediation and to sonic arts including music, field recording and ethnomusicology. Each contribution explores how skilled listening can mediate new relationships with our physical environment and the people...
and other species with which it is shared.

On Listening is divided into four sections. Carlyle and Lane admit this division is arbitrary but capable of revealing commonalities, of making connections across disciplines, geographies and methodologies and, as a result, of increasing apprehension. Listening Perspectives, the first section, assembles a number of perspectives and meanings linked by the common idea that listening becomes active, creative, dedicated and passionate. The second section, Listening Spaces, discusses eventscapes where “either one species or one specialized area of activity dominates, often making it difficult for us to access the acoustic space” (p. 55). Such spaces include personal point of view while riding a bicycle, a Protestant cemetery in Rome, the airspace above a secret testing facility in the Mojave Desert, and underwater. A common theme is what constitutes ideal listening environments and the knowledge to which listening can give rise.

The essays collected in Listening Spaces, the third section, speaks to a range of technical and conceptual devices, acting like McLuhan’s extended ganglia, as probes sent into the world, designed to stream information back to the listener.

The final section, Listening to Self and Others, explores the nature of a listener and effective listening in a variety of contexts. In each essay, the author struggles to express the essential nature of listening even while reminding us that careful listening is essential for the moral, spiritual and intellectual welfare of both individuals and societies. The common theme: Listening requires full concentration and engagement. Listening is “an attitude, a state of mind, a way of being, something that happens inside as well as coming from the outside” (pp. 153–154).

In the end, this collection of curated essays leads the reader (listener?) to realize that listening can reveal a parallel reality. This reality of listening can lead to immersion, and over time to meditative introspection. The listener is located at the center of this process, “offering an immediate connection to place and its inhabitants, sacred, and profane.”

**TRIPLE ENTENDRE: FURNITURE MUSIC, MUZAK, MUZAK-PLUS**


Reviewed by Brian Reffin Smith, Collège de Pataphysique, Paris, France.

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We love to place things along continua, forcing multi-dimensional phenomena onto a straight line that is probably compartmentalized into a mere handful of categories we can get a grip on. Nowhere is this more so than with the arts. In the case of music, whose categories seem designed for mystification, it’s not easy, but we strain to do it. From John Cage’s silence to the self-parody of heavy metal, from the wondrous Portsmouth Sinfonia to the UNESCO designated, intangible world heritage of Sardinian throat singing, we have ways of explaining why it is music, where it is along the line and hence, of course, of commodifying it.

Then along comes a transgression. Worse, one that has been with us since the 1940s. No, not crooning, but Muzak from the Muzak Corporation. Shock! Horror! Degradation! Muzak was to music what Tracey Emin’s bed is to the Daily Mail’s art. What a relief, then, that John Cage added edgy, near-tangible heritage value to the very concept of it, by inventing Muzak-Plus. Phew! Muzak is thus able to be pinned to its reserved place—Now we see it!—along a line starting—Perhaps! Who knows!—with Erik Satie’s “furniture music” and passing via Cage towards ambient music, iPad drone and just, like, 8-bit post-video-game wave-table looping madness!

The above is not only, I assert, true, but also useful, rich and extremely interesting. One cannot repeat too often that the sideways mapping of discourse from one domain to another is deeply satisfying and illuminating, irredundant holism. And of course the ideas treated in this study could be couched in terms of, say, found text, Situationist strolling, seaside postcards or computer art. *Triple Entendre*, by Hervé Vanel, is partly about a music designed not to be listened to but to enhance productivity, change or reinforce moods—a trademarked instrument of social engineering. Not to be listened to, but always heard. You can blink, but you don’t have earlids [1]. The title is deserving of unraveling.

In full, the title of the book reads *Triple Entendre: Furniture Music, Muzak, Muzak-Plus*; it offers three ways of hearing. Then, of course, there is the pun on “double entendre,” where one utterance can conceal another, and one can have it mean or be understood both ways, if you know what I mean. As Vanel must know, the phrase “double entendre” is not to be found in the French section of any *dictionnaire bilingue*, but only in the English sections, where it is explained to the somewhat mystified French that it means *double entente*, one more cordial false friend. So a close reading of the title reveals it...
as a self-referential triple entende/entente/pun, acting perhaps as a metaphor for what is to be found inside. And what is inside is fascinating, well-written and often quite funny, especially the appalling promotional material from Muzak, who, to give them their due, were entirely honest: “Muzak is . . . a management tool.” The text is an interdisciplinary analysis of doing and making, theorizing and demystifying, not only the music but also the broader cultural, historical, economic and philosophical contexts and implications of its subject.

The book is centrally a study of Cage’s Muzak-Plus, but this has to discuss Muzak, and its semantic links to Satie’s musique d’ameublement, described here as a “watermark” in Cage’s work. And as always, in discussing one thing, the perhaps disgusting use of sound, mindlessly omnipresent, to make people work harder and “reduce hidden payroll costs,” we also have to attend to its opposite: participation in music. The sublime and ridiculous often go hand in hand towards some meta-level from which you can see or invent new stuff. Just what is the relationship and what are the differences and similarities between despicable Muzak and Cage’s by now near-mainstream contribution? Along what lines do we judge them? Are we elitist snobs, indiscriminately omnivorous generalists (as a deliberate political or self-comforting act?) or meta-theorists of everything? What are the equivalents of furniture music, Muzak and Muzak-Plus, in fields such as art, writing, TV or design? Are we dealing with art as life, or life as art, and is there a difference beyond one of intention? Is it revolution or utter stasis? Are we doing it, making it, stopping it or “in it”? Should we call a musicologist or the police?

If you have any interest in the relation between what is and what is not (what is/is not music, creativity, but much more than that), if the boundaries between theory and public practice are too rigid for you (or too fuzzy to see) or if you don’t know much about music but know what you like, then you will greatly profit from reading this book, as your surprised and delighted reviewer did.

**Note**

1. R. Murray Schafer makes this point in “Open Ears,” where he opens with the line, “We have no ear lids.” Presented at Acoustic Ecology, Melbourne, Australia, March 2003.

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**PAPER KNOWLEDGE: TOWARD A MEDIA HISTORY OF DOCUMENTS**


Reviewed by Jan Baetens. Email: <jan.baetens@arts.kuleuven.be>.

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A new book by media historian Lisa Gitelman is always a sensation, and this one is no exception. Paper Knowledge can be read as a companion volume to “Raw Data” Is an Oxymoron (MIT, 2013) [1], a volume Gitelman recently edited, but also as the complete, book-length version of an article she contributed to the much remarked programmatic collection by N. Katherine Hayles and Jessica Pressman, Comparative Textual Media (Minnesota, 2013) [2]. At the crossroads of media history, cultural history, science and technology studies, and cultural and literary theory, Paper Knowledge is an illuminating discovery journey through the history of the document, which Gitelman defines as a special vernacular genre defined by the “show-know function” as an “epistemic practice: the kind of knowing that is all wrapped up with showing and showing wrapped up with knowing” (p. 1).

The first keyword in the definition of document is “genre,” which Gitelman distinguishes from medium on the one hand and format on the other hand. If “medium” refers to the material properties of the channel or host medium of the document, while “format” concerns the specific rules (content, style, presentation, circulation, etc.) a document has to obey in most cases, it is clear that no study of the document as a genre (i.e. a way of identifying and categorizing cultural productions) is possible that is not also a medium history, as well as a history of its permanently shifting formats. Thanks to the triad medium-genre-format, Gitelman benefits from a very broad yet extremely supple instrument to tackle the notion of document. The efficient combination of the utmost abstraction of “the” document as a genre and the fine-mazed close reading of specific documents and documentary practices constitute one of the most challenging and innovative aspects of Gitelman’s approach. The author manages to bridge the gap between the claims of a generic approach on the one hand and the seductions of four well-chosen case studies on the other hand extremely well. As a reader, one never has the impression that Gitelman is stretching the limits of the case studies in order to produce a universal definition of the genre. Nor does one experience the attempt to produce a general history of the genre as reducing the space that is given to the irreducible specific details that can be expected from the “thick reading” of the examples.

A second keyword is “vernacular.” Gitelman does not focus on the
history of the document as the history of the Great Documents (for instance the Declaration of Independence, the 1886 Universal Copyright Convention or the Hayes Code of 1930, to give some just examples almost chosen at random) in her book. What she is interested in is the type of document that is so ubiquitous that it has become almost invisible, although its social, cultural, political and ideological implications are dramatically strong and all-intruding. All case studies in the book have to do with the ways in which industrial societies actually use techniques to reproduce documents (and one sees immediately how this perspective brings in elements of transmediality and cross-formatting). In the four chapters of the book, Gitelman studies commercial or “job-printing” in the late 19th century, the typescript books of the 1930s, the Xerox machine and finally today’s PDF. These objects and practices are not only vernacular in the sense that Gitelman’s study leads us from the world of High Culture and Great Learning to the workplace, the workshop, the office, the garage, the basement and the manifold places where public and private spaces are intertwined. They are also vernacular in the sense that the author pays attention to objects, people, machines and institutions that have been forgotten or that often stay under the radar of traditional media history and theory. (New media historians are now redisclosing these for the great joy and benefit of the public. Philosopher Siegfried Zielinski and media archeologist Erkki Huhtamo [3] come easily to mind.)

As already stated, the third keyword, which may resume all the other ones, is “history.” What kind of historical approach is Gitelman defending as well as illustrating? First of all, it should be underlined that the ambitions of the book, which takes as its starting point the post–Civil War era and as its ending point our current fascination with fan culture, are not to offer a complete historical overview of the document as a genre. Gitelman explicitly rejects any kind of global or universal reading of the document, which often reduces the rich fabric of medium, genre and format to sweeping overgeneralizations (themselves frequently narrowed down to para-Hegelian schemes: orality, the Gutenberg galaxy, digital culture). Variations of this scheme can be found in the work of many great authors (McLuhan, of course, but also Kittler and Debray, for instance). Necessary and useful as these generalizations may be, they cannot do justice to the cultural density and complexity of media history. By insisting on the reproduction of the document, Gitelman raises fundamental issues on access and the way in which the uses of documents define and redefine the relationships between producers and consumers. In her approach, job printing, for instance, cannot be separated from the invention of small letterpress machines that broke the monopoly of the traditional printer (and that redefined at the same time the old distinction between manuscript and print).

In the same vein, typescript books are studied against the background of the microfilm revolution and the introduction of fair use reappropriation of copyrighted material, while the Xerox machine is presented as a wonderful example, the mechanisms of which are well known to all those familiar with science and technology studies (television and telephone would be similar cases), of a technology that ends up being used in ways that are quite distinct from those that its inventors had in mind and whose impact can only become clear when reframed in its historical context (in this case the Cold War and debates on secrecy and espionage).

In all cases, Gitelman offers a meticulous reconstruction of the historical context of the media changes she foregrounds, and in many regards this book is a real Wanderkammer. At the same time, however, the author always scrutinizes the past in order to show what it can mean for us today. Here the political dimension of the book comes to the fore, for Paper Knowledge is also a passionate discussion of what knowing and showing are about, namely the possibility to produce, share and debate knowledge in a society to open this knowledge to all of its members. Thanks to technology, this possibility is no longer determined by those who know and show and those who don’t.

References and Notes


THE AESTHETIC BRAIN: HOW WE EVOLVED TO DESIRE BEAUTY AND ENJOY ART

Reviewed by Amy Ione, Director, The Diatrope Institute, Berkeley, CA. Email: <ione@diatrope.com>.

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I am among those who find the subject of art and the brain fascinating, yet I have never warmed to the field of neuroaesthetics. While it is true that art is ineluctably a function of the brain, I find that, in order to reduce art to modalities that scientific ways of neuroaesthetic investigations can address, scientists inevitably seem to remove key aspects of art from their equations. The primary issue I have with wrapping my brain around the neuroaesthetic approach is that I don’t think art is a “problem” we can/ will resolve from a neurobiological perspective—and I think this is a
good thing! That said, I do think science and art in general, and scientists and artists in particular, have something to contribute to our conversations on art and the brain. Given this, I’m glad people are talking across disciplinary lines.

Lately it seems the topic has really struck a chord, with everyone wanting to contribute a new theory, methodology or art project. Anjan Chatterjee’s new book, The Aesthetic Brain: How We Evolved to Desire Beauty and Enjoy Art, is one of the recent books in the genre. Like many of its siblings from the science/philosophy side of the spectrum, Chatterjee’s contribution to the idiom offers much theoretical content based on a large body of science and social science research. Essentially Chatterjee believes “the brain will help us understand the how of aesthetics, and frameworks from evolutionary psychology will help us understand the why of aesthetics” (p. xv). His underlying assumption is that beauty is integral to how most people think about aesthetics, and thus the book is built around the idea that beauty, pleasure and art are connected. Still, although art is highlighted in the subtitle, The Aesthetic Brain is about aesthetics rather than art. Chatterjee writes:

“Aesthetics and art are not the same. They are overlapping but different ideas. Aesthetics, as generally understood, focuses on properties of objects and our emotional responses to those properties. The object need not be art per se. . . . Aesthetics typically relates to the continuum of beauty to ugly. . . . Art can and usually does have aesthetic properties. However, the artist’s intentions, the art work’s place in history, and its political and social dimension are also relevant to art. These aspects fall outside of what we might regard as “aesthetic” (p. 115).”

Chatterjee divides The Aesthetic Brain into three sections: Beauty, Pleasure, and Art. Each section is comprised of many short chapters that serve to ask and answer specific questions. The beauty and pleasure sections draw on research studies that are intended to show that we have instincts for beauty and pleasure. For example, his assumption is that most people like art that is beautiful and he presents experimental research to support that we like beauty, symmetry and so on. Next, in order to establish that we have a pleasure instinct, he looks at human behavior in terms of pleasure, offering anecdotes and studies that support the idea that the parts of the human brain involved in positive reinforcement of behavior are also involved in the sensation of pleasure.

Art is the final section. Much of the discussion about art seemed rather abstract and quite unlike Chatterjee’s essay on Katherine Sherwood’s work for her Golgi’s Door exhibition [1], which revealed more a person forming a relationship with a body of work on its own terms. The Aesthetic Brain, by contrast, offers a philosophically reasoned argument—lively, but largely detached from both the people who make art and the essential language(s) of art. Nonetheless, I do believe this book could help move our cross-disciplinary conversations in a worthwhile direction because Chatterjee is not intent on building yet another theoretical structure outlining how we need to study art and the brain. Instead, he defers. Rather than jamming art into a model, he allows the book to remain an invitation for us to have a broader discussion. To my mind, this conclusion allowed him to land in something like “Chatterjee looks to see if it can form a framework broad enough to accommodate all art: the art we know from Paleolithic times to the eclectic variety surrounding us today. The problems he finds are that different people emphasize the elements of the triad differently and that “contemporary art does pose a special challenge for scientists. Thus the challenge lies in figuring out if science can deal with meaning in art and whether this challenge sets inherent limits on the reach of science” (p. xxi). Chatterjee examines the problems art poses by asking if art is an instinct or a cultural by-product of life. He also grapples with ways the scientific design might address contextual meaning embedded in
artworks as well as recent conceptual and non-aesthetic trends that defy the “simplicity” of simple static paintings and sculptures. As I noted above, he decides we cannot.

Chatterjee, who is a neurologist, does overlook some recent neuroscientific research on art and our sensory experience. Some of this work would have allowed him to demonstrate more concretely that art is ultimately as nuanced and complicated as our neural machinery itself. Art and the Senses by Francesca Bacci and David Melcher [2] would have given him a wealth of concrete quantitative and qualitative studies by artists, scientists and humanists. The Age of Art: The Quest to Understand the Unconscious in Art, Mind and Brain by Eric Kandel [3], a recipient of the 2000 Nobel Prize in Physiology or Medicine, included a full chapter titled “The Biological Response to Beauty and Ugliness in Art.” Kandel integrates the work of the Viennese artists and scientists at the turn of 20th century with several topics Chatterjee considers (e.g. pleasure and sex, art that isn’t strikingly beautiful, etc.). Moreover, Kandel’s exploration of the expressive art of Klimt, Kokoschka and Schiele, artists who many say challenged the aesthetic focus on beauty, would have offered an excellent and tangible counterpoint in the discussion. Chatterjee, by way of contrast, seemed to lose sight of actual artworks when looking at much of the aesthetic design space. Gerald Edelman’s Neural Darwinism, which synchs nicely with Chatterjee’s comments on brain plasticity, also seemed like a good fit for the discussion [4].

Another direction that could have been included is Charles Bell’s work, particularly since Bell had an interest in aesthetics as both an artist and neuroscientist. Bell (1774–1842) was a Scottish anatomist, surgeon, physiologist and artist who worked before the invention of photography. Bell not only studied and taught art [5], he also made major contributions to neuroscience. A larger point here is that Bell’s theories of emotion offer an evolutionary counterpoint to current views. Although his theories did not stand the test of time empirically, Bell had a tremendous influence on others. For example, Charles Darwin’s The Expression of Emotions in Animals and Man, a book Chatterjee references, drew significantly on Bell’s work. Ironically, Chatterjee references Paul Ekman’s work related to this Darwin book, but not Ekman’s collaborative work with Prodger exploring Darwin’s use of art in developing his theories about emotion [6]. We now know that Bell’s theoretical views incorporated many of the racial and theological biases of the 19th century and his errors alert us to the need to think about how we build our prejudices into our theories.

I also think The Aesthetic Brain would have been stronger if Chatterjee more effectively communicated points of overlap and dissonance between art and aesthetics. To my mind, images of artwork could have helped him frame his thinking and the scientific literature. Indeed, it is striking that the array of research he offers related to beauty and pleasure includes many anecdotes but strikingly little art, and few visuals. There are only three images in the book. One is a line showing the proportions of the golden section. One is a picture of a golden section. The third is a rather dense image of the pleasure and reward centers of the brain, which seemed quite out of place as a singleton brain image, given how little it offered in the scheme of things. Many art-related examples came to mind as I read, and I think having images in the volume would have had added appeal to readers from the arts.

Reading the section on beauty, I thought about Leonardo da Vinci’s (1452–1519) grotesque drawings of human heads and Charles Bell’s comment on them in The Anatomy and Philosophy of Expression as Connected with the Fine Arts:

[Leonardo] searched for ugliness. If he saw an uncommon face,—if it were a caricature of expression,—he would follow it, and contrive to look at the individual in all aspects. He would pursue a curiosity of this kind for a whole day, until he was able to go home and draw it. We have here the practical result of the theory, which is, to study the deformities, in order to learn to avoid them; and certainly the effect was admirable, since we know, as his biographer has written, that his painting of beauty raised love in all beholders [7].

Édouard Manet (1832–1883) is another artist who could have helped tie threads together and highlight various conundrums. Henri Matisse wrote in 1932, for the centenary of Édouard Manet’s birth, that Manet was “the first painter who immediately translated his sensations, thereby liberating his instinct” [8]. We see this in the exquisitely rendered still life paintings of flowers he did during the last months of his life, as he lay dying. Manet had been ill for several years and unable to paint. Upon receiving bouquets from friends who came to visit, he decided that he wanted to paint them all, and he nearly did. From an aesthetics perspective, it is easy to see beauty in these renditions. Still, although brain studies could help to analyze the beauty people perceive in these paintings, they would add nothing meaningful on their own and would even skew the pathos within this body of work. This kind of example would have concretely reinforced Chatterjee’s point that meaning in art poses a problem to scientific study. (Including the story behind the paintings in an experimental design might show activation of a pathos center, which would indeed be an interesting way to study the brain.)

Artworks might also have helped him with contextual nuances in other ways. Food, for example, was a topic discussed in the pleasure section. Even if we are unaware of the art historical canons view that Diego Velázquez (1599–1660) liked to use working-class characters in his work, we can, for example, relish...
his talent in visually capturing and conveying the smell of eggs cooking in his wonderful painting, *Old Woman Frying Eggs* (1618). Similarly, why do Wayne Thiebaud’s cakes look delicious [9] while Cézanne’s apples, although visually tantalizing due to how he handled the paint, appear to carry little “taste” information to the brain? Chatterjee’s discussion of money also brought many works to mind. I immediately thought of the contrast between Quentin Matsys’s (Dutch, 1465/1466–1530) painting *The Moneylender and His Wife* (1514), which condemns avarice and exalts honesty, and 200 One Dollar Bills by Andy Warhol, a 1962 work that was sold by Sotheby’s for $43,762,500 in 2009 [10]. But, of course, my larger point is that I like looking at art and I also think a large array of artworks would have helped communicate the core ideas of the book and how why art challenges a grand theory of neuroaesthetics.

*The Aesthetic Brain*, although quite comprehensive in some ways, also brings to mind that one book cannot cover everything. Many kinds of art, particularly those the standard art canon has difficulty coming to terms with, were very much in the background even within the book’s broad definitional space. Perhaps this is because aesthetics theories tend to deal more with objects than praxis? In this case, Chatterjee did not consider how “embodiment” approaches are challenging the “spectacle” or social, textual preferences advocated in the elitist circles of critics like Blake Gopnik, a commentator Chatterjee mentions frequently. Collaborative efforts to research the senses today likewise seem to fall outside of Chatterjee’s scope. Marcus Novak’s multimodal data exploration conceived with the Allosphere, *Allobrain* [11], comes to mind in both instances. This work presents a virtual world consisting of isosurfaces of brain blood density drawn from fMRI imaging data in an attempt to provide the experience of being inside a brain as architectural space. Another example is media artist Jill Scott’s neuromedia sculpture “The Electric Retina,” created during her residency at the Neurosciences Lab University in Zürich, Switzerland [12].

Prototyping and model-making are similarly absent, and I believe *Leonardo* readers would think these topics belong in a discussion of “the properties of objects and our emotional responses to those properties” (p. 115), particularly since much of this work has a sensory component (and a long historical trajectory). Leonardo da Vinci’s unpublished studies of the brain, which were more advanced than what science was doing at the time, were perhaps a precursor of this kind of work today. His 16th-century studies, based on wax castings of cattle ventricles, produced a picture of the brain far beyond what science had “seen” at that point because scientific dissections of the era were hampered by the inability to preserve the form of the brain when studying it. Scientists of that time rapidly sliced through important information hoping to learn as much as possible before the tissue deteriorated. Leonardo, by contrast, used his artistic training to make a model of the organ so as to study its properties.

In summary, the analyses of beauty, pleasure and art in *The Aesthetic Brain* are spelled out through various psychological and neuroscientific experiments, as well as evolutionary and anthropological theories that directly or indirectly measure aspects of beauty, pleasure and art. Overall, the discussion parallels art rather than addressing it directly. Chatterjee’s style will appeal to academics and generalists who are interested in aesthetic theory. Those interested in art may enjoy its range. He concludes by noting that there is no neural network dedicated to aesthetics and by asking whether we have an instinct for art or whether art is a cultural by-product of life. The challenging issue he grapples with in building his scientific design is how we embed the contextual meaning of artworks as well as the recent conceptual and non-aesthetic trends that defy the “simplicity” of simple static paintings and sculptures. This is a challenging issue (and I think an unsolvable one). At the end, Chatterjee refreshingly concludes that a grand theory for neuroaesthetics cannot encompass many aspects of art. I liked the book largely because I share this view.

References and Notes


5 Wellcome Images offer a number of examples of Bell’s artwork; see <http://wellcomeimages.org/indexplus/image/Lo019305.html>.


11 More information about Allobrain is available at <www.allosphere.ucsb.edu/media.php>.

12 For Jill Scott’s project, see <http://vimeo.com/1387705>.

**JULY 2014**

*La culture scientifique: Pour quoi faire* by Jean-Marc Levy-Leblond. Response by Roger F. Malina.

*Literary Gaming* by Astrid Ensslin. Reviewed by Rob Harle.


**JUNE 2014**

*Electric Signs* by Alice Arnold. Reviewed by Martha Patricia Niño Mojica.

*Synthetic Aesthetic* by Alexandra Daisy Ginsberg, Jane Calvert, Pablo Schyfter, Alistair Ellick and Drew Endy. Reviewed by Jason Paul Stansbie.


*Between the Black Box and the White Cube: Expanded Cinema and Post War Art* by Andrew V. Uroskie. Reviewed by Amanda Egbe.

**MAY 2014**


*The Culture of the Copy: Striking Likenesses, Unreasonable Facsimiles* by Hillel Schwartz. Reviewed by Brian Reffin Smith.