THE BEAUTY OF NUMBERS IN NATURE: MATHEMATICAL PATTERNS AND PRINCIPLES FROM THE NATURAL WORLD

by Ian Stewart

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Ian Stewart has written many books, so he has nothing to prove in terms of being a successful author who explains difficult topics in an accessible way. This book seems to be very close to another of his, first published in 2001, called What Shape Has a Snowflake? (Ivy Press). The present version, also with this publisher but with MIT Press as well, has improved new pictures as well as a better title, though the text is more or less unchanged. The text does not need to change, although some on page 162 shows its age. Ian Stewart is the David Attenborough of the genre and his style is fluent, readable, informative and confident.

This is a splendid book. The excellent prose is enhanced by spectacular pictures. It is breathtaking in its scope, and the layout is refreshing. Each topic is confined largely to just two sides—the open page. The book is so well written, with no wasted words, that this works. There are three parts: Principles and Patterns, The Mathematical World, and Simplicity and Complexity—16 chapters in all. The first three start with snowflake hexagonal symmetry, honeycombs, then other two-dimensional curves from nature, finally introducing three-dimensional patterns. This leads to the middle part of the book, the largest, with over 100 pages (eight chapters) that go into more technical detail. Stewart somehow does this without the need to understand any actual mathematical symbolism. It is a tribute to his explanatory powers that he succeeds. Here the section on animal stripes stands out, as does that on animal gait; these are research topics for Stewart, but once more there’s no mathematics here, just clear exposition. There is much more, from astronomy to architecture, patterns in time, even packing fruit in a box. The final section, five chapters, goes into complexity, fractals and chaos. The book is philosophical, beautifully written, artistic and with a touch of humor (Stewart has co-authored with the late Terry Pratchett and written science fantasy). Stewart has authored many books, all worth reading. This just might be the best of them.

NEVER ALONE, EXCEPT FOR NOW: ART, NETWORKS, POPULATIONS


Reviewed by Jan Baetens.
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This is a very ambitious book, and one that in many regards stands up to its theoretical and critical ambitions. A reflection on the way in which the relationships between individual and group, selfhood and community, subject and environment are redefined by modern network technology, it also contains many fascinating analyses and hypotheses on the functions and functioning of art in contemporary society. These topics are of course far from new, but from the very
beginning Cohen makes very clear that he will try to avoid any form of technodeterminism—a problem he thinks is recurrent in the “visual studies” approach, too focused on medium affordances in his view—as well as of representation—a typical priority of “cultural studies,” which likes to reframe hidden or explicit mediations in symbolic terms.

Although his starting point is clearly that of relationality in art and society, Cohen proposes to supersede any direct or reciprocal interpretation of personal, social and political relationships through works of art as well as nonartistic artifacts in order to defend a framework based on what he calls symmetry, namely the historical and contextual convergence of different systems and protocols that clearly influence each other but whose mutual definition can never be reduced in linear or hegemonic ways (that is, this layer determining the other layer, but not the other way around).

Given the key position of relation and relationality, the major issue is of course to understand how persons relate with each other in networked environments. In this regard, Cohen rejects both the optimistic neoliberal stance toward digital networks as the source of new opportunities, increased agency and theoretically unlimited freedom and the more pessimistic reading of the power of these networks as instruments of corporate control beyond any democratic debate or negotiation (most research based on Debord’s ideas of the theory of the spectacle strongly underwrite this way of thinking). In the same vein, he is not looking for a kind of middle ground or nuanced balance between these competing interpretations, both very well represented in current scholarly and societal debates. Instead, he proposes to elaborate a different way of thinking that radically undermines the possibility to distinguish between both sides—that of the self, that of the net, to largely simplify—as more or less autonomous structures or entities, while at the same time introducing new theoretical concepts that help in understanding the fact that selves are now defined by networked relations, which themselves are affected and changed by their actual uses.

Two concepts or rather two lines of thinking come here to the fore. First of all that of “group form,” a very general and voluntarily neutral term that refers to the way in which people relate thanks to all kinds of networks as well as to the way in which networks produce relationships between all kinds of people. What matters most in the concept of “group form” is that it avoids the clash between the more traditional concepts of the “public” (that is the group form created by individuals having some form of freedom and agency, in the Habermasian tradition) and of the “population” (that is of the group as produced by computer algorithms and big data, which no longer have to take into account nonquantitative features). What matters in the idea of group form is the fact that it helps foreground new, often improvised and ephemeral forms of relationality and sociality, regardless of traditional ways of describing or producing selves and populations (here the influence of Michel Foucault’s work on sexuality is blatant). The apparently paradoxical title of the book, which strikingly combines “never” and “except,” may be a good illustration of these new forms of relationships that it is no longer possible to explain with the help of the antinomy self/network. At the same time, Cohen is also very explicit in his efforts to dismantle the a priori positive or negative readings of either the concept of public or that of population.

The second major theoretical contribution of the book has to do with Cohen’s reading of artworks, which are no longer isolated from nonartistic artifacts (quite a logical move, if one follows the “group form” structure he elaborates at the level of relationality and connectivity). Works of art are no longer considered different from nonartistic artifacts, and one of the great rhetorical and theoretical strengths of the book is to systematically bring them together in a way he himself calls symmetrical (that is, nonrepresentative, nonsymbolic, nondeterministic). Cohen brings together the way in which recent activist forms of minimal and conceptual art tend to produce similar “group form” effects as diacritic signs (such as LOLs or emoticons) in contemporary Internet communication. This way of reading is extremely productive. It is also very helpful in reducing the possible dangers of discursive and political overinterpretation of works of art that may seem deprived of any direct political or societal impact, be it lack of a sizable audience (as in the case of certain forms of performance art) or a priori neutralized by its institutional setting (as we know, galleries and museums are not necessarily the best possible places for political activism). The symmetry Cohen displays between the often very sophisticated and thus not always immediately readable artworks and the sometimes extremely ordinary and often overlooked forms of communication and group form work on the Internet help demonstrate both the social and political relevance and the effective impact of artworks that work in symmetry with other, better known mechanisms and procedures. The analysis of Thomson & Craighead’s BEACON, a set of online and offline installations that question the multiple meanings of the search engine in the multilayered and conflicting contexts of the self, the public and the population, but also the group form, is an excellent illustration of Cohen’s basic claims on networked relationality which at the same time enrich political thinking on new forms of identities, connectivity and therefore action, and underline the possibility of producing an art-critical discourse that neither isolates nor prioritizes the work of art.
**ZOMBIE THEORY: A READER**


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I have always thought that thinking about zombies in popular culture—the zombie movies and video games, the meaning of the zombie narrative—was a sideshow, the B-movie to the grown-up, art-house docudrama, the *tractatus zombiophilosophicus* of consciousness studies, quantum physics and speculative cognition. It was epistemology as existential thriller and none the worse for that. But now, like a bulldozer in the night, slamming sideways into the peaceful study of the philosophical zombie, comes this book, a vast collection of interdisciplinary zombie scholarship covering just about everything on zombies in the arts, society, politics, philosophy, forms of alienation and colonization, and every aspect of the human condition. I now see that there is no way we can approach the refined questions of consciousness, artificial intelligence, free will or indeed life, the universe and everything proper to a well-found zombie-theoretical ouvroir or workshop without considering what we bring to these inquiries from zombie culture. Like some echo from an alien past, zombies seem to be in our DNA, and we ignore their epigenetic influence on our philosophical evolution at our peril. The cultural zombie, what I'll call the c-zombie, is at least as important as the p- or philosophical zombie. The two may well share more space than we'd thought.

As editor Sarah Juliet Lauro states in her introduction, the zombie is never wholly terrifying but is also pitiable. It has always been a result of and symbol for oppression. Its history stems from colonialism. Whilst it might be a palimpsest revealing layers of different kinds of alienation, there is a common thread that seems to be even greater than a common threat. We return to a duality, be it both/and or the pessimistic neither/nor. The zombie represents our worst fears. The zombie is us. OR (living or dead) becomes AND.

The zombie is not free but we, more or less, are. Sort of. That must surely be an a priori: the c-zombies don't want to chase—rather sluggishly—humans in order to eat their flesh or brains, nor to shuffle off, brain damaged, to do slave work in the sugar cane fields. They could never catch free and running humans were it not for the doors and dead ends so vital if the creatures are ever to have their dinner. C-zombie behavior could mostly be modeled in a few lines of code, human behavior not.

But Slavoj Žižek has pointed out that the zombie is the most basic part of the human, before consciousness and so on—the zero-level of humanity. It is what we fear we might actually or merely be, or be reduced to. The c-zombie is never original. It is never a construction but a deconstruction, a ruined, putrefying, reduced person. No one is born a zombie. There is a vast difference between a mindless robot and a mindless zombie, even if their behaviors might be identical, just for this reason: the robot, the AI, might “become”; the zombie is always once-was, a has-been, and can only be itself, perhaps forever. It can certainly never be one more than itself. There is no cure, no redemption because zombies are irredeemable, as true, dehumanized enemies must always be—or what's the point?

In movies, some zombies are mortal, able to be splattered, squished, squashed or otherwise slaughtered. Others just get up, keep calm insofar as they are able, and carry on pursuing brains to eat. Ola Sigurdson, in his article “Slavoj Žižek, the Death Drive and Zombies,” [1] points out that Žižek writes of our anxiety in the face of “an excess of undeadness,” a wonderful phrase. Zombies cannot experience that anxiety, so perhaps we envy them too. And of course if c-zombies were truly as predictable and modelable as I implied above, they wouldn't be very frightening, and therewith certainly be no films. They only terrify insofar as they escape real zombiedom and become, just a bit, like us. That is where their study as a cultural phenomenon perhaps begins.

Here we see a difference: The philosophical, p-zombie is indistinguishable from us, could be us. I am a zombie: Prove I'm not (please; since I certainly can't). The c-zombie, however, is a metaphor for a part of us, what we might be reduced or amputated to. The c-zombie is, perhaps paradoxically, an optimistic idea. We are not like that, hence alive! Bravo! But we might actually be the p-zombie, hence dead (even if simultaneously alive). Boo! There are living dead and living dead, quite different. C-zombies are monochrome, the grey of decaying flesh, thus creating the optimistic counter idea, what if they were to be colored, like . . . oh, like us? The p-zombie can only lose color, or let's say: We are going to die. What if we were to be grey, like . . . oh, like we will be? To be a p-zombie is to be mortal, hence fearful, death-wishy or at best death wishy-washy like many of us. To be a c-zombie is possibly to be immortal, and to have no fear. Which would you prefer to be? Who has the freedom now?

Zombic thinking forces us to
consider such matters. We should read and analyze those who write on p-zombies, and we should also watch, listen to and read those who document the c-zombie. I say document: Both kinds of zombie are fictional, yet they are fictions so useful that even if the premises be false (and again who is to tell) the conclusions are real. I see all zombie movies and texts as documentary. Their appearance, habits, ways of being neutralized, etc., are all necessarily fictional of course. We could not confront the horrifying truth (I mean the possibility, again, that zombies are us, minus our death wish, of which they have no need). But the zombies themselves are real, flesh and blood. Would George Romero lie?

In this large book we have texts, some seminal, from all parts of zombie studies. Here are some entries from the index: zombie aesthetics, agents, apocalypse, as animals, as anonymous, bank, bottle, boundary figure, comedies or zomédies, computers, corporations . . . zombie diet, ethics, festivals, literature, march, music, part-time zombies, philosophical zombies, zombie poetry, preparedness, renaissance, runs, time, walks and zombie-oriented ontology (presumably a reference to OOO, object-oriented ontology). Let’s see (this is truly a book to dip into). Ah! Jeffrey Jerome Cohen, in his chapter, “Grey,” (pp. 381–394) writing indeed of OOO: “Humans ought never to be reduced to the bare life of an object. Yet our inclination to believe that things have no agency, vitality, or autonomy also deserves interrogation. Thingly existence is very different from existence reduced to inert thingness.” Here again: p- and c-zombies. Cohen speaks of a ZOO, or a ZOE, a zombie-oriented ecology (the interplay, perhaps, between sum and parts, each capable of being “more than.”) Obscure, worldly, challenging and embodied, the zombie’s grey, he says, “is also rather beautiful.”

This reader on zombie theory is as rich and thought provoking as a Whole Earth Catalog for the makers, creators, curators, thinkers and keep-ers of the simultaneously dead and alive, the waveform uncollapsed. The index, its end, is its beginning. How people love things, especially zombie things, to come to an end. Communism, for example, those Soviet zombies, or the EU (for the end of the EU as “other” against the solid Brit was implicit in the appalling Brexit and sometimes explicitly [death-?] wished for). The North Korean people, often characterized as zombies, teeter on our balance between pity and repulsion, our end-time displaced to a state 99% of people couldn’t locate on a map. But as in some infinitely extended and extensible video game, we can target zombies from many perspectives, yet they don’t end. They pop up, get up, emerge, transform, come through walls, pepper consciousness studies, computer science, philosophy and even theology with their reeking presence and in culture remind us to reflect, above all, on ourselves. They are the virus rewriting us. AND becomes DNA in the zombie mirror. Zombies are us and in an excess of undeathness we can even enjoy them. You should probably buy this book.

References and Notes


CONSECRATING SCIENCE: WONDER, KNOWLEDGE, AND THE NATURAL WORLD


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The title of Lisa Sideris’s book, Consecrating Science: Wonder, Knowledge, and the Natural World, made me wonder: Would this consecration expose me to something wondrous? While I don’t think the word wondrous quite fits my response, the book is a rewarding read. Sideris, a talented writer, introduces pointed questions to guide her study. I was particularly impressed with her nuanced evaluation of the new cosmologies that claim to bring science and spirituality together. In addition, the author’s erudite discussion stands out as a refreshing example of why the kind of critical thinking encouraged by the humanities has value.

Sideris, Professor of Religious Studies at Indiana University, opens the volume by explaining that the lack of coherence between the religious vision for nature of environmental ethicists and the realities of Darwinian science were subjects of her own earlier research, which includes a general indictment of anthropocentrism (the view that humankind is the most significant entity of the universe). She then adds that this book is an extended meditation on wonder and that she uses wonder to express her concern that a growing constellation of movements within both religious and secular environmentalism take science rather too seriously. Essentially, her argument is that, when properly oriented, wonder can foster intellectual and moral habits that are also encouraged by what she calls the “ignorance-based worldview” (p. 193) and its emphasis on sensory engagement with the world; however, as I discuss below, her examples of people who advocate for an ignorance-based worldview do not emphasize such sensory engagement with the world. Her larger point is that, although a common story and unified global ethic may sound appealing, particularly in times of great environmental and political upheaval, a global, science-based story cannot do justice to the enormous variety of places, people, problems (and possible solutions) that are part of the richness and complexity of life on this planet. In other words, universal narratives are inadequate, especially when we look at the particularities of environmental injustice and disparities of wealth and accountability. Moreover, no one person, or even a community of people,
can provide a story for the rest of humanity, nor should they try.

The book's strength is Sideris's ability to deftly illustrate that many of the new grand narratives and cosmogenesis stories use scientific framings in ways that distort our vision and/or experience of both nature and science. The critiqued and overlapping set of "stories" go by names like the Epic of Evolution, the Universe Story, the New Story, the Great Story, Big History and so forth. Advocates of these new cosmologies, some of whom have scientific backgrounds, include Thomas Berry, Brian Swimme, Mary Evelyn Tucker, John Grim, Loyal Rue, David Christian, Eric Chaisson, Ursula Goodenough, Connie Barlow and Michael Dowd. Their narratives largely define humans as the part of nature that has become conscious of itself and frequently integrate ideas from sociology and evolutionary psychology.

Sideris's problems with such myths (or stories) include their emphasis on the centrality of humans and human consciousness, their interpretations of intentionality or directionality, how they combine scientific and religious traditions, and a proselytizing impulse most evident in how they position humans as cocreators of the universe within the "Good Anthropocene" narratives related to global climate change. Cocreation within the spiritual cosmologies suggests that the fate of the planet involves humans understanding our unique cosmic role in shaping the environment and also includes a measure of spiritual self-awareness. Sideris claims that sometimes their arguments seem hubristic and/or hierarchical. She also claims that at other times their visions of (or arguments about) the environment seem indistinguishable from the environmentally disastrous and morally bankrupt voices of the Anthropocene, the geological era in which human activity began to significantly impact climate and the environment.

The book also critiques expressions about wonder in the work of scientists, Richard Dawkins and E.O. Wilson in particular, because several of the new spiritually inclined cosmologists take inspiration from their work. According to Sideris, Dawkins "endorses a kind of natural theology without either God or nature as the ultimate object" (p. 35). She argues that he conflates science with nature and sees wonder in terms of puzzle solving. What she finds particularly troubling is "Dawkins's suspicion of the natural world as a legitimate source of wonder, or as worthy of rapt contemplation, in and of itself" (p. 37), as if science offers something superior to religion. In short, Dawkins, she argues, proclaims the superiority of science and too narrowly defines wonder as curiosity.

Wilson's advocacy for scientific materialism, by contrast, serves as an alternative mythology to religion because he proposes a grand narrative. The controversial phase of his career began with his publication of Sociobiology (1975), although he is probably best known for Consilience (1998). Wilson's call for a unification of knowledge that will bridge all disciplinary gaps—his consilience project—includes nature, experiential and sensory elements. Strangely, many strains of evangelists are drawn to his advocacy for an evolutionary epic despite his belief that the "great religions . . . are sources of ceaseless and unnecessary suffering. They are impediments to the grasp of reality needed to solve most social problems of the real world" (p. 54, quoting Wilson). While Dawkins is clearly a biological reductionist, aspects of Wilson's writings have more resonance with spiritual views of nature and wonder, perhaps explaining his appeal.

The array of ideas frame two foci of the volume. One is that science has a limited hegemony for defining what "authentic" reality is because imaginary realms are omitted. The second concerns how narratives capture who we are and what kind of story our narratives about nature reveal. To one who has argued that narrative approaches obscure many other ways of knowing [1], the narrative terrain seemed truncated from the start. As used in this book, the "narrative" problem is accentuated rather than addressed, because Sideris largely mischaracterizes science. Although at the end it is clear that she has some understanding of science as a useful practice, in most of the book science is articulated more in terms of philosophies of science ("scientism") than science per se. In addition, although the author tells us her remarks are aimed not at science but scientism, the lack of evidentiary and empirical elements within the volume make her references to "science" suggest that science is just another story.

Rachel Carson and Loren Eiseley serve as her main counterpoints to the figures mentioned above. In them the author sees examples of people who align themselves with the natural world and understand mystery as well as the limitation of science. Sideris noted at the start that she didn't intend to offer an alternative environmental ethic through her disposition on wonder. Therefore, these two twentieth-century writers essentially serve as the alternative vision of how science, nature, mystery and wonder optimally come together. Even so, and even with her concluding valuation of an ignorance-based approach toward nature, the book seemed incomplete.

Seeing wonder in terms of nature and repeatedly relating it to the environment leaves our environmental crisis just hanging there. Although Sideris doesn't explicitly speak about religious awe and God's handwork in defining wonder, because the language often implies that this is how the threads and mystery are connected in her mind, the lack of an environmental alternative leaves a Jobian feel as the book ends. This sense that the Book of Job may serve as her response to the environmental crisis of our time is particularly resonant with her interest in placing wonder in relation to all creatures (rather than just humans) and her ethic of humility. A passage from this scripture reads:

But ask the animals, and they will tell you, or the birds in the sky,
and they will tell you; or speak to the earth, and it will teach you, or let the fish in the sea inform you. Which of all these does not know that the hand of the Lord has done this? In his hand is the life of every creature and the breath of all mankind.

—JO**B** (12:7–10)

Still, in my view, the study's primary problem is Sideris's assessment of science. In her exposition, within science, wonder becomes a response to the end product of inquiry rather than a goad to inquiry. Or, as she puts it, an explanation is not the experience of wonder. Rather wonder is a phenomenon itself. It is the color, sound, or a combination of impressions that elicits wonder. I find this overly simplistic. How are phenomena and emotions deriving from phenomena connected? How do lifelong developmental factors inform our relationship to phenomena and experience? Suffice it to say, she tells us that while wonder in the broadest sense may be a response to living in a universe that exhibits an incommensurate play of scales and a perplexing array of possible meanings, she doesn't move it beyond a kind of one-dimensional space. She does, however, say that wonder is not always a positive or affirming experience; it may be deeply unsettling, again bringing the Book of Job to mind.

The most intriguing element of the book is her advocacy for an ignorance-based science at the end, particularly in light of the book's religious resonance. She cites several contemporary figures, not all scientists, to support her vision. Notably, they do not appear to base their ideas about ignorance on the kind of contemplative mystery or sensory processes she has elevated in defining wonder. They do share her sense that narratives aiming to tie all the pieces together are misplaced, and that those who turn to science to craft a coherent story about who we are or what it means to be human will, if they are truly paying attention, come away perplexed.

Given the religious underpinnings throughout the text, and that she works within the Religious Studies framework professionally, I wondered why she also landed in limbo on the religious front. As she notes, in theological circles "wonder has sometimes been highly regarded as a fitting response to the divine and to the intricate marvels of the created world" (pp. 20–21), and "the Augustinian association of curiosity, vanity, and pride, on the one hand, and wonder, humility, and ignorance, on the other hand, has never faded entirely from Christian thought" (p. 22). These references are to Augustine of Hippo (354–430), who is frequently characterized as a figure who opened the era of Medieval philosophy. Nicholas of Cusa (1401–1464) is said to mark its end point, more or less.

While Augustine tended to look inward, Nicholas, a theologian, cosmologist and influential philosopher, extended his vision outward and directed it toward nature. Augustine wrote, "Understanding is the reward of faith. Therefore, seek not to understand that thou mayest believe, but believe that thou mayest understand" (in Joannis Evangelium tractatus, XXIX, 6); Nicholas, in his On Learned Ignorance (De docta ignorantia, 1440), simply defines the learned man as one who is aware of his own ignorance. Sideris's view seems to align with Augustine's moral underpinnings and meditative embrace of wonder. Nicholas is more in line with her ignorance-based advocacy as expressed in the views of the contemporary figures she introduces to support her view, although they do not use his theological and religious framing. It seems that Nicholas espoused an ignorance-based philosophy that intersects with Sideris's proposal, but she does not acknowledge or critique this precursor. Given that Nicholas wrote on learned ignorance, and saw ignorance as a form of humility in the face of the infinity of God, it is a striking omission.

Of course, there are many ways to frame wonder, nature, the exigencies of modern science, the generational debates about what science and knowledge are, and the interpretations as to why science began its ascendency in the west. In terms of the current trend to blame the rise of modern science and technology for many of our ills, which seemed to echo at times in Consecrating Science, perhaps it is useful to think about the terrain that led to the decline of the spiritual mythology of the Church. To return to her statement that wonder is not always a positive or affirming experience, it is clear that, for example, glorifying God and reverence for nature's wonders proved ineffective in solving pressing problems like the Black Plague at the end of the Middle Ages, for example. When prayer, ecstatic mysticism, scapegoating, medicine based on sympathetic magic and so forth all came up short, is it surprising that people looked outward, deciding we needed better methods for studying nature and the outside environment? Their revised orientation did not displace wonder, nor did the movement toward a larger investigative toolbox mean that subsequent changes happened in a linear fashion. Nor should we assume that the changes suggest a progressive story, as ensuing generational debates underscore. Rather, just as our deliberations about nature and the environment today come in many flavors, within each generational culture we can identify all shades of values, nuances and dispositions. Despite the increased interest in developing new tools, God continued to hold a transcendent position within scientific studies well into the Darwinism paradigm, and even today some see
God as the precursor to Big Bang cosmologies. Needless to say, the range of views on wonder and experience—both positive and negative—evince many opinions. Indeed, perhaps our awareness of global warming is comparable to how the plague moved the needle in some way we cannot yet cogently define.

That said, I really found the book a stimulating read. Also, I would be remiss not to acknowledge that at times Sideris seems to recognize that science is a valid way of knowing, even as she seems to denounce some. Perhaps our awareness of global warming is comparable to how the plague moved the needle in some way we cannot yet cogently define.

Scientific investigation entails a heuristic narrowing of its subject, and this narrowing process entails that certain elements of the problem be isolated or abstracted from some larger context. The processes deployed in scientific investigation—isolating, abstracting, simplifying, objectifying—have a proper role to play and are not in themselves suspect or unethical. These terms signal practices of disciplined engagement that enable interrogation of some concrete, delimited phenomenon. Only when knowledge gained through such practices is invested with claims to ultimate meaning or superior and totalizing reality does science overstep its bounds (p. 172).

In summary, as much as I enjoyed having a dialogue with the book, I did not think that Sideris’s meditation on wonder fit seamlessly with her promotion of an ignorance-based knowing. I do, however, fully support her valuation of the humanities. I also applaud her for writing a book that attempts to grapple with difficult and challenging questions. Engaging with her ideas is well worth the read, given her talent for thinking about ideas in a complex way.

Reference

away, etc. Cornsweet also devotes a chapter to what happens when we shut our eyes. However, in his approach, the visual noise, flashes and stars, etc. that are caused by spontaneous bleaching of pigment molecules in his description of the process are part of the function of the eye and are continuous with the world and as such indistinguishable from external visual stimuli. This approach to understanding vision as a molecular change subject to random events governed by probability provides an alternative account of how we see, while it simultaneously proposes that there is a continuity between the operations of perception and those of the external world that suggest our claims for naturalism must be both modest and contingent.

Cornsweet’s career as a scientist has been devoted to human vision and developing instruments that allowed him to understand part of its workings. His name is given to a particular optical illusion that reveals some aspects of how we privilege contrast over tone in visual perception independently of the data that is presented. In the Cornsweet illusion tonal differences are perceived in a flat plane if a small darker band is placed across a field of uniform luminance. Many illusions with similar effects are often used to show the superiority of science and reason and how the eyes are unreliable sensors that fool the brain into misunderstanding the truth of the world. This is not Cornsweet’s object; instead, he is concerned with explaining the function of the eye that leads to this perception and, as such, for him it is not so much a question of the optical illusion fooling the brain as the way in which the world and the eye collaborate to reconcile quite different versions of the external world that are equally true. Seeing: How Light Tells Us About the World is a paradigm of late style that reflects on Cornsweet’s intellectual capital with a secure confidence offering a simplicity and clarity that belies the complexity of his insight. He does not say as much, but the intellectual generosity of his style—his refusal to complicate and mystify, for example by using simple illustrative numbers—bear the mark of a scholar at peace with the limitations of what is known. Indeed at the end of each chapter he invites the reader to think about some of the things he has just been explaining in ways that inevitably expose the limits of his explanation. Cornsweet died in November 2017, and in an obituary, someone remarked that sooner or later, everyone who met him became his student. This phrase describes exactly what the book does and how it engages the reader as it deals with the simple and the complex as contingencies to be encountered.

ARTS OF LIVING ON A DAMAGED PLANET: GHOSTS AND MONSTERS OF THE ANTHROPOCENE


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Where the twentieth century created and sustained the fiction of individuality, the 21st century shows that a (renewed) awareness of the entanglement between the human and nonhuman is unavoidable if we want to survive the damaging effects of our self-inflicted Anthropocene. Individuality understood as consisting of single, independent entities, whether human or nonhuman, might not have to be thrown completely out of our frame of understanding as long as it is understood that it can only exist in relation to the other. Arts of Living on a Damaged Planet, the fascinating outcome of the conference of the same name that took place at UC Santa Cruz in 2014, makes this very clear. As a publication, it can be ranked alongside Textures of the Anthropocene—Grain Vapor Ray (2015; see my review in Leonardo Reviews [1]) in the way it raises our attention not only via its content but also through its design. Where Textures of the Anthropocene literally played with textures through the choice of paper and font for each of its four volumes, Arts of Living comprises two parts within one volume that are printed in opposite directions. One half is dedicated to the key theme Monsters and the other to Ghosts but not necessarily in this order. Both halves are interchangeable, entwined and entangled; they refer to one another and thus one finds oneself regularly turning the book upside down to switch between one or the other part, with page numbers starting either with M or G. Each part has its own insightful introduction and coda, which, however, refer to each other and thus form yet another form of entwinement. Arts of Living is in this way able to engage the reader not only intellectually but also physically and tacitly, making it clear that intellect and body are equally entwined and entangled.

The editors Anna Tsing, Heather Swanson, Elaine Gan and Nils Bubandt are all in one or another way connected to the Anthropology department of Aarhus University, but the contributions to their book come from a wide range of exciting authors of various backgrounds, most combining several fields of knowledge. With essays by Ursula K. Le Guin, Karen Barad and Donna Haraway as the more obvious highlights, those by the other, possibly lesser-known authors are certainly of equal interest. Arts of Living is an explicitly trans- or cross-disciplinary book, confirming that we need the intertwining of disciplines to find solutions for the rut we got ourselves into. As stated in the introduction of the Ghosts part, “to survive, we need to relearn multiple forms of curiosity. Curiosity is an attunement to multispecies entanglement, complexity, and the shimmer all around us” (Gr1). For the curious, there is plenty to learn—from mysterious mud volcanoes to the entanglement of horseshoe crabs and red knots birds, lichens or new ways of evolutionary thinking, span-
ning from the tiny to the universal. Where the Ghosts part discusses various specters from the past that haunt our present in unexpected ways, the Monsters part illustrates that any I is in fact a We, as all of life exists as interdependent entities. In his book Humankind: Solidarity with Non-Human People (2017), Timothy Morton phrases how every human being consists of a considerable non-human amount and is thus a collective in itself. Scott F. Gilbert, eminent in the field of developmental genetics and embryology, uses the phrase holobiont in his contribution to Arts of Living to show how all creatures are symbioses of one sort or another. In the last essay of the Monsters section, professor of ecology and evolutionary biology Ingrid M. Parker shows that it is urgent to deal with our amnesia and blindness toward things happening in the far or nearer past. In that sense, it is interesting that the concept of ghosts and monsters was quite present in a not-too-distant past that we seemingly have forgotten, namely the nineteenth century. Where the “vampires, mummies, doppelgangers, ghosts, and zombies as well as Frankenstein’s monster, the Jabberwock, Helen Vaughan, and the Invisible Man” [2] haunted literature as threatening aliens, the ghosts and monsters of Arts of Living however turn out to be very real and everyday threats. They occur mostly in what we overlook, as in a meadow for Ingrid Parker, but also in the borderland between the U.S. and Mexico as described by Lesley Stern, who writes “in the interstices between cultural studies, memoir, and environmental history [3].”

The ecosystem of our planet does not particularly need us humans to survive and would probably be better off without us. As shown in the past, it will no doubt generate other life forms. If we want to stay part of the equation, we will have to come down from our high horse and start paying attention to what we form part of. Arts of Living gives an excellent indication of where to start. The Ghosts and Monsters parts meet in the middle of the book, where they state, “Arts of Living are necessary because of threats to our survival. On a Damaged Planet monsters and ghosts are figures hiding in plain sight.”

References and Notes

NONHUMAN PHOTOGRAPHY

Ana Peraica, independent scholar. Email: anaperica@gmail.com. doi:10.1162/LEON_r_01709

Although the title of the book Nonhuman Photography suggests it could be yet another on the popular topic of unmanned photography, this book by Joanna Zylinska is quite a theoretical surprise!

Already at the beginning Zylinska sets the problem in terms of “a cultural condition in which visual enhancement, algorithmic logic, and mediated perception enable different modes of visuality and self-identification,” (p. 5) defining the field of photography not as a priori cultural, but rather a media one, thus including its technological aspect beside terms of purposes of implementation. Although it implements a terminology of cultural logic, as a “cultural condition” and “visuality,” this logic is not defined in terms of orthodox styles and periods of art history, or episodic episodes of cultural studies. It presents a larger set of time-definition in terms of pre- and post-Anthropocene. But in defining Anthropocene, the cultural definition overlaps the media one, marking the beginning of the Anthropocene not as the moment of the biological supremacy of the human race on Earth, but rather of its fall in initialization of contamination of its own environment, falling vaguely in the time of Industrial Revolution. And that is precisely the time when photographic recording technology was invented. Thus, this more precise definition of the Anthropocene inevitably connects photography to ecology through theory of media defining the human action in environment by a strict definition of nonhuman and human-run environments/spaces, as well as warning on the human/posthuman time conditions. Here Zylinska grounds her theories close to Durham Peters’s theory of Earth as a medium, but also the ecological media theories of Sean Cubitt.

From these standpoints of ecology and posthumanism, both being media theories, Zylinska redefines the medium of photography, expanding it to a nonhuman one. This photography is “not of, by, or for the human” (p. 51); it is that without humans, before humans (in terms of deep time) but also that after humans. The definition of photography is expanded as the photography preceding or succeeding its inventor. It is also defined not as a mere utilitarian tool but rather as a technical phenomenon that includes various phenomena of optical stabilization of images, as various types of light-imprints, fossils, imprinted shadows, photograms, besides commonly accepted mechanical and digital records.

Redefining photography in terms of the origin and process, Zylinska offers a wide-enough nonhuman definition of photography that records life (on the planet) rather than merely serving memories of humans. Opposing the cultural definition of photography defined via death (Basin, Barthes, Sontag), Zylinska defines photography as rather a “life-making process” and “quintessential practice of life.” Stripped of its mere-purposiveness, in satisfying the need to visually externalize memory, a new
type of vision is absorbed in the definition of the medium; a vision as a data assemblage, rather than a direct experience. Such vision, abandoning the ideological (and thus contaminated) human employment of photographic medium, Zylinska sees as an option of the current posthuman condition.

Along with interesting theories, the author successfully analyzes works by contemporary media artists as Trevor Paglen, Tacita Dean, Jana Sterbak, et al. (supplemented with the website www.nonhuman.photography, providing more colorful versions of artworks), although more interesting elements of the book are Zylinska's own photographs. Producing photographs on a scientifically experimental level, rather than as a mere illustration in humanist sciences, she poses an important question: "Is it possible to practice philosophy as a form of art, while also engaging in photography and image making as ways of philosophizing?" (p. 39) And this question shows, in practice, the whole theoretical standpoint consistently and coherently; what indeed photography may serve today.

An interesting read, both theoretically and practically, this book would benefit photographers, photography theorists, image scientists, media theorists and media ecologists, but cultural theorists would find their own disciplinary standpoints the most challenged.

**A TASTE FOR THE BEAUTIFUL: THE EVOLUTION OF ATTRACTION**


Reviewed by Jan Baetens.

doi:10.1162/LEON_r_01710

A Taste for the Beautiful gives an excellent overview of cutting-edge research in the field of sexual selection, Darwin's second great evolutionary theory after that of natural selection. This field is an important correction of Darwin's initial views, which were not immediately capable of answering questions on the existence and elaboration of features that proved both highly attractive from a sexual point of view, that is in view of reproduction, and ruthlessly harmful in terms of survival (the classic example being the peacock's tail). New research in the discipline is no longer satisfied with solving the apparent paradox of this coexistence of incompatible characteristics or explaining the underlying mechanisms of sexual attractiveness, which are now situated in the brain, the most important of our sexual organs, since beauty and attractiveness—the necessary conditions for successful mating and reproduction—are not "essential" or "inherent" properties of creatures but properties acknowledged by specific and species-related brain functions and constituents. Although all mysteries concerning beauty recognition are far from being deciphered, contemporary research has witnessed a dramatic shift. Instead of only trying to see how sexual brains evolve in order to become capable of noticing which kind of beauty properties offers the best possible guarantee for numerous and healthy offspring, recent investigations are also interested in understanding how features recognized as beautiful evolve in order to better match the recognizing properties of the brain itself.

Ryan phrases it this way:

I have a unique perspective to offer on these issues as I have spent the past forty years studying the sexual behavior of a tiny, bumpy frog in Central America. This work has opened my eyes and mind to both the diversity of sexual behavior in the animal kingdom and a core unifying theory that I have developed called sensory exploitation.

The key idea is simple: features of the female’s brain that find certain notes of the males’ mating call attractive existed long before those attractive notes evolved. Thus, females are the biological puppeteers, making the males sing exactly what their brains desire. Beauty is indeed in the brain of the beholder, and in most cases, that means the female’s brain. . . .

This simple idea contributed to a paradigm shift in the study of sexual selection, one in which the importance of the sexual brain as a driver of evolution finally was acknowledged (pp. 3–4).

Ryan's book gives a lively and very readable survey of this—his and others’—ongoing research. Yet readability and liveliness are not the only qualities of this work. First of all, Ryan is a very meticulous scientist, who tries to divide each question into as many subquestions as possible or necessary. For instance, when discussing sexual attractiveness—for this is how beauty must be encoded in the larger context of reproduction and survival—he makes sharp distinctions between: liking sex, wanting sex, making love and actual reproduction, linking each type of sexual behavior with specific, sometimes contradictory types of beauty.

Second, Ryan is also a very nuanced and cautious researcher. The perspective he adopts is always multiple, and he is at great pains taking into account the conflicting outcomes of different types of beauty. To give just one example: In certain species, certain beauty features may attract the eye, ear or nose of the mate(s), but they may for exactly the same reasons also attract possible predators—and even sexually very success-
ful creatures that become food for their enemies do not survive.

Third, Ryan is not a determinist thinker at all. Not only does he accept the limits of the general rules he establishes, always highlighting the existence of exceptions and inconsistencies that he never reduces to just exceptions or mere chance deviations. He is also very keen in admitting blank spaces and following a trial-and-error method. The frequent “sacrifice” of creatures whose brains are sliced up in order to measure the neurological traces of certain events or experiments is an almost ritual step during any observation and hypothesis cycle. Ryan is also always extremely careful in crediting his colleagues, collaborators and students with their often-crucial contributions to the development of his own work (normally this is formally done in a book’s acknowledgments; here, however, it is tightly woven into the very fabric of the scientific discourse).

Inevitably, the most interesting aspect of A Taste for the Beautiful for nonspecialized readers are the systematic, yet never overemphasized, references to human behavior. It would be incorrect to label these references as comparisons with the human species, for this would suppose a separation between man and animal that of course does not exist in this regard. Ryan moves from animal to man and vice versa with a great sense of humor (one has often the impression of the lecture of an enthusiastic professor) and a sound understanding of good old rhetoric. But the bigger picture, that is the brain and the sensory exploitation paradigm, is never out of sight, which leads the author to end his book with very interesting remarks on pornography, which he thinks could change our actual ideas and practices of sexuality the “same” way (inverted commas more than simply intended) certain animals he has studied have also modified their features in order to better match what is considered attractive by possible mates.

**BIOAESTHETICS: MAKING SENSE OF LIFE IN SCIENCE AND THE ARTS**


Reviewed by Gabriela Galati. Email: info@ec-centric.eu.
doi:10.1162/LEON_r_01711

Bioaesthetics is an ambitious work that intends to be a critique of what the author calls “biologism,” namely, “the effort to understand all aspects of human culture, including art and politics, in biological terms as part of our evolutionary heritage” (pp. 1–2). As the detailed and accurate critique of all the approaches considered under the biologism umbrella unfolds, Strathausen also aims at defining what bioaesthetics is and its position regarding other related theories.

The book is clear and precise, both in its analyses and in describing its own position in the field that it is delimiting. It exposes a sharp critique of sociobiology and the neo-Darwinian theory that ground biologism. This critique is based on the confusion between the different objects of study of the sciences and the humanities, and on how the humanities give language constructs and modifies its object of studies, whereas for the sciences language is often transparent. One of the main flaws of biologism and neo-Darwinism is the indistinct use and application of concepts of the sciences to the humanities, that is to say, the use of scientific language and terminology taken completely out of context. The second problem is the universalist pretension: Biology and bioaesthetics are historical disciplines, and the approaches labeled by the author as belonging to biologism do not consider this fact.

Instead, the book defines bioaesthetics as “an interdisciplinary approach to the study of culture that moves beyond the speculative theory of art that has dominated the humanities since the early nineteenth century, without, however, succumbing to the broad universalist claims that characterize today’s biologism and neo-Darwinian theory” (p. 24). The author also draws on Francisco Varela, Eleanor Rosch and Evan Thompson’s concept of “embodied cognition” to consider a more complete approach to knowledge and how every living being makes sense of the world around it.

In the first chapter the book analyzes extensively how nature is considered after Kant and the coincidences and differences between Kant’s concept of epigenesis, which uses intentionality to explain the emergence of life (p. 43), and Varela and Humberto Maturana’s autopoietic theory. Although the author claims that bioaesthetics doesn’t have a clear position regarding the emergence of life, it does adhere to Varela and Maturana’s autopoietic notion, according to which “all living organisms are cognitive systems able to enact their unique environment by making simple choices” (p. 56). At this point one of the main arguments of the book is advanced: that recursivity and nonlinear causality of all living matter are essential to art and aesthetics, as Kant demonstrated a long time ago in theorization of aesthetic judgements, coincident as they
are with the contemporary notion of the autopoietic nature of human cognition (p. 57).

After dedicating the second chapter to the analysis of the dispute between Jacques Monod and Louis Althusser, Strathausen deconstructs, if the term can be allowed here, sociobiology, evolutionary psychology and Richard Dawkins’s meme theory. In this last case particularly, there seem to be at least three problems: First, memes, unlike genes, do not necessarily increase adaptive fitness or produce some biological advantage; second, cultural evolution is not necessarily adaptive from the genetic point of view; and, lastly, it is not yet clear what a meme is exactly (pp. 124–125).

In the following chapter, the book addresses the approaches of evolutionary aesthetics and cognitive studies. Whereas within the former, especially among literary Darwinists, the tendency is to consider literature, and by extension art in general, as an adaptive feature that would facilitate manipulation to obtain reproductive advantages over others, cognitive studies seems to be more focused on the art object. In particular, cognitive studies not only understands art as an adaptive feature, or a fixed term to be defined, but points out the cognitive function of art, which is considered to be to pose questions, not to give answers, and to underline possible misalignments in the environment (p. 185)—in a certain sense, this appears to be quite close to the McLuhanian consideration of the role of the artist.

In the fifth and last chapter, neuroaesthetics is analyzed, and the author points out how, even if Semir Zeki defines neuroaesthetics as “a theory of aesthetics that is biologically based,” it would be more appropriate to say that it seeks to develop an aesthetic theory that is actually based only on the brain (p. 194). Zeki’s approach is largely analyzed, and in general considered pertinent, although Strathausen makes evident how he reduces aesthetic judgements to cognitive judgements, or to judgements of taste. On the contrary, the bioaesthetics approach considers that art challenges traditional or fixed cognitive structures, creating new cognitive patterns within the brain (p. 226).

Finally, in the Coda (p. 227), the author explains the difference between bioaesthetics, Gilles Deleuze’s aesthetics of affect and a posthuman aesthetics: While Deleuze’s aesthetics is based on one’s possibilities of “becoming other than human” (p. 227), namely, the body without organs, and the consideration that affect can be detached from the organism, and posthuman aesthetics considers, among other issues, the production of sense by the nonhuman and advances a broader consideration of subjectivities, Strathausen positions bioaesthetics as a philosophy that fosters new kinds of subjectivity but is strongly grounded in “our shared nature and history of being human” (p. 231). Precisely regarding this last statement, there can be found perhaps the only critique to be made of the book, which has to do with the use of the prefix “bio” in bioaesthetics: Even when the author claims that bioaesthetics considers “the living” and “all living matter” in general, (“life makes sense only to the living” [p. 231]) it doesn’t; it actually considers only the human aspect within the living, and with it, sense understood and produced by humans and for humans. Of course one cannot avoid being human when thinking or writing, or living in general, but bioaesthetics doesn’t seem to be a theory that comprises and is equally interested in all the living. This is why the prefix bio is misleading. It is also why it could be worth at least just asking whether or not this excessive focus on the human has not already been overcome in the humanities.

For the rest, the book is acute in its analysis, observation and eventual critiques of all the approaches it addresses. It is an excellent introduction to an aesthetics that intends to overcome speculative theories of art and philosophy without disregarding context and history. That some space for speculation is still desirable and fruitful, and even important when thinking about issues like art, media and aesthetics, is something that some of us are not yet ready to give up; however, we can hope that this interdisciplinary approach will only add to these practices and theorizations.

LIST CULTURES: KNOWLEDGE AND POETICS FROM MESOPOTAMIA TO BUZZFEED

Reviewed by Jan Baetens.
doi:10.112/LEON_r_01712

Liam Cole Young is a contemporary representative of the Toronto “civilizational” school of media studies (its major historical figures are Harold Innis and Marshall McLuhan), which aims today at bridging the modern gap between the often-conflicting approaches of cultural studies (with a strong focus on identity issues and politics of media representation) and political economy (with a strongly politicized reading of the production and organization of labor and wealth). This book on the history and the uses of lists is a brilliant example of this school, which does not simply repeat the many broad and daring insights of Innis as well as McLuhan. In Young’s work, the expansion of the Toronto civilizational approach results from dialogue with two other disciplines. First is hardcore German media theory and history à la Kittler, with a “fearless” (I am quoting Young, who particularly likes this adjective) use of interdisciplinary concerns and ways of thinking. Contrary to Kittler, however, Young prefers to shy away from sweeping overgeneralizations and grand narratives, which he replaces with a more modest but eventually no-less-eye-opening close reading of media affordances and practices. Second is media archaeology (the book is published in a series coedited by Jussi Parikka), more specifically media materialism, with strong influences of Latour’s actor
network theory and its fine-grained observation of actual uses of technological items and mechanisms.

This global framework is applied to the notion of “list.” For Young, lists are not a single universal and transhistorical phenomenon, in spite of the apparent simplicity and comparable features of any list whatsoever. In this book, the list is in the first place a technique, nothing more and nothing less, that can be found in practically all human communities. Young is in search not of the underlying logic of all possible types of lists but of what distinguishes them from various points of view—historical, technical, cultural, political—and his most fundamental analytical resource is a mix of contextualization and close reading. He therefore departs from a set of four general arguments, which both guarantee the overall coherence of the approach and allow for a fine-grained individualization of each list culture under scrutiny: (1) What has a media materialist approach to offer us when examining a specific list culture? (2) What can lists as cultural techniques, that is as material operations that precede but also generate media forms and structures teach us on the ways in which knowledge is being built and how it takes place within certain material circumstances? (3) What are the actual functions of a given list culture—a functionalist caveat that helps avoid thinking of lists as either good or bad? and (4) How can we display the inherent ambivalences of the list, which often articulate deeply contradictory feelings and aspirations?

Each of these questions informs, from a civilizational point of view, the close reading of list cultures, that is list techniques, in the next five chapters of the book (the concrete topics are, respectively, pop music charts, double-entry bookkeeping, the Nazi Census, BuzzFeed and a set of poetic lists such as those invented by Jorge Luis Borges in literature and Chris Marker in cinema, but in fact, the book enriches these key examples with a great number of supplementary case studies). Young’s objective is not to study lists in themselves but to approach them as tools or springboards for larger social, philosophical and political analysis, in the already-mentioned spirit of the Toronto school and new German media theory, which he firmly opposes to current Anglo-Saxon media analysis: “We tend not to touch figures like Aristotle, Jesus, or Pythagoras (with some notable exceptions), but the German tradition understands that these figures usually have as much or more to say than Marconi, Edison, Hearst, or Zuckerberg” (pp. 154–155).

In List Cultures, the list appears as the ideal instrument to get a better grasp of the radical transformation of space and—increasingly—time as productive commodities in modern or modernizing societies. In this regard, Young’s emphasis on compression, knowledge formation, control, transportation, exchange and the like brings him very close to Jonathan Crary’s work on “the end of sleep” (as addressed in his book 2a/s), but List Cultures is in the first place a book that attempts (and succeeds) to sketch positive alternatives. Since Young rightly rejects any a priori judgment of the meaning of the list as cultural technique, List Cultures pays much attention to other forms and uses of lists, either in poetry or philosophy, although in this powerfully interdisciplinary approach to human activity, the frontier between poetry and philosophy becomes very thin, as shown for instance in Young’s innovative reading of Markers’s La Jetée and Sans Soleil, two list-based works of art. Young reads them in the background of recent theory of “database narrative,” but manages to disclose that database narrative should not only be about database but also about narrative.

List Cultures is an important book, both from a scientific and a societal point of view, which brilliantly illustrates the role humanities can and must play in debates that may seem unhospitable to them, but that are cruelly in need of the broader civilizational approach updated by Young. His book is the perfect example of how to continue, instead of debunking or deconstructing, the quasi-mythical study of lists by Jack Goody (The Domestication of the Savage Mind), which it is now possible to reread afresh.

DAVID SMITH: COLLECTED WRITINGS, LECTURES, AND INTERVIEWS


Reviewed by Rob Harle, Australia.
doi:10.1162/LEON_r_01713

It is both a treat and a privilege to be able to share the details of an artist’s life as revealed through the artist’s own words; this book affords us this pleasure.

Susan Cooke has done a marvelous job of editing this comprehensive volume of Collected Writings, Lectures and Interviews of the brilliant, iconoclastic American sculptor David Smith. I could not put this book down, partly because Smith “tells it like it is” and also because his commitment to materials, passion for creating sculpture above all else and existential artistic authenticity so closely paralleled my own sculpture practice over the years to the extent that at times it hurt!

Smith spoke of the artist’s identity. Smith defined identity as an inner confidence and certitude strengthened by constant struggle and a “defensive belligerence” to all externally imposed rules. It originated in the artist’s visual-perceptual responses to his [sic] immediate world and expressed itself through “eidetic” images (p. 9).

Smith’s words throughout his lectures and personal musings show him to be what most of us perceive as the archetypal traditional artist. It seems almost like there is a genetic predisposition to live a life with so many difficulties: seldom enough money for materials or rent, never enough hours in the day to fit everything in
Leonardo Reviews 

the teaching of sculpture, cally in one of his lectures regarding hazardous. As Smith says paradoxically in his lectures regarding potentially dangerous materials, chemicals and industrial working processes makes the job even more hazardous. As Smith says paradoxically in one of his lectures regarding the teaching of sculpture,

There is a need for art. The artist has a social obligation, as well as his own ego satisfaction to produce to the fullest extent of his ability. It is society’s duty to make the effort to understand before it takes an active prejudice. . . . To the majority there is no need for art on the basis that creative art is produced. We live in a hypocritical world (p. 110).

The book has a most informative and useful Introduction written by Cooke, then three major sections of Smith’s own writings: Thirties & Forties, Fifties, and Sixties. These are followed by a chronology and an excellent index, as would be expected in such a comprehensive research compendium as this. There is a smattering of illustrations, both color and black and white, consisting of scans from Smith’s notebooks and sketchbooks together with a few photographs of his finished sculptures. My one minor criticism of this book is the dearth of photographs of Smith’s finished sculptures. It would be helpful for readers and research-

ers to have these, particularly in situ major works, at hand rather than have to search for them elsewhere.

It will be of considerable interest to Leonardo supporters and associates to know that David Smith was lauding the symbiotic relationship of art, science and technology way back in the 1940s! In his own words, “Art cannot be divorced from its time, place or science. It has never been dependent on but has always been related to science. . . . In the creative sense art has been related to science, but the inverse is likewise true” (p. 66). He then goes on to give examples of this relationship to support his statement. David Smith was an eccentric, iconic figure in the art world of the early- to mid-1900s, possibly never getting the full recognition he deserved, especially in his own lifetime, which incidentally ended tragically in a car crash. This book will go a long way in redressing this situation. I cannot recommend it highly enough to art students, researchers, art teachers and art historians. For the artist reader particularly, I will end this review with a poignant quote (from his Skidmore College lectures, 1947), which to me epitomizes Smith the archetypal artist:

So, you the artist—if you are an inspired mind, if you feel that you can express something that has not been expressed before, if you are willing to lay yourself open to opprobrium and tough sledding in a wealthy country with a narrow culture—be the artist—have the courage of conviction—for you will never be happy being anything else (p. 67).

AERIAL AFTERMATHS: WARTIME FROM ABOVE

By Caren Kaplan. Reviewed by Mike Leggett.

ART AND THE BRAIN: PLASTICITY, EMBODIMENT AND THE UNCLOSED CIRCLE

By Amy Ione. Reviewed by George Shortess.

DESIGNED FOR HI-FI LIVING: THE VINYL LP IN MIDCENTURY AMERICA

By Janet Borgerson and Jonathan Schroeder. Reviewed by John F. Barber.

THE MAN WHO WALKED IN COLOR


PASSWORDS: PHILOLOGY, SECURITY, AUTHENTICATION

By Brian Lennon. Reviewed by Jan Baetens.

POETIC CONVENTIONS AS COGNITIVE FOSSILS

By Reuven Tsur. Reviewed by Rob Harle.

THE VOICES OF MISSISSIPPI: ARTISTS AND MUSICIANS DOCUMENTED BY WILLIAM FERRIS

Edited by William Ferris. Reviewed by Allan Graubard.

WILLIAM KENTRIDGE: PROCESS AS METAPHOR AND OTHER DOUBTFUL ENTERPRISES

By Leora Maltz-Leca. Reviewed by Amy Ione.

July 2018

PERFECTION’S THERAPY: AN ESSAY ON ALBRECHT DÜRER’S MELANCOLIA I

By Mitchell B. Merback. Reviewed by Mike Mosher.

SUPER POWER, SPONNY BARDS, AND SILVERWARE

By DominicArsenault. Reviewed by James Sweeting.

TRAVERSALS: THE USE OF PRESERVATION FOR EARLY ELECTRONIC WRITING

By Stuart Moulthrop and Dene Grigar; foreword by Joseph Tabbi. Reviewed by Jan Baetens.

June 2018

ORNAMENT AND EUROPEAN MODERNISM: FROM ART PRACTICE TO ART HISTORY

Edited by Loretta Vandi. Reviewed by Jan Baetens.