Donna Haraway begins by telling the story of meeting a new group of Princeton students who all looked like Greek gods on account of the fact they all had such perfectly ordered teeth! She surmises this is a result of orthodontic standards inflicted on generations of children, standards established by ancient sculptors in the course of constructing the perfect male form. She sits in her house, with her dog (later described as her wife), surrounded by the objects of a life, objects prompting a story and a digression leading to another object and another story: a Navajo woven basket an “eruption of dispossession”; her barking dog, an “inherited state of mind.”

The discourse is engaging. At core is the place in which she has led so much of her life in California, built many years previously with her partner and their two sons. We know this because we see the old photographs (with Flamenco music) and videos—of her dog being put through its paces at a dog show; it’s about cross-species collaboration. Her performance on public television on the subject of Tarzan is about listening and the anthropomorphizing of the natural world.

She speaks and, almost certainly with her approval, the filmmaker juxtaposes greenscreen effects: jellyfish arising from under the table and undulating sensuously off toward the ceiling; light stabbing into darkness; shadows flickering in a garden; periods of darkness on the screen where sometimes she speaks, or otherwise there is just some reflection time. . . . These visual interruptions or intervals twine around Haraway weaving a history of radical thinking and practice. A historian of biology initially, science fiction writing introduced her to feminist ideas and writing. Thinking practice is at center, through string games (“the soil of soul”), through Sartre and Marxism, the academic constraint on criticism and the paralysis of revolt against the fundamentals for survival.

She recounts the practice of work and play, the making of homes and communities through nonheteronormative joy, the making of kin, communities of care and concern through collective child-rearing and recognition of symbiosis, “reforming kin . . . making flourishing ongoing and possible.”

This film paces Haraway’s relentless flow of ideas and reflections on human development and the recuperation of the natural world, which some may find irritating, but, as an intervention into the norms of contemporary screen culture and Western living, the discourse is attractively provocative.
ETERNITY HAS NO DOORS OF ESCAPE


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“Art has no boundaries” is the cliché with which we are familiar, and the ability to be freely expressive is the principle upon which many liberal democracies base the freedoms espoused. Of course, we also are familiar with the fact that these principles are qualified, no less so in the cosmology of the contemporary arts.

The film and photo archives of Europe have been thoroughly searched by the filmmaker to be able to document, from the early twentieth century, the recognition of the mentally disabled as equally capable of self-expression and the rating of their output alongside the work of other artists. The development of this acceptance is traced through the doctors in Germany who began to collect the drawings, paintings and objects made by their patients, initially as a part of guiding their treatment. One of these, Hans Prinzhorn, published in 1922 a book that became an immediate bestseller, not least among artists and philosophers of the age.

“Unloading hallucinatory overload onto paper” is how one of the many contemporary experts on the art of the outsider describes the practices of many of the individuals. The French artist Dubuffet legitimated these works—the French Surrealists and even the Spiritualists finding common ground. It was a time when breakdown of social cohesion and religion in rural communities moved many to embrace the practices of “mediums,” to freely “guide [the] hand” as a recognized form of expression for participants; the “spiritualists” created an accepting context for the work of patients.

The Company of Art Brut formed by Dubuffet and a group of French artists defined a legitimate area of arts practice. From then on, commodification became mixed with passionate connoisseurship and a series of rivalries and disagreements about ownership while at the same time following various collections from salon to salon—not least to one of the early flagships of contemporary art, Documenta 5, where in 1972 director Harold Szeeman placed “outsider” works alongside the latest celebrity artists’ offerings. It was an attempt to broaden borders around practice and create linking dialogues between such dispersed sources, but it was met with mixed reactions—though not, it seems, from the dealers, who were eager, together with the institutionalization of Dubuffet’s collection in Lausanne, to see an official market opportunity opening up. Today, happily, there are ateliers for the mentally disabled where work is sold in support of their care. The film provides a good briefing for newcomers to the topic.

BOOKS

WEATHER AS MEDIUM: TOWARD A METEOROLOGICAL ART


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“You don’t need a weatherman to know which way the wind blows,” sings Bob Dylan in one of the most famous of rock lyrics, perhaps also in a way that it becomes a suitably quotable snippet in the context of environmental arts. The scale of a climate disaster that is not merely looming in the future but already enveloping contemporary planetary politics is itself one natural continuation of this line of thought that also demands its own scale of activism. Yet, as must be quickly pointed out, weather and climate are not of the same scale, and Dylan’s perhaps somewhat different lineage of thought about politics must anyway be updated: You might actually need a climate scientist to tell which way, with a certain degree of certainty, the wind will blow, the ocean streams flow and the arctic ice melt. Janine Randerson’s Weather as Medium: Toward a Meteorological Art is, to say the least, a timely addition to the recent years of discussion of media, art, ecology and the Anthropocene. Randerson’s book navigates through some of the most important examples of the contemporary art of environmental elements from ice to wind, atmospheres to toxic cultures of political irresponsibility. It addresses “meteorological art” as “social encounters with live weather,” echoing also the experiential dimension of environmental scales. Randerson writes with her artist’s hat on, too, acknowledging that “the weather is a co-performer in my art making and writing, along with meteorological scientists, activists, and indigenous stakeholders.” Resonating with past years of environmental media theory, Randerson’s choice is, however, to build on the idea of weather as medium: “a vibrant site of exchange” hinting at an understanding of media as more of a worldly condition than about specifics of technical media which, one can claim, play a key

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role in the scientific epistemology of weather and climate. For Randerson, the task of environmental, meteorological arts then "politicizes and contests the same weather data that drives the technosciences." In other words, while acknowledging the centrality of the media of environmental sciences, the book also argues that the arts is a key context where politics takes place. The book is less focused on tackling technoscientific media. The author's social encounters with environmental arts tease out the experiential aspects that address otherwise large-scale patterns in experienced sites and situations, affects and perceptions. Addressing experience, the book nods toward an "environmental posthumanities" that is also inclusive, for example, of indigenous cosmologies and activism, resonating with such posthuman scholarship of past years as Rosi Braidotti’s work.

*Weather as Medium* includes several fascinating projects and historical anecdotes, described throughout the book’s chapters. Shitao’s “Comments on Painting” (1710–1717) presents the case for “cloud in landscape painting [as] a means of understanding the universe,” including particular ink techniques that interact with air and silk. Len Lye’s 1960 *Wind Wand* would then stand as a counterpoint in more recent art contexts for observing materials and movement, including the ephemerality of air. Hans Haacke’s weather work is another good example of earlier work that fits into the idea that environmental events are staged, examined and investigated in multiple art methods from the gallery to earth arts. In many ways, Haacke’s notes related to weather systems are a core manual for the ways in which nonhuman environmental events are an agential part of artmaking. Hence, besides Condensation Cube (1963–1965), *Ice Stick* (1964–1966) also stands out, as well as Latali Taumoepeau’s performance i-Land X-Isle, which performs a form of frozen ice torture with the artist’s body “bound by a rope to a 2 tonne block of ice.” As one can observe, the recently widely discussed Olafur Eliasson’s *Ice Watch* (London version) has multiple precedents in the “genre” of melting ice. Even Leonardo da Vinci’s work has interesting traits to be picked up: *A Deluge* (circa 1517–1518) works as part of the media archaeology of aesthetics of hydrology. John Constable’s early nineteenth-century “skying” experiments are one way of recording the weather in painting. Of more recent work, Tomas Saraceno’s *Aerocene* gets a deserved mention, too. Multiple other examples are also summarized as examples of meteorological art, with the implication (familiar from Bruno Latour’s work) that aesthetics plays a core role in visualizing “matters of concern” (not just matters of fact). In general, the theoretical influences range from Latour and Braidotti’s posthuman theory to Theodor Adorno and Hannah Arendt to Elizabeth Povinelli and, for example, some new materialist theory. Latour’s role in the book is central. However, one can also point to some issues in Latour’s approach to the “parliament of things” and whether this nod to a (liberal?) parliamentary politics of negotiation risks missing some of the aspects of political and economic issues in environmental contexts. A reference to “we” as the audience of many of the artistic projects might sweep under the carpet the uneven geopolitical distribution of waste that characterizes the Anthropocene not as a species-level period but one that imposes a bloodier, heavier weight on women and people of color, both in the global South and in the endocolonial context of the poor in the North. *Weather as Medium* is strongly contextualized in indigenous knowledge and practices that offer excellent insight on the issues, but the idea that environmental arts is often about “raising awareness” could be discussed and problematized in more detail. Similarly, one can ask if there is a danger of leveling climatological arts to include in the same register rather different contexts of artmaking—from indigenous artists to “blockbuster” contemporary arts professionals who are integrated into the industry circuits of biennales and galleries. This implies that not all contemporary art is in its own right progressive in contexts where raising awareness might be a necessary but, in itself, insufficient form of aesthetic activism. This is also where more theoretical development could be useful in forming a sense of aesthetics as more than activating a cognitive sense of responsibility for an undefined “we.” All in all, Randerson’s *Weather as Medium* is a useful compendium of projects that offers insights on some of the most significant work tackling the intensities of weather and climate. The book’s choice of projects is interesting and in general offers many ways to continue developing this highly important body of art methods and theoretical knowledge that offer much to the field of environmental humanities from the creative practice side of things.

**TOWARD FEWER IMAGES:**

**THE WORK OF ALEXANDER KLUGE, 1ST EDITION**


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Alexander Kluge is one of the most prolific filmmakers to emerge from the New German Cinema of the 1960s. Now in his late 80s, Kluge continues at his own artisanal production process: a process based on cinematic montage that he has honed throughout his past as filmmaker, fiction writer, theorist, television producer and digital artist. A modest portion of this mountain of media has been translated into English, but Kluge’s aesthetic is so outside the mainstream of contemporary U.S. culture that his name is not as well known here as it perhaps should be. A futurist obsessed with the past. A fiction writer who rejects cohesive narrative worlds. A humanist who has no patience with psychological realism. A material-
What is perhaps most illuminating about Ekardt’s analysis of Klugean montage is how the artist made the transition to digital media. Walter Benjamin used the term “constellation” to describe the dialectical montage process used in his unfinished Arcades Project. Kluge adopts this term as a way to carry cinematic montage into the postcinema age where all is disjunctive. Montage emerged in the twentieth century as a counter-practice to the standard practice of continuity editing, which seeks to hide the cut between shots. The digital “predicament” is to find the role of montage when there are no dominant continuous flows to disrupt, when digital media is already discontinuous. The constellation, made of “autonomous celestial bodies that can’t be connected by fixed relations,” is a model not only for the Internet but for a network aesthetic that offers a “multitude of possible recombinations.” Kluge writes, “We need montage interventions to interrupt the omnipresence of electronic imageny.” Connected to constellation aesthetics is Kluge’s poetics of smallness; a poetics of the temporally short and of the anecdot al, as seen in his online portal dctp.tv. Like Godard, Kluge comes to the twenty-first century with modernist techniques that appear on the surface as purely destructive and critical but that actually bring a needed poetry of resistance to the homogenizing effects of the digital. Ekardt’s book gives us an intellectually expansive portrait of an artist who continues to embrace change and chance but whose art seeks a stillness in active discernment.
must listen through the choices made, enough that they seem familiar” (p. 64). Strange—what had only just begun to touch from a distance we are being touched here and now, it is because of what we are doing, by voices that stand outside of the community.

A common theme is sound and pathways for the sonic specter, a hypothetical presence, an invisible layer of noise alongside conventional histories of technological artifacts. The recurring presence of sound is audible, self-generative and remembered. “When we record sound, we store time, archiving our impermanence. When we are haunted by voices that stand outside of the exactly here and now, it is because we are being touched from a distance [all emphasis original]” (p. 64). This distance, however, is made short by the “interlocking strata of meanings imprinted upon a vast archive of physical media formats and devices” (p. 64). These devices touch upon military, communications or cultural history, becoming “part of the quintessential American experience, sufficiently alienating—making strange—what had only just begun to seem familiar” (p. 64).

As with an audio mixtape, one must listen through the choices made by the creator and seek out connections and meanings. *High Static, Dead Lines*, as a literary mixtape, presents similar challenges as its entwined explorations mirror the strange phenomena described. The essays, object studies and autobiographical asides promote a series of networks.


Gallerneaux acknowledges the potential of ridicule from scientific communities as she attempts to investigate the “root materialism and causal factors of physical manifestations and objects ‘touched’ by the supernatural” (p. 15) but remains steadfast in her interest in exploring the boundaries between the trifecta of material culture, sound, and belief. I value the voice of the object, the thing, above all else, and prefer to give space for its natural narratives to escape. In choosing to listen, as a subject, one almost becomes as ghostly as the thing itself. One is not supposed to wholly absorb oneself in or become “contaminated” by his or her research. But I am not the first, nor will I be the last [pp. 15–16; all emphasis original].

Because of its historical, curatorial and cultural curiosity, *High Static, Dead Lines* is an interesting and insightful read for media historians, parapsychologists, sound artists and anyone interested in technological materiality. Those of you experienced with hauntings may enjoy Gallerneaux’s personal experiences as well.

**DISPLAYING TIME:**

**THE MANY TEMPORALITIES OF THE FESTIVAL OF INDIA**


Reviewed by Jane Hutchinson.

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A “Festival of India” was celebrated in the United States during 1985 and 1986. It comprised over 200 India-related exhibitions, installations and demonstrations by craftspeople, *bahrupiya* (impersonators), magicians and puppeteers, dancers, poets and musicians. The ephemeral and distributed nature of this festival is thoroughly explored as the author weaves a narrative through an investigation of temporality, discussions of making and materiality, and the negotiations, compromises and mediations between politically infused relationships, observers and artists.

Rebecca Brown explains how the friendship between Reagan and Indira Gandhi, the developing relationships between government and cultural institutions in the United States and India, and the cultural, political and economic openness of the 1980s meant that a large-scale international...
event could take place. Key elements of the festival were, however, already being planned: Melā (meaning fair, festival or celebration in Sanskrit) and Adīti, for example, were incorporated into the 1985 iteration of the annual Festival of American Folklife, and Adīti had previously been presented in New Delhi (1978) and London (1982), increasing in scale and complexity with each restaging.

The book’s principal theme is time: the transformative nature of time, of “short durations,” “slow decay” (p. xiii) and the distance and distanc- ing of space and place as manifestations of time in bigger historical flows (p. 160), all explored through rich and detailed descriptions of the festival events and exhibited work. Following the introduction, the author presents “An Interruption” in order to explain how her theoretical approach to temporality, drawn from the work of Jacques Derrida and Edmund Husserl, influenced her thinking throughout the book’s project. She explores a number of examples in her discussions of the different temporalities of the festival. These include (in Chapter 2) the changing materiality of clay as it is transformed through the process of making, the “irruptions” of visitors into the galleries (Chapter 3) and the placing of contemporary work alongside historical and “traditional” work (Chapter 5). Although the book’s theme is time, the introduction, “Flickering Light, Fluttering Textiles,” explores light. Light is a thread through the narrative: lighting the exhibits, diffused light through the material of the exhibition tents and canopies, and the light and the relative darkness of their painted and embroidered interiors.

Brown uses the tent as a metaphor for her book’s project and for the Festival, which she describes as “a large set of overlapping tents” (pp. 7 and 153) that encompass creative spaces and shelters. Two tents feature in this text: a seventeenth-century Mughal emperor’s tent and the architect Frei Otto’s painted and embroidered tent, which was created through an experimental reworking of material grounded in tradition, in collaboration with Gujarati artists and craftspeople for the Golden Eye installation at the Smithsonian Design Museum (December 1985–January 1986). Brown explains how the wider aspirations of India were embedded within the traditional designs of the Frei Otto tent panels; one depicted an astronaut, a parent’s anticipation of space travel in a scientific future of their young child (p. 155).

In Displaying Time, Brown explains how the spectacle of the “other” and of the “exotic” (in the guise of education and understanding) provided by the Festival was an event in a long history of similarly purposed fairs and expositions (Chapters 1 and 3). Brown argues though that the exhibitions of the previous century were not simply representative of colonial power, as is commonly stated, but involved the same complexity of political and cultural maneuverings and acts of resistance as those of the 1980s. Richard Kurin, who was director of the Smithsonian’s annual Folklife Festival’s staging of Adīti, described the event as “a living exhibition” that, just like living villages and “working” industrial sites, attempted to reconstitute its original context through a mix of action and static installation, and through objects not to be touched and objects available to buy with the added appeal of being made “in front of your eyes.” These all required a mediation of the work through interpreters who would facilitate discussion between makers and conversation between the visiting public and the craftspeople.

Rajeev Sethi’s design and staging of Adīti was intended to represent the cycle of life from birth to maturity. (Adīti is both mother and daughter in the Hindu Vedas.) This intention is apparent in other elements of the Festival. For example, in Chapter 4, which examines Golden Eye in depth, Brown describes the skills and traditions involved in the creation of handicrafts that are taught by father to son, mother to daughter (p. 87) in a cycle of production that has been considered since the nineteenth century to be in need of preservation: a moral task of “anthropo- logical salvage” (p. 92) assumed by (Western) outsiders to be achievable by transforming local commercial networks into international trade. One of the Festival’s broader aims was to encourage business enterprise and the development of a market for Indian work in the U.S.A., but this, Brown explains, focused upon the commercial potential of the notion of the authenticity of craft work and did not include representations of India’s other industrial and scientific achievements. She does also point out, however, that in India, craft work is considered industrial rather than cultural. Although the Golden Eye exhibition was titled “An International Tribute to the Artisans of India,” it was focused upon the economic potential of the artisans’ skill rather than simply displaying them as “glories of the past” [1]. Rajeev Sethi, who was involved in the festi- val’s conception, and in particular the transformation of a Smithsonian gallery into a “living” Indian village, continues to align the cultural worth of artisan-made objects with a commercial value.

In Chapter 6 of Displaying Time, Brown explores global temporalities and conducts a detailed examination of how the organizers of the three festival exhibition venues [2], who,
determined to include contemporary work, attempted to work through tensions consequential to the limited temporal scope (p. 144) of Western concepts of traditional and contemporary and conceptions of India in time and space as exotic, distinct and distant. Organizers also had to find ways to assimilate these temporary exhibitions into their permanent collections and to introduce the work to a mixed audience of "elite urban . . . culturally astute viewers" (p. 127), national and international tourists and others, many of whom, she suggests, were more likely to be familiar with portrayals of India in cinema blockbusters than with any notion of contemporary Indian art. The cyclical and multilayered nature of the Festival is apparent in this chapter, too, as Brown explains how these three events drew upon previous exhibitions of contemporary Indian art. She reviews their catalogue texts as examples of scholarship and research into India’s twentieth-century art at a time when it was rare (p. 137) and concludes by suggesting that the legacy of these exhibitions needs to be examined and reconsidered within a reassessment of India’s art history.

The particular appeal of Displaying Time for this reviewer is its connection, through the influence of Derrida’s discussions of origins, reiterations and repetition upon the author, to the work of performance theorist Richard Schechner, whose book Between Theater and Anthropology [3] explores analogies between the cyclical nature of ritual and performance. Where Schechner’s model of Restored Behavior describes social actions and cultural performances as collaborative cyclical reenactments that shed old and incorporate new elements with each iteration—for example, the “transmission of behavior between master and novice” (p. 36) and the annual ritual of Ramilila in Northern India—Brown describes the Festival as a metaphorical tent that is “set up, taken down, patched and restored, added to and re-formed” (p. 153). This is also realized in the actuality of the Golden Eye exhibition of Otto Frei’s tent, where the panels that were not incorporated into the final creation hang alongside it, their presence still important in the overall affective experience.

In her conclusion Brown draws again upon the metaphor of the tent. She describes tents within tents as exhibitions become transient features in public and commercial spaces (p. 158), such as the tented village of the shopping mall that offers a range of exhibitionary practices. She explains how the temporality of the Festival of India is not only of its time but incorporates references to the past and is open-ended into the future through the recounting of events in text and aural accounts. It also persists through catalogues, images and the objects that were created for and during the events. Displaying Time is, she explains, itself but one element in a continuing deconstruction and remaking of the Festival.

Displaying Time can be read as an innovative and engaging approach to exploring, through its overarching theme of temporality, the complexities of staging a large-scale international festival event and will be of interest to those concerned with the presentation of art and cultural histories through museum and exhibition practices. It is also valuable through its offering to the reader the means to “refocus their temporal lenses” (p. 5) in order to gain a deeper understanding and appreciation of the web of moments and durations, flows and interruptions, linear, cyclical and layered temporalities, and the temporal resonances that are all constituents of such exhibitions and events.

Displaying Time is part of the interdisciplinary series Global South-East Asia and its author, a specialist in South Asian art, has written previously about the cultural, economic and political status of art and artisans in India. The book contains black and white images alongside related text for ease of reference and color plates of installation photographs and artwork plus a comprehensive bibliography.

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3 R. Schechner, Between Theater and Anthropology (University of Pennsylvania Press, 1985).

ATLAS OF POETIC BOTANY
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https://doi.org/10.1162/leon_r_01817
Francis Hallé, who is in his 80th year [Editor’s note: in 2018], is somewhat given to iconoclastic statements: “My dream is to do away with the need for names and classifications and bring botany back to the study of the biology of plants.” For those of us who are not botanists (or scientists as such), this foreshadows an intervention into the world of Linnaeus that could topple taxonomies of every discipline. But as it transpires, no harm is intended; as a botanist of the high equatorial forests, he hopes the reader will discover “a potent antidote to the woes that attend our modern life in the metropolis.” His experience and his passions, curiously, avoid the woes we know are attending the forests themselves. The 30 plants featured in this cabinet of curiosities are organized into five sections grouping the behaviors peculiar to each plant: Records and Exuberance; Adaptations; Mysterious Behavior; Coevolution Between Plants and Animals; and Biological Singularities. Travel to all parts of the tropical world has been a constant throughout the author’s career, and the wow factor is predominant.
My favorite is one of the bromeliads, an epiphyte growing high in the tops of the tropical forest; like most plants of this kind, the leaves are formed close enough together to hold rainwater, as much as 20 liters in this species:

Exposed to sunlight, a whole ecosystem develops inside each hanging aquarium: frogs, mollusks, shrimp, insect larvae, and a kind of crab. . . . Dead leaves make compost where other animals live: Some researchers think that when the plant blooms, it turns carnivorous and kills off the fauna for the benefit of its own inflorescence at the bottom of the aquarium.

Appropriately, the image is something of a metaphor for the pitiable state we have allowed the planet to reach and, in particular, the tropical forest where these plants grow.

Slim volumes about botanical curiosities have been standard fare for publishing since printing began, always risking the confusion of novelty with virtue. Such titles are often timed to appear before end-of-year seasonal gift-giving, so it is a little surprising that MIT Press has joined the tradition with this collection of strange plants. Curiously in the context of the imprint, the author introduces the subject with a digression into the efficacy of drawing as preferred to the photograph:

In the case of photography, the thinking belongs more to the person who has conceived and automated the camera than the person who uses it. . . . In contrast, drawing—which relies more on the individual brain and hand and does so without technological mediation—is more directly the work of the artist.

The artist with whom Hallé collaborates, Éliane Patriarca, is clearly from a graphics background; the diagrams she makes are eccentric to the tradition of botanical illustration, outlining the principles referred to in the text, which itself occasionally seems to have lost something in translation. This reviewer, with a special interest in orchids, is offended when “mushroom” is used to describe the specific and complex mycorrhizal fungal processes so crucial to orchids and many other plants. The avuncular tone adopted suggests the book is aimed at children between the ages of eight and thirteen, when interest in the wider world is alert but before critical reflexiveness can interrogate the evidence and hypotheses proposed. Anthropomorphizing the natural world, as practiced in the entertainment industry, is irritatingly applied here as part of the approach. Does it really close the gap between humans understanding other species or simply amplify their role as servants and slaves of humans? It raises the question of the bending of significance and meaning by a professional botanist and biologist as a pedagogical practice aimed at the young. Such subjectivity can by no means be excused as being “poetic,” although at least the locations designated in the tiny atlas image at top left are accurate and useful. There is a (too) brief lexicon of botanical terms, and no bibliography or index, but overall it is attractively laid out and printed.

**POWERS OF TIME: VERSIONS OF BERGSON**


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In *Powers of Time: Versions of Bergson*, French philosopher David Lapoujade sets out to construct a portrait of an “another” Henri Bergson, one not solely defined by the three main aspects of his thinking on affect—emotion, sympathy and attachment. After an intense and lengthy interrogation of Bergson’s vision on time and affect, as well as the notion of freedom (via, among others, Gilles Deleuze’s *Bergsonism*), Lapoujade concludes that this other Bergson, or in fact multiple Bergsons, can be made to appear via “apparently secondary and sometimes neglected” concepts, such as “obscure number,” “attachment to life” and “sympathy.” These thus give occasion to think of Bergson as a mathematical version, a perspectivist one and even “a doctor of civilization,” to finally arrive at Bergson the spiritualist. By fully acknowledging these concepts, and thus opening up another understanding of Bergson’s oeuvre, Lapoujade believes to “enable an indissoluble relationship to be knotted together between time and affect.” And he succeeds in doing so, although it takes some time to access his particular way of reasoning, as he tends to first pose certain lines of thought only to immediately question these, literally by a series of questions.

Lapoujade thus continuously points to aspects that have so far rarely been evoked. In the chapter “The Obscure Number of Duration of Life,” he for instance explicitly points to the close resemblance that Bergson observes between the philosopher and “the mathematician who determines a function by starting from the differential” in

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relation to the occurrence of “infinitely small elements,” or, in Lapoujade’s words, “veritable differentials of consciousness.” It has to be said that Lapoujade here picks up on a thesis already introduced by Jean Milet in 1974 “on the importance of infinitesimal calculus at the time that Bergson was working on Time and Free Will” (p. 22, note 14), which he however then further develops. In combination with, among others, his clarification of the subtle but important difference between intuition and sympathy in Bergson’s work, this adds to a small but very insightful volume.

Originally published in 2010, Lapoujade’s vision of Bergson is especially timely through its link to a nonhuman perspective. Especially the chapter on the attachment of life presents “a [Bergsonian] universe that opens up to a plurality of worlds,” as its final sentence appropriately posits, affirming that the nonhuman turn, not entirely surprising, already found its origins much earlier than today. It is therefore a shame, as is unfortunately quite often the case, that the translation of this work comes only now. In this case it is also somewhat unfortunate that the current translation sometimes lacks in accuracy or translates Lapoujade’s perfectly flowing—but particular—way of writing too literally. On the other hand, Lapoujade’s text raises some questions that beg to be answered, such as on the role of intelligence, and in relation to that of artists and philosophers responsible for Bergson’s observed disturbance of equilibrium. As Lapoujade concludes, “at the cost of violent efforts, man succeeds in synchronizing with other rhythms of duration, but most frequently lags behind . . . Man is this delay itself, an arrhythmia.” That being said, Powers of Time invites us not only to read more of Lapoujade but also to urgently—slowly and intensely—reread Bergson in light of the posthuman turn, as it is only through a “long acquaintance,” and possibly a renewed acquaintance, that his work can be fully appreciated.

**THE PRIME NUMBER CONSPIRACY**


Reviewed by Phil Dyke.

https://doi.org/10.1162/leon_r_01829

This most excellent book is a collection of short articles from Quanta magazine. Under normal circumstances, a collection of articles written by a number of different authors gathered together is something best avoided, but this is a glorious exception. The topics, although wide ranging, have been selected to be both interesting and profound. The writers are excellent, the articles are very well researched and show a good understanding of difficult subjects, and the subjects are explained without recourse to any advanced mathematics—in fact without any mathematics at all. As a mathematician myself who understands the mathematics behind the articles, I found this almost impossible task to have been achieved successfully by using analogy and very skillful prose.

The book is divided into seven sections, only the first of which is specifically about prime numbers. However, to be fair to the book, prime numbers do occasionally appear in other sections. This first section explores the distribution of twin primes (those that differ by two, such as 101 and 103); estimating the number of primes as they get rarer along the number line; and the distribution of the digits 1, 2, 3, 4, 5, 6, 7, 8, 9, 0 in individual primes. Subsequent sections cover other aspects of mathematics.

The second section concerns the occurrence of very specific numbers and mathematical structures in nature. Everyone knows about the Fibonacci sequence, but the structures examined here are lesser known—for example, a distribution called “universality” that looks random, but isn’t, and a distribution that looks Gaussian but isn’t (it’s called Tracy-Widom). Also, there’s a closer look at random processes and how particle physics and astronomy lead to the same periodic mathematical structures as those found in the solutions to simple algebraic equations.

The third section moves on to describe how some proofs are rescued from obscurity. Here the book branches into graph theory, statistics (again) and operational research (management science in the United States). Most of us realize that circles pack most closely in a kind of honeycomb pattern in two dimensions, but what about three and higher dimensions? As theoretical as this kind of problem sounds, such topological questions can provide solutions to fundamental problems in lattice theory, and these are applied to error correction in codes.

The next two, shorter, sections are on how computers can help to prove mathematical theorems and challenges on defining different infinities. The section on computers includes Russell’s paradox, whereby the set of all sets of elements that do not contain themselves causes a problem. Applying logic, if an element is in this set, then it isn’t. On the other hand, if an element is not in this set then by definition it has to be in there. As unresolvable as this seems, mathematicians have managed a workaround by disallowing certain definitions of a set, and it is a good story. Infinity has always perplexed the thinking human, and to learn that a whole hierarchy of infinities is now proved to exist still seems remarkable. The proof is technical, but here the prose is so well written it is almost as convincing. Finally, and a little bizarrely: Is doing this kind of mathematics good for your mental well-being? This last section is philosophical and veers toward being a little homespun.

This book exudes class from every chapter. The readability is paramount, and each author achieves this readability not only by excellent prose style but by writing in detail about the people in a sympathetic way. The biographical detail is enough for you to get to know the person behind the mathematics. It is just worth mentioning that, as excellent as this book is, there are two minor
problems. First, the Fields Medal keeps being introduced as if for the first time. Second, there are portions where the writing style goes into a direct interview, like a play, which is lazy writing. Both of these are pitfalls more prevalent in multi-author works. They could have been easily put right by careful editing. Apart from this quite minor point, each chapter reads very well, less like an essay and more like a short story. This book certainly deserves a wide readership.

DIGITAL RENAISSANCE: WHAT DATA AND ECONOMICS TELL US ABOUT THE FUTURE OF POPULAR CULTURE


Reviewed by Jan Baetens.

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I started to read this book with quite some skepticism. Yes, I don’t like the word “customer” when we talk of culture, and I am also one of those who think that the quality of life in an urban environment depends on the presence of a well-structured and dense network of bookshops (I mean real bookshops, not newsstands selling Fifty Shades of Grey). At the same time, I am well aware of the fact that culture without industry is neither thinkable nor desirable, although a primarily economic take on culture will never be totally unproblematic for me (is it necessary to mention once again the hollow pep talk of economists like Richard Florida?). And a last caveat: As a European and Francophile reader, I always feel uncomfortable with the ways in which US scholars use terms such as “popular” and “elite.”

But prejudices are never good, and I am grateful to Joel Waldfogel that he helped me get rid of quite some naïve if not false ideas on culture and economics. There remain many conclusions and suggestions that I think are open to debate—and I will come back to some of them—but I truly appreciate the intellectual and methodological honesty of this book, as well as its basic claim to make room for evidence-based thinking in our inevitably ideological debates on culture. Moreover, Waldfogel is a modest author, whose concern for culture is far from exclusively driven by figures, revenues, return on investment and profit maximization. Cultural diversity and a good mix of guilty pleasure and intellectual challenge are key elements in his thinking, and it was good to see that the final horizon of his work is something everybody can and should endorse: the possibility given to all to create and enjoy culture as much as possible.

Waldfogel’s message is both simple and highly surprising. Contrary to what many of those active or interested in the creative industries (in practice: music, movies, television and books) have been repeating, the digital revolution, which makes it so easy to reproduce, to circulate and thus also to steal copyrighted material, has not translated into a collapse of cultural production. From a quantitative point of view, one can only observe that the number of works being produced has been strongly increasing and continues to do so. And from a qualitative point of view, there may be signs that the audience considers the new works at least as appealing as those that were produced in the predigital era. In that sense, Waldfogel accepts that there are good reasons to believe that our age is that of a Renaissance not that of a decline. And according to him this Renaissance is not merely contemporary with the digital turn but can be explained by it for, thanks to the new technology, it has become possible to overcome the limitations of production and reception as defined by traditional forms of gatekeeping. It is now possible to produce at lower cost and distribute at almost no cost, and this evolution means that many works that could not previously be actually produced and distributed can now be made and made available to large audiences. This new situation helps us gain something (we can access more works at lower cost) but does not come without a loss. What we are losing to a certain extent—although Waldfogel tends to suggest that this idea or fear is not based on real evidence—is the protection offered by copyright law, which, when piracy becomes universal and endemic, can no longer function as an incentive to cultural creation. (As far as the publishing industry is concerned, I have strong doubts on this point, but the work on book production is definitely less convincing than the other sections of the research.) Waldfogel’s book globally [sic] defends copyright as a system that profits makers (in the short run) and audiences (in the long run), but he also produces many interesting figures showing that a reduction of copyright revenue does not hit all sectors and all agents or stakeholders the same way (if Hollywood loses money, for instance, the solution will not be to reduce the number of new movies but to reduce the salaries of its box office stars, which count for an incredible percentage of its production costs). Yet what we do not lose are the supposedly crucial advantages of gatekeeping, which Waldfogel discards as a dangerous myth. In the sphere of cultural production, “nobody knows,”
that is: Nobody knows what the audience will like or dislike, and for that reason the restraints imposed by traditional gatekeeping are not a guarantee that the works that are eventually judged worth making and selling are better than those everybody can now independently produce, self-publish and offer for almost nothing on the market.

All this may seem pretty abstract, but Digital Renaissance is in the first place a book that tries to build its argumentation on precise data—more precisely on data that are as precise as possible—for in many cases many figures are difficult to find, first because the available information is so meager and scattered that the gathering of relevant material supposes a tremendous amount of work and research, and second because the industry itself is not always eager to make these figures accessible. Waldfogel’s book is admirable in its efforts to clearly expose the way in which it has gathered, structured and presented its material, and even more admirable in the great modesty with which it remains aware of its limitations. The least we can say is that Digital Renaissance produces and shares a great deal of vital data that can now be discussed, completed or corrected. Quantitatively speaking, Waldfogel’s conviction that digitization has fostered instead of restricted cultural production seems difficult to deny.

More problematic, obviously, is the link between the quantitative and the qualitative sides of the data. The figures produced by Digital Renaissance in its attempts to give as objective as possible an idea of what audiences actually like seem to indicate that readers, viewers and listeners tend to be more positive about the works made during the digital era than those made during the predigital era, not only because there are now more works that the audience can like (a quite logical hypothesis, since there has been a dramatic increase on the supply side) but also and more importantly because modern audiences seem to find the works of the digital era more appealing than those of the previous era. Quality judgments are always tricky to make, as well as evaluate, even if one sticks to the apparently simple economic interpretation of “quality” as what appeals to customers and manages to be sold to them. Digital Renaissance does not have the pretention to go beyond the economic basis of this interpretation and thus stays away from aesthetic, political, sociological or philosophical debates on “value” (or “art”). Of course, the fact that these issues are not directly addressed is also a statement, as if “art” and “popular culture” belong to different spheres. Yet in certain cases it will be difficult to avoid these kinds of questions, even if one addresses culture in purely economic terms. A more precise definition of the “popular” is certainly something that further research in this field should consider an absolute priority.

The same applies to the relationship between new production and certain contextual constraints, be they institutional or personal, that determine the survival of older forms of culture. General education undoubtedly plays a role in the way audiences read older literature, for instance, while the key factor in the transmission of classic music is definitely one’s family background. In general, the similar treatment of the four creative industries that are studied in Digital Renaissance crudely wipes out the differences between them. In the field of independent publishing, for example, the “long tail” mantra is, I think, a myth (at least, I have never seen any independent publisher making a profit thanks to the long tail, even if there will certainly be exceptions). Waldfogel is also very quiet in his evaluation of the negative effects of piracy and his critique of the old gatekeeping system, which the “nobody knows” principle does not really make useless. Editorial control, supervision and even censorship are most often extremely positive elements, and decisions to publish or not, and to do so in this or that way, are not wet-finger work. In spite of all the problems entailed and the sometimes unfair results produced in this regard, it makes sense to recall the persisting influence of “hidden” vanity publishing in the production of literary value—we all know that Marcel Proust had to fund the publication costs of the first volume of his Remembrance of Things Past himself.

A last remark, at least for this review, expands on my previous remark on the somewhat mechanical juxtaposition of the four major creative industries. On the one hand, this juxtaposition does not pay enough justice to their specificities. On the other hand, and this is an essential point, the mere apposition of these industries misses the many interactions between them that affect the very economy of each of them. The book industry can no longer be separated from the film industry, for instance, as clearly shown by works such as those of Simone Murray (The Adaptation Industry, 2012) or Sarah Brouillette (Literature and the Creative Economy, 2014).

The best of possible worlds ought to meet to take further steps in a better understanding of art, culture, media and economy.

**WORLDMAKING AS TECHNÉ: PARTICIPATORY ART, MUSIC, AND ARCHITECTURE**


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

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In general, reading compilations of papers, either from a conference or from multiple sources, can be hard going. Too dense, so many hundreds, even thousands of references. You can’t “read” them, in several senses. If you don’t know who is a hero or a villain for whom, nuances may be lost, in-jokes missed. The editors of Worldmaking as Techné: Participatory Art, Music, and Architecture have
succeeded in producing a large book containing 17 important papers and essays, some historical and some recent, all over 20 pages long, from (surely everyone’s heroes?) Nicolas Schöffer to Heinz von Foerster, with an introduction by Roy Ascott—“This book is a triumph of theory on the move.” You can actually read it, from cover to cover. The texts, and plenty of illustrations, are connected, parts of a whole, but add to rather than detract from each other. The copious notes are, thank goodness, in parallel to the text, in the margins. Theory becomes practice here. Concepts are enacted. At the moment, “our” parts of the world seem to be disintegrating, rejecting us as well they might. If it is not too late to imagine constructing or reconstructing our world, this book may well be a primer, a toolkit and a provocation to doing so.

Organized into three sections, Po(i)etics, Machinic and Cybernetic, the book explores “the aesthetics, systems, methods and ontological underpinnings” of a worldmaking-based practice. I think if you had a library consisting of, say, this book; the admittedly hard to find Cybernetics of Cybernetics, edited in 1974 by von Foerster when he was at the University of Illinois’s biological computing lab; back copies of the London Review of Books or the Times Literary Supplement; and New Scientist, you might well have the equivalent of a Whole Earth Catalog for our times. Had you time and money to refer to both original and secondary sources mentioned in this tome you’d have enough for a lifetime. But if you want action, concretization, real projects, the “revelation” that comes through techné—the politics, so to speak, when we do that in today’s world—the book under review here would be your stimulus.

The three editors come from the fields of art, music and architecture; the concepts and the ontologies discussed, if not always interchangeable, nonetheless reinforce the holistic approach. Their aim? A more rounded and formalized language around the concept of worldmaking as techné. “We believe that by forming a common language it would be helpful to other theorists and practitioners who work in similar territory. . . . We wanted to learn about the parallels and the differences between various practices that may fall under the moniker of worldmaking, compare the outcomes in these works, and look for future directions.”

In the first section, Po(i)etics, Schöffer writes, in 1985, of the motivations and framework for his work. It’s rather sad to see his optimistic hopes for “non-redundant” art, when today work such as his might well be drowned out, sonically and visually, by a terrible redundant splurge of more-or-less-useless social media, the antithesis of his endeavors. Subsequent chapters deal with the psycho-geography of a drum machine by Peter Blasser, Alberto de Campo on inventing causalities, and networks of influence, the détournement of metadata to artistic ends and more. The Machinic section starts with a good 1993 text by Felix Guattari, “Machinic Heterogenesis”—the “how” to Techné’s “why.” He contrasts but connects the diagram, always in flux, and the materialized machine, a leitmotif, under different guises, for this book. He also broadens the notion of what a machine actually is to include signs, values and the social. Further chapters cover a conceptual framework for computer art, architectural practice as codification (Sang Lee) and Laura Beloff on wearable technology, disrupting and questioning any smooth integration of technology and the human but also providing a mental space for users to explore. The section finishes with Graham Wakefield’s text on Computational Ontology, against determinism, via Bergson’s notion of a nonstatic, “becoming” reality. Worldmaking here is considered as an open-ended, creative process. The final section, Cybernetics, starts with a 2005 paper by Andrew Pickering (revised in 2009) and focuses on two of my heroes: Gordon Pask and Stafford Beer. Both were concerned with systems’ actions as much as “thinking.” Beer, even in his idea of an automated factory, wanted not plans and diagrams but adaptive systems involving nature. Pask was happily prepared to cause minor explosions involving crystals growing in ovens as a computational medium and used the idea of a pond as a biological computer. Both cybernauts were tinkerers, in a very positive sense. Both loved the mystique of the lab; both had a shamanistic side. In human terms, Pask evolved the idea of a learning “conversation” with a machine and was active in theater, architecture and robotic art. Beer was to have introduced a systems approach to Allende’s Chile’s economy until Pinochet’s coup ended all such prospects (I believe that when the Indian government asked Beer to undertake a similar project, he advised them to pretend they had the computers, as this might work just as well). Beer and Pask illustrate the wonder of cybernetics on many levels, including one of magic and performance. Pask invented the microphone drop long before it became a “thing” and was capable of turning up in his glowing cape at entirely the wrong conference and still asking pertinent questions of someone else’s intervention.

Sana Murrani focuses on a bottom-up approach to the reappraisal of the built environment via second-order cybernetic principles, the cybernetics of cybernetics, the human participant as part of the system and the phenomenology of what is going on when that occurs. The section progresses with Philip Beesley’s Sentient Canopy and Katherine Elizabeth Johansson using an analysis of Beesley’s Hylozoic Series as an example of how technological art, in this case an immersive environment, can impact how we understand consciousness and reality. Then come rich, seminal papers by Edward Shanken and Heinz von Foerster. Johansson quotes de Chardin: “Prodigious sympathy might arise in material convergence,” and this in a way sums up the whole book.
DIVA NATION: FEMALE ICONS FROM JAPANESE CULTURAL CULTURE


Reviewed by Jan Baetens.

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There are many ways to define the word “diva” and many local and global examples that illustrate a phenomenon that goes far beyond the original meaning of the word as “opera diva.” This collection is an important contribution to a better understanding of the diva in the postfeminist era. The main objective of the book is not to celebrate women or womanhood or to disclose notable women who have nevertheless been overlooked by patriarchal historiography but to build a new interpretive framework. Key in this regard is the following proposal, made by the prefacer of the book, Laura Hein: “Successful divas are debt collectors—their honesty is a claim for reparations, but their demands are rarely met with an equally honest response” (p. xvi). The rich—and brilliantly written—introduction by the two editors further explores this fundamental hypothesis. It underscores the similarities between the extremely variegated case studies one finds in the book, which covers a broad range of periods and cultural spheres, while managing to carefully point out their common features, all of them linked with the often tragic clash between female genius and social structures.

What most interests the various contributors is the permanent tension—social, ideological, political, in short: cultural—of mainstream culture and diva culture. More precisely it is the tension between traditional Japanese ideas and ideals of womanhood and the often crude rejection of these norms centered on notions such as modesty, restraint and unpretentiousness, by all kinds of women—straight, queer, transgender—whose way of life is exuberantly exceptional as well as exceptionally excessive, at least at certain moments of their life. Not all divas remain divas after their public performances; some of them even choose “excessive normalcy” as their way of performing the qualities and audacity of diva lives (the key example here is the Olympic skating champion Asada Mao, who powerfully combined girl-next-door aesthetics with unusual personal strength and career planning).

Written by specialists in Japanese culture, Diva Nation offers a good panorama of the historical and contemporary presence and diversity of divas, ranging from mythological figures to present-day performers and pop stars (for non-Japanese audiences, the best-known example is probably Yoko Ono). The strong historical dimension as well as the generic diversity of the book are unquestionably two great advantages. First of all, the diva phenomenon can emerge as a general pattern of Japanese culture and can do away with persistent clichés, at least in Western eyes, mainly of the geisha figure (roughly speaking, the Japanese equivalent of the “mother and whore” female stereotypes in Western traditions). Corollarily, the mix of high cultural and low cultural examples, theater and literature, music and visual arts, folklore and the Internet also helps foreground these larger patterns. In a second step, and most of the contributions do this in an exemplary way, the initially purely Japanese take on the diva is compared to examples and theoretical readings of the diva in other cultures, European as well as American (this may seem a Western bias, but it helps avoid making nonrelevant comparisons). On the other hand, there is a strong input of general theories on celebrity and performance culture and thus a permanent dialogue with authors such as Richard Dyer, Lauren Berlant and Judith Butler. On the other hand, the Japanese examples are also interpreted and nuanced in light of non-Japanese cases of diva culture, such as Josephine Baker or Judy Garland (and the fact that some Japanese divas are actually cross-cultural examples, such as Yoko Ono, makes these kinds of references and comparisons all the more useful and convincing).

At the same time, the transhistorical and cross-cultural perspectives, perfectly valuable in themselves, come also with a price. All more or less general or generalizing approaches remain in need of a no-less-necessary historical periodization and differentiation, which is clearly not the principal aim of the collection. It is now time to produce a second volume that is more committed to historical differences, between premodern and modern Japan, between pre-Western and Westernized Japan, between traditional and high-tech culture. Similar remarks may apply to the ecumenical approach of high and low culture. It is an excellent idea to bring together examples and practices from very different cultural fields, but it might have been interesting to learn more about the pressure of the cultural industries (if not the cultural industry in the Adorno and Horkheimer sense) in Japanese pop culture, where the diva is such a structuring phenomenon. The editors are definitely aware of this perspective, which has to do with the agency of divas, but the current framework of the book did not allow it to address these issues as well.

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99 Variations on a Proof

Animal Musicalities: Birds, Beasts, and Evolutionary Listening
by Rachel Mundy. Reviewed by Edith Doove.

Disconnect: Facebook’s Affective Bonds
by Tero Karpri. Reviewed by Andrew Prior.
Leonardo Reviews


Quantum Computing for Everyone by Chris Bernhardt. Reviewed by Phil Dyke.


Visuality and Virtuality: Images and Pictures from Prehistory to Perspective by Whitney Davis. Reviewed by Ian Verstegen.


MAY 2019
Erwin Schrödinger’s Color Theory: Translated with Modern Commentary edited by Keith K. Niall. Reviewed by Ernest Edmonds and Mike Leggett.

Facebook Society: Losing Ourselves in Sharing Ourselves by Roberto Simanowski; translated by Susan H. Gillespie. Reviewed by Amy Ione.


Picturing the Postcard: A New Media Crisis at the Turn of the Century by Monica Cure. Reviewed by Kathryn Adams.


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