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Spring 2017

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science

Gravity's Kiss

The Detection of Gravitational Waves

Harry Collins

Scientists have been trying to confirm the existence of gravitational waves for fifty years. Then, in September 2015, came a "very interesting event" (as the cautious subject line in a physicist's email read) that proved to be the first detection of gravitational waves. In *Gravity's Kiss*, Harry Collins—who has been watching the science of gravitational wave detection for forty-three of those fifty years and has written three previous books about it—offers a final, fascinating account, written in real time, of the unfolding of one of the most remarkable scientific discoveries ever made.

Predicted by Einstein in his theory of general relativity, gravitational waves carry energy from the collision or explosion of stars. Dying binary stars, for example, rotate faster and faster around each other until they merge, emitting a burst of gravitational waves. It is only with the development of extraordinarily sensitive, highly sophisticated, detectors that physicists can now confirm Einstein's prediction. This is the story that Collins tells.

Collins, a sociologist of science who has been embedded in the gravitational wave community since 1972, traces the detection, the analysis, the confirmation, and the public presentation and reception of the dis-covery—from the first email to the final published paper and the response of professionals and the public. Collins shows that science today is collaborative, far-flung (with the physical location of the participants hardly mattering), and sometimes secretive, but still one of the few institutions that has integrity built into it.

Harry Collins is Distinguished Research Professor of Sociology and Director of the Centre for the Study of Knowledge, Expertise, and Science at Cardiff University. He is the author of *Changing Order*, *Gravity's Shadow*, *Gravity's Ghost*, *Gravity's Ghost* and *Big Dog*, and other books. He is coauthor of *Bad Call: Technology's Attack on Referees and Umpires and How to Fix It* (MIT Press).
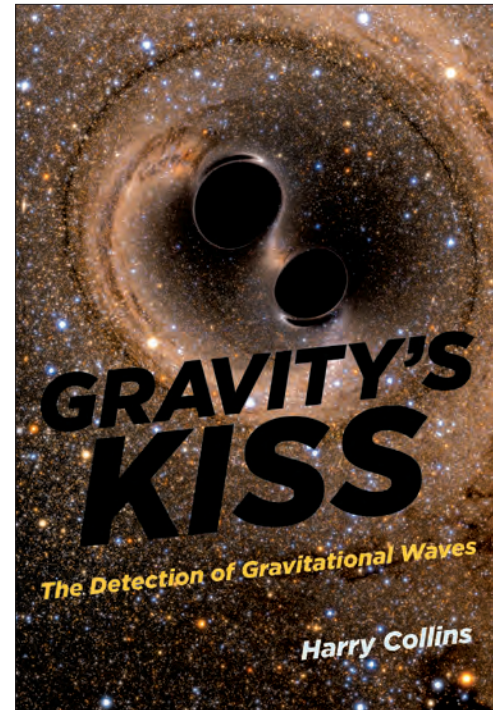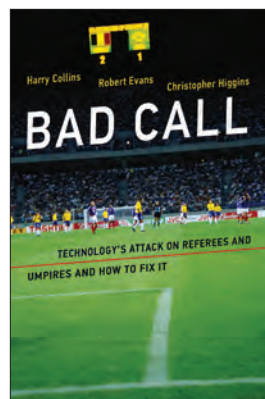
A fascinating account, written in real time, of the unfolding of a scientific discovery: the first detection of gravitational waves.

February
6 x 9, 416 pp.
39 illus.

$29.95T/£22.95 cloth
978-0-262-03618-4

Also available [or thumbnail?]

Bad Call
Technology's Attack on Referees and Umpires and How to Fix It
Harry Collins, Robert Evans, and Christopher Higgins

2016, 978-0-262-03539-2
$26.95/£19.95 cloth
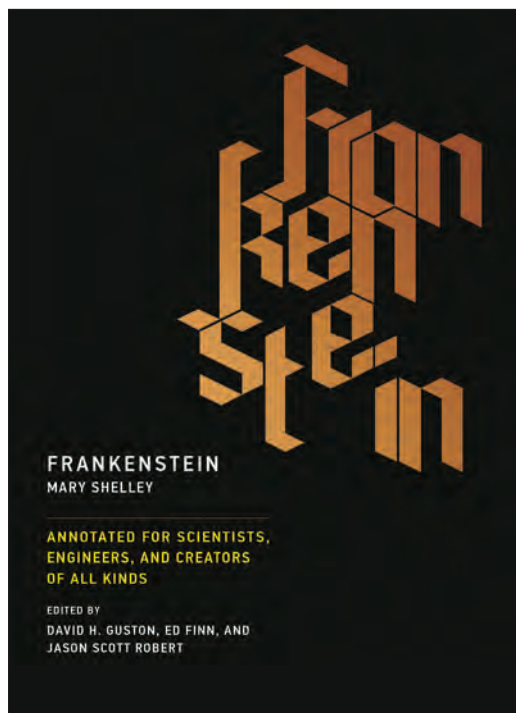
science | literature

Frankenstein

Annotated for Scientists, Engineers,
and Creators of All Kinds

Mary Shelley

edited by David H. Guston, Ed Finn, and Jason Scott Robert
introduction by Charles E. Robinson

Mary Shelley's *Frankenstein* has endured in the popular imagination for two hundred years. Begun as a ghost story by an intellectually and socially precocious eighteen-year-old author during a cold and rainy summer on the shores of Lake Geneva, the dramatic tale of Victor Frankenstein and his stitched-together creature can been read as the ultimate parable of scientific hubris. Victor, "the modern Prometheus," tried to do what he perhaps should have left to Nature: create life. Although the novel is most often discussed in literary-historical terms—as a seminal example of romanticism or as a groundbreaking early work of science fiction—Mary Shelley was keenly aware of contemporary scientific developments and incorporated them into her story. In our era of synthetic biology, artificial intelligence, robotics, and climate engineering, this edition of *Frankenstein* will resonate forcefully for readers with a background or interest in science and engineering, and anyone intrigued by the fundamental questions of creativity and responsibility. This edition of *Frankenstein* pairs the original 1818 version of the manuscript—meticulously line-edited and amended by Charles E. Robinson, one of the world's preeminent authorities on the text—with annotations and essays by leading scholars exploring the social and ethical aspects of scientific creativity raised by this remarkable story. The result is a unique and accessible edition of one of the most thought-provoking and influential novels ever written.

David Guston is Professor and Founding Director of the School for the Future of Innovation in Society at Arizona State University, where he also serves as Codirector of the Consortium for Science, Policy, and Outcomes. **Ed Finn** is Founding Director of the Center for Science and the Imagination at Arizona State University, where he is also Assistant Professor with a joint appointment in the School of Arts, Media, and Engineering and the Department of English. **Jason Scott Robert** is Lincoln Chair in Ethics, Associate Professor in the School of Life Sciences, and Director of the Lincoln Center for Applied Ethics at Arizona State University.

Essays by
Elizabeth Bear, Cory Doctorow, Heather E. Douglas, Josephine Johnston, Kate MacCord, Jane Maienschein, Anne K. Mellor, Alfred Nordmann

The origial 1818 text of Mary Shelley's classic novel, with annotations and essays highlighting its scientific, ethical, and cautionary aspects.

May
6 1/2 x 9, 488 pp.
15 illus.

$19.95T/£14.95 paper
978-0-262-53328-7

character and situation of
existing always in my own
wn from the following pages
natever kind.
o the author, that this story
ne is principally laid, and in
ssed the summer of 1816 in
d rainy, and in the evenings
casionally amused ourselves
ppened to fall into our hands.
itation. Two other friends (a
nore acceptable to the public
myself agreed to write each
nce.
serene; and my two friends
, in the magnificent scenes
y visions. The following tale

accompanied the commence-
d with such evil forebodings.
to assure my dear sister of
uccess of my undertaking.
I walk in the streets of Pe-
on my cheeks, which braces
nderstand this feeling? This
owards which I am advanc-
Inspirited by this wind of
nt and vivid. I try in vain
rost and desolation; it ever
gion of beauty and delight.

challenge that evening by writing the
t stories. John Polidori (1795–1821)
rt story that went on to inspire Bram

There, Margaret, the sun is for ever visible; its broad disk just skirting the horizon, and diffusing a perpetual splendour. There—for with your leave, my sister, I will put some trust in preceding navigators—there snow and frost are banished; and, sailing over a calm sea, we may be wafted to a land surpassing in wonders and in beauty every region hitherto discovered on the habitable globe. Its productions and features may be without example, as the phænomena of the heavenly bodies undoubtedly are in those undiscovered solitudes. What may not be expected in a country of eternal light? I may there discover the wondrous power which attracts the needle;[3] and may regulate a thousand celestial observations, that require only this voyage to render their seeming eccentricities consistent for ever. I shall satiate my ardent curiosity[4] with the sight of a part of the world never before visited,

15

3. When Victor talks about the "wondrous power [of] the needle," he talks about magnetism and its very first application in a compass. For centuries, people ascribed magical powers to magnetite and lodestones, until William Gilbert (1540–1603) first discovered the basic features of magnetism and the fact that Earth itself is a weak magnet. The links between electricity and magnetism were a major subject of scientific investigation during Mary's lifetime, and a number of expeditions departed for the North and South Poles in the hopes of discovering the secrets of the planet's magnetic field.
Nicole Herbots.

4. For moderns, this comment may seem self-evident, if a little florid. But such Promethean ambition does not characterize all historical periods or all cultures or all individuals; rather, it reflects the interesting combination of curiosity, ambition, and historical perspective that coevolved with the European exploration of science and a profoundly multicultural world. Mary was writing at the close of the Age of Discovery, during which Europeans rounded the southern tip of Africa, "discovered" and colonized the New World, and circumnavigated the globe. Polar exploration was one remaining feat. It was also the age of romanticism, the paintings of Caspar David Friedrich (1774–1840) and Eugène Delacroix (1798–1863), as well as the music of Ludwig van Beethoven (1770–1827) and Hector Berlioz (1803–1869). This eagerness for exploration is express in "Ulysses," the poem written in 1833 by Alfred, Lord Tennyson (1809–1892):

I cannot rest from travel: I will drink
Life to the lees: All times I have enjoy'd
Greatly, have suffer'd greatly, both with those
That loved me, and alone, on shore, and when
Thro' scudding drifts the rainy Hyades
Vext the dim sea: I am become a name;
For always roaming with a hungry heart.

I am a part of all that I have met;
Yet all experience is an arch wherethro'
Gleams that untravell'd world whose margin fades
For ever and forever when I move. (Tennyson 2004, XXX)

The irony, at least to modern sensibilities, is that this romantic language befits the pursuit of art, not the rational pursuit of science.
Braden Allenby.
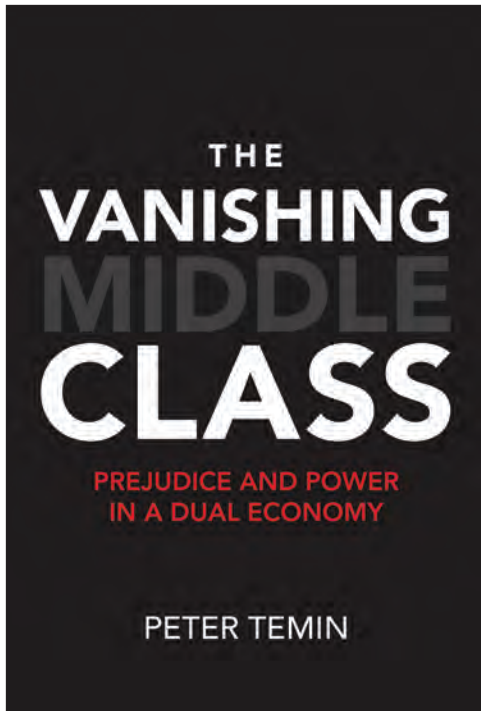
The Vanishing Middle Class

Prejudice and Power in a Dual Economy

Peter Temin

The United States is becoming a nation of rich and poor, with few families in the middle. In this book, MIT economist Peter Temin offers an illuminating way to look at the vanishing middle class. Temin argues that American history and politics, particularly slavery and its aftermath, play an important part in the widening gap between rich and poor. Temin employs a well-known, simple model of a dual economy to examine the dynamics of the rich/poor divide in America, and outlines ways to work toward greater equality so that America will no longer have one economy for the rich and one for the poor.

Many poorer Americans live in conditions resembling those of a developing country—substandard education, dilapidated housing, and few stable employment opportunities. And although almost half of black Americans are poor, most poor people are not black. Conservative white politicians still appeal to the racism of poor white voters to get support for policies that harm low-income people as a whole, casting recipients of social programs as the Other—black, Latino, not like us. Moreover, politicians use mass incarceration as a tool to keep black and Latino Americans from participating fully in society. Money goes to a vast entrenched prison system rather than to education. In the dual justice system, the rich pay fines and the poor go to jail.

Peter Temin is Professor of Economics Emeritus at MIT. He is the coauthor of *Keynes: Useful Economics for the World Economy* (MIT Press) and of *The Leaderless Economy*.

Why the United States has developed an economy divided between rich and poor and how racism helped bring this about.

March
6 x 9, 208 pp.
7 illus.

$27.95T/£19.95 cloth
978-0-262-03616-0

Also available

Keynes
Useful Economics for the World Economy
Peter Temin
2017, 978-0-262-52899-3
$20.95T/£15.95 paper

science

The Digital Mind

How Science Is Redefining Humanity

Arlindo Oliveira

What do computers, cells, and brains have in common? Computers are electronic devices designed by humans; cells are biological entities crafted by evolution; brains are the containers and creators of our minds. But all are, in one way or another, information-processing devices. The power of the human brain is, so far, unequaled by any existing machine or known living being. Over eons of evolution, the brain has enabled us to develop tools and technology to make our lives easier. Our brains have even allowed us to develop computers that are almost as powerful as the human brain itself. In this book, Arlindo Oliveira describes how advances in science and technology could enable us to create digital minds.

Exponential growth is a pattern built deep into the scheme of life, but technological change now promises to outstrip even evolutionary change. Oliveira describes technological and scientific advances that range from the discovery of laws that control the behavior of the electromagnetic fields to the development of computers. He calls natural selection the ultimate algorithm, discusses genetics and the evolution of the central nervous system, and describes the role that computer imaging has played in understanding and modeling the brain. Having considered the behavior of the unique system that creates a mind, he turns to an unavoidable question: Is the human brain the only system that can host a mind? If digital minds come into existence—and, Oliveira says, it is difficult to argue that they will not—what are the social, legal, and ethical implications? Will digital minds be our partners, or our rivals?

Arlindo Oliveira is President of Instituto Superior Técnico (Técnico Lisboa), where he is also Professor in the Computer Science and Engineering Department.

How developments in science and technology may enable the emergence of purely digital minds— intelligent machines equal to or greater in power than the human brain.

architecture | popular culture

The Strip

Las Vegas and the Architecture of the American Dream

Stefan Al

The Las Vegas Strip has impersonated the Wild West, with saloon doors and wagon wheels; it has decked itself out in midcentury modern sleekness. It has illuminated itself with twenty-story-high neon signs, then junked them. After that came Disney-like theme parks featuring castles and pirates, followed by replicas of Venetian canals, New York skyscrapers, and the Eiffel Tower. (It might be noted that forty-two million people visited Las Vegas in 2015—ten million more than visited the real Paris.) More recently, the Strip decided to get classy, with casinos designed by famous architects and zillion-dollar collections of art. Las Vegas became the "implosion capital of the world" as developers, driven by competition, got rid of the old to make way for the new—offering a non-metaphorical definition of "creative destruction." In *The Strip*, Stefan Al examines the many transformations of the Las Vegas Strip, arguing that they mirror transformations in America itself. *The Strip* is not, as popularly supposed, a display of architectural freaks but representative of architectural trends and a record of social, cultural, and economic change.

Al tells two parallel stories. He describes the feverish competition of Las Vegas developers to build the snazziest, most tourist-grabbing casinos and resorts—with a cast of characters including the mobster Bugsy Siegel, the eccentric billionaire Howard Hughes, and the would-be political kingmaker Sheldon Adelson. And he views the Strip in a larger social context, showing that it has not only reflected trends but also magnified them and sometimes even initiated them. Generously illustrated with stunning color images throughout, *The Strip* traces the many metamorphoses of a city that offers a vivid projection of the American dream.

Stefan Al, a Dutch architect and urban designer, is Associate Professor of Urban Design at the University of Pennsylvania. His books include *Villages in the City* and *Mall City*.

The transformations of the Strip—from the fake Wild West to neon signs twenty stories high to "starchitecture"—and how they mirror America itself.

science

Is the Universe a Hologram?
And Other Conversations with Leading Scientists

Adolfo Plasencia
foreword by Tim O'Reilly

Science today is more a process of collaboration than moments of individual "eurekas." This book recreates that kind of synergy by offering a series of interconnected dialogues with leading scientists who are asked to reflect on key questions and concepts about the physical world, technology, and the mind. These thinkers offer both specific observations and broader comments about the intellectual traditions that inform these questions; doing so, they reveal a rich seam of interacting ideas.

The persistent paradox of our era is that in a world of unprecedented access to information, many of the most important questions remain unsolved. These conversations (conducted by a veteran science writer, Adolfo Plasencia) reflect this, with scientists addressing such issues as intelligence, consciousness, global warming, energy, technology, matter, the possibility of another earth, changing the past, and even the philosophical curveball, "is the universe a hologram?"

The dialogues discuss such fascinating aspects of the physical world as the function of the quantum bit, the primordial cosmology of the universe, and the wisdom of hewn stones. They offer optimistic but reasoned views of technology, considering convergence culture, algorithms, "Beauty ≠ Truth," the hacker ethic, AI, and other topics. And they offer perspectives from a range of disciplines on intelligence, discussing subjects that include the neurophysiology of the brain, affective computing, collaborative innovation, and the wisdom of crowds.

Adolfo Plasencia, a blogger, writer, and columnist on science and technology, hosted the Spanish television program *Tecnópolis* for more than six years. He cofounded the MITUPV Exchange, a joint initiative of MIT and the Polytechnic University of Valencia (UPV).

Questions about the physical world, the mind, and technology in conversations that reveal a rich seam of interacting ideas.

May
6 x 9, 528 pp.
35 illus.

$29.95T/£22.95 cloth
978-0-262-03601-6

CONVERSATIONS WITH

Hal Abelson, Ricardo Baeza-Yates, John Perry Barlow, Javier Benedicto, José Bernabéu, Michail Bletsas, Jose M. Carmena, David Casacuberta, Yung Ho Chang, Ignacio Cirac, Gianluigi Colalucci, Avelino Corma, Bernardo Cuenca Grau, Javier Echeverria Ezponda, José Hernández-Orallo, Hiroshi Ishii, Pablo Jarillo-Herrero, Yung Ho Chang, Henry Jenkins, Anne Margulies, Mario J. Molina, Tim O'Reilly, John Ochsendorf, Paul Osterman, Alvaro Pascual-Leone, Rosalind W. Picard, Howard Rheingold, Alejandro W. Rodriguez-Wong, Israel Ruiz, Sara Seager, Richard Stallman, Antonio Torralba, Bebo White, José María Yturralde

global studies | politics

Extraction Empire

Sourcing the Scales, Systems, and States
of Canada's Global Resource Empire

**edited by Pierre Bélanger
and Nina-Marie Lister**

Extraction is the process and practice that defines Canada, at home and abroad. Of the nearly 20,000 mining projects in the world from Africa to Latin America, more than half are Canadian-operated. Not only does the mining economy employ close to 400,000 people in Canada, it contributed $57 billion CAD to Canada's GDP in 2014 alone. Globally, more than 75 percent of the world's mining firms are based in Canada. The scale of these statistics naturally extends the logic of Canada's historical legacy as state, nation, and now, as global resource empire. Canada, once a far-flung northern outpost of the British Empire, has become an empire in its own right.

This book examines both the historic and contemporary Canadian culture of extraction, with essays, interviews, archival material, and multimedia visualizations. The essayists and interviewees—who include such prominent figures as Naomi Klein and Michael Ignatieff—come from a range of fields, including geography, art, literature, architecture, science, environment, and business. All consider how Canadian life came to be mediated through mineral extraction. When did this empire emerge? How far does it reach? Who gains, who loses? What alternatives exist? On the 150th anniversary of the creation of Canada by Queen Victoria's Declaration of Confederation, it is time for Canada to re-examine and reimagine its imperial role throughout the world, from coast to coast, from one continent to another.

Pierre Bélanger, a landscape architect and urbanist, is Associate Professor of Landscape Architecture at Harvard University's Graduate School of Design and the coauthor of *Ecologies of Power: Countermapping the Logistical Landscapes and Military Geographies of the U.S. Department of Defense* (MIT Press) and *Landscapes of Infrastructure*. **Nina-Marie Lister**, an ecologist and urban planner, is Graduate Program Director and Associate Professor in the School of Urban and Regional Planning at Ryerson University, Toronto, and the coauthor of *Projective Ecologies*.

Interviews, Archives, and Essays

A Tribe Called Red, Chief Allan Adam, Chris Alton, David Chancellor, Glen S. Coulthard, Alain Denault, Eriel Deranger, Alex Golub, James Hopkins, Genevieve Ennis Hume, Michael Ignatieff, Harold Innis, Naomi Klein, Kari Levitt, Doug Morrison, Rene Muga, Peter Munk, Joan Murray, Alessandra Ponte, Moura Quayle, Olga Semenovych, Anna Tsing, David Tuccaro, Frank Underhill, John van Nostrand, Maurice Strong, Mel Watkins, Sean Willy, Suzanne Zeller

**How Canada became
an empire in its own right
and how Canadian life
came to mediated through
mineral extraction**

May
7 11/25 x 9 17/25, 740 pp.
627 illus., color throughout

$44.95T/£34.95 paper
978-0-262-53382-9

Also available

Ecologies of Power
**Countermapping the Logistical
Landscapes and Military Geographies
of the U.S. Department of Defense**
Pierre Bélanger and Alexander Arroyo
2016, 978-0-262-52939-6
$39.95T/£29.95 paper

history | environment

Energy and Civilization
A History

Vaclav Smil

Energy is the only universal currency; it is necessary for getting anything done. The conversion of energy on Earth ranges from terra-forming forces of plate tectonics to cumulative erosive effects of raindrops. Life on Earth depends on the photosynthetic conversion of solar energy into plant biomass. Humans have come to rely on many more energy flows—ranging from fossil fuels to photovoltaic generation of electricity—for their civilized existence. In this monumental history, Vaclav Smil provides a comprehensive account of how energy has shaped society, from pre-agricultural foraging societies through today's fossil fuel–driven civilization.

Humans are the only species that can systematically harness energies outside their bodies, using the power of their intellect and an enormous variety of artifacts—from the simplest tools to internal combustion engines and nuclear reactors. The epochal transition to fossil fuels affected everything: agriculture, industry, transportation, weapons, communication, economics, urbanization, quality of life, politics, and the environment. Smil describes humanity's energy eras in panoramic and interdisciplinary fashion, offering readers a magisterial overview. This book is an extensively updated and expanded version of Smil's *Energy in World History* (1994). Smil has incorporated an enormous amount of new material, reflecting the dramatic developments in energy studies over the last two decades and his own research over that time.

Vaclav Smil is Distinguished Professor Emeritus at the University of Manitoba. He is the author of forty books, including *Power Density: A Key to Understanding Energy Sources and Uses* and *Made in the USA: The Rise and Retreat of American Manufacturing*, both published by the MIT Press. In 2010 he was named by *Foreign Policy* as one of the Top 100 Global Thinkers. In 2013 Bill Gates wrote on his website that "there is no author whose books I look forward to more than Vaclav Smil."

"Smil is one of my favorite authors. The term "polymath" was made for people like him. . . . I learn more by reading Vaclav Smil than just about anyone else."
—Bill Gates, *The Gates Notes*

A comprehensive account of how energy has shaped society throughout history, from pre-agricultural foraging societies through today's fossil fuel–driven civilization.

May
6 x 9, 536 pp.
113 illus.

$39.95T/£29.95 cloth
978-0-262-03577-4

digital culture

# What Algorithms Want
Imagination in the Age of Computing
Ed Finn

We depend on—we believe in—algorithms to help us get a ride, choose which book to buy, execute a mathematical proof. It's as if we think of code as a magic spell, an incantation to reveal what we need to know and even what we want. Humans have always believed that certain invocations—the marriage vow, the shaman's curse—do not merely describe the world but make it. Computation casts a cultural shadow that is shaped by this long tradition of magical thinking. In *What Algorithms Want*, Ed Finn considers how the algorithm—in practical terms, "a method for solving a problem"—has its roots not only in mathematical logic but also in cybernetics, philosophy, and magical thinking.

Finn argues that the algorithm deploys concepts from the idealized space of computation in a messy reality, with unpredictable and sometimes fascinating results. Drawing on sources that range from Neal Stephenson's *Snow Crash* to Diderot's *Encyclopédie*, from Adam Smith to the *Star Trek* computer, Finn explores the gap between theoretical ideas and pragmatic instructions. He examines the development of intelligent assistants like Siri, the rise of algorithmic aesthetics at Netflix, Ian Bogost's satiric Facebook game *Cow Clicker*, and the revolutionary economics of Bitcoin. He describes Google's goal of anticipating our questions, Uber's cartoon maps and black box accounting, and what Facebook tells us about programmable value, among other things.

If we want to understand the gap between abstraction and messy reality, Finn argues, we need to build a model of "algorithmic reading" and scholarship that attends to process, spearheading a new experimental humanities.

Ed Finn is Founding Director of the Center for Science and the Imagination at Arizona State University, where he is also Assistant Professor with a joint appointment in the School of Arts, Media, and Engineering and the Department of English.
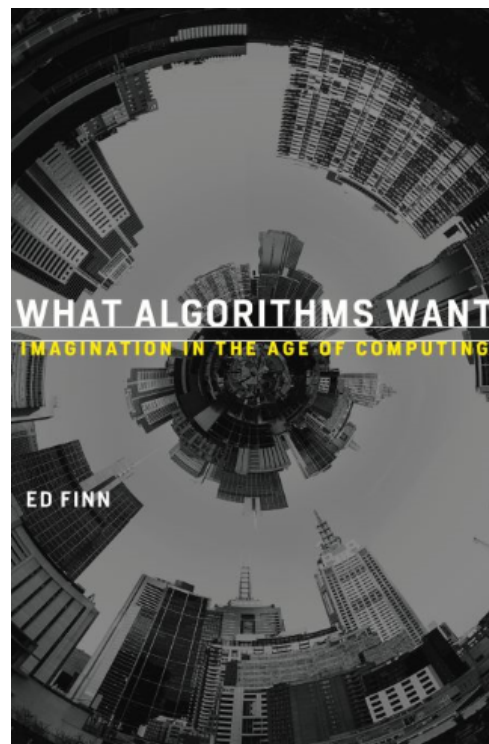
The gap between theoretical ideas and messy reality, as seen in Neal Stephenseon, Adam Smith, and *Star Trek*.

March
6 x 9, 256 pp.
17 illus.

$29.95T/£22.95 cloth
978-0-262-03592-7

Common Sense, the Turing Test, and the Quest for Real AI

Hector J. Levesque

What can artificial intelligence teach us about the mind? If AI's underlying concept is that thinking is a computational process, then how can computation illuminate thinking? It's a timely question. AI is all the rage, and the buzziest AI buzz surrounds *adaptive machine learning*: computer systems that learn intelligent behavior from massive amounts of data. This is what powers a driverless car, for example. In this book, Hector Levesque shifts the conversation to "good old fashioned artificial intelligence," which is based not on heaps of data but on understanding commonsense intelligence. This kind of artificial intelligence is equipped to handle situations that depart from previous patterns—as we do in real life, when, for example, we encounter a washed-out bridge or when the barista informs us there's no more soy milk.

Levesque considers the role of language in learning. He argues that a computer program that passes the famous Turing Test could be a mindless zombie, and he proposes another way to test for intelligence—the Winograd Schema Test, developed by Levesque and his colleagues. "If our goal is to understand intelligent behavior, we had better understand the difference between making it and faking it," he observes. He identifies a possible mechanism behind common sense and the capacity to call on background knowledge: the ability to represent objects of thought symbolically. As AI migrates more and more into everyday life, we should worry if systems without common sense are making decisions where common sense is needed.

Hector J. Levesque is Professor Emeritus in the Department of Computer Science at the University of Toronto. He is the author of *The Logic of Knowledge Bases* and *Thinking as Computation: A First Course* (both published by the MIT Press).

What artificial intelligence can tell us about the mind and intelligent behavior.

March
5 3/8 x 8, 192 pp.
3 illus.

$23.95T/£17.95 cloth
978-0-262-03604-7

architecture | history | travel

Architects' Gravesites

A Serendipitous Guide (USA)

Henry H. Kuehn
foreword by Barry Bergdoll
afterword by Paul Goldberger

All working architects leave behind a string of monuments to themselves in the form of buildings they have designed. But what about the final spaces that architects themselves will occupy? Are architects' gravesites more monumental—more architectural—than others? This unique book provides an illustrated guide to more than 200 gravesites of famous architects, almost all of them in the United States. Led by our intrepid author, Henry Kuehn, we find that most graves of architects are not monumental but rather modest, that many architects did not design their final resting places, and that a surprising number had their ashes scattered.

Architects' Gravesites offers an alphabetical listing, from Alvar Aalto and Dankmar Adler (Louis Sullivan's partner) to Frank Lloyd Wright and Minoru Yamasaki (designer of the Word Trade Center's twin towers). Each entry includes a brief note on the architect's career and a color photograph of the site. For example, Ludwig Mies van der Rohe is buried in Chicago under a simple granite slab designed by his architect grandson; Louise Bethune, the first American woman to become a professional architect, is buried under a headstone inscribed only with her husband's name (a plaque honoring her achievements was installed later); Philip Johnson's ashes were spread in his rose garden, with no marker, across the street from his famous Glass House; and the grave of Pierre L'Enfant in Arlington National Cemetary offers a breathtaking view of Washington, D.C., the city he designed.

Architects' Gravesites is an architectural guide like no other, revealing as much about mortality as about monumentality.

Henry H. Kuehn, a leading executive in the medical industry before his retirement, has a longstanding interest and involvement in architecture, working with the Society of Architectural Historians and the Chicago Architecture Foundation.

An illustrated guide to the monumental and non-monumental final resting places of famous architects from Aalto Alvar to Frank Lloyd Wright.

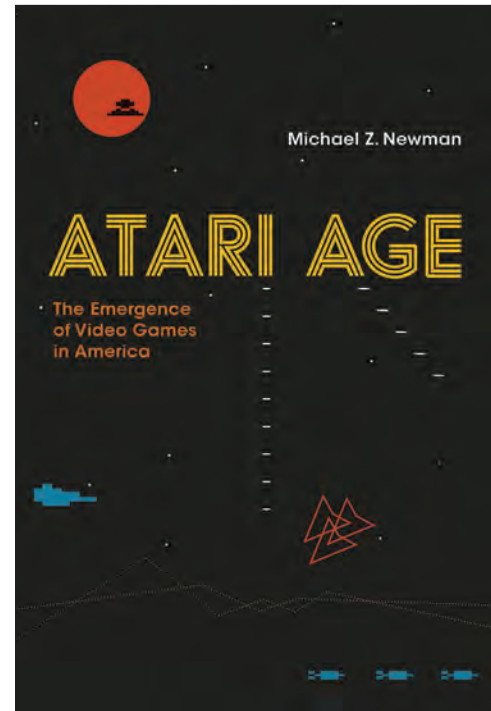*game studies | popular culture*

Atari Age

The Emergence of Video Games in America

Michael Z. Newman

Beginning with the release of the Magnavox Odyssey and *Pong* in 1972, video games, whether played in arcades and taverns or in family rec rooms, became part of popular culture, like television. In fact, video games were sometimes seen as an improvement on television because they spurred participation rather than passivity. These "space-age pinball machines" gave coin-operated games a high-tech and more respectable profile. In *Atari Age*, Michael Newman charts the emergence of video games in America from ball-and-paddle games to hits like *Space Invaders* and *Pac-Man*, describing their relationship to other amusements and technologies and showing how they came to be identified with the middle class, youth, and masculinity.

Newman shows that the "new media" of video games were understood in varied, even contradictory ways. They were family fun (but mainly for boys), better than television (but possibly harmful), and educational (but a waste of computer time). Drawing on a range of sources—including the games and their packaging; coverage in the popular, trade, and fan press; social science research of the time; advertising and store catalogs; and representations in movies and television—Newman describes the series of cultural contradictions through which the identity of the emerging medium worked itself out. Would video games embody middle-class respectability or suffer from the arcade's unsavory reputation? Would they foster family togetherness or allow boys to escape from domesticity? Would they make the new home computer a tool for education or just a glorified toy? Then, as now, many worried about the impact of video games on players, while others celebrated video games for familiarizing kids with technology essential for the information age.

Michael Z. Newman is Associate Professor in the Department of Journalism, Advertising, and Media Studies at the 00University of Wisconsin–Milwaukee.

The cultural contradictions of early video games: a medium for family fun (but mainly for middle-class boys), an improvement over pinball and television (but possibly harmful).

Paid

Tales of Dongles, Checks, and Other Money Stuff

edited by Bill Maurer and Lana Swartz
foreword by Bruce Sterling

Museums are full of the coins, notes, beads, shells, stones, and other objects people have exchanged for millennia. But what about the debris, the things that allow a transaction to take place and are left its wake? How would a museum go about curating our scrawls on electronic keypads, the receipts wadded in our wallets, that vast information infrastructure that runs the card networks? This book is a catalog for a museum exhibition that never happened. It offers a series of short essays, paired with striking images, on these often ephemeral, invisible, or unnoticed transactional objects—money stuff.

Although we've been told for years that we're heading toward total cashlessness, payment is increasingly dependent on *things*. Consider, for example, the dongle, a clever gizmo that processes card payments by turning information from a card's magnetic stripe into audio information that can be read by a smart phone's headphone jack. Or dogecoin, a meme of a smiling, bewildered dog's interior monologue that fueled a virtual currency similar to Bitcoin. Or go further back and contemplate the paper currency printed with leaves by Benjamin Franklin to foil counterfeiters, or even further back to consider khipu, Incan records kept in knotted string.

Paid's authors describe these payment-adjacent objects so engagingly that for a moment, financial leftovers seem more interesting than finance. *Paid* encourages us to take a moment to look at the nuts and bolts of our everyday transactions by remembering the stuff that surrounds them.

Bill Maurer is Dean of the School of Social Sciences at the University of California, Irvine. He is the author of *How Would You Like to Pay: How Technology Is Changing the Future of Money* and other books. **Lana Swartz** is Assistant Professor of Media Studies at the University of Virginia.

Contributors
Bernardo Bátiz-Lazo, Maria Bezaitis, Finn Brunton, Lynn H. Gamble, David Graeber, Jane I. Guyer, Keith Hart, Sarah Jeong, Alexandra Lippman, Julien Mailland, Scott Mainwaring, Bill Maurer, Taylor C. Nelms, Rachel O'Dwyer, Michael Palm, Lisa Servon, David L. Stearns, Bruce Sterling, Lana Swartz, Whitney Anne Trettien, Gary Urton

Stories about objects left in the wake of transactions, from cryptocurrencies to leaf-imprinted banknotes to records kept with knotted string.

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Infrastructures series

current affairs | food

Big Hunger

The Unholy Alliance between Corporate America
and Anti-Hunger Groups

Andrew Fisher

foreword by Saru Jayaraman

Food banks and food pantries have proliferated in response to an economic emergency. The loss of manufacturing jobs combined with the recession of the early 1980s and Reagan administration cutbacks in federal programs led to an explosion in the growth of food charity. This was meant to be a stopgap measure, but the jobs never came back, and the "emergency food system" became an industry. In *Big Hunger*, Andrew Fisher takes a critical look at the business of hunger and offers a new vision for the anti-hunger movement.

From one perspective, anti-hunger leaders have been extraordinarily effective. Food charity is embedded in American civil society, and federal food programs have remained intact while other anti-poverty programs have been eliminated or slashed. But anti-hunger advocates are missing an essential element of the problem: economic inequality driven by low wages. Reliant on corporate donations of food and money, anti-hunger organizations have failed to hold business accountable for offshoring jobs, cutting benefits, exploiting workers and rural communities, and resisting wage increases. They have become part of a "hunger industrial complex" that seems as self-perpetuating as the more famous military-industrial complex.

Fisher lays out a vision that encompasses a broader definition of hunger characterized by a focus on public health, economic justice, and economic democracy. He points to the work of numerous grassroots organizations that are leading the way in these fields as models for the rest of the anti-hunger sector. It is only through approaches like these that we can hope to end hunger, not just manage it.

Andrew Fisher has worked in the anti-hunger field for twenty-five years, as the executive director of national and local food groups, and as a researcher, organizer, policy advocate, and coalition builder. He has led successful efforts to gain passage of multiple pieces of federal food and nutrition legislation.

How to focus anti-hunger efforts not on charity but on the root causes of food insecurity, improving public health, and reducing income inequality.

higher education

Knowledge for Sale

The Neoliberal Takeover of Higher Education

Lawrence Busch

A new philosophy of higher education has taken hold in institutions around the world. Its supporters disavow the pursuit of knowledge for its own sake and argue that the only knowledge worth pursuing is that with more or less immediate market value. Every other kind of learning is downgraded, its budget cut. In *Knowledge for Sale*, Lawrence Busch challenges this market-driven approach.

The rationale for the current thinking, Busch explains, comes from neoliberal economics, which calls for reorganizing society around the needs of the market. The market-influenced changes to higher education include shifting the cost of education from the state to the individual, turning education from a public good into a private good subject to consumer demand; redefining higher education as a search for the highest-paying job; and turning scholarly research into a competition based on metrics including number of citations and value of grants. Students, administrators, and scholars have begun to think of themselves as economic actors rather than seekers of knowledge.

Arguing for active resistance to this takeover, Busch urges us to burst the neoliberal bubble, to imagine a future not dictated by the market, a future in which there is a more educated citizenry and in which the old dichotomies—market and state, nature and culture, and equality and liberty—break down. In this future, universities value learning and not training, scholarship grapples with society's most pressing problems rather than quick fixes for corporate interests, and democracy is enriched by its educated and engaged citizens.

Lawrence Busch is University Distinguished Professor of Sociology at Michigan State University and the author of *Standards: Recipes for Reality* (MIT Press).
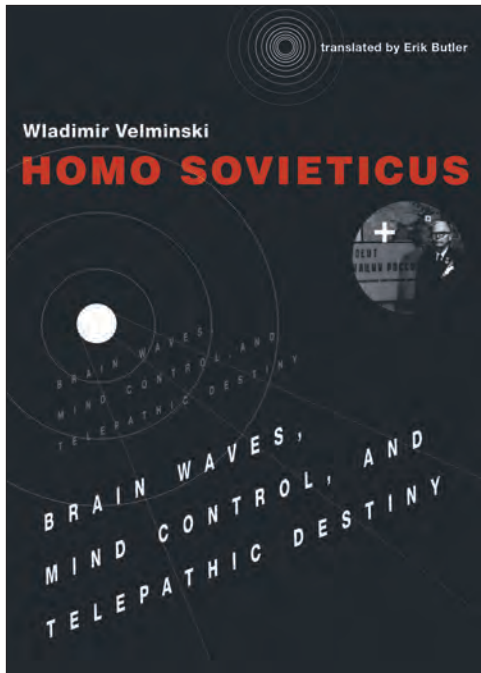
How free-market fundamentalists have shifted the focus of higher education to competition, metrics, consumer demand, and return on investment, and why we should change this.

history

Homo Sovieticus

Brain Waves, Mind Control, and Telepathic Destiny

Wladimir Velminski

translated by Erik Butler

In October 1989, as the Cold War was ending and the Berlin Wall about to crumble, television viewers in the Soviet Union tuned in to the first of a series of unusual broadcasts. "Relax, let your thoughts wander free . . ." intoned the host, the physician and clinical psychotherapist Anatoly Mikhailovich Kashpirovsky. Moscow's Channel One was attempting mass hypnosis over television, a therapeutic session aimed at reassuring citizens panicked over the ongoing political upheaval—and aimed at taking control of their responses to it. Incredibly enough, this last-ditch effort to rally the citizenry was the culmination of decades of official telepathic research, cybernetic simulations, and coded messages undertaken to reinforce ideological conformity. In *Homo Sovieticus*, the art and media scholar Wladimir Velminski explores these scientific and pseudoscientific efforts at mind control.

In a fascinating series of anecdotes, Velminski describes such phenomena as the conflation of mental energy and electromagnetism; the investigation of aura fields through the "Aurathron"; a laboratory that practiced mind control methods on dogs; and attempts to calibrate the thought processes and physical movements of laborers. "Scientific" diagrams from the period accompany the text. In all of the experimental methods for implanting thoughts into a brain, Velminski finds political and metaphorical contaminations. These apparently technological experiments in telepathy and telekinesis were deployed for purely political purposes. The history described in *Homo Sovieticus* offers bizarre, intriguing insights into the uses and potential abuses of our engagement with technology.

Wladimir Velminski is a Researcher in the Department of Slavic Studies at the University of Zurich, a Research Fellow at the International Research Institute for Cultural Technologies and Media Philosophy of Bauhaus University, and an Associated Member at the Hermann von Helmholtz Centre for Cultural Technology of Humboldt University of Berlin.

How Soviet scientists and pseudoscientists pursued telepathic research, cybernetic simulations, and mass hypnotism over television to control the minds of citizens.

March
5 x 7, 128 pp.
56 illus.

$19.95T/£14.95 paper
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information science

Information and Society

Michael Buckland

We live in an information society, or so we are often told. But what does that mean? This volume in the MIT Press Essential Knowledge series offers a concise, informal account of the ways in which information and society are related and of our ever-increasing dependence on a complex multiplicity of messages, records, documents, and data. Using information in its everyday, nonspecialized sense, Michael Buckland explores the influence of information on what we know, the role of communication and recorded information in our daily lives, and the difficulty (or ease) of finding information. He shows that all this involves human perception, social behavior, changing technologies, and issues of trust.

Buckland argues that every society is an "information society"; a "non-information society" would be a contradiction in terms. But the shift from oral and gestural communication to documents, and the wider use of documents facilitated by new technologies, have made our society particularly information intensive. Buckland describes the rising flood of data, documents, and records, outlines the dramatic long-term growth of documents, and traces the rise of techniques to cope with them. He examines the physical manifestation of information as documents, the emergence of data sets, and how documents and data are discovered and used. He explores what individuals and societies do with information; offers a basic summary of how collected documents are arranged and described; considers the nature of naming; explains the uses of metadata; and evaluates selection methods, considering relevance, recall, and precision.

Michael Buckland is Emeritus Professor in the School of Information at the University of California, Berkeley, and Codirector of the Electronic Cultural Atlas Initiative there.
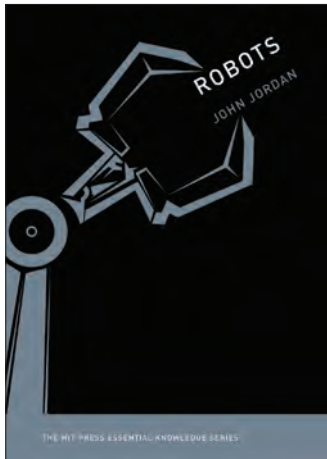
A short, informal account of our ever-increasing dependence on a complex multiplicity of messages, records, documents, and data.

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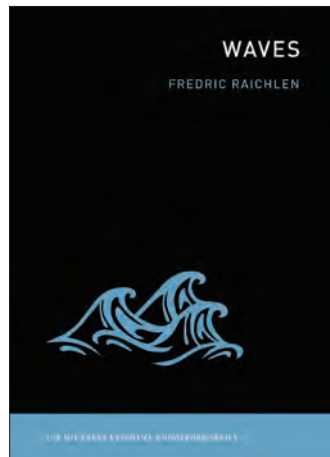978-0-262-52543-5

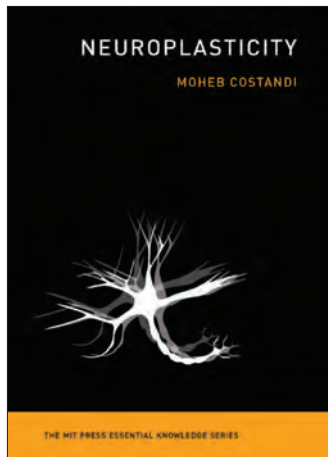**The Internet of Things**
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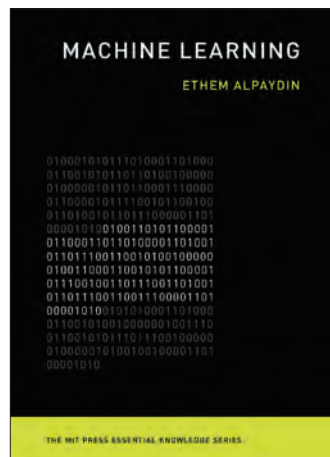**$16.95T/£12.95 paper**
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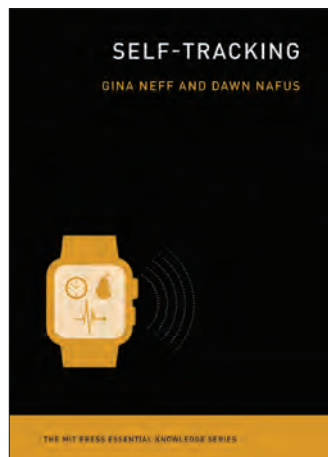
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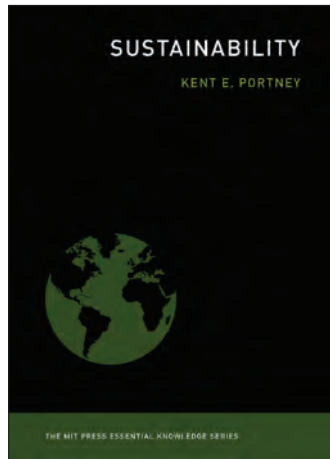
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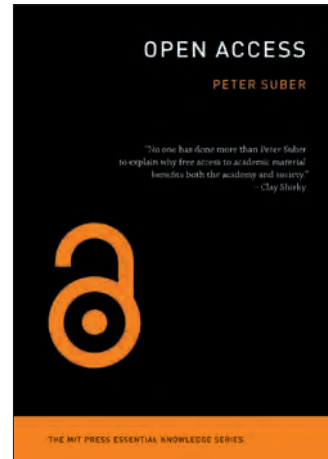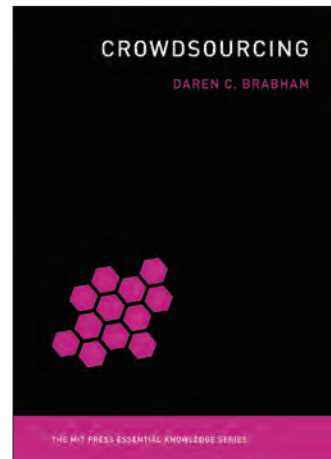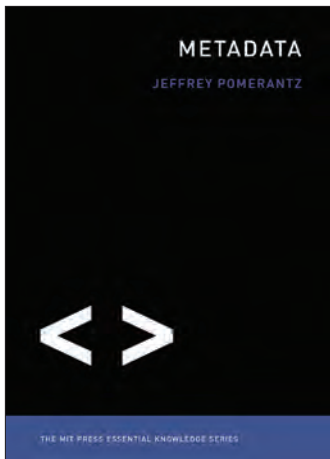**$15.95T/£11.95 paper**
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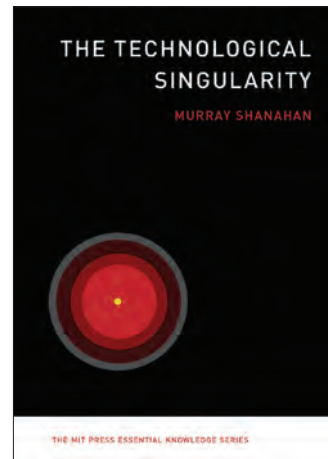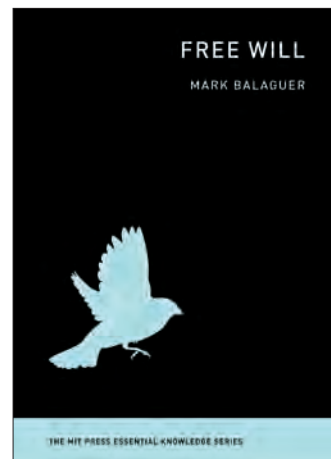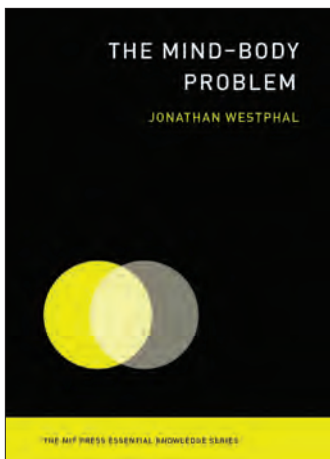
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contemporary art | Asian studies

Thai Art
Currencies of the Contemporary
David Teh

Since the 1990s, Thai contemporary art has achieved international recognition, circulating globally by way of biennials, museums, and commercial galleries. Many Thai artists have shed identification with their nation; but "Thainess" remains an interpretive crutch for understanding their work. In this book, the curator and critic David Teh examines the tension between the global and the local in Thai contemporary art. Writing the first serious study of Thai art since 1992 (and noting that art history and criticism have lagged behind the market in recognizing it), he describes the competing claims to contemporaneity, as staked in Thailand and on behalf of Thai art elsewhere. He shows how the values of the global art world are exchanged with local ones, how they do and don't correspond, and how these discrepancies have been exploited.

How can we make sense of globally circulating art without forgoing the interpretive resources of the local, national, or regional context? Teh examines the work of artists who straddle the local and the global, becoming willing agents of assimilation yet resisting homogenization. He describes the transition from an artistic subjectivity couched in terms of national community to a more qualified, postnational one, against the backdrop of the singular but waning sovereignty of the Thai monarchy and sustained political and economic turmoil. Among the national currencies of Thai art that Teh identifies are an agricultural symbology, a Siamese poetics of distance and itinerancy, and Hindu-Buddhist conceptions of charismatic power. Each of these currencies has been converted to a legal tender in global art—signifying sustainability, utopia, the conceptual, and the relational—but what is lost, and what may be gained, in such exchanges?

David Teh, Assistant Professor in the Department of English Language and Literature at the National University of Singapore, is an independent curator and critic who has organized exhibits in Europe, Australia, and across Southeast Asia.
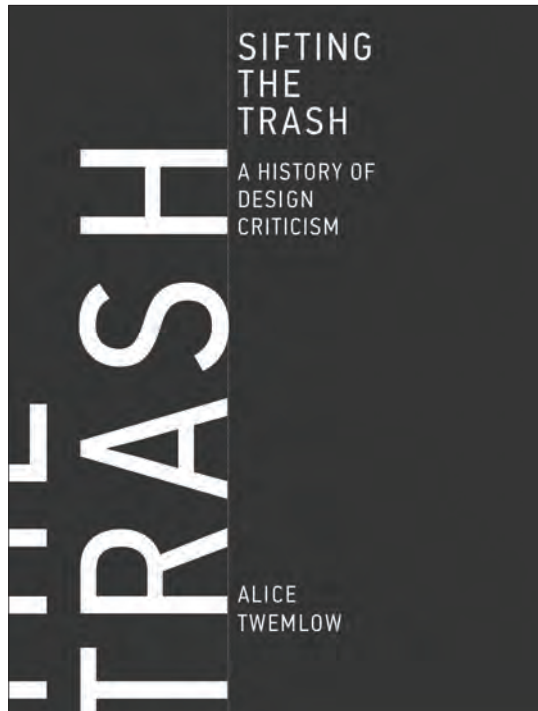
The interplay of the local and the global in contemporary Thai art, as artists strive for international recognition and a new meaning of the national.

design | art criticism

Sifting the Trash
A History of Design Criticism

Alice Twemlow

Product design criticism operates at the very brink of the landfill site, salvaging some products with praise but consigning others to its depths through condemnation or indifference. When a designed product's usefulness is past, the public happily discards it to make room for the next new thing. Criticism rarely deals with how a product might be used, or not used, over time; it is more likely to play the enabler, encouraging our addiction to consumption. With *Sifting the Trash*, Alice Twemlow offers an especially timely reexamination of the history of product design criticism through the metaphors and actualities of the product as imminent junk and the consumer as junkie.

Twemlow explores five key moments over the past sixty years of product design criticism. From the mid-1950s through the 1960s, for example, critics including Reyner Banham, Deborah Allen, and Richard Hamilton wrote about the ways people actually used design, and invented a new kind of criticism. At the 1970 International Design Conference in Aspen, environmental activists protested the design establishment's lack of political engagement. In the 1980s, left-leaning cultural critics introduced ideology to British design criticism. In the 1990s, dueling London exhibits offered alternative views of contemporary design. And in the early 2000s, professional critics were challenged by energetic design bloggers. Through the years, Twemlow shows, critics either sifted the trash and assigned value or attempted to detect, diagnose, and treat the sickness of a consumer society.

Alice Twemlow, a writer, lecturer, and curator, is Co-head of the Masters Program in Design Curating and Writing at Design Academy Eindhoven, the Netherlands. From 2008 to 2016, she was Founding Chair of the Masters Program in Design Research, Writing, and Criticism at the School of Visual Arts in New York.

How product design criticism has rescued some products from the trash and consigned others to the landfill.
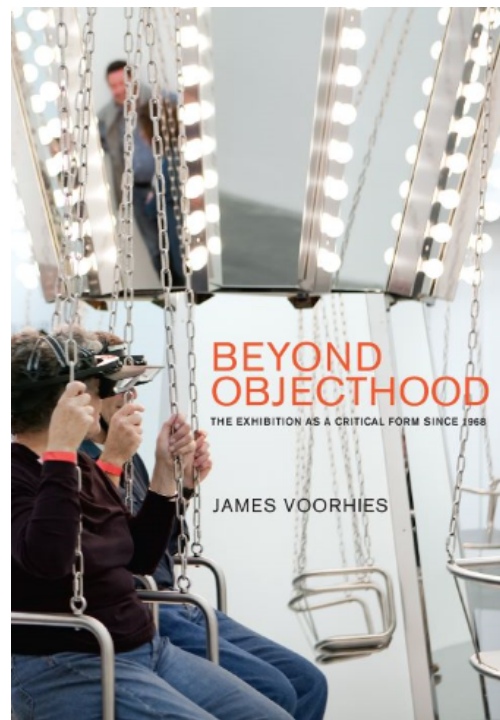
art

Beyond Objecthood
The Exhibition as a Critical Form since 1968

James Voorhies

In 1968, Robert Smithson reacted to Michael Fried's influential essay "Art and Objecthood" with a series of works called non-sites. While Fried described the spectator's connection with a work of art as a momentary visual engagement, Smithson's non-sites asked spectators to do something more: to take time looking, walking, seeing, reading, and thinking about the combination of objects, images, and texts installed in a gallery. In *Beyond Objecthood*, James Voorhies traces a genealogy of spectatorship through the rise of the exhibition as a critical form—and artistic medium. Artists like Smithson, Group Material, and Michael Asher sought to reconfigure and expand the exhibition and the museum into something more active, open, and democratic, by inviting spectators into new and unexpected encounters with works of art and institutions. This practice was sharply critical of the ingrained characteristics long associated with art institutions and conventional exhibition-making; and yet, Voorhies finds, over time the critique has been diluted by efforts of the very institutions that now gravitate to the "participatory."

Beyond Objecthood focuses on innovative figures, artworks, and institutions that pioneered the exhibition as a critical form, tracing its evolution through the activities of curator Harald Szeemann, relational art, and New Institutionalism. Voorhies examines recent artistic and curatorial work by Liam Gillick, Thomas Hirschhorn, Carsten Höller, Maria Lind, Apolonija Šušteršič, and others, at such institutions as Documenta, e-flux, Manifesta, and Office for Contemporary Art Norway, and he considers the continued potential of the exhibition as a critical form in a time when the differences between art and entertainment increasingly blur.

James Voorhies is Dean of Fine Arts at California College of the Arts, where he is Associate Professor of Contemporary Art.

The rise of the exhibition as critical form and artistic medium, from Robert Smithson's antimodernist non-sites in 1968 to today's institutional gravitation toward the participatory.

architecture

Not Quite Architecture
Writing around Alison and Peter Smithson

M. Christine Boyer

The English architects Alison Smithson (1928–1993) and Peter Smithson (1923–2003) were ringleaders of the New Brutalism, active in CIAM and Team 10, and influential in English Pop Art. The Smithsons, who met as architecture students, built only a few buildings but wrote prolifically throughout their career, leaving a body of writings that consider issues in architecture and urbanism and also take up subjects that are "not quite architecture" (the name of a series of articles written by Alison Smithson for the *Architects' Journal*)—including fashion design, graphic communication, and children's tales. In this book, M. Christine Boyer explores the Smithsons' writings—books, articles, lectures, unpublished manuscripts, and private papers. She focuses on unpublished material, reading the letter, the scribbled note, the undelivered lecture, the scrapbook, the "magic box," as words in the language of modern architectural history—especially that of postwar England, where the Smithsons and other architects were at the center of the richest possible range of cultural encounters. Boyer is "writing around" the Smithsons' work by considering the cultural contexts in which they formed and wrote about their ideas.

Boyer explains that the Smithsons were intensely concerned with the responsibility of the architect to ensure the quality of place, to build with lyrical appropriateness. They reached back to the country landscapes of their childhood and, Boyer argues, mixed their brand of New Brutalism with the English Picturesque. The Smithsons saw architects as both inheritors and passers-on. Their writings offer juxtapositions and connections, resembling an association of interactive loops, ideas waiting to be transmuted into built form.

M. Christine Boyer is William R. Kenan Jr. Professor in the School of Architecture at Princeton University and the author of *Dreaming the Rational City*, *The City of Collective Memory* (both published by the MIT Press), *Le Corbusier: Homme de Lettres*, and other books.

An exploration of published and unpublished writings of Alison and Peter Smithson, considering them in the context of the debates and discourses of postwar architecture.

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7 x 9, 488 pp.
25 color illus., 80 black & white illus.

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architecture | design | theater

Elastic Architecture

Frederick Kiesler and Design Research
in the First Age of Robotic Culture

Stephen J. Phillips

In 1960, the renowned architect Philip Johnson championed Frederick Kiesler, calling him "the greatest non-building architect of our time." Kiesler's ideas were difficult to construct, but as Johnson believed, "enormous" and "profound." Kiesler (1890–1965) went against the grain of the accepted modern style, rejecting rectilinear glass and steel in favor of more organic forms and flexible structures that could respond to the ever-changing needs of the body in motion.

In *Elastic Architecture*, Stephen Phillips offers the first in-depth exploration of Kiesler's innovative and multidisciplinary research and design practice. Phillips argues that Kiesler established a new career trajectory for architects not as master builders, but as research practitioners whose innovative means and methods could advance alternative and speculative architecture. Indeed, Kiesler's own career was the ultimate uncompromising model of a research-based practice.

Exploring Kiesler's formative relationships with the European avant-garde, Phillips shows how Kiesler found inspiration in the plastic arts, experimental theater, early animation, and automatons to develop and refine his spatial concept of the Endless. Moving from Europe to New York in the 1920s, Kiesler applied these radical Dadaist, constructivist, and surrealist practices to his urban display projects, which included shop windows for Saks Fifth Avenue. After launching his innovative Design Correlation Laboratory at Columbia and Yale, Kiesler went on to invent new houses, theaters, and galleries that were meant to move, shift, and adapt to evolutionary changes occurring within the natural and built environment.

As Phillips demonstrates vividly, although many of Kiesler's designs remained unbuilt, his ideas proved influential to later generations of architects and speculative artists internationally, including Archigram, Greg Lynn, UNStudio, and Olafur Eliasson.

Stephen J. Phillips is Professor of Architecture at California Polytechnic State University, Founding Director of the Cal Poly Los Angeles Metropolitan Program in Architecture and Urban Design, and Principal Architect at the firm Stephen Phillips Architects (SPARCHS).

Twentieth-century architect Frederick Kiesler's innovative multidisciplinary practice responded to the ever-changing needs of the body in motion, anticipating the research-oriented practices of contemporary art and architecture.

art | film

On the Eve of the Future
Selected Writings on Film by Annette Michelson

Annette Michelson

The celebrated critic and film scholar Annette Michelson saw the avant-garde filmmakers of the 1950s and 1960s as radically redefining and extending the Modernist tradition of painting and sculpture. In essays that were as engaging as they were influential and as lucid as they were learned, she set out to demonstrate the importance of the underappreciated medium of film. *On the Eve of the Future* collects more than thirty years' worth of those essys, focusing on her most relevant engagements with avant-garde production in experimental cinema, particularly with the movement known as American Independent Cinema.

This volume includes the first critical essay on Marcel Duchamp's film *Anemic Cinema*, the first investigation into Joseph Cornell's filmic practices, and the first major explorations of Michael Snow. It offers an important essay on Maya Deren, whose work was central to that era of renewal and reinvention, seminal critiques of Stan Brakhage, Hollis Frampton, and Harry Smith, and overviews of Independent Cinema. Gathered here for the first time, these texts demonstrate Michelson's pervasive influence as a writer and thinker and her role in the establishment of cinema studies as an academic field.

The postwar generation of Independents worked to develop radically new terms, techniques, and strategies of production and distribution. Michelson shows that the fresh new forms they created from the legacy of Modernism became the basis of new forms of spectatorship and cinematic pleasure.

Annette Michelson is Professor Emeritus in the Department of Cinema Studies at New York University. A founding editor of the journal *October*, she has written on art and cinema for more than five decades.

The first collection of Annette Michelson's influential writings on film, with essays on work by Marcel Duchamp, Maya Deren, Hollis Frampton, Martha Rosler, and others.

art

William Kentridge

edited by Rosalind E. Krauss

Since the 1970s, the South African artist William Kentridge has charted the turbulent terrain of his homeland in both personal and political terms. With erudition, absurdist humor, and an underlying hope in humankind, Kentridge's artwork has examined apartheid, humanitarian atrocities, aging, and the ambiguities of growing up white and Jewish in South Africa. This October Files volume brings together critical essays and interviews that explore Kentridge's work and shed light on the unique working processes behind his drawings, prints, stop-animation films, and theater works.

The texts include an interview with the artist Carolyn Christov-Bakargiev, curator of the first major retrospective of Kentridge's work; an essay by Andreas Huyssen on the role of shadow-play in Kentridge's film series *9 Drawing for Projection*; and investigations of Kentridge's work for opera and theater by Maria Gough, Joseph Leo Koerner, and Margaret Koster Koerner. An analysis by the influential art historian, Rosalind Krauss, the editor of this volume, argues that Kentridge's films are the result of a particularly reflexive drawing practice in which the marks on the page—particularly the smudges, smears, and erasures that characterize his stop-animations—define the act of drawing as a temporal medium. Krauss's understanding of Kentridge's work as embodying a fundamental tension between formal and sociological poles has been crucial to subsequent analyses of the artist's work, including the new essay by the anthropologist Rosalind Morris, who has collaborated with Kentridge on several projects.

Rosalind E. Krauss is University Professor in the Department of Art History at Columbia University, where, from 1995 to 2006, she held the Meyer Schapiro Chair in Modern Art and Theory. She is a founding editor of *October* and the author of *Passages in Modern Sculpture*, *The Originality of the Avant-Garde and Other Myths*, *The Optical Unconscious*, *Bachelors*, *Perpetual Inventory*, *Under Blue Cup* (all published by the MIT Press), and other books.

Essays and Interviews
Carolyn Christov-Bakargiev, Maria Gough, Andreas Huyssenn, William Kentridge, Joseph Leo Koerner, Margaret Koster Koerner, Rosalind E. Krauss, Rosalind Morris

Critical texts and interviews that explore the drawings, animations, and theater work of the South African artist William Kentridge

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53 illus.

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October Files

art | architecture

Public Space? Lost and Found

edited by Gediminas Urbonas, Ann Lui, and Lucas Freeman

"Public space" is a potent and contentious topic among artists, architects, and cultural producers. *Public Space? Lost and Found* documents how critical spatial practices have expanded the concept far beyond the physical confines of the city square. The book considers the role of aesthetic practices within the construction, identification, and critique of shared territories, and how artists or architects—the "antennae of the race"—can heighten our awareness of rapidly changing formulations of public space in the age of digital media, vast ecological crises, and civic uprisings.

Public Space? Lost and Found combines significant recent projects in art and architecture with writings by historians and theorists. Contributors investigate strategies for responding to underrepresented communities and areas of conflict through the work of Marjetica Potrč in Johannesburg and Teddy Cruz on the Mexico-U.S. border. They explore our collective stakes in ecological catastrophe through artistic research such as Atelier d'Architecture Autogérée's hubs for community action and recycling in Colombes, France Brian Holmes's theoretical investigation of new forms of aesthetic perception in the age of the Anthropocene. Inspired by artist and MIT professor Antoni Muntadas's early coining of the term "media landscape," contributors also look ahead, casting a critical eye on the fraught impact of digital media and the Internet on public space.

This book is the first in a new series of volumes produced by the MIT School of Architecture and Planning's Program in Art, Culture and Technology.

> The MIT Press is pleased to include the publications of the MIT School of Architecture and Planning among its distributed titles. These volumes present engaging and provocative perspectives on design, urbanism, and art.

Open House in York, Alabama.
Matthew Mazzotta, 2013.

Gediminas Urbonas, an artist, activist, and educator, is an Associate Professor in MIT's School of Architecture and Planning and Director of the MIT Program in Art, Culture, and Technology. **Ann Lui** is an Assistant Professor at the School of the Art Institute of Chicago. **Lucas Freeman** is Writer in Residence at the MIT Program in Art, Culture and Technology.

Contributors

atelier d'architecture autogérée (Constantin Petcou and Doina Petrescu), Dennis Adams, Ute Meta Bauer, Bik Van Der Pol (Liesbeth Bik and Jos van der Pol), Adrian Blackwell, Ina Blom, Néstor García Canclini, Beatriz Colomina, Teddy Cruz, Juan Herreros, Brian Holmes, Andrés Jaque, Caroline Jones, Coryn Kempster with Julia Jamrozik, György Kepes, Rikke Luther, Matthew Mazzotta, Metahaven (Daniel van der Velden and Vinca Kruk), Antoni Muntadas, Otto Piene, Marjetica Potrč, Gerald Raunig with Christoph Brunner, Adèle Naudé Santos, Nader Tehrani, Troy Therrien, Urbonas Studio, Angela Vettese, Mariel Villeré, Mark Wigley, Krzysztof Wodiczko

With responses from

Catherine D'Ignazio, Ana María León, Ana Miljački, Doris Sommer, Meejin Yoon

architecture

Designing MIT
Bosworth's New Tech

Mark M. Jarzombek

At the end of the nineteenth century, MIT occupied an assortment of laboratories, classrooms, offices, and student facilities scattered across Boston's Back Bay. In 1912, backed by some of the country's leading financiers and industrialists, MIT officials purchased an undeveloped tract of land in Cambridge. Largely on the basis of a recommendation from John D. Rockefeller, Jr., MIT hired the École des Beaux-Arts—trained architect William Welles Bosworth to build and design a new campus.

Designing MIT is the first book to detail Bosworth's challenges in the planning and construction of MIT's unique Cambridge campus. MIT professor of architecture Mark Jarzombek provides a fascinating sample of the architectural debates of the time. He examines the competing project proposals—including one from Ralph Adams Cram, noted for his gothic West Point campus—and describes how Bosworth found his classically oriented vision challenged by the engineer John Freeman, a proponent of Frederick W. Taylor's new principle of scientific management. Jarzombek shows that their conflict ultimately resulted in a far more innovative design than either of their individual approaches would have produced, one that employed new European concepts of industrialism, efficiency, and aesthetics in academic structures.

Generously illustrated with images from the MIT archives, the story of Bosworth's new "Tech" offers more than just insight into the planning of a campus. Fraught with artistic clashes, bureaucratic tangles, and contemporary politics, the story of MIT's design sheds light on the academic culture of the early twentieth century, the role of patronage in the world of architecture, and the history of the Beaux-Arts style in the United States.

Mark Jarzombek is Professor of the History and Theory of Architecture at MIT. He is coauthor of *A Global History of Architecture* and *Architecture of First Societies: A Global Perspective*.
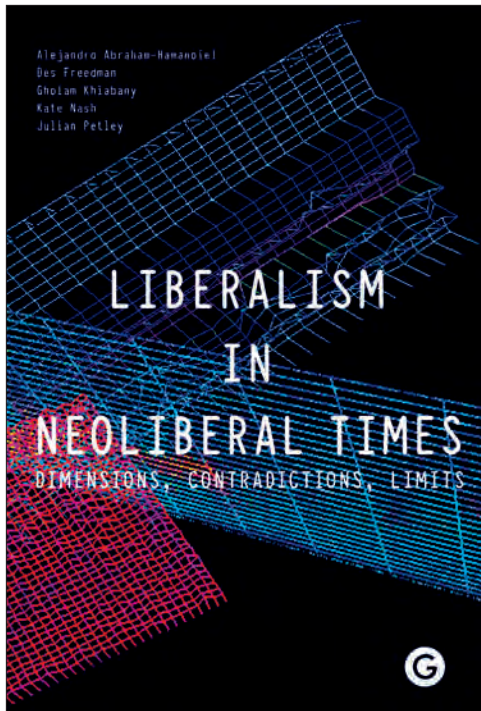
A generously illustrated account of artistic clashes, bureaucratic tangles, and contemporary politics that accompanied the design and building of MIT's Cambridge campus.

political theory

Liberalism in Neoliberal Times
Dimensions, Contradictions, Limits

edited by Alejandro Abraham-Hamanoiel, Des Freedman, Gholam Khiabany, Kate Nash, and Julian Petley

What does it mean to be a liberal in neoliberal times? This collection of short essays attempts to show how liberals and the wider concept of liberalism remain relevant in what many perceive to be a highly illiberal age. Liberalism in the broader sense revolves around tolerance, progress, humanitarianism, objectivity, reason, democracy, and human rights. Liberalism's emphasis on individual rights opened a theoretical pathway to neoliberalism, through private property, a classically minimal liberal state, and the efficiency of "free markets." In practice, neoliberalism is associated less with the economic deregulation championed by its advocates than the re-regulation of the economy to protect financial capital. *Liberalism in Neoliberal Times* engages with the theories, histories, practices, and contradictions of liberalism, viewing it in relation to four central areas of public life: human rights, ethnicity and gender, education, and the media. The contributors explore the transformations in as well as the transformative aspects of liberalism and highlight both its liberating and limiting capacities.

The book contends that liberalism—in all its forms—continues to underpin specific institutions such as the university, the free press, the courts, and, of course, parliamentary democracy. Liberal ideas are regularly mobilized in areas such as counterterrorism, minority rights, privacy, and the pursuit of knowledge. This book contends that while we may not agree on much, we can certainly agree that an understanding of liberalism and its emancipatory capacity is simply too important to be left to the liberals.

Alejandro Abraham-Hamanoiel is a postdoctoral researcher in the Department of Media and Communications at Goldsmiths, University of London. **Des Freedman** is Professor of Media and Communications at Goldsmiths, University of London. **Gholam Khiabany** is Reader in Media and Communications at Goldsmiths, University of London. **Kate Nash** is Professor of Sociology and Director of the Centre for the Study of Global Media and Democracy at Goldsmiths, University of London. **Julian Petley** is Professor of Screen Media and Journalism in the School of Arts at Brunel University.

Contributors
Alejandro Abraham-Hamanoiel, Patrick Ainley, Abdullahi An-Na'im, Michael Bailey, Haim Bresheeth, Başak Çalı, David Chandler, William Davies, Costas Douzinas, Natalie Fenton, Des Freedman, Roberto Gargarella, Priyamvada Gopal, Jonathan Hardy, John Holmwood, Ratna Kapur, Gholam Khiabany, Ray Kiely, Monika Krause, Deepa Kumar, Arun Kundnani, Colin Leys, Howard Littler, Kathleen Lynch, Robert W. McChesney, Nivedita Menon, Toby Miller, Kate Nash, Joan Pedro-Carañana, Julian Petley, Anne Phillips, Jonathan Rosenhead, Annabelle Sreberny, John Steel, Michael Wayne, Milly Williamson

An exploration of the theories, histories, practices, and contradictions of liberalism today.

June
5 3/8 x 8, 184 pp.

$28.00S/£19.95 cloth
978-1-906897-40-6

Distributed for Goldsmiths Press

media | public policy

The Death of Public Knowledge?

How Free Markets Destroy the General Intellect

edited by Aeron Davis

The Death of Public Knowledge? argues for the value and importance of shared, publicly accessible knowledge, and suggests that the erosion of its most visible forms, including public service broadcasting, education, and the network of public libraries, has worrying outcomes for democracy.

With contributions from both activists and academics, this collection of short, sharp essays focuses on different aspects of public knowledge, from libraries and education to news media and public policy. Together, the contributors record the stresses and strains placed upon public knowledge by funding cuts and austerity, the new digital economy, quantification and target-setting, neoliberal politics, and inequality. These pressures, the authors contend, not only hinder democracies, but also undermine markets, economies, and social institutions and spaces everywhere.
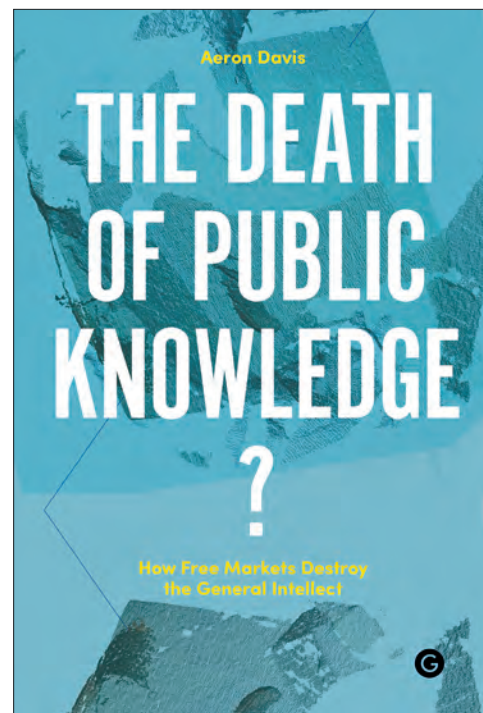
Covering areas of international public concern, these polemical, accessible texts include reflections on the fate of schools and education, the takeover of public institutions by private interests, and the corruption of news and information in the financial sector. They cover the influence over Greek media during recent EU negotiations, the role played by media and political elites in the Irish property bubble, the compromising of government policy by corporate interests in the United States and Korea, and the squeeze on public service media in the United Kingdom, New Zealand, and the United States.

Individually and collectively, these pieces spell out the importance of maintaining public, shared knowledge in all its forms, and offer a rallying cry for doing so, asserting the need for strong public, financial, and regulatory support.

Aeron Davis is Professor of Political Communication and Codirector of the Political Economy Research Centre (PERC) at Goldsmiths, University of London.

Contributors

Toril Aalberg, Ian Anstice, Philip Augar, Rodney Benson, Aeron Davis, Des Freedman, Wayne Hope, Ken Jones, Bong-hyun Lee, Colin Leys, Andrew McGettigan, Michael Moran, Aristotelis Nikolaidis, Justin Schlosberg, Henry Silke, Roger Smith, Peter Thompson, Janine R. Wedel, Karel Williams, Kate Wright
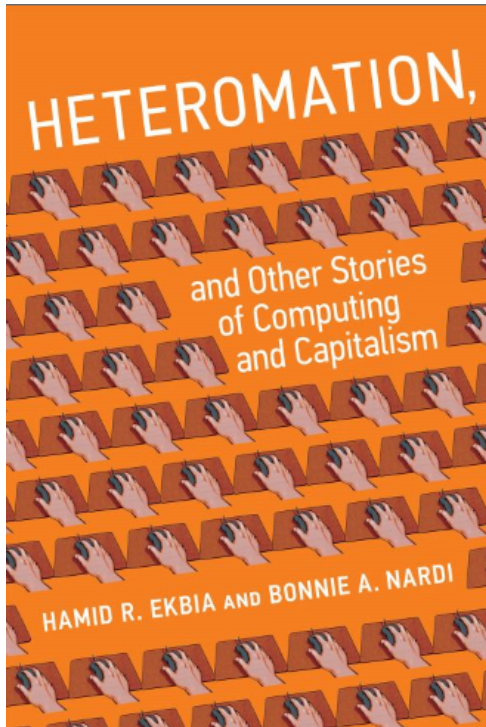
A collection of short, sharp essays exploring the value of shared and accessible public knowledge in the face of its erosion.

technology | labor studies

Heteromation, and Other Stories of Computing and Capitalism

Hamid Ekbia and Bonnie A. Nardi

The computerization of the economy—and everyday life—has transformed the division of labor between humans and machines, shifting many people to work that is hidden, poorly compensated, or accepted as part of being a "user" of digital technology. Through our clicks and swipes, logins and profiles, emails and posts, we are, more or less willingly, participating in digital activities that yield economic value to others but little or no return to us. Hamid Ekbia and Bonnie Nardi call this kind of participation—the extraction of economic value from low-cost or free labor in computer-mediated networks—"heteromation." In this book, they explore the social and technological processes through which economic value is extracted from digitally mediated work, the nature of the value created, and what prompts people to participate in the process.

Arguing that heteromation is a new logic of capital accumulation, Ekbia and Nardi consider different kinds of heteromated labor: communicative labor, seen in user-generated content on social media; cognitive labor, including microwork and self-service; creative labor, from gaming environments to literary productions; emotional labor, often hidden within paid jobs; and organizing labor, made up of collaborative groups such as citizen scientists. Ekbia and Nardi then offer a utopian vision: heteromation refigured to bring end users more fully into the prosperity of capitalism.

Hamid Ekbia is Professor of Economics, Cognitive Science, and International Studies and Director of the Center for Research on Mediated Interaction at Indiana University Bloomington and a coeditor of *Big Data Is Not a Monolith* (MIT Press). **Bonnie A. Nardi** is Professor of Informatics in the Donald Bren School of Information and Computer Sciences at the University of California, Irvine, and Cofounder of the Center for Research in Sustainability, Collapse-preparedness, and Information Technology there. She is the coauthor of *Acting with Technology* (MIT Press).

An exploration of the new division of labor between machines and humans, in which many workers (or "users") provide value with little or no compensation.

*media studies | human-computer interaction*

The Stuff of Bits

An Essay on the Materialities of Information

Paul Dourish

Virtual entities that populate our digital experience, like e-books, virtual worlds, and online stores, are backed by the large-scale physical infrastructures of server farms, fiber optic cables, power plants, and microwave links. But another domain of material constraints also shapes digital living: the digital representations sketched on whiteboards, encoded into software, stored in databases, loaded into computer memory, and transmitted on networks. These digital representations encode aspects of our everyday world and make them available for digital processing. The limits and capacities of those representations carry significant consequences for digital society.

In *The Stuff of Bits*, Dourish examines the specific materialities that certain digital objects exhibit. He presents four case studies: emulation, the creation of a "virtual" computer inside another; digital spreadsheets and their role in organizational practice; relational databases and the issue of "the databaseable"; and the evolution of digital networking and the representational entailments of network protocols. These case studies demonstrate how a materialist account can offer an entry point to broader concerns—questions of power, policy, and polity in the realm of the digital.

Paul Dourish is Chancellor's Professor of Informatics at the Donald Bren School of Information and Computer Sciences at the University of California, Irvine. He is the author of *Where the Action Is: The Foundations of Embodied Interaction* and coauthor of *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*, both published by the MIT Press.
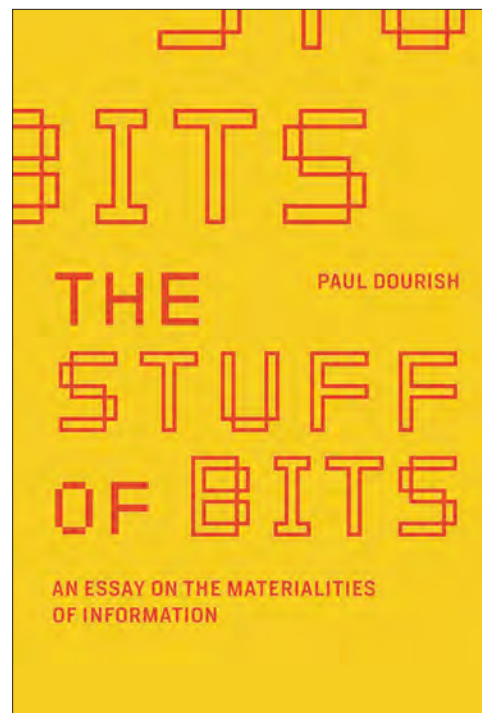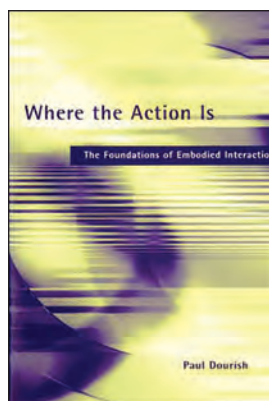
An argument that the material arrangements of information—how it is represented and interpreted—matter significantly for our experience of information and information systems.

May
6 x 9, 264 pp.
11 black & white illus.

$35.00S/£24.95 cloth
978-0-262-03620-7

Also available

Where the Action Is
Paul Dourish

2004, 978-0-262-54178-7
$30.00S/£22.95 paper

Divining a Digital Future
Paul Dourish and Genevieve Bell

2014, 978-0-262-52589-3
$25.00S/£18.95 paper

sports | technology

Sport 2.0

Transforming Sports for a Digital World

Andy Miah

Digital technology is changing everything about modern sports. Athletes and coaches rely on digital data to monitor and enhance performance. Officials use tracking systems to augment their judgment in what is an increasingly superhuman field of play. Spectators tune in to live sports through social media, or even through virtual reality. Audiences now act as citizen journalists whose collective shared data expands the places in which we consume sports news.

In *Sport 2.0*, Andy Miah examines the convergence of sports and digital cultures, examining not only how it affects our participation in sport but also how it changes our experience of life online. This convegence redefines how we think of about our bodies, the social function of sports, and the kinds of people who are playing. Miah describes a world in which the rise of competitive computer game playing—e-sports—challenges and invigorates the social mandate. Miah also looks at the Olympic Games as an exemplar of digital innovation in sports, and offers a detailed look at the social media footprint of the 2012 London Games, discussing how organizers, sponsors, media, and activists responded to the world's largest media event.

In the end, Miah does not argue that physical activity will cease to be central to sports, or that digital corporeality will replace the nondigital version. Rather, he provides a road map for how sports will become mixed-reality experiences and abandon the duality of physical and digital.

Andy Miah (@andymiah) is Professor and Chair of Science Communication and Digital Media in the School of Environment and Life Sciences at the University of Salford, Manchester. He is the coauthor of *The Medicalization of Cyberspace* and *The Olympics* and the author of *Genetically Modified Athletes*.

Ramifications of the convergence of sports and digital technology, from athlete and spectator experience to the role of media innovation at the Olympics.

environment | business

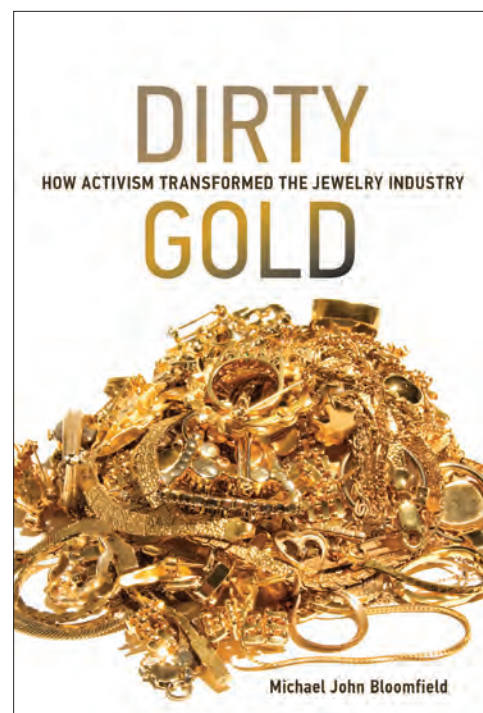# Dirty Gold

How Activism Transforms the Jewelry Industry

Michael J. Bloomfield

Gold mining can be a dirty business. It creates immense amounts of toxic materials that are difficult to dispose of. Mines are often developed without community consent, and working conditions for miners can be poor. Income from gold has funded wars. And consumers buy wedding rings and gold chains not knowing about any of this. In *Dirty Gold*, Michael Bloomfield shows what happened when Earthworks, a small Washington-based NGO, launched a campaign for ethically sourced gold in the consumer jewelry market, targeting Tiffany and other major firms. The unfolding of the campaign and its effect on the jewelry industry offer a lesson in the growing influence of business in global environmental politics.

Earthworks planned a "shame" campaign, aimed at the companies' brands and reputations, betting that firms like Tiffany would not want to be associated with pollution, violence, and exploitation. As it happened, Tiffany contacted Earthworks before they could launch the campaign; the company was already looking for partners in finding ethically sourced gold.

Bloomfield examines the responses of three companies to "No Dirty Gold" activism: Tiffany, Wal-Mart, and Brilliant Earth, a small company selling ethical jewelry. He finds they offer a case study in how firms respond to activist pressure and what happens when businesses participate in such private governance schemes as the "Golden Rules" and the "Conflict-Free Gold Standard." Taking a firm-level view, Bloomfield examines the different opportunities for and constraints on corporate political mobilization within the industry.

Michael J. Bloomfield is Lecturer (Assistant Professor) in International Development in the Department of Social and Policy Sciences at the University of Bath.
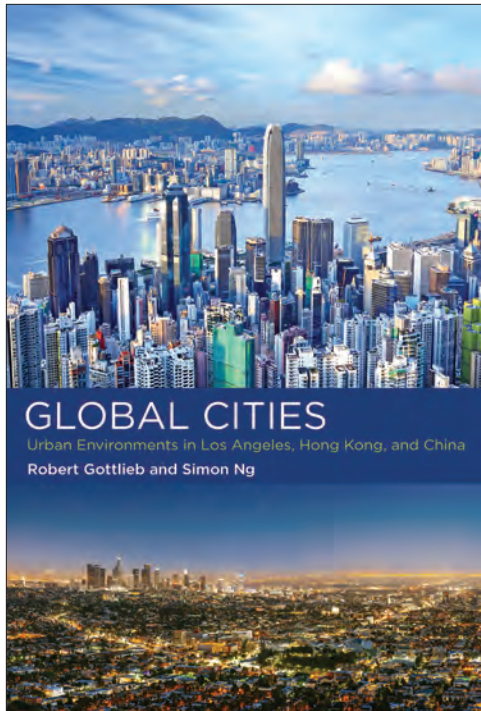
The response from the jewelry industry to a campaign for ethically sourced gold as a case study in the power of business in global environmental politics.
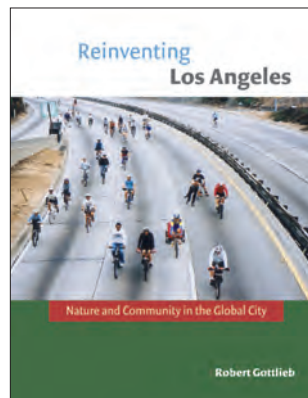
urban studies | environment

Global Cities

Urban Environments in Los Angeles,
Hong Kong, and China

Robert Gottlieb and Simon Ng

Over the past four decades, Los Angeles, Hong Kong, and key urban regions of China have emerged as global cities—in financial, political, cultural, environmental, and demographic terms. In this book, Robert Gottlieb and Simon Ng trace the global emergence of these urban areas and compare their responses to a set of six urban environmental issues.

These cities have different patterns of development: Los Angeles has been the quintessential horizontal city, the capital of sprawl; Hong Kong is dense and vertical; China's new megacities in the Pearl River Delta, created by an explosion in industrial development and a vast migration from rural to urban areas, combine the vertical and the horizontal. All three have experienced major environmental changes in a relatively short period of time. Gottlieb and Ng document how each has dealt with challenges posed by ports and the movement of goods, air pollution (Los Angeles, Hong Kong, and urban China are all notorious for their hazardous air quality), water supply (all three places are dependent on massive transfers of water) and water quality, the food system (from seed to table), transportation, and public and private space. Finally they discuss the possibility of change brought about by policy initiatives and social movements.

Robert Gottlieb is Research Professor of Urban and Environmental Policy and founder and former Director of the Urban and Environmental Policy Institute at Occidental College. He is the author of *Reinventing Los Angeles: Nature and Community in the Global City* (MIT Press) and other books. **Simon Ng** is Research Consultant and former Chief Research Officer at Civic Exchange, a public policy think tank in Hong Kong.

How Los Angeles, Hong Kong, and China deal with such urban environmental issues as ports, goods movement, air pollution, water quality, transportation, and public space.

May
6 x 9, 448 pp.
37 illus.

$35.00S/£24.95 cloth
978-0-262-03591-0

Urban and Industrial Environments series

Also available

Reinventing Los Angeles
Nature and Community in the Global City
Robert Gottlieb
2007, 978-0-262-57243-9
$30.95T/£22.95 paper

media | communication

Alt-People

Digital Technologies and the Struggle for Community

Jessa Lingel

Whether by accidental keystroke or deliberate tinkering, technology is often used in ways that are unintended and unimagined by its designers and inventors. In *Uncommon People*, Jessa Lingel offers an account of digital technology use that looks beyond Silicon Valley and college dropouts-turned-entrepreneurs. Instead, Lingel tells stories from the margins of countercultural communities that have made the Internet meet their needs, subverting established norms of how digital technologies should be used.

Lingel presents three case studies that contrast the imagined uses of the web to its lived and often messy practicalities. She examines a social media platform (developed long before Facebook) for body modification enthusiasts, with early web experiments in blogging, community, wikis, online dating, and podcasts; a network of communication technologies (both analog and digital) developed by a local community of punk rockers to manage information about underground shows; and the use of Facebook and Instagram for both promotional and community purposes by Brooklyn drag queens. Drawing on years of fieldwork, Lingel explores issues of alterity and community, inclusivity and exclusivity, secrecy and surveillance, and anonymity and self-promotion.

By examining online life in terms of countercultural communities, Lingel argues that looking at outsider experiences helps us to imagine new uses and possibilities for the tools and platforms we use in everyday life.

Jessa Lingel is Assistant Professor of Communication at the Annenberg School for Communication at the University of Pennsylvania.
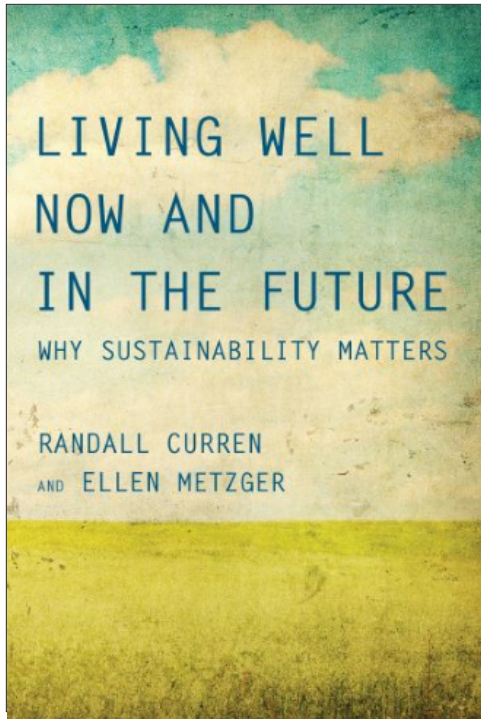
How countercultural communities have made the Internet meet their needs, subverting established norms of digital technology use.

April
6 x 9, 192 pp.
9 illus.

$30.00S/£22.95 cloth
978-0-262-03621-4

Information Society series

environment | philosophy

Living Well Now and in the Future
Why Sustainability Matters
Randall Curren and Ellen Metzger

Most people acknowledge the profound importance of sustainability, but few can define it. We are ethically bound to live sustainably for the sake of future generations, but what does that mean? In this book Randall Curren, a philosopher, and Ellen Metzger, a scientist, clarify normative aspects of sustainability. Combining their perspectives, they propose that sustainability can be understood as the art of living well together without diminishing opportunity to live well in the future.

Curren and Metzger lay out the nature and value of sustainability, survey the problems, catalog the obstacles, and identify the kind of efforts needed to overcome them. They formulate an *ethic of sustainability* with lessons for government, organizations, and individuals, and illustrate key ideas with three case studies. Curren and Metzger put intergenerational justice at the heart of sustainability; discuss the need for fair (as opposed to coercive) terms of cooperation to create norms, institutions, and practices conducive to sustainability; formulate a framework for a fundamental ethic of sustainability derived from core components of common morality; and emphasize the importance of sustainability education. The three illustrative case studies focus on the management of energy, water, and food systems, examining the 2010 Gulf of Mexico oil spill, Australia's National Water Management System, and patterns of food production in the Mekong region of Southeast Asia.

Randall Curren is Professor of Philosophy at the University of Rochester. **Ellen Metzger** is Professor of Geology and Director of Science Education at San Jose State University and Codirector of the Bay Area Environmental STEM Institute.

A philosopher and a scientist propose that sustainability can be understood as living well together without diminishing opportunity to live well in the future.

media | education

Worried About the Wrong Things

Youth, Risk, and Opportunity in the Digital World

Jacqueline Ryan Vickery

foreword by S. Craig Watkins

It's a familiar narrative in both real life and fiction, from news reports to television storylines: a young person is bullied online, or targeted by an online predator, or exposed to sexually explicit content. The consequences are bleak; the young person is shunned, suicidal, psychologically ruined. In this book, Jacqueline Ryan Vickery argues that there are other urgent concerns about young people's online experiences besides porn, predators, and peers. We need to turn our attention to inequitable opportunities for participation in a digital culture. Technical and material obstacles prevent low-income and other marginalized young people from the positive, community-building, and creative experiences that are possible online.

Vickery explains that cautionary tales about online risk have shaped the way we think about technology and youth. She analyzes the discourses of risk in popular culture, journalism, and policy, and finds that *harm-driven* expectations, based a privileged perception of risk, enact control over technology. Opportunity-driven expectations, on the other hand, based on evidence and lived experience, produce discourses that acknowledge the practices and agency of young people rather than seeing them as passive victims who need to be protected.

Vickery first addresses how the discourses of risk regulate and control technology, then turns to the online practices of youth at a low-income, minority-majority Texas high school. She considers the participation gap and the need for schools to teach digital literacies, privacy, and different online learning ecologies. Finally, she shows that opportunity-driven expectations can guide young people's online experiences in ways that balance protection and agency.

Jacqueline Ryan Vickery is Assistant Professor in the Department of Media Arts at the University of North Texas.

Why media panics about online dangers overlook another urgent concern: creating equitable online opportunities for marginalized youth.

Also available in this series

Framing Internet Safety
The Governance of Youth Online
Nathan W. Fisk

2016, 978-0-262-03515-6
$35.00S/£24.95 cloth

Education and Social Media
Toward a Digital Future
edited by Christine Greenhow, Julia Sonnevend, and Colin Agur

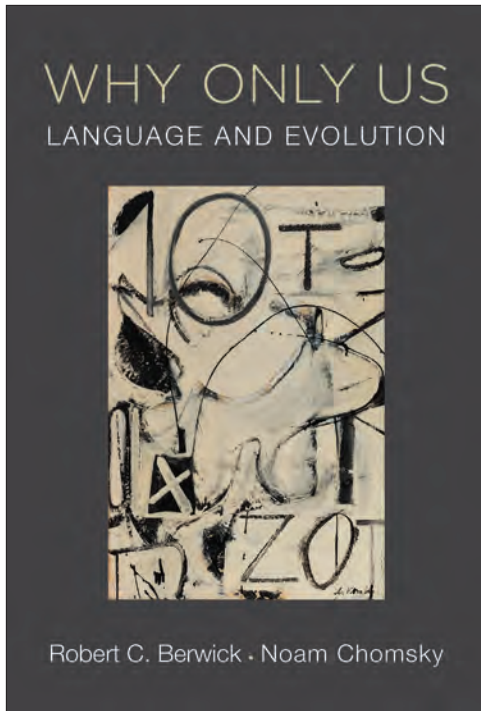2016, 978-0-262-03447-0
$30.00S/£22.95 paper

Voicetracks

Attuning to Voice in Media and the Arts

Norie Neumark

Moved by the Aboriginal understandings of songlines or dreaming tracks, Norie Neumark's *Voicetracks* seeks to deepen an understanding of voice through listening to a variety of voicing/sound/voice projects from Australia, Europe and the United States. Not content with the often dry tone of academic writing, the author engages a "wayfaring" process that brings together theories of sound, animal, and posthuman studies in order to change the ways we think about and act with the assemblages of living creatures, things, places, and histories around us.

Neumark evokes both the literal—the actual voices within the works she examines—and the metaphorical—in a new materialist exploration of voice encompassing human, animal, thing, and assemblages. She engages with artists working with animal sounds and voices; voices of place, placed voices in installation works; voices of technology; and "unvoicing," disturbances in the image/voice relationship and in the idea of what voice is. She writes about remixes, the Barbie Liberation Organisation, and breath in Beijing, about cat videos, speaking fences in Australia, and an artist who reads (to) the birds. Finally, she considers ethics and politics, and describes how her own work has shaped her understandings and apprehensions of voice.

Norie Neumark, a sound and media artist, is Honorary Professorial Fellow at Victorian College of the Arts, University of Melbourne, and Emeritus Professor at La Trobe University in Melbourne. She coedited *At a Distance: Precursors to Art and Activism on the Internet* and *VOICE: Vocal Aesthetics in Digital Arts and Media*, both published by the MIT Press.

The affects, aesthetics, and ethics of voice in the new materialist turn, explored through encounters with creative works in media and the arts.

linguistics | evolutionary biology

Why Only Us

Language and Evolution

Robert C. Berwick and Noam Chomsky

Our remarkable, species-specific ability to acquire any human language—"the language faculty"—raises important biological questions about language, including how it has evolved. This book by two distinguished scholars—a computer scientist and a linguist—addresses the enduring question of the evolution of language. Robert Berwick and Noam Chomsky explain that until recently the evolutionary question could not be properly posed, because we did not have a clear idea of how to define "language" and therefore what it was that had evolved. But since the Minimalist Program, developed by Chomsky and others, we know the key ingredients of language and can put together an account of the evolution of human language and of what distinguishes us from all other animals.

Robert C. Berwick is Professor of Computational Linguistics and Computer Science and Engineering, in the Laboratory for Information and Decision Systems and the Institute for Data, Systems, and Society at MIT and the author of *Computational Complexity and Natural Language* and *The Acquisition of Syntactic Knowledge*, both published by the MIT Press. **Noam Chomsky** is Institute Professor and Professor of Linguistics (Emeritus) at MIT and the author of many influential books on linguistics, including *Aspects of the Theory of Syntax* and *The Minimalist Program*, both published by the MIT Press.

"Will fascinate anyone interested in the extraordinary phenomenon of language."
—Ian Tattersall, *New York Review of Books*

"The book is captivating and a must for everyone interested in evolution and humans. It is a landmark that will define future research."
—Martin Nowak, Professor of Mathematics and of Biology, Harvard University

"A witty and engaging introduction to language from a biological perspective, this is science writing at its best."
—Stephen Crain, Distinguished Professor, Department of Linguistic, Macquarie University, and Director of the ARC Centre of Excellence in Cognition and its Disorders

science

Consciousness

Confessions of a Romantic Reductionist

Christof Koch

Christof Koch has devoted much of his career to bridging the seemingly unbridgeable gap between the physics of the brain and phenomenal experience. This engaging book—part scientific overview, part memoir, part futurist speculation—describes Koch's search for an empirical explanation for consciousness. Koch recounts not only the birth of the modern science of consciousness but also the subterranean motivation for his quest—his instinctual (if "romantic") belief that life is meaningful. He gives us stories from the front lines of modern research into the neurobiology of consciousness as well as his own reflections on a variety of topics, including the distinction between attention and awareness, the unconscious, how neurons respond to Homer Simpson, the physics and biology of free will, dogs, *Der Ring des Nibelungen*, sentient machines, the loss of his belief in a personal God, and sadness. All of them are signposts in the pursuit of his life's work: to uncover the roots of consciousness.

Christof Koch is President and Chief Scientific Officer of the Allen Institute for Brain Science in Seattle. He is the author of *The Quest for Consciousness* and other books.

"Science writing at its best."
—**Anil Seth,** *Times Higher Education*

"The book will leave you with a small piece of Koch's own consciousness, plucked from his head and delivered into yours."
—**Laura Sanders,** *Science News*

"I argued with Koch all the way through this book. And I loved every minute of it."
—**Robert Stickgold,** *Nature*

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science

Turing's Vision

The Birth of Computer Science

Chris Bernhardt

In 1936, when he was just twenty-four years old, Alan Turing wrote a remarkable paper in which he outlined the theory of computation, laying out the ideas that underlie all modern computers. This groundbreaking and powerful theory now forms the basis of computer science. In *Turing's Vision*, Chris Bernhardt explains the theory, Turing's most important contribution, for the general reader. He argues that the strength of Turing's theory is its simplicity, and that, explained in a straightforward manner, it is eminently understandable by the nonspecialist. Bernhardt begins with the foundation and systematically builds to the surprising conclusions. He also views Turing's theory in the context of mathematical history, other views of computation (including those of Alonzo Church), Turing's later work, and the birth of the modern computer.
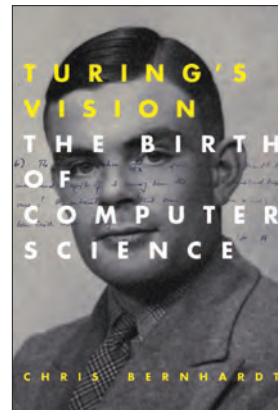
Chris Bernhardt is Professor of Mathematics at Fairfield University.

"A fascinating account of Alan Turing's epic research paper, which kicked off the entire computer revolution. . .simple, transparent, and a pleasure to read."
—**Ian Stewart, author of** *In Pursuit of the Unknown: 17 Equations That Changed the World*

"This is a delightful introduction for the lay reader to the ideas surrounding Alan Turing's great paper of 1936."
—**Scott Aaronson, Associate Professor of Electrical Engineering and Computer Science, MIT**

"A marvelous book."
—**A. K. Dewdney, Professor Emeritus, Department of Computer Science, University of Western Ontario**

May | 5 3/8 x 8, 208 pp. | 15 illus.

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art | music | biography

Topless Cellist

The Improbable Life of Charlotte Moorman

Joan Rothfuss

foreword by Yoko Ono

The Juilliard-trained cellist Charlotte Moorman sat nude behind a cello of carved ice, performed while dangling from helium-filled balloons, and did a striptease while playing Bach in Nam June Paik's *Sonata for Adults Only*. Less famous than her madcap antics but more significant is Moorman's transformative influence on contemporary performance practice. In *Topless Cellist*, the first book to explore Charlotte Moorman's life and work, Joan Rothfuss rediscovers, and recovers, the legacy of an extraordinary American artist.
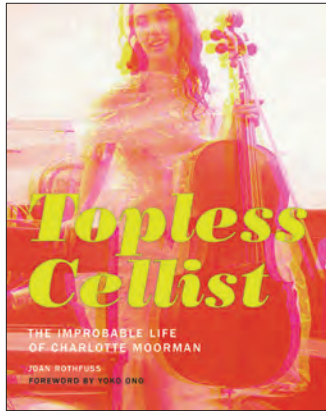
Moorman's arrest in 1967 for performing topless made her a water-cooler conversation starter, but before her tabloid fame she was a star of the avant-garde performance circuit, with a repertoire of pieces by, among others, Yoko Ono, Joseph Beuys, John Cage, and Paik, her main artistic partner. Deeply researched and profusely illustrated, *Topless Cellist* offers a fascinating, sometimes heartbreaking, often hilarious story of an artist whose importance was more than the sum of her performances.

Joan Rothfuss is an independent writer and curator based in Minneapolis.

"A superb biography."
—Holland Cotter, *New York Times*

"Not just a record of a remarkable span and its rich artistic milieu, but a testament also to the ways Moorman could be so easily written out of the history of the avant-garde."
—Brian Dillon, *The Guardian*

March | 7 x 9, 464 pp. | 100 illus.

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design | business

Make It New

The History of Silicon Valley Design

Barry M. Katz

foreword by John Maeda

California's Silicon Valley is home to the greatest concentration of designers in the world. In *Make It New*, Barry Katz tells how design helped transform Silicon Valley into the most powerful engine of innovation in the world. From Hewlett-Packard and Ampex in the 1950s to Google and Facebook today, design has provided the bridge between research and development, art and engineering, technical performance and human behavior.

Katz traces the origins of all of the leading consultancies—including IDEO, frog, and Lunar—and shows the process by which some of the world's most influential companies came to place design at the center of their business strategies. Drawing on unprecedented access to a vast array of primary sources and interviews with nearly every influential design leader—including Douglas Engelbart, Steve Jobs, and Don Norman—Katz reveals design to be the missing link in Silicon Valley's ecosystem of innovation.

Barry M. Katz is Professor of Industrial and Interaction Design at California College of the Arts, Consulting Professor in the Design Group, Department of Mechanical Engineering, at Stanford University, and Fellow at IDEO, Inc. He is coauthor of *Change by Design*, with Tim Brown, and *NONOBJECT*, with Branko Lukić (MIT Press).

"A timely—perhaps even overdue—take on the historical development of the appreciation, role, and insights of design in some of the key corporations of digital culture."
—Jussi Parikka, *Leonardo Online*

"A delight for experts and accidental readers alike, as it touches upon so many icons and necessary fixtures of everyday life."
—Paola Antonelli, Museum of Modern Art

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architecture | neuroscience

Mind in Architecture

Neuroscience, Embodiment, and the Future of Design

edited by Sarah Robinson and Juhani Pallasmaa

Although we spend more than ninety percent of our lives inside buildings, we understand very little about how the built environment affects our behavior, thoughts, emotions, and well-being. Architecture is late in discovering the richness of neuroscientific research. As scientists were finding evidence for the bodily basis of mind and meaning, architecture was caught up in convoluted cerebral games that denied emotional and bodily reality altogether. *Mind in Architecture* maps the extraordinary opportunity that engagement with cutting-edge neuroscience offers present-day architects. In this volume, leading thinkers from architecture and other disciplines, including neuroscience, cognitive science, psychiatry, and philosophy, explore what architecture and neuroscience can learn from each other. They offer historical context, examine the implications for current architectural practice and education, and imagine a neuroscientifically informed architecture of the future.

Sarah Robinson is a practicing architect and the author of *Nesting: Body, Dwelling, Mind*. **Juhani Pallasmaa**, architect, educator, and writer, is the author of more than fifty books, including *The Eyes of the Skin: Architecture and the Senses*. He is the former director of both the Finnish Museum of Architecture and the Department of Architecture at Helsinki University of Technology.

"For anyone interested in thinking about the broader implications of perceptually oriented neuroscience, *Mind in Architecture* presents an interesting read."
—Todd C. Handy, *Perception*

March | 7 x 9, 272 pp. | 47 color illus., 24 black & white illus.

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higher education | business

Revolution in Higher Education

How a Small Band of Innovators Will Make College Accessible and Affordable

Richard A. DeMillo
foreword by Andrew J. Young

For the past few years, technology-fueled innovation has begun to transform higher education, introducing new ways to disseminate knowledge and better ways to learn—all at lower cost. In this impassioned account, Richard DeMillo tells the behind-the-scenes story of these pioneering efforts and offers a roadmap for transforming higher education. Building on his earlier book, *Abelard to Apple*, DeMillo argues that the current system of higher education is clearly unsustainable. Where are the revolutionaries who can save higher education? DeMillo's heroes are a small band of innovators who are bringing the revolution in technology to colleges and universities. DeMillo describes the revolution's goals and the entrenched hierarchical system it aims to overthrow; and he reframes the nature of the contract between society and its universities. The new institutions of a transformed higher education promise to demonstrate not only that education has value but also that it has values—virtues for the common good.

Richard A. DeMillo has held senior positions in academia, industry, and government. Currently Charlotte B. and Roger C. Warren Chair of Computing and the Director of the Center for 21st Century Universities at Georgia Tech, he is the author of *Abelard to Apple: The Fate of American Colleges and Universities* (MIT Press).

Winner, 2015 American Publishers Award for Professional and Scholarly Excellence (PROSE Award) in Education Practice

"Whatever you think of open online education. . . your ideas and opinions will be better informed after reading this book."
—Joshua Kim, *Inside Higher Education*

"DeMillo presents a well-informed account of the challenges and potential transformation in American higher education."
—*Library Journal*

March | 6 x 9, 360 pp. | 14 illus.

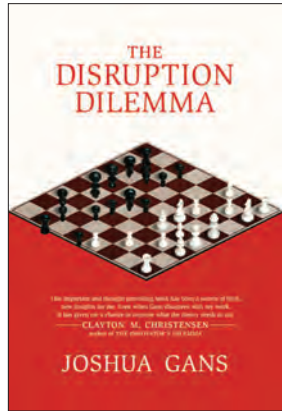**$19.95T/£14.95 paper**
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business | innovation

The Disruption Dilemma

Joshua Gans

"Disruption" is a business buzzword that has gotten out of control. Today everything and everyone seem to be characterized as disruptive. Almost twenty years ago Clayton Christensen popularized the term in his book *The Innovator's Dilemma*. Since then, few have closely examined his account. Joshua Gans does so in this book. He looks at companies that have proven resilient and those that have fallen, and explains why some companies have successfully managed disruption while others have not. Departing from the conventional wisdom, Gans identifies two kinds of disruption: demand-side, when successful firms focus on their main customers and underestimate market entrants with innovations that target niche demands; and supply-side, when firms focused on developing existing competencies become incapable of developing new ones. Herein lies the disruption dilemma: A firm cannot practice both independence and integration at once. Gans shows business leaders how to choose their strategy so their firms can deal with disruption while continuing to innovate.

Joshua Gans is Professor of Strategic Management and holder of the Jeffrey S. Skoll Chair of Technical Innovation and Entrepreneurship at the University of Toronto's Rotman School of Management. He is the author of *Parentonomics: An Economist Dad Looks at Parenting* (MIT Press), *Information Wants to Be Shared*, and other books.

"For those who have tired of being told every product or service is disruptive, this is a good—and nuanced—book."
—Emma Jacobs, *Financial Times*

"This important and thought-provoking book has been a source of fresh, new insights for me."
—Clayton M. Christensen, author of *The Innovator's Dilemma*

May | 6 x 9, 176 pp. | 2 illus.
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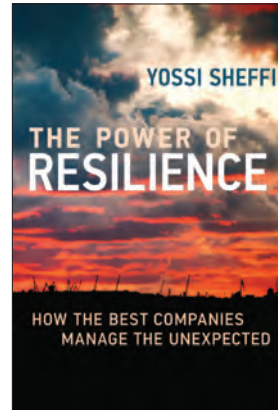**Simplified and Complex Chinese.**

business | management

The Power Of Resilience

How the Best Companies Manage the Unexpected

Yossi Sheffi

The interconnectedness of the global economy today means that unexpected events in one corner of the globe can ripple through the world's supply chain and affect customers everywhere. In this book, Yossi Sheffi shows why modern vulnerabilities call for innovative processes and tools for creating and embedding corporate resilience and risk management. Sheffi focuses on deep tier risks as well as corporate responsibility, cybersecurity, long-term disruptions, business continuity planning, emergency operations centers, detection, and systemic disruptions. He offers fascinating case studies that illustrate how companies have prepared for, coped with, and come out stronger following disruption. Supply chain risk management, Sheffi shows, is a balancing act between taking on the risks involved in new products, new markets, and new processes—all crucial for growth—and the resilience created by advanced risk management.

Yossi Sheffi is Elisha Gray II Professor of Engineering Systems at MIT and Director of the MIT Center for Transportation and Logistics as well as a consultant and active entrepreneur. He is the author of *The Resilient Enterprise: Overcoming Vulnerability for Competitive Advantage* and *Logistics Clusters: Delivering Value and Driving Growth*, both published by the MIT Press.

"Senior executives will gain unique insights and manage much more effectively having read [this book]."
—Frederick W. Smith, Chairman and CEO, FedEx Corporation

"A brilliant book that should be read by all business leaders in order to capably manage risks and create growth in the new global economy."
—Hau L. Lee, Thoma Professor of Operations, Information, and Technology, Graduate School of Business, Stanford University

April | 6 x 9, 488 pp. | 7 illus.
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science | philosophy

Prehension

The Hand and the Emergence of Humanity

Colin McGinn

This book is a hymn to the hand. Collin McGinn examines the role of the hand in shaping human evolution, finding that the development of our capacity to grasp, to grip, to take hold (also known as *prehension*) is crucial in the emergence of *Homo sapiens*. Following Darwin and others, McGinn calls the hand the source of our biological success. He recounts how our remote ancestors descended from the trees, adopted a bipedal gait that left the hands free for other work, and began to make tools, leading to increased social cooperation and brain capacity. But McGinn also goes further than others in arguing for the importance of the hand; he speculates that the hand played a major role in the development of language. In doing so, McGinn mixes biology, anthropology, analytic philosophy, existential philosophy, sheer speculation, and utter amazement to celebrate humans' achievement of humanity.

Colin McGinn has taught philosophy at institutions of higher learning including University College London, Rutgers University, and Oxford University. He is the author of *The Character of Mind, Consciousness and Its Objects*, *The Meaning of Disgust*, *The Philosophy of Language: The Classics Explained* (MIT Press), and other books.

"A serious attempt to identify the conditions that enabled what we take to be the distinctly human achievements."
—**Daniel N. Robinson,** *Review of Metaphysics*

"[A] gripping, inventive, and wide-ranging tale of evolution and human nature."
—**Alva Noë, Professor of Philosophy, University of California, Berkeley, and author of** *Strange Tools: Art and Human Nature*

July | 5 3/8 x 8, 208 pp.

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environment | current affairs

The Future Is Not What It Used to Be

Climate Change and Energy Scarcity

Jörg Friedrichs

The future is not what it used to be because we can no longer rely on the comforting assumption that it will resemble the past. In this book, Jörg Friedrichs argues that industrial society itself is transitory, and he examines the prospects for our civilization's coming to terms with its two most imminent choke points: climate change and energy scarcity. Friedrichs contends that industrial civilization cannot outlast our ability to burn fossil fuels and that the demise of industrial society would entail cataclysmic change, including population decreases. To understand the social and political implications, he examines historical cases of climate stress and energy scarcity, including the Little Ice Age in the medieval Far North, the Japanese struggle to prevent "fuel starvation" from 1918 to 1945, and Cuba's socioeconomic adaptation to fuel scarcity in the 1990s, and draws important lessons about the likely effects of climate and energy disruptions on different kinds of societies.

Jörg Friedrichs is Associate Professor in the Department of International Development at the University of Oxford. He is the author of *Fighting Terrorism and Drugs* and *European Approaches to International Relations Theory*.

Honorable Mention, Rachel Carson Environment Book Award given by the Society of Environmental Journalists

"A dark masterpiece. . . a message that anyone interested in civilisation's long-term future needs to hear."
—**Robin Lovelace,** *Environmental Values*

"An important reminder of the perilous times ahead, not just for human societies but also for the biota who share this planet with us."
—**Ian Lowe,** *The Quarterly Review of Biology*

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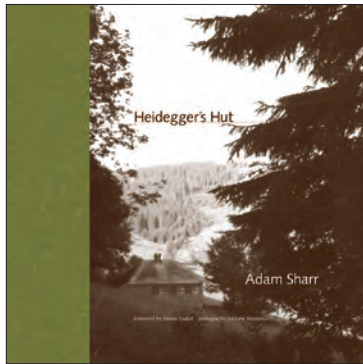cloth 2013
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architecture | philosophy

Heidegger's Hut

Adam Sharr

foreword by Simon Sadler
prologue by Andrew Benjamin

Beginning in the summer of 1922, philosopher Martin Heidegger (1889-1976) occupied a small, three-room cabin in the Black Forest Mountains of southern Germany. Over the years, Heidegger worked on many of his most famous writings in "die Hütte," from his early lectures to his last enigmatic texts. There are many ways to interpret Heidegger's hut—as the site of heroic confrontation between philosopher and existence; as the petit bourgeois escape of a misguided romantic; as a place overshadowed by Heidegger's troubling involvement with the Nazi regime in the early 1930s; or as an entirely unremarkable little building. *Heidegger's Hut* does not argue for any one reading, but guides readers toward their own possible interpretations of the importance of "die Hütte."

Adam Sharr is an architect and writer. He is Professor of Architecture and Head of School at Newcastle University, UK, Editor-in-Chief of *arq: Architectural Research Quarterly* and Principal of Adam Sharr Architects.

"Whether [it was] a magic trick, a fox's trap, or simply a thinker's retreat, Sharr has written a most fascinating account of this small but highly significant hut in the Black Forest."
—**Volker M. Welter,** *Journal of the Society of Architectural Historians*

"As Adam Sharr reveals in his remarkable study *Heidegger's Hut*, the philosopher's timber-shingled cabin . . . can be interpreted as a locus of contemplation, a romantic escape, and a place where, given the politically problematic nature of Heidegger's writings, fascist overtones cannot but linger."
—**Andrea Walker,** *Bookforum*

March | 7 1/2 x 7 1/2, 163 pp. | 53 illus.

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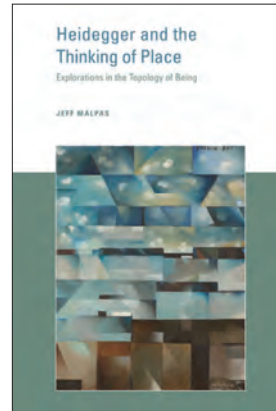**Spanish, German, Czech, Turkish.**

philosophy

Heidegger and the Thinking of Place

Explorations in the Topology of Being

Jeff Malpas

The idea of place—*topos*—runs through Martin Heidegger's thinking almost from the very start. It can be seen not only in his attachment to the famous hut in Todtnauberg but in his constant deployment of topological terms and images and in the situated, "placed" character of his thought and of its major themes and motifs. Heidegger's work, argues Jeff Malpas, exemplifies the practice of "philosophical topology." In *Heidegger and the Thinking of Place*, Malpas examines the topological aspects of Heidegger's thought and offers a broader elaboration of the philosophical significance of place. In doing so, he provides a distinct and productive approach to Heidegger as well as a new reading of other key figures—notably Kant, Aristotle, Gadamer, and Davidson, but also Benjamin, Arendt, and Camus. Philosophy, Malpas argues, begins in wonder and begins in place and the experience of place. The place of wonder, of philosophy, of questioning, he writes, is the very topos of thinking.

Jeff Malpas is Distinguished Professor at the University of Tasmania and Adjunct Professor in the School of Architecture at RMIT University. He is the author of *Heidegger's Topology: Being, Place, World* (MIT Press).

"Malpas does a brilliant job. . . . this book constitutes another impressive achievement by Jeff Malpas in reconsidering the importance and senses of place, not only in Heidegger's work, but also more broadly in philosophy itself."
—**François Raffoul,** *Notre Dame Philosophical Reviews*

"Far exceeds the bounds of Heidegger exegesis. It is a major work."
—**Julian Young, Kenan Professor of Humanities, Wake Forest University**

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philosophy

Division III of Heidegger's *Being and Time*

The Unanswered Question of Being

edited by Lee Braver

Heidegger's *Being and Time* is one of the most influential and important books in the history of philosophy, but it was left unfinished. In this book, leading Heidegger scholars and philosophers influenced by Heidegger take up the unanswered questions in Heidegger's masterpiece, speculating on what Division III would have said, and why Heidegger never published it.

The contributors' task—to produce a secondary literature on a nonexistent primary work —seems one out of fiction by Borges. Why did Heidegger never complete *Being and Time*? Did he become dissatisfied with it? Did he judge it too subjectivistic, not historical enough, too individualistic, too existential? What does being mean, after all? The contributors, in search of lost Being and Time, consider these and other topics, shedding new light on Heidegger's thought.

Lee Braver is Professor of Philosophy at the University of South Florida and the author of *Groundless Grounds: A Study of Wittgenstein and Heidegger* (MIT Press) and *A Thing of This World: A History of Continental Anti-Realism*.

Contributors
Alain Badiou, Lee Braver, Daniel Dahlstrom, Charles Guignon, Graham Harman, Karsten Harries, Theodore Kisiel, Denis McManus, Eric S. Nelson, Richard Polt, François Raffoul, Thomas Sheehan, Iain Thomson, Kate Withy, Julian Young

"[The essays] give the reader a greater understanding not only of *Being and Time* but also of Heidegger's entire philosophy."
—Library Journal Reviews

March | 6 x 9, 384 pp.

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engineering

Engineering a Safer World

Systems Thinking Applied to Safety

Nancy G. Leveson

Engineering has experienced a technological revolution, but the basic engineering techniques applied in safety and reliability engineering have changed very little over the years. In this groundbreaking book, Nancy Leveson proposes a new approach to safety based on modern systems thinking and systems theory. Revisiting and updating ideas pioneered by 1950s aerospace engineers in their System Safety concept, Leveson presents a new, extended model of causation (Systems-Theoretic Accident Model and Processes, or STAMP), and applies the new techniques to real-world events including the friendly-fire loss of a U.S. Blackhawk helicopter in the first Gulf War; the Vioxx recall; the U.S. Navy SUBSAFE program; and the bacterial contamination of a public water supply in a Canadian town. Leveson's approach is relevant even beyond safety engineering, offering techniques for "reengineering" any large sociotechnical system to improve safety and manage risk.

Nancy G. Leveson is Professor of Aeronautics and Astronautics and Engineering Systems at MIT. An acknowledged leader in the field of safety engineering, she has worked to improve safety in nearly every industry over the past thirty years.

"Nancy Leveson's book should be required reading for all Directors of Safety. She makes engineering 'come alive' more than any professor I've ever read. You cannot deliver a mature Safety Management System unless you go beyond the boundaries that currently constrain our thinking. Leveson will take you there."
—Mont Smith, M.S. (Aeronautical Systems), Director of Safety-Air Transport Association

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human-computer interaction | *psychology*

Positive Computing

Technology for Wellbeing and Human Potential

Rafael A. Calvo and Dorian Peters

Technology, so pervasive and ubiquitous, has the capacity to increase stress and suffering; but it also has the less-heralded potential to improve the wellbeing of individuals, society, and the planet. In this book, Rafael Calvo and Dorian Peters investigate what they term "positive computing"—the design and development of technology to support psychological wellbeing and human potential. They explain that technologists' growing interest in social good is part of a larger public concern about how our digital experience affects our emotions and our quality of life—which itself reflects an emerging focus on humanistic values in many different disciplines. Synthesizing theory, knowledge, and empirical methodologies from a variety of fields, they offer a rigorous and coherent foundational framework for positive computing, as well as suggestions for future research and funding.

Rafael A. Calvo is Professor of Software Engineering, ARC Future Fellow, and Director of the Positive Computing Lab at the University of Sydney. **Dorian Peters** is user experience designer and online strategist for the Faculty of Education and Social Work at the University of Sydney and Creative Leader of the Positive Computing Lab there.

"A call to action. . . . There's no time like today to plan for a future in which we can thrive, and not be the victims of our own design."
—Giovanni Rodriguez, Forbes

"Three cheers to Calvo and Peters for *Positive Computing*: It's about time."
—Don Norman, Director of the Design at UC San Diego Program; author of *Emotional Design* and *The Design of Everyday Things*

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environment | *urban planning*

Sharing Cities

A Case for Truly Smart and Sustainable Cities

Duncan McLaren and Julian Agyeman

In *Sharing Cities*, Duncan McLaren and Julian Agyeman argue that the intersection of cities' highly networked physical space with new digital technologies and new mediated forms of sharing offers cities the opportunity to connect smart technology to justice, solidarity, and sustainability. McLaren and Agyeman explore these opportunities in the changing nature of sharing. Drawing on detailed case studies of San Francisco, Seoul, Copenhagen, Medellín, Amsterdam, and Bengaluru (formerly Bangalore), they propose a new "sharing paradigm," to envision models of sharing that are not always commercial but also communal, encouraging trust and collaboration.

Duncan McLaren, former Chief Executive of Friends of the Earth Scotland, is Director of McLaren Environmental Research and Consultancy. **Julian Agyeman** is Professor of Urban and Environmental Policy and Planning at Tufts University. He is the coeditor of *Just Sustainabilities: Development in an Unequal World* (MIT Press) and other books.

Named one of *Nature*'s "Books and Arts" blog's top 20 for 2015

"A wake-up call to policy makers, businesspeople, and community leaders: There has never been a better—or more urgent—time to build a shared urban future."
—April Rinne, *Stanford Social Innovation Review*

"Offers a persuasive case for sharing and solidarity at a time where already over half of the world's population lives in cities, and makes a valid and timely contribution to the plea for building a shared urban future."
—Patrycja Długosz, *Global Policy Journal*

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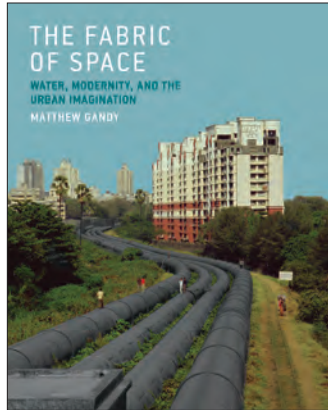**Urban and Industrial Environments series**

urban studies | environment

The Fabric of Space

Water, Modernity, and the Urban Imagination

Matthew Gandy

Water lies at the intersection of landscape and infrastructure, crossing between visible and invisible domains of urban space, in the tanks and buckets of the global South and the vast subterranean technological networks of the global North. In this book, Matthew Gandy considers the cultural and material significance of water through the experiences of six cities: Paris, Berlin, Lagos, Mumbai, Los Angeles, and London. Tracing the evolving relationships among modernity, nature, and the urban imagination, from different vantage points and through different periods, Gandy uses water as a lens through which to observe both the ambiguities and the limits of nature as conventionally understood.

Matthew Gandy is Professor of Geography at the University of Cambridge. He is the author of *Concrete and Clay: Reworking Nature in New York City* (MIT Press), recipient of the 2003 Spiro Kostof Award from the Society of Architectural Historians, and has published widely on urban, cultural, and environmental themes.

Winner of the 2014 AAG Meridian Book Award for Outstanding Scholarly Work in Geography

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—Martin V. Melosi, *Journal of Historical Geography*

"One of the exceptional achievements of the book is that it breaks down the imperial project of twentieth-century modernism as a coherent aesthetic and political project into a narrative of conflicting choices and fractured outcomes."
—Rajna Rao, *Journal of Planning Education and Research*

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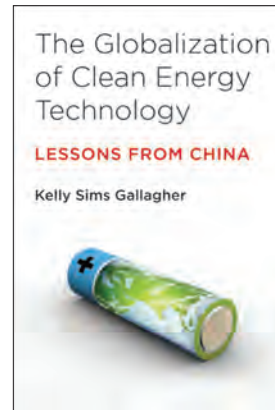978-0-262-53372-0

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environment | economics

The Globalization of Clean Energy Technology

Lessons from China

Kelly Sims Gallagher

The development and deployment of cleaner energy technologies have become globalized phenomena. Yet despite the fact that energy-related goods account for more than ten percent of international trade, policy makers, academics, and the business community perceive barriers to the global diffusion of these emerging technologies. In this book, Kelly Gallagher uses analyses and case studies from China's solar photovoltaic, gas turbine, advanced battery, and coal gasification industries to examine both barriers and incentives in clean energy technology transfer. Gallagher finds that the barriers are not as daunting as many assume. She shows that intellectual property infringement is not as widespread as business leaders fear, and that firms in developing countries show considerable resourcefulness in acquiring technology legally. The biggest single barrier, she finds, is the failure of government to provide sensible policy incentives. The case studies show how government, through market-formation policy, can unleash global market forces.

Kelly Sims Gallagher is Director of the Center for International Environment and Resource Policy and Professor of Energy and Environmental Policy at Tufts University's Fletcher School. She is the author of *China Shifts Gears: Automakers, Oil, Pollution, and Development* (MIT Press).

Honorable Mention, 2014 American Publishers Award for Professional and Scholarly Excellence (PROSE Award) in Environmental Science

"A useful book—a thorough piece of practical research."
—Richard N. Cooper, *Foreign Affairs*

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