

A Book Review Mit

The BookMIT Press

The intellectual heritage of MIT: an account of "the flow of ideas" about science and education that shaped the Institute as it emerged and that inspires it today. The motto on the seal of the Massachusetts Institute of Technology, "Mens et Manus" -- "mind and hand" -- signals the Institute's dedication to what MIT founder William Barton Rogers called "the most earnest cooperation of intelligent culture with industrial pursuits." Mind and Hand traces the ideas about science and education that have shaped MIT and defined its mission -- from the new science of the Enlightenment era and the ideals of representative democracy spurred by the Industrial Revolution to new theories on the nature and role of higher education in nineteenth-century America. MIT emerged in mid-century as an experiment in scientific and technical education, with its origins in the tension between these old and new ideas. Mind and Hand was undertaken by Julius Stratton after his retirement from the presidency of MIT and continued by Loretta Mannix after his death; Philip N. Alexander, of the MIT Program in Writing and Humanistic Studies, stepped in to complete the project. The combined efforts of these three authors have given us what Julius Stratton envisioned -- "a coherent account of the flow of ideas" from which MIT emerged.

A diverse collection of science fiction authors, characters, and stories, featuring contributions by Pat Cadigan, Elizabeth Bear, Joe Haldeman, Ken Liu, Tobias Buckell and others, as well as color illustrations by Chris Foss. TRSF is the first iteration of the Twelve Tomorrows series. Published by MIT Technology Review, this volume brings together original stories by leading science fiction authors inspired by today's emerging technologies. Featuring a diverse collection of authors, characters, and stories rooted in contemporary real-world science, each volume in the series offers conceivable and inclusive stories of the future, celebrating and continuing the genre of "hard" science fiction pioneered by authors such as Isaac Asimov, Arthur C. Clarke, and Robert Heinlein. Pat Cadigan, Elizabeth Bear, Joe Haldeman, Ken Liu, Tobias Buckell and others offer stories about space flight, biocomputing, virtual reality, and filmmaking. Ranging from sad to hilarious, but always thought-provoking, the stories are interspersed with beautiful full-page color illustrations from the work of SF illustrator Chris Foss.

Umberto Eco's wise and witty guide to researching and writing a thesis, published in English for the first time. By the time Umberto Eco published his best-selling novel *The Name of the Rose*, he was one of Italy's most celebrated intellectuals, a distinguished academic and the author of influential works on semiotics. Some years before that, in 1977, Eco published a little book for his students, *How to Write a Thesis*, in which he offered useful advice on all the steps involved in researching and writing a thesis—from choosing a topic to organizing a work schedule to writing the final draft. Now in its twenty-third edition in Italy and

translated into seventeen languages, *How to Write a Thesis* has become a classic. Remarkably, this is its first, long overdue publication in English. Eco's approach is anything but dry and academic. He not only offers practical advice but also considers larger questions about the value of the thesis-writing exercise. *How to Write a Thesis* is unlike any other writing manual. It reads like a novel. It is opinionated. It is frequently irreverent, sometimes polemical, and often hilarious. Eco advises students how to avoid "thesis neurosis" and he answers the important question "Must You Read Books?" He reminds students "You are not Proust" and "Write everything that comes into your head, but only in the first draft." Of course, there was no Internet in 1977, but Eco's index card research system offers important lessons about critical thinking and information curating for students of today who may be burdened by Big Data. *How to Write a Thesis* belongs on the bookshelves of students, teachers, writers, and Eco fans everywhere. Already a classic, it would fit nicely between two other classics: *Strunk and White* and *The Name of the Rose*. Contents The Definition and Purpose of a Thesis • Choosing the Topic • Conducting Research • The Work Plan and the Index Cards • Writing the Thesis • The Final Draft

A landmark insider's tour of how social media affects our decision-making and shapes our world in ways both useful and dangerous, with critical insights into the social media trends of the 2020 election and beyond "The book might be described as prophetic. . . . At least two of Aral's three predictions have come to fruition."—New York NAMED ONE OF THE BEST BOOKS OF THE YEAR BY WIRED • LONGLISTED FOR THE PORCHLIGHT BUSINESS BOOK AWARD Social media connected the world—and gave rise to fake news and increasing polarization. It is paramount, MIT professor Sinan Aral says, that we recognize the outsize effect social media has on us—on our politics, our economy, and even our personal health—in order to steer today's social technology toward its great promise while avoiding the ways it can pull us apart. Drawing on decades of his own research and business experience, Aral goes under the hood of the most powerful social networks to tackle the critical question of just how much social media actually shapes our choices, for better or worse. He shows how the tech behind social media offers the same set of behavior influencing levers to everyone who hopes to change the way we think and act—from Russian hackers to brand marketers—which is why its consequences affect everything from elections to business, dating to health. Along the way, he covers a wide array of topics, including how network effects fuel Twitter's and Facebook's massive growth, the neuroscience of how social media affects our brains, the real consequences of fake news, the power of social ratings, and the impact of social media on our kids. In mapping out strategies for being more thoughtful consumers of social media, *The Hype Machine* offers the definitive guide to understanding and harnessing for good the technology that has redefined our world overnight.

Examines Japan's innovative, highly successful production methods

Why play is a productive, expressive way of being, a form of understanding, and a fundamental part of our well-being. What do we think about when we think about play? A pastime? Games? Childish activities? The opposite of work? Think again: If we are happy and well rested, we may approach even our daily tasks in a playful way, taking the attitude of play without the activity of play. So what, then, is play? In *Play Matters*, Miguel Sicart argues that to play is to be in the world; playing is a form of understanding what surrounds us and a way of engaging with others. Play goes beyond games; it is a mode of being human. We play games, but we also play with toys, on playgrounds, with technologies and design. Sicart proposes a theory of play that doesn't derive from a particular object or activity but is a portable tool for being—not tied to objects but brought by people to the complex interactions that form their daily lives. It is not separated from reality; it is part of it. It is pleasurable, but not necessarily fun. Play can be dangerous, addictive, and destructive. Along the way, Sicart considers playfulness, the capacity to use play outside the context of play; toys, the materialization of play—instruments but also play pals; playgrounds, play spaces that enable all kinds of play; beauty, the aesthetics of play through action; political play—from Maradona's goal against England in the 1986 World Cup to the hacktivist activities of Anonymous; the political, aesthetic, and moral activity of game design; and why play and computers get along so well.

How MIT's first nine presidents helped transform the Institute from a small technical school into a major research university. MIT was founded in 1861 as a polytechnic institute in Boston's Back Bay, overshadowed by its neighbor across the Charles River, Harvard University. Harvard offered a classical education to young men of America's ruling class; the early MIT trained men (and a few women) from all parts of society as engineers for the nation's burgeoning industries. Over the years, MIT expanded its mission and ventured into other fields—pure science, social science, the humanities—and established itself in Cambridge as Harvard's enduring rival. In *A Widening Sphere*, Philip Alexander traces MIT's evolution from polytechnic to major research institution through the lives of its first nine presidents, exploring how the ideas, outlook, approach, and personality of each shaped the school's intellectual and social cultures.

Alexander describes, among other things, the political skill and entrepreneurial spirit of founder and first president, William Rogers; institutional growing pains under John Runkle; Francis Walker's campaign to broaden the curriculum, especially in the social sciences, and to recruit first-rate faculty; James Crafts, whose heart lay in research, not administration; Henry Pritchett's thwarted effort to merge with Harvard (after which he decamped to the Carnegie Foundation for the Advancement of Teaching); Richard Maclaurin's successful strategy to move the institute to Cambridge, after considering other sites (including a golf club in Brighton); the brilliant, progressive Ernest Nichols, who succumbed to chronic illness and barely held office; Samuel Stratton's push towards a global perspective; and Karl Compton's vision for a new kind of Institute—a university

polarized around science and technology. Through these interlocking yet independent portraits, Alexander reveals the inner workings of a complex and dynamic community of innovators.

The authors explore strategies for fostering powerful cultures of innovation and creating breakthroughs. The text includes several profiles of MIT innovators. A clear-eyed look at how AI can complement (rather than eliminate) human jobs, with real-world examples from companies that range from Netflix to Walmart. Descriptions of AI's possible effects on businesses and their employees cycle between utopian hype and alarmist doomsaying. This book from MIT Sloan Management Review avoids both these extremes, providing instead a clear-eyed look at how AI can complement (rather than eliminate) human jobs, with real-world examples from companies that range from Netflix to Walmart. The contributors show that organizations can create business value with AI by cooperating with it rather than relinquishing control to it. The smartest companies know that they don't need AI that mimics humans because they already have access to resources with human capability—actual humans. The book acknowledges the prominent role of such leading technology companies as Facebook, Apple, Amazon, Netflix, and Google in applying AI to their businesses, but it goes beyond the FAANG cohort to look at AI applications in many nontechnology companies, including DHL and Fidelity. The chapters address such topics as retraining workers (who may be more ready for change than their companies are); the importance of motivated and knowledgeable leaders; the danger that AI will entrench less-than-ideal legacy processes; ways that AI could promote gender equality and diversity; AI and the global loneliness epidemic; and the benefits of robot–human collaboration. Contributors Cynthia M. Beath, Megan Beck, Joe Biron, Erik Brynjolfsson, Jacques Bughin, Rumman Chowdhury, Paul R. Daugherty, Thomas H. Davenport, Chris DeBrusk, Berkeley J. Dietvorst, Janet Foutty, James R. Freeland, R. Edward Freeman, Julian Friedland, Lynda Gratton, Francis Hintermann, Vivek Katyal, David Kiron, Frieda Klotz, Jonathan Lang, Barry Libert, Paul Michelman, Daniel Rock, Sam Ransbotham, Jeanne W. Ross, Eva Sage-Gavin, Chad Syverson, Monideepa Tarafdar, Gregory Unruh, Madhu Vazirani, H. James Wilson

“In a time in which the ways we communicate and connect are constantly changing, and not always for the better, Sherry Turkle provides a much needed voice of caution and reason to help explain what the f*** is going on.” —Aziz Ansari, author of *Modern Romance*

Renowned media scholar Sherry Turkle investigates how a flight from conversation undermines our relationships, creativity, and productivity—and why reclaiming face-to-face conversation can help us regain lost ground. We live in a technological universe in which we are always communicating. And yet we have sacrificed conversation for mere connection. Preeminent author and researcher Sherry Turkle has been studying digital culture for over thirty years. Long an enthusiast for its possibilities, here she investigates a troubling consequence: at work, at home, in politics, and in love, we find ways around conversation, tempted by the possibilities of a text or an email in which we don't have to look, listen, or reveal ourselves. We develop a taste for what mere connection offers. The dinner table falls silent as children compete with phones for their parents' attention. Friends learn strategies to keep conversations going when only a few people are looking up from their phones. At work, we retreat to our screens although it is conversation at the water cooler that increases not only productivity but commitment to work. Online, we only want to share opinions that our followers will agree with – a politics that shies away from the real conflicts and solutions of the public square. The case for conversation begins with the necessary conversations of solitude and self-reflection. They are endangered: these days, always connected, we see loneliness as a problem that technology should solve. Afraid of being alone, we rely on other people to give us a sense of ourselves, and our capacity for empathy and relationship suffers. We see the costs of the flight from conversation

everywhere: conversation is the cornerstone for democracy and in business it is good for the bottom line. In the private sphere, it builds empathy, friendship, love, learning, and productivity. But there is good news: we are resilient. Conversation cures. Based on five years of research and interviews in homes, schools, and the workplace, Turkle argues that we have come to a better understanding of where our technology can and cannot take us and that the time is right to reclaim conversation. The most human—and humanizing—thing that we do. The virtues of person-to-person conversation are timeless, and our most basic technology, talk, responds to our modern challenges. We have everything we need to start, we have each other. Turkle's latest book, *The Empathy Diaries* (3/2/21) is available now.

The book as object, as content, as idea, as interface. What is the book in a digital age? Is it a physical object containing pages encased in covers? Is it a portable device that gives us access to entire libraries? The codex, the book as bound paper sheets, emerged around 150 CE. It was preceded by clay tablets and papyrus scrolls. Are those books? In this volume in the MIT Press Essential Knowledge series, Amaranth Borsuk considers the history of the book, the future of the book, and the idea of the book. Tracing the interrelationship of form and content in the book's development, she bridges book history, book arts, and electronic literature to expand our definition of an object we thought we knew intimately. Contrary to the many reports of its death (which has been blamed at various times on newspapers, television, and e-readers), the book is alive. Despite nostalgic paeans to the codex and its printed pages, Borsuk reminds us, the term “book” commonly refers to both medium and content. And the medium has proved to be malleable. Rather than pinning our notion of the book to a single form, Borsuk argues, we should remember its long history of transformation. Considering the book as object, content, idea, and interface, she shows that the physical form of the book has always been the site of experimentation and play. Rather than creating a false dichotomy between print and digital media, we should appreciate their continuities.

Reimagining the scholarly book as living and collaborative--not as commodified and essentialized, but in all its dynamic materiality. In this book, Janneke Adema proposes that we reimagine the scholarly book as a living and collaborative project--not as linear, bound, and fixed, but as fluid, remixed, and liquid, a space for experimentation. She presents a series of cutting-edge experiments in arts and humanities book publishing, showcasing the radical new forms that book-based scholarly work might take in the digital age. Adema's proposed alternative futures for the scholarly book go beyond such print-based assumptions as fixity, stability, the single author, originality, and copyright, reaching instead for a dynamic and emergent materiality. Adema suggests ways to unbind the book, describing experiments in scholarly book publishing with new forms of anonymous collaborative authorship, radical open access publishing, and processual, living, and remixed publications, among other practices. She doesn't cast digital as the solution and print as the problem; the problem in scholarly publishing, she argues, is not print itself, but the way print has been commodified and essentialized. Adema explores alternative, more ethical models of authorship; constructs an alternative genealogy of openness; and examines opportunities for intervention in current cultures of knowledge production. Finally, asking why it is that we cut and bind our research together at all, she examines two book publishing projects that experiment with remix and reuse and try to rethink and reperform the book-apparatus by taking responsibility for the cuts they make.

The future of the university as an open knowledge institution that institutionalizes diversity and contributes to a common resource of knowledge: a manifesto. In this book, a diverse group of authors—including open access pioneers, science communicators, scholars, researchers, and university administrators—offer a bold proposition: universities should become open knowledge institutions, acting with principles of openness at their center and working across boundaries and with broad communities to generate shared knowledge resources for the benefit of

humanity. Calling on universities to adopt transparent protocols for the creation, use, and governance of these resources, the authors draw on cutting-edge theoretical work, offer real-world case studies, and outline ways to assess universities' attempts to achieve openness. Digital technologies have already brought about dramatic changes in knowledge format and accessibility. The book describes further shifts that open knowledge institutions must make as they move away from closed processes for verifying expert knowledge and toward careful, mediated approaches to sharing it with wider publics. It examines these changes in terms of diversity, coordination, and communication; discusses policy principles that lay out paths for universities to become fully fledged open knowledge institutions; and suggests ways that openness can be introduced into existing rankings and metrics. Case studies—including Wikipedia, the Library Publishing Coalition, Creative Commons, and Open and Library Access—illustrate key processes.

The essentials of communication for professionals, educators, students, and entrepreneurs, from organizing your thoughts to inspiring your audience. Do you give presentations at meetings? Do you ever have to explain a complicated subject to audiences unfamiliar with your field? Do you make pitches for ideas or products? Do you want to interest a lecture hall of restless students in subjects that you find fascinating? Then you need this book. *Make It Clear* explains how to communicate—how to speak and write to get your ideas across. Written by an MIT professor who taught his students these techniques for more than forty years, the book starts with the basics—finding your voice, organizing your ideas, making sure what you say is remembered, and receiving critiques (“do not ask for brutal honesty”)—and goes on to cover such specifics as preparing slides, writing and rewriting, and even choosing a type family. The book explains why you should start with an empowerment promise and conclude by noting you delivered on that promise. It describes how a well-crafted, explicitly identified slogan, symbol, salient idea, surprise, and story combine to make you and your work memorable. The book lays out the VSN-C (Vision, Steps, News—Contributions) framework as an organizing structure and then describes how to create organize your ideas with a “broken-glass” outline, how to write to be understood, how to inspire, how to defeat writer's block—and much more. Learning how to speak and write well will empower you and make you smarter. Effective communication can be life-changing—making use of just one principle in this book can get you the job, make the sale, convince your boss, inspire a student, or even start a revolution.

A new approach for defining causality and such related notions as degree of responsibility, degrees of blame, and causal explanation. Causality plays a central role in the way people structure the world; we constantly seek causal explanations for our observations. But what does it even mean that an event C “actually caused” event E? The problem of defining actual causation goes beyond mere philosophical speculation. For example, in many legal arguments, it is precisely what needs to be established in order to determine responsibility. The philosophy literature has been struggling with the problem of defining causality since Hume. In this book, Joseph Halpern explores actual causality, and such related notions as degree of responsibility, degree of blame, and causal explanation. The goal is to arrive at a definition of causality that matches our natural language usage and is helpful, for example, to a jury deciding a legal case, a programmer looking for the line of code that cause some software to fail, or an economist trying to determine whether austerity caused a subsequent depression. Halpern applies and expands an approach to causality that he and Judea Pearl developed, based on structural equations. He carefully formulates a definition of causality, and building on this, defines degree of responsibility, degree of blame, and causal explanation. He concludes by discussing how these ideas can be applied to such practical problems as accountability and program verification. Technical details are generally confined to the final section of each chapter and can be skipped by non-mathematical readers.

An examination of subjectivity in copyright law, analyzing authors, users, and pirates through a

relational framework. In current debates over copyright law, the author, the user, and the pirate are almost always invoked. Some in the creative industries call for more legal protection for authors; activists and academics promote user rights and user-generated content; and online pirates openly challenge the strict enforcement of copyright law. In this book, James Meese offers a new way to think about these three central subjects of copyright law, proposing a relational framework that encompasses all three. Meese views authors, users, and pirates as interconnected subjects, analyzing them as a relational triad. He argues that addressing the relationships among the three subjects will shed light on how the key conceptual underpinnings of copyright law are justified in practice. Meese presents a series of historical and contemporary examples, from nineteenth-century cases of book abridgement to recent controversies over the reuse of Instagram photos. He not only considers the author, user, and pirate in terms of copyright law, but also explores the experiential element of subjectivity—how people understand and construct their own subjectivity in relation to these three subject positions. Meese maps the emergence of the author, user, and pirate over the first two centuries of copyright's existence; describes how regulation and technological limitations turned people from creators to consumers; considers relational authorship; explores practices in sampling, music licensing, and contemporary art; examines provisions in copyright law for user-generated content; and reimagines the pirate as an innovator.

Twelve visions of the future—by turns hilarious, frightening, and relevant—from new and established voices in science fiction. In this book, new and established voices in science fiction come together to offer original stories of the future. Ken Liu writes about a virtual currency that hijacks our empathy; Elizabeth Bear shows us a smart home tricked into kidnapping its owner; Clifford V. Johnson presents, in a graphic novella, the story of a computer scientist seeing a new side of the AIs she has invented; and J. M. Ledgard describes a 28,000-year-old AI who meditates on the nature of loneliness. We encounter metal-melting viruses, vegetable-based heart transplants, search-and-rescue drones, and semi-automated sailing ships. Sometimes hilarious, sometimes frightening, and always relevant, *Twelve Tomorrows* offers compelling visions of potential futures. Originally launched in 2011 by MIT Technology Review, the *Twelve Tomorrows* series explores the future implications of emerging technologies through the lens of fiction. Featuring a diverse collection of authors, characters, and stories rooted in contemporary real-world science, each volume in the series offers conceivable and inclusive stories of the future, celebrating and continuing the genre of “hard” science fiction pioneered by authors such as Isaac Asimov, Arthur C. Clarke, and Robert Heinlein. *Twelve Tomorrows* is the first volume of the series to be published in partnership with the MIT Press. Contributors Elizabeth Bear, SL Huang, Clifford V. Johnson, J. M. Ledgard, Liu Cixin, Ken Liu, Paul McAuley, Nnedi Okorafor, Malka Older, Sarah Pinsker, Alastair Reynolds

An introduction to annotation as a genre--a synthesis of reading, thinking, writing, and communication--and its significance in scholarship and everyday life. Annotation--the addition of a note to a text--is an everyday and social activity that provides information, shares commentary, sparks conversation, expresses power, and aids learning. It helps mediate the relationship between reading and writing. This volume in the MIT Press Essential Knowledge series offers an introduction to annotation and its literary, scholarly, civic, and everyday significance across historical and contemporary contexts. It approaches annotation as a genre--a synthesis of reading, thinking, writing, and communication--and offer examples of annotation that range from medieval rubrication and early book culture to data labeling and online reviews.

A young economic professor's adventures in his quest for a tenure-track position and a well-balanced life. David Fox (Ph.D. Economics, Columbia, Visiting Assistant Professor at Kester College, Knittersville, New York) is having a stressful year. He has a

temporary position at a small college in a small town miles from everything except Albany. His students have never read Freakonomics. He thinks he is getting the hang of teaching, but a smart and beautiful young woman in his Economics of Social Issues class is distractingly flirtatious. His research is stagnant, to put it kindly. His search for a tenure-track job looms dauntingly. (The previous visiting assistant professor of economics is now working in a bookstore.) So when a right-wing think tank called the Center to Research Opportunities for a Spiritual Society (CROSS)—affiliated with the Salvation Academy for Value Economics (SAVE)—wants to publish (and publicize) a paper he wrote as a graduate student showing the benefits of high school abstinence programs, fetchingly retitled “Something for Nothing,” he ignores his misgivings and accepts happily. After all, publication is “the coin of the realm,” as a senior colleague puts it. But David faces a personal dilemma when his prized results are cast into doubt. The school year is filled with other challenges as well, including faculty politics, a romance with a Knittersville native, running the annual interview gauntlet, and delivering the culminating “job talk” lecture under trying circumstances. David's adventures offer an instructive fictional guide for the young economist and an entertaining and comic tale for everyone interested in questions of balancing career and life, success and integrity, and loyalty and desire.

A thirteen-year-old girl wakes up in a future where human emotions are extinct and people rely on personal-assistant robots to navigate daily life. Imagine a future in which many human emotions are extinct, and “emotional masseuses” try to help people recover those lost sensations. Individuals rely on personal-assistant robots to navigate daily life. Students are taught not to think but to employ search programs. Companies protect their intellectual property by erasing the memory of their employees. And then imagine what it would feel like to be a sweet, smart thirteen-year-old girl from the twenty-first century who wakes from a cryogenically induced sleep into this strange world. This is the compelling story told by Carme Torras in this prize-winning science fiction novel. We meet Celia, brought back to life when a cure is found for her formerly terminal disease, and Lu, Celia's adoptive mother, protective but mystified by her new daughter. There is Leo, a bioengineer, who is developing a “creativity prosthesis” to augment humans' atrophied capacities, and the eccentric robotics mogul Dr. Craft. And there is Silvana, an emotional masseuse who reads old books to research the power of emotion. Silvana sees Celia as a living, breathing example of the emotions and feelings that are now out of reach for most people. Torras, a prominent roboticist, weaves provocative ethical issues into her story. What kind of robots do we want when robot companions become as common as personal computers are now? Is it the responsibility of researchers to design robots that make the human mind evolve in a certain way? An appendix provides readers with a list of ethics questions raised by the book.

In *Windows into the Soul*, Gary T. Marx sums up a lifetime of work on issues of surveillance and social control by disentangling and parsing the empirical richness of watching and being watched. Ultimately, Marx argues, recognizing complexity and asking the right questions is essential to bringing light and accountability to the darker, more iniquitous corners of our emerging surveillance society.

The vision of the MIT Process Handbook Project is the creation of a systematic and powerful method of organizing and sharing business knowledge. This text presents the

key findings of a multidisciplinary research group at MIT's Sloan School of Management.

“A beautiful book... an instant classic of the genre.” —Dwight Garner, *New York Times* • A *New York Times* Book Review Editors' Choice MIT psychologist and bestselling author of *Reclaiming Conversation* and *Alone Together*, Sherry Turkle's intimate memoir of love and work *For* decades, Sherry Turkle has shown how we remake ourselves in the mirror of our machines. Here, she illuminates our present search for authentic connection in a time of uncharted challenges. Turkle has spent a career composing an intimate ethnography of our digital world; now, marked by insight, humility, and compassion, we have her own. In this vivid and poignant narrative, Turkle ties together her coming-of-age and her pathbreaking research on technology, empathy, and ethics. Growing up in postwar Brooklyn, Turkle searched for clues to her identity in a house filled with mysteries. She mastered the codes that governed her mother's secretive life. She learned never to ask about her absent scientist father--and never to use his name, her name. Before empathy became a way to find connection, it was her strategy for survival. Turkle's intellect and curiosity brought her to worlds on the threshold of change. She learned friendship at a Harvard-Radcliffe on the cusp of coeducation during the antiwar movement, she mourned the loss of her mother in Paris as students returned from the 1968 barricades, and she followed her ambition while fighting for her place as a woman and a humanist at MIT. There, Turkle found turbulent love and chronicled the wonders of the new computer culture, even as she warned of its threat to our most essential human connections. *The Empathy Diaries* captures all this in rich detail--and offers a master class in finding meaning through a life's work. A single line of code offers a way to understand the cultural context of computing. This book takes a single line of code—the extremely concise BASIC program for the Commodore 64 inscribed in the title—and uses it as a lens through which to consider the phenomenon of creative computing and the way computer programs exist in culture. The authors of this collaboratively written book treat code not as merely functional but as a text—in the case of 10 PRINT, a text that appeared in many different printed sources—that yields a story about its making, its purpose, its assumptions, and more. They consider randomness and regularity in computing and art, the maze in culture, the popular BASIC programming language, and the highly influential Commodore 64 computer.

A cultural theory of the interface as a relation that is both ubiquitous and elusive, drawing on disciplines from cultural theory to architecture. In this book, Branden Hookway considers the interface not as technology but as a form of relationship with technology. The interface, Hookway proposes, is at once ubiquitous and hidden from view. It is both the bottleneck through which our relationship to technology must pass and a productive encounter embedded within the use of technology. It is a site of contestation—between human and machine, between the material and the social, between the political and the technological—that both defines and elides differences. A virtuoso in multiple disciplines, Hookway offers a theory of the interface that draws on cultural theory, political theory, philosophy, art, architecture, new media, and the history of science and technology. He argues that the theoretical mechanism of the interface offers a powerful approach to questions of the human relationship to technology. Hookway finds the origin of the term interface in nineteenth-century fluid dynamics and

traces its migration to thermodynamics, information theory, and cybernetics. He discusses issues of subject formation, agency, power, and control, within contexts that include technology, politics, and the social role of games. He considers the technological augmentation of humans and the human-machine system, discussing notions of embodied intelligence. Hookway views the figure of the subject as both receiver and active producer in processes of subjectification. The interface, he argues, stands in a relation both alien and intimate, vertiginous and orienting to those who cross its threshold.

Stargazers rejoice! In his first book for children, renowned physicist Alan Lightman and collaborators, with help from the Hubble telescope, light up the night sky. New York Times best-selling author Alan Lightman, in collaboration with Olga Pastuchiv, brings galaxies close in a stunning picture-book tribute to the interconnectedness of the natural world. Layering photographs taken from the Hubble telescope into charming and expressive art, illustrator Susanna Chapman zooms in on one child's experiences: Ada knows that the best place for star-gazing is on the island in Maine where she vacations with her grandparents. By day, she tracks osprey in the trees, paddles a kayak, and hunts for shells. But she's most in her element when the sun goes down and the stars blink to life. Will the fog this year foil her plans, or will her grandfather find a way to shine a spotlight on the vast puzzle of the universe . . . until the weather turns? Recounts the story of how a notorious gang of MIT blackjack savants devised and received backing for a system for winning at the world's most sophisticated casinos, an endeavor that earned them more than three million dollars. Originally published as *Bringing Down the House*. Reissue. (A Columbia Pictures film, written by Peter Steinfeld & Allan Loeb, directed by Robert Luketic, releasing March 2008, starring Kevin Spacey, Kate Bosworth, Laurence Fishburne, Jim Sturgess, & others) (Current Affairs)

The evolution of MIT, as seen in a series of crucial decisions over the years. How did MIT become MIT? The Massachusetts Institute of Technology marks the 150th anniversary of its founding in 2011. Over the years, MIT has lived by its motto, "Mens et Manus" ("Mind and Hand"), dedicating itself to the pursuit of knowledge and its application to real-world problems. MIT has produced leading scholars in fields ranging from aeronautics to economics, invented entire academic disciplines, and transformed ideas into market-ready devices. This book examines a series of turning points, crucial decisions that helped define MIT. Many of these issues have relevance today: the moral implications of defense contracts, the optimal balance between government funding and private investment, and the right combination of basic science, engineering, and humanistic scholarship in the curriculum. Chapters describe the educational vision and fund-raising acumen of founder William Barton Rogers (MIT was among the earliest recipients of land grant funding); MIT's relationship with Harvard—its rival, doppelgänger, and, for a brief moment, degree-conferring partner; the battle between pure science and industrial sponsorship in the early twentieth century; MIT's rapid expansion during World War II because of defense work and military training courses; the conflict between Cold War gadgetry and the humanities; protests over defense contracts at the height of the Vietnam War; the uproar in the local community over the perceived riskiness of recombinant DNA research; and the measures taken to reverse years of institutionalized discrimination against women scientists.

A range of perspectives on the complex political, philosophical, and pragmatic implications of opening research and scholarship through digital technologies. The Open Access Movement proposes to remove price and permission barriers for accessing peer-reviewed research work--to use the power of the internet to duplicate material at an infinitesimal cost-per-copy. In

this volume, contributors show that open access does not exist in a technological vacuum; there are complex political, philosophical, and pragmatic implications for opening research through digital technologies. The contributors examine open access across spans of colonial legacies, knowledge frameworks, publics and politics, archives and digital preservation, infrastructures and platforms, and global communities.

Title and statement of responsibility from page 4 of cover.

A leading innovation scholar explains the growing phenomenon and impact of free innovation, in which innovations developed by consumers and given away “for free.” In this book, Eric von Hippel, author of the influential *Democratizing Innovation*, integrates new theory and research findings into the framework of a “free innovation paradigm.” Free innovation, as he defines it, involves innovations developed by consumers who are self-rewarded for their efforts, and who give their designs away “for free.” It is an inherently simple grassroots innovation process, unencumbered by compensated transactions and intellectual property rights. Free innovation is already widespread in national economies and is steadily increasing in both scale and scope. Today, tens of millions of consumers are collectively spending tens of billions of dollars annually on innovation development. However, because free innovations are developed during consumers' unpaid, discretionary time and are given away rather than sold, their collective impact and value have until very recently been hidden from view. This has caused researchers, governments, and firms to focus too much on the Schumpeterian idea of innovation as a producer-dominated activity. Free innovation has both advantages and drawbacks. Because free innovators are self-rewarded by such factors as personal utility, learning, and fun, they often pioneer new areas before producers see commercial potential. At the same time, because they give away their innovations, free innovators generally have very little incentive to invest in diffusing what they create, which reduces the social value of their efforts. The best solution, von Hippel and his colleagues argue, is a division of labor between free innovators and producers, enabling each to do what they do best. The result will be both increased producer profits and increased social welfare—a gain for all.

A devastating, play-by-play account of the federal government's leading role in bringing about today's climate crisis. In 2015, a group of twenty-one young people sued the federal government for violating their constitutional rights by promoting the climate catastrophe, depriving them of life, liberty, and property without due process of law. *They Knew* offers evidence for their claims, presenting a devastating, play-by-play account of the federal government's role in bringing about today's climate crisis. James Speth, tapped by the plaintiffs as an expert on climate, documents how administrations from Carter to Trump--despite having information about climate change and the connection to fossil fuels--continued aggressive support of a fossil fuel based energy system. What did the federal government know and when did it know it? Speth asks, echoing another famous cover up. What did the federal government do and what did it not do? *They Knew* (an updated version of the Expert Report Speth prepared for the lawsuit) presents the most compelling indictment yet of the government's role in the climate crisis, showing a forty-year failure to take action. Since *Juliana v. United States* was filed, the federal government has repeatedly delayed the case. Yet even in legal limbo, it has helped inspire a generation of youthful climate activists. *An Our Children's Trust Book Strategies for transboundary natural resource management*; winner of Harvard Law School's Raiffa Award for best research of the year in negotiation and conflict resolution. Transboundary natural resource negotiations, often conducted in an atmosphere of entrenched mistrust, confrontation, and deadlock, can go on for decades. In this book, Bruno Verdini outlines an approach by which government, private sector, and nongovernmental stakeholders can overcome grievances, break the status quo, trade across differences, and create mutual gains in high-stakes water, energy, and environmental negotiations. Verdini examines two landmark negotiations between the United States and Mexico. The two cases—one involving conflict over

shared hydrocarbon reservoirs in the Gulf of Mexico and the other involving disputes over the shared waters of the Colorado River—resulted in groundbreaking agreements in 2012, after decades of deadlock. Drawing on his extensive interviews with more than seventy high-ranking negotiators in the United States and Mexico—from presidents and ambassadors to general managers, technical experts, and nongovernmental advocates—Verdini offers detailed accounts from multiple points of view, on both sides of the border. He unpacks the negotiation, leadership, collaborative decision-making, and political communication strategies that made agreement possible. Building upon the theoretical and empirical findings, Verdini offers advice for practitioners on effective negotiation and dispute resolution strategies that avoid the presumption that there are not enough resources to go around, and that one side must win and the other must inevitably lose. This investigation is the winner of Harvard Law School's Howard Raiffa Award for best research of the year in negotiation, mediation, decision-making, and dispute resolution.

Practical advice for redesigning "big, old" companies for digital success, with examples from Amazon, BNY Mellon, LEGO, Philips, USAA, and many other global organizations. Most established companies have deployed such digital technologies as the cloud, mobile apps, the internet of things, and artificial intelligence. But few established companies are designed for digital. This book offers an essential guide for retooling organizations for digital success. In the digital economy, rapid pace of change in technology capabilities and customer desires means that business strategy must be fluid. As a result, the authors explain, business design has become a critical management responsibility. Effective business design enables a company to quickly pivot in response to new competitive threats and opportunities. Most leaders today, however, rely on organizational structure to implement strategy, unaware that structure inhibits, rather than enables, agility. In companies that are designed for digital, people, processes, data, and technology are synchronized to identify and deliver innovative customer solutions--and redefine strategy. Digital design, not strategy, is what separates winners from losers in the digital economy. Designed for Digital offers practical advice on digital transformation, with examples that include Amazon, BNY Mellon, DBS Bank, LEGO, Philips, Schneider Electric, USAA, and many other global organizations. Drawing on five years of research and in-depth case studies, the book is an essential guide for companies that want to disrupt rather than be disrupted in the new digital landscape.

"Savvy and insightful." --New York Times Technology has become the architect of our intimacies. Online, we fall prey to the illusion of companionship, gathering thousands of Twitter and Facebook friends, and confusing tweets and wall posts with authentic communication. But this relentless connection leads to a deep solitude. MIT professor Sherry Turkle argues that as technology ramps up, our emotional lives ramp down. Based on hundreds of interviews and with a new introduction taking us to the present day, *Alone Together* describes changing, unsettling relationships between friends, lovers, and families.

How local, specific, and personal understandings about belonging, ownership, and agency intersect with law to shape the city. In *Owning the Street*, Amelia Thorpe examines everyday experiences of and feelings about property and belonging in contemporary cities. She grounds her account in an empirical study of PARK(ing) Day, an annual event that reclaims street space from cars. A popular and highly recognizable example of DIY Urbanism, PARK(ing) Day has attracted considerable media attention, but has not yet been the subject of close scholarly examination. Focusing on the event's trajectories in San Francisco, Sydney, and Montreal, Thorpe addresses this gap, making use of extensive interview data, field work, and careful reflection to explore these tiny, temporary,

and often transformative interventions.

Ten grids that changed the world: the emergence and evolution of the most prominent visual structure in Western culture. Emblematic of modernity, the grid is the underlying form of everything from skyscrapers and office cubicles to paintings by Mondrian and a piece of computer code. And yet, as Hannah Higgins makes clear in this engaging and evocative book, the grid has a history that long predates modernity; it is the most prominent visual structure in Western culture. In *The Grid Book*, Higgins examines the history of ten grids that changed the world: the brick, the tablet, the gridiron city plan, the map, musical notation, the ledger, the screen, moveable type, the manufactured box, and the net.

Charting the evolution of each grid, from the Paleolithic brick of ancient Mesopotamia through the virtual connections of the Internet, Higgins demonstrates that once a grid is invented, it may bend, crumble, or shatter, but its organizing principle never disappears. The appearance of each grid was a watershed event. Brick, tablet, and city gridiron made possible sturdy housing, the standardization of language, and urban development. Maps, musical notation, financial ledgers, and moveable type promoted the organization of space, music, and time, international trade, and mass literacy. The screen of perspective painting heralded the science of the modern period, classical mechanics, and the screen arts, while the standardization of space made possible by the manufactured box suggested the purified box forms of industrial architecture and visual art. The net, the most ancient grid, made its first appearance in Stone Age Finland; today, the loose but clearly articulated networks of the World Wide Web suggest that we are in the middle of an emergent grid that is reshaping the world, as grids do, in its image.

In the bestselling tradition of *Stuff Matters* and *The Disappearing Spoon*: a clever and engaging look at materials, the innovations they made possible, and how these technologies changed us. Finalist for the 41st Los Angeles Times Book Award in Science and Technology and selected as one of the Best Summer Science Books Of 2020 by Science Friday. In *The Alchemy of Us*, scientist and science writer Ainissa Ramirez examines eight inventions--clocks, steel rails, copper communication cables, photographic film, light bulbs, hard disks, scientific labware, and silicon chips--and reveals how they shaped the human experience. Ramirez tells the stories of the woman who sold time, the inventor who inspired Edison, and the hotheaded undertaker whose invention pointed the way to the computer. She describes, among other things, how our pursuit of precision in timepieces changed how we sleep; how the railroad helped commercialize Christmas; how the necessary brevity of the telegram influenced Hemingway's writing style; and how a young chemist exposed the use of Polaroid's cameras to create passbooks to track Black citizens in apartheid South Africa. These fascinating and inspiring stories offer new perspectives on our relationships with technologies.

A new way of thinking about data science and data ethics that is informed by the

ideas of intersectional feminism. Today, data science is a form of power. It has been used to expose injustice, improve health outcomes, and topple governments. But it has also been used to discriminate, police, and surveil. This potential for good, on the one hand, and harm, on the other, makes it essential to ask: Data science by whom? Data science for whom? Data science with whose interests in mind? The narratives around big data and data science are overwhelmingly white, male, and techno-heroic. In *Data Feminism*, Catherine D'Ignazio and Lauren Klein present a new way of thinking about data science and data ethics—one that is informed by intersectional feminist thought. Illustrating data feminism in action, D'Ignazio and Klein show how challenges to the male/female binary can help challenge other hierarchical (and empirically wrong) classification systems. They explain how, for example, an understanding of emotion can expand our ideas about effective data visualization, and how the concept of invisible labor can expose the significant human efforts required by our automated systems. And they show why the data never, ever “speak for themselves.” *Data Feminism* offers strategies for data scientists seeking to learn how feminism can help them work toward justice, and for feminists who want to focus their efforts on the growing field of data science. But *Data Feminism* is about much more than gender. It is about power, about who has it and who doesn't, and about how those differentials of power can be challenged and changed.

Why the troll problem is actually a culture problem: how online trolling fits comfortably within today's media landscape.

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