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Taming the Sun-Varun Sivaram 2018 How solar could spark a clean-energy transition through transformative innovation--creative financing, revolutionary technologies, and flexible energy systems. Solar energy, once a niche application for a limited market, has become the cheapest and fastest-growing power source on earth. What's more, its potential is nearly limitless--every hour the sun beams down more energy than the world uses in a year. But in Taming the Sun, energy expert Varun Sivaram warns that the world is not yet equipped to harness erratic sunshine to meet most of its energy needs. And if solar's current surge peters out, prospects for replacing fossil fuels and averting catastrophic climate change will dim. Innovation can brighten those prospects, Sivaram explains, drawing on firsthand experience and original research spanning science, business, and government. Financial innovation is already enticing deep-pocketed investors to fund solar projects around the world, from the sunniest deserts to the poorest villages. Technological innovation could replace today's solar panels with coatings as cheap as paint and employ artificial photosynthesis to store intermittent sunshine as convenient fuels. And systemic innovation could add flexibility to the world's power grids and other energy systems so they can dependably channel the sun's unreliable energy. Unleashing all this innovation will require visionary public policy: funding researchers developing next-generation solar technologies, refashioning energy systems and economic markets, and putting together a diverse clean energy portfolio. Although solar can't power the planet by itself, it can be the centerpiece of a global clean energy revolution. A Council on Foreign Relations Book

Taming the Sun-Varun Sivaram 2018-03-02 How solar could spark a clean-energy transition through transformative innovation--creative financing, revolutionary technologies, and flexible energy systems. Solar energy, once a niche application for a limited market, has become the cheapest and fastest-growing power source on earth. What's more, its potential is nearly limitless--every hour the sun beams down more energy than the world uses in a year. But in Taming the Sun, energy expert Varun Sivaram warns that the world is not yet equipped to harness erratic sunshine to meet most of its energy needs. And if solar's current surge peters out, prospects for replacing fossil fuels and averting catastrophic climate change will dim. Innovation can brighten those prospects, Sivaram explains, drawing on firsthand experience and original research spanning science, business, and government. Financial innovation is already enticing deep-pocketed investors to fund solar projects around the world, from the sunniest deserts to the poorest villages. Technological innovation could replace today's solar panels with coatings as cheap as paint and employ artificial photosynthesis to store intermittent sunshine as convenient fuels. And systemic innovation could add flexibility to the world's power grids and other energy systems so they can dependably channel the sun's unreliable energy. Unleashing all this innovation will require visionary public policy: funding researchers developing next-generation solar technologies, refashioning energy systems and economic markets, and putting together a diverse clean energy portfolio. Although solar can't power the planet by itself, it can be the centerpiece of a global clean energy revolution. A Council on Foreign Relations Book

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Digital Decarbonization-Varun Sivaram 2018 As energy industries produce ever more data, firms are harnessing greater computing power, advances in data science, and increased digital connectivity to exploit that data. These trends have the potential to transform the way energy is produced, transported, and consumed.

Renewables-Michael Aklin 2018-03-23 A comprehensive political analysis of the rapid growth in renewable wind and solar power, mapping an energy transition through theory, case studies, and policy. Wind and solar are the most dynamic components of the global power sector. How did this happen? After the 1973 oil crisis, the limitations of an energy system based on fossil fuels created an urgent need to experiment with alternatives, and some pioneering governments reaped political gains by investing heavily in alternative energy such as wind or solar power. Public policy enabled growth over time, and economies of scale brought down costs dramatically. In this book, Michaël Aklin and Johannes Urpelainen offer a comprehensive political analysis of the rapid growth in renewable wind and solar power, mapping an energy transition through theory, case studies, and policy analysis. Aklin and Urpelainen argue that, because the fossil fuel energy system and political support for it are so entrenched, only an external shock--an abrupt rise in oil prices, or a nuclear power accident, for example--allows renewable energy to grow. They analyze the key factors that enable renewable energy to withstand political backlash, and they draw on this analysis to explain and predict the development of renewable energy in different countries over time. They examine the pioneering efforts in the United States, Germany, and Denmark after the 1973 oil crisis and other shocks; explain why the United States surrendered its leadership role in renewable energy; and trace the recent rapid growth of modern renewables in electricity generation, describing, among other things, the return of wind and solar to the United States. Finally, they apply the lessons of their analysis to contemporary energy policy issues.

Energy for a Sustainable World-Vincenzo Balzani 2010-12-01 An easy read, balancing the pros and cons, this book surveys the energy issue from a broad scientific perspective while considering environmental, economic, and social factors. It explains the basic concepts, provides a historical overview of energy resources, assesses our

unsustainable energy system based on fossil fuels, and shows that the energy crisis is not only a tough challenge, but also an unprecedented opportunity to become more concerned about the world in which we live and the society we have built up. By outlining the alternatives for today and the future, it gives an extensive overview on nuclear energy, solar thermal and photovoltaics, solar fuels, wind power, ocean energies and other renewables, highlighting the increasing importance of electricity and the long-term perspectives of a hydrogen-based economy. An excellent source of updated and carefully documented information on the entangled aspects of the energy issue, this book is a guide for scientists, students and teachers looking for ways out of the energy and climate crisis, and the problems and disparities generated during the fossil fuel era.

Applied Photovoltaics-Stuart R. Wenham 2013-01-11 The new edition of this thoroughly considered textbook provides a reliable, accessible and comprehensive guide for students of photovoltaic applications and renewable energy engineering. Written by a group of award-winning authors it is brimming with information and is carefully designed to meet the needs of its readers. Along with exercises and references at the end of each chapter, it features a set of detailed technical appendices that provide essential equations, data sources and standards. The new edition has been fully updated with the latest information on photovoltaic cells, modules, applications and policy. Starting from basics with 'The Characteristics of Sunlight' the reader is guided step-by-step through semiconductors and p-n junctions; the behaviour of solar cells; cell properties and design; and PV cell interconnection and module fabrication. The book covers stand-alone photovoltaic systems; specific purpose photovoltaic systems; remote area power supply systems; grid-connected photovoltaic systems and water pumping. Applied Photovoltaics is highly illustrated and very accessible, providing the reader with all the information needed to start working with photovoltaics.

The Great Race-Levi Tillemann 2016-01-19 The Great Race recounts the exciting story of a century-long battle among automakers for market share, profit, and technological dominance--and the thrilling race to build the car of the future. The world's great manufacturing juggernaut--the \$3 trillion automotive industry--is in the throes of a revolution. Its future will include cars Henry Ford and Karl Benz could scarcely imagine. They will drive themselves, won't consume oil, and will come in radical shapes and sizes. But the path to that future is fraught. The top contenders are two traditional manufacturing giants, the US and Japan, and a newcomer, China. Team America has a powerful and little-known weapon in its arsenal: a small group of technology buffs and regulators from California. The story of why and how these men and women could shape the future--how you move, how you work, how you live on Earth--is an unexpected tale filled with unforgettable characters: a scorned chemistry professor, a South African visionary who went for broke, an ambitious Chinese ex-pat, a quixotic Japanese nuclear engineer, and a string of billion-dollar wagers by governments and corporations. "To explain the scramble for the next-generation auto--and the roles played in that race by governments, auto makers, venture capitalists, environmentalists, and private inventors--comes Levi Tillemann's The Great Race...Mr. Tillemann seems ideally cast to guide us through the big ideas percolating in the world's far-flung workshops and labs" (The Wall Street Journal). His account is incisive and riveting, explaining how America bounced back in this global contest and what it will take to command the industrial future.

Superpower-Russell Gold 2020-11-10 Meet Michael Skelly, the man boldly harnessing wind energy that could power America's future and break its fossil fuel dependence in this "essential, compelling look into the future of the nation's power grid" (Bryan Burrough, author of The Big Rich). The United States is in the midst of an energy transition. We have fallen out of love with dirty fossil fuels and want to embrace renewable energy sources like wind and solar. A transition from a North American power grid that is powered mostly by fossil fuels to one that is predominantly clean is feasible, but it would require a massive building spree--wind turbines, solar panels, wires, and billions of dollars would be needed. Enter Michael Skelly, an infrastructure builder who began working on wind energy in 2000 when many considered the industry a joke. Eight years later, Skelly helped build the second largest wind power company in the United States--and sold it for \$2 billion. Wind energy was no longer funny--it was well on its way to powering more than 6% of electricity in the United States. Award-winning journalist, Russel Gold tells Skelly's story, which in many ways is the story of our nation's evolving relationship with renewable energy. Gold illustrates how Skelly's company, Clean Line Energy, conceived the idea for a new power grid that would allow sunlight where abundant to light up homes in the cloudy states thousands of miles away, and take wind from the Great Plains to keep air conditioners running in Atlanta. Thrilling, provocative, and important, Superpower is a fascinating look at America's future.

Taming The Big Data Tidal Wave-Bill Franks 2012-03-19 You receive an e-mail. It contains an offer for a complete personalcomputer system. It seems like the retailer read your mind sinceyou were exploring computers on their web site just a few hoursprior.... As you drive to the store to buy the computer bundle, you get anoffer for a discounted coffee from the coffee shop you are gettingready to drive past. It says that since you're in the area,you can get 10% off if you stop by in the next 20minutes.... As you drink your coffee, you receive an apology from themanufacturer of a product that you complained about yesterday onyour Facebook page, as well as on the company's website.... Finally, once you get back home, you receive notice of a specialarmor upgrade available for purchase in your favorite online videogame. It is just what is needed to get past some spotsyou've been struggling with.... Sound crazy? Are these things that can only happen in thedistant future? No. All of these scenarios are possible today! Bigdata. Advanced analytics. Big data analytics. It seems youcan't escape such terms today. Everywhere you turn people arediscussing, writing about, and promoting big data and advancedanalytics. Well, you can now add this book to the discussion. What is real and what is hype? Such attention can lead one tothe suspicion that perhaps the analysis of big data is somethingthat is more hype than substance. While there has been a lot ofhype over the past few years, the reality is that we are in atransformative era in terms of analytic capabilities and theleveraging of massive amounts of data. If you take the time to cutthrough the sometimes-over-zealous hype present in the media,you'll find something very real and very powerful underneathit. With big data, the hype is driven by genuine excitement andanticipation of the business and consumer benefits that analyzingit will yield over time. Big data is the next wave of new data sources that will drivethe next wave of analytic innovation in business, government, andacademia. These innovations have the potential to radically changehow organizations view their business. The analysis that big dataenables will lead to decisions that are more informed and, in somecases, different from what they are today. It will yield insightsthat many can only dream about today. As you'll see, thereare many consistencies with the requirements to tame big data andwhat has always been needed to tame new data sources. However, theadditional scale of big data necessitates utilizing the newesttools, technologies, methods, and processes. The old way ofapproaching analysis just won't work. It is time to evolve the world of advanced analytics to the next level. That'swhat this book is about. Taming the Big Data Tidal Wave isn't just the titleof this book, but rather an activity that will determine whichbusinesses win and which lose in the next decade. By preparing andtaking the initiative, organizations can ride the big data tidalwave to success rather than being pummeled underneath the crushingsurf. What do you need to know and how do you prepare in order tostart taming big data and generating exciting new analytics fromit? Sit back, get comfortable, and prepare to find out!

Global Warming Gridlock-David G. Victor 2011-03-10 Global warming is one of today's greatest challenges. The science of climate change leaves no doubt that policies to cut emissions are overdue. Yet, after twenty years of international talks and treaties, the world is now in gridlock about how best to do this. David Victor argues that such gridlock has arisen because international talks have drifted away from the reality of what countries are willing and able to implement at home. Most of the lessons that policy makers have drawn from the history of other international environmental problems won't actually work on the problem of global warming. Victor argues that a radical rethinking of global warming policy is required and shows how to make international law on global warming more effective. This book provides a roadmap to a lower carbon future based on encouraging bottom-up initiatives at national, regional and global levels, leveraging national self-interest rather than wishful thinking.

Saving the Sun-Gillian Tett 2009-10-13 Saving the Sun tells the story of the world's largest private equity deal where American investors made billions of dollars rehabilitating Shinsei, a failed Japanese bank. Within that business saga is the dramatic tale of Japan's brightest financial minds, the men who made the Japanese economic

miracle come to life, and their struggle against the economic failure in the 1990s. Into this climate of despair, where Japan seemed incapable of reviving prosperity, came a group of wily and determined Americans who would discover just how different the Japanese really are.

A Reformer on the Throne-Sergey Plekhanov 2004

Energy-Richard Rhodes 2019-06-11 A “meticulously researched” (The New York Times Book Review) examination of energy transitions over time and an exploration of the current challenges presented by global warming, a surging world population, and renewable energy—from Pulitzer Prize- and National Book Award-winning author Richard Rhodes. People have lived and died, businesses have prospered and failed, and nations have risen to world power and declined, all over energy challenges. Through an unforgettable cast of characters, Pulitzer Prize-winning author Richard Rhodes explains how wood gave way to coal and coal made room for oil, as we now turn to natural gas, nuclear power, and renewable energy. “Entertaining and informative...a powerful look at the importance of science” (NPR.org), Rhodes looks back on five centuries of progress, through such influential figures as Queen Elizabeth I, King James I, Benjamin Franklin, Herman Melville, John D. Rockefeller, and Henry Ford. In his “magisterial history...a tour de force of popular science” (Kirkus Reviews, starred review), Rhodes shows how breakthroughs in energy production occurred; from animal and waterpower to the steam engine, from internal-combustion to the electric motor. He looks at the current energy landscape, with a focus on how wind energy is competing for dominance with cast supplies of coal and natural gas. He also addresses the specter of global warming, and a population hurtling towards ten billion by 2100. Human beings have confronted the problem of how to draw energy from raw material since the beginning of time. Each invention, each discovery, each adaptation brought further challenges, and through such transformations, we arrived at where we are today. “A beautifully written, often inspiring saga of ingenuity and progress...Energy brings facts, context, and clarity to a key, often contentious subject” (Booklist, starred review).

The 48 Laws of Power-Robert Greene 2000-09-01 Amoral, cunning, ruthless, and instructive, this multi-million-copy New York Times bestseller is the definitive manual for anyone interested in gaining, observing, or defending against ultimate control – from the author of *The Laws of Human Nature*. In the book that *People* magazine proclaimed “beguiling” and “fascinating,” Robert Greene and Joost Elffers have distilled three thousand years of the history of power into 48 essential laws by drawing from the philosophies of Machiavelli, Sun Tzu, and Carl Von Clausewitz and also from the lives of figures ranging from Henry Kissinger to P.T. Barnum. Some laws teach the need for prudence (“Law 1: Never Outshine the Master”), others teach the value of confidence (“Law 28: Enter Action with Boldness”), and many recommend absolute self-preservation (“Law 15: Crush Your Enemy Totally”). Every law, though, has one thing in common: an interest in total domination. In a bold and arresting two-color package, *The 48 Laws of Power* is ideal whether your aim is conquest, self-defense, or simply to understand the rules of the game.

From Space to Earth-John Perlin 2002 Perlin traces the evolution of photovoltaics from its 19th century beginnings through its success in the space programme to its current position as an indispensable, versatile and largely unrecognised power generator.

Chatter-Ethan Kross 2021-01-26 NATIONAL BESTSELLER • An award-winning psychologist reveals the hidden power of our inner voice and shows how to harness it to live a healthier, more satisfying, and more productive life. “A masterpiece.”—Angela Duckworth, bestselling author of *Grit* • Malcolm Gladwell, Susan Cain, Adam Grant, and Daniel H. Pink’s Next Big Idea Club Winter 2021 Winning Selection One of the best new books of the year—The Washington Post, BBC, CNN Underscored, Shape, Behavioral Scientist, PopSugar • Kirkus Reviews, Publishers Weekly, and Shelf Awareness starred reviews Tell a stranger that you talk to yourself, and you’re likely to get written off as eccentric. But the truth is that we all have a voice in our head. When we talk to ourselves, we often hope to tap into our inner coach but find our inner critic instead. When we’re facing a tough task, our inner coach can buoy us up: Focus—you can do this. But, just as often, our inner critic sinks us entirely: I’m going to fail. They’ll all laugh at me. What’s the use? In *Chatter*, acclaimed psychologist Ethan Kross explores the silent conversations we have with ourselves. Interweaving groundbreaking behavioral and brain research from his own lab with real-world case studies—from a pitcher who forgets how to pitch, to a Harvard undergrad negotiating her double life as a spy—Kross explains how these conversations shape our lives, work, and relationships. He warns that giving in to negative and disorienting self-talk—what he calls “chatter”—can tank our health, sink our moods, strain our social connections, and cause us to fold under pressure. But the good news is that we’re already equipped with the tools we need to make our inner voice work in our favor. These tools are often hidden in plain sight—in the words we use to think about ourselves, the technologies we embrace, the diaries we keep in our drawers, the conversations we have with our loved ones, and the cultures we create in our schools and workplaces. Brilliantly argued, expertly researched, and filled with compelling stories, *Chatter* gives us the power to change the most important conversation we have each day: the one we have with ourselves.

Energy and Civilization-Vaclav Smil 2018-09-13 A comprehensive account of how energy has shaped society throughout history, from pre-agricultural foraging societies through today's fossil fuel-driven civilization. "I wait for new Smil books the way some people wait for the next 'Star Wars' movie. In his latest book, *Energy and Civilization: A History*, he goes deep and broad to explain how innovations in humans' ability to turn energy into heat, light, and motion have been a driving force behind our cultural and economic progress over the past 10,000 years. --Bill Gates, *Gates Notes*, Best Books of the Year *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.

The Pillars of the Earth-Ken Follett 2010-06-29 #1 New York Times Bestseller Oprah's Book Club Selection The “extraordinary . . . monumental masterpiece” (Booklist) that changed the course of Ken Follett’s already phenomenal career—and begins where its prequel, *The Evening and the Morning*, ended. “Follett risks all and comes out a clear winner,” extolled Publishers Weekly on the release of *The Pillars of the Earth*. A departure for the bestselling thriller writer, the historical epic stunned readers and critics alike with its ambitious scope and gripping humanity. Today, it stands as a testament to Follett’s unassailable command of the written word and to his universal appeal. *The Pillars of the Earth* tells the story of Philip, prior of Kingsbridge, a devout and resourceful monk driven to build the greatest Gothic cathedral the world has known . . . of Tom, the mason who becomes his architect—a man divided in his soul . . . of the beautiful, elusive Lady Aliena, haunted by a secret shame . . . and of a struggle between good and evil that will turn church against state and brother against brother. A spellbinding epic tale of ambition, anarchy, and absolute power set against the sprawling medieval canvas of twelfth-century England, this is Ken Follett’s historical masterpiece.

Harvesting the Biosphere-Vaclav Smil 2015-08-21 An interdisciplinary and quantitative account of human claims on the biosphere's stores of living matter, from prehistoric hunting to modern energy production. The biosphere—the Earth's thin layer of life—dates from nearly four billion years ago, when the first simple organisms appeared. Many species have exerted enormous influence on the biosphere's character and productivity, but none has transformed the Earth in so many ways and on such a scale as *Homo sapiens*. In *Harvesting the Biosphere*, Vaclav Smil offers an interdisciplinary and quantitative account of human claims on the biosphere's stores of living matter, from prehistory to the present day. Smil examines all harvests—from prehistoric man's hunting of megafauna to modern crop production—and all uses of harvested biomass, including energy, food, and raw materials. Without harvesting of the biomass, Smil points out, there would be no story of human evolution and advancing civilization; but at the same time, the increasing extent and intensity of present-day biomass harvests are changing the very foundations of civilization's well-being. In his detailed and comprehensive account, Smil presents the best possible quantifications of past and current global losses in order to assess the evolution and extent of biomass harvests. Drawing on the latest work in disciplines ranging from anthropology to environmental science, Smil offers a valuable long-term, planet-wide perspective on human-caused environmental change.

Uncertain Futures-Jens Beckett 2018-07-12 *Uncertain Futures* considers how economic actors visualize the future and decide how to act in conditions of radical uncertainty. It starts from the premise that dynamic capitalist economies are characterized by relentless innovation and novelty and hence exhibit an indeterminacy that cannot be reduced to measurable risk. The organizing question then becomes how economic actors form expectations and make decisions despite the uncertainty they face. This edited volume lays the foundations for a new model of economic reasoning by showing how, in conditions of uncertainty, economic actors combine calculation with imaginaries and narratives to form fictional expectations that coordinate action and provide the confidence to act. It draws on groundbreaking research in economic sociology, economics, anthropology, and psychology to present theoretically grounded empirical case studies. These demonstrate how grand narratives, central bank forward guidance, economic forecasts, finance models, business plans, visions of technological futures, and new era stories influence behaviour and become instruments of power in markets and societies. The market impact of shared calculative devices, social narratives, and contingent imaginaries underlines the rationale for a new form of narrative economics.

Our Time Has Come-Alyssa Ayres 2018 Over the last 25 years, India's explosive economic growth has vaulted it into the ranks of the world's emerging major powers. Long plagued by endemic poverty, until the 1990s the Indian economy was also hamstrung by a burdensome regulatory regime that limited its ability to compete on a global scale. Since then, however, the Indian government has gradually opened up the economy and the results have been stunning. India's middle class has grown by leaps and bounds, and the country's sheer scale-its huge population and \$2 trillion economy-means its actions will have a major global impact. From world trade to climate change to democratization, India now matters. While it is clearly on the path to becoming a great power, India has not abandoned all of its past policies: its economy remains relatively protectionist, and it still struggles with the legacy of its longstanding foreign policy doctrine of non-alignment. India's vibrant democracy encompasses a vast array of parties who champion dizzily disparate policies. And India isn't easily swayed by foreign influence; the country carefully guards its autonomy, in part because of its colonial past. For all of these reasons, India tends to move cautiously and deliberately in the international sphere. In *Our Time Has Come* Alyssa Ayres looks at how the tension between India's inward-focused past and its ongoing integration into the global economy will shape its trajectory. Today, Indian leaders increasingly want to see their country feature in the ranks of the world's great powers-in fact, as a "leading power," to use the words of Prime Minister Narendra Modi. Ayres considers the role India is likely to play as its prominence grows, taking stock of the implications and opportunities for the US and other nations as the world's largest democracy defines its place in the world. As she shows, India breaks the mold of the typical "ally," and its vastness, history, and diversity render it incomparable to any other major democratic power. By focusing on how India's unique perspective shapes its approach to global affairs, *Our Time Has Come* will help the world make sense of India's rise.

Solar Power Finance Without The Jargon-Chase Jenny 2019-07-04 Solar power has become big business, with \$131 billion invested in 2018, up from just \$11.2 billion in 2004 but down from \$171 billion in 2017 as unit costs fell. New installed capacity grew from 1.1GW in 2004 to about 107GW in 2018, a steady rise as solar begins to compete with fossil fuels on cost and to be built in nearly every country. This is a book for the solar workers of the future, a business book for those without a business or economics background and those simply curious about major shifts happening in the world energy economy. Key financial, economic and technical concepts are interspersed with the history of the first decade of cheap solar power, and the author's experience of being part of a successful startup in the clean energy sector. Related Link(s)

Radical, Religious, and Violent-Eli Berman 2011-09-30 Applying fresh tools from economics to explain puzzling behaviors of religious radicals: Muslim, Christian, and Jewish; violent and benign. How do radical religious sects run such deadly terrorist organizations? Hezbollah, Hamas, Lashkar-e-Taiba, and the Taliban all began as religious groups dedicated to piety and charity. Yet once they turned to violence, they became horribly potent, executing campaigns of terrorism deadlier than those of their secular rivals. In *Radical, Religious, and Violent*, Eli Berman approaches the question using the economics of organizations. He first dispels some myths: radical religious terrorists are not generally motivated by the promise of rewards in the afterlife (including the infamous seventy-two virgins) or even by religious ideas in general. He argues that these terrorists (even suicide terrorists) are best understood as rational altruists seeking to help their own communities. Yet despite the vast pool of potential recruits—young altruists who feel their communities are repressed or endangered—there are less than a dozen highly lethal terrorist organizations in the world capable of sustained and coordinated violence that threatens governments and makes hundreds of millions of civilians hesitate before boarding an airplane. What's special about these organizations, and why are most of their followers religious radicals? Drawing on parallel research on radical religious Jews, Christians, and Muslims, Berman shows that the most lethal terrorist groups have a common characteristic: their leaders have found a way to control defection. Hezbollah, Hamas, and the Taliban, for example, built loyalty and cohesion by means of mutual aid, weeding out “free riders” and producing a cadre of members they could rely on. The secret of their deadly effectiveness lies in their resilience and cohesion when incentives to defect are strong. These insights suggest that provision of basic social services by competent governments adds a critical, nonviolent component to counterterrorism strategies. It undermines the violent potential of radical religious organizations without disturbing free religious practice, being drawn into theological debates with Jihadists, or endangering civilians.

Agricultural Productivity and Producer Behavior-Wolfram Schlenker 2019-11-13 Agricultural yields have increased steadily in the last half century, particularly since the Green Revolution. At the same time, inflation-adjusted agricultural commodity prices have been trending downward as increases in supply outpace the growth of demand. Recent severe weather events, biofuel mandates, and a switch toward a more meat-heavy diet in emerging economies have nevertheless boosted commodity prices. Whether this is a temporary jump or the beginning of a longer-term trend is an open question. *Agricultural Productivity and Producer Behavior* examines the factors contributing to the remarkably steady increase in global yields and assesses whether yield growth can continue. This research also considers whether such growth will impose significant environmental externalities. Among the topics studied are genetically modified crops; changing climatic factors; farm production responses to government regulations including crop insurance, transport subsidies, and electricity subsidies for groundwater extraction; and the role of specific farm practices such as crop diversification, disease management, and water-saving methods. This research provides new evidence that technological as well as policy choices influence agricultural productivity.

The Grid-Gretchen Bakke 2016-07-26 One of Bill Gates's Favorite Books of 2016 A revelatory look at our national power grid—how it developed, its current flaws, and how it must be completely reimaged for our fast-approaching energy future. America's electrical grid, an engineering triumph of the twentieth century, is turning out to be a poor fit for the present. It's not just that the grid has grown old and is now in dire need of basic repair. Today, as we invest great hope in new energy sources—solar, wind, and other alternatives—the grid is what stands most firmly in the way of a brighter energy future. If we hope to realize this future, we need to reimagine the grid according to twenty-first-century values. It's a project which forces visionaries to work with bureaucrats, legislators with storm-flattened communities, moneymen with hippies, and the left with the right. And though it might not yet be obvious, this revolution is already well under way. Cultural anthropologist Gretchen Bakke unveils the many facets of America's energy infrastructure, its most dynamic moments and its most stable ones, and its essential role in personal and national life. The grid, she argues, is an essentially American artifact, one which developed with us: a product of bold expansion, the occasional foolhardy vision, some genius technologies, and constant improvisation. Most of all, her focus is on how Americans are changing the grid right now, sometimes with gumption and big dreams and sometimes with legislation or the brandishing of guns. The Grid tells—entertainingly, perceptively—the story of what has been called “the largest machine in the world”: its fascinating history, its problematic present, and its potential role in a brighter, cleaner future.

Renewed Energy-John Weyant 2018-08-09 “Sheds light on the recent history of clean energy between the 2009 recession and 2012. What went wrong? What went well? This book provides ... perspectives from the industry's leading policymakers, technology investors, and industry experts” --

Taming Liquid Hydrogen-Anthony H. Cordesman 2004

The Road Taken-Henry Petroski 2016-02-16 A renowned historian and engineer explores the past, present, and future of America's crumbling infrastructure. Acclaimed engineer and historian Henry Petroski explores our core infrastructure from both historical and contemporary perspectives, explaining how essential their maintenance is to America's economic health. Petroski reveals the genesis of the many parts of America's highway system—our interstate numbering system, the centerline that divides roads, and such taken-for-granted objects as guardrails, stop signs, and traffic lights—all crucial to our national and local infrastructure. A compelling work of history, *The Road Taken* is also an urgent clarion call aimed at American citizens, politicians, and anyone with a vested interest in our economic well-being. Physical infrastructure in the United States is crumbling, and Petroski reveals

the complex and challenging interplay between government and industry inherent in major infrastructure improvement. The road we take in the next decade toward rebuilding our aging infrastructure will in large part determine our future national prosperity.

The Art of Game Design-Jesse Schell 2008-08-04 Anyone can master the fundamentals of game design - no technological expertise is necessary. The Art of Game Design: A Book of Lenses shows that the same basic principles of psychology that work for board games, card games and athletic games also are the keys to making top-quality videogames. Good game design happens when you view your game from many different perspectives, or lenses. While touring through the unusual territory that is game design, this book gives the reader one hundred of these lenses - one hundred sets of insightful questions to ask yourself that will help make your game better. These lenses are gathered from fields as diverse as psychology, architecture, music, visual design, film, software engineering, theme park design, mathematics, writing, puzzle design, and anthropology. Anyone who reads this book will be inspired to become a better game designer - and will understand how to do it.

Let It Shine-John Perlin 2013-08-27 Tells the entire story of humankind's use of solar energy, reaching all the way back 6,000 years to stone age China and then bringing the story all the way up to now. The only book in existence that attempts to tell the entire story of humankind's more than 6,000 year use of solar energy. Most people think of solar power as being a 20th century invention. Few know that the first photovoltaic cells joined the grid on a New York City rooftop in 1881; or that engineers in France used solar power to run steam engines in 1860s; or that in 1901 an ostrich farmer in Southern California used a solar engine with a massive 33-1/2 foot mirrored dish to irrigate 300 acres of trees by pumping 1,400 gallons of water every minute from a reservoir using nothing but the power of the sun. And these are just a few of the incredible stories that will be told in the book. Author John Perlin began telling this story in 1980 with the first edition of their book A Golden Thread, which then went back 2,500 years and covered up through the late 70s. The book sold 55,000 copies and received rave reviews, with the reviewer for The Los Angeles Times calling it a "humbling book" and a "rich mine of information." The New York Times called it "A clear and evocative account of the 2,500-year history of a technology - solar energy - that many people thought was a purely 20th century development" and The Washington Post gave the book an even stronger review calling it a "careful, thoughtful" book that touches on "an awesome range of solar uses and issues." Lester Brown, Founder of the Worldwatch institute has said, "A Golden Thread has become a classic" and a contributor to the popular energy blog "The Oil Drum" wrote that it is "like The Prize but from a solar perspective."

The Wheel-Richard W. Bulliet 2016-01-19 In this book, Richard W. Bulliet focuses on three major phases in the evolution of the wheel and their relationship to the needs and ambitions of human society. He begins in 4000 B.C.E. with the first wheels affixed to axles. He then follows with the innovation of wheels turning independently on their axles and concludes five thousand years later with the caster, a single rotating and pivoting wheel. Bulliet's most interesting finding is that a simple desire to move things from place to place did not drive the wheel's development. If that were the case, the wheel could have been invented at any time almost anywhere in the world. By dividing the history of this technology into three conceptual phases and focusing on the specific men, women, and societies that brought it about, Bulliet expands the social, economic, and political significance of a tool we only partially understand. He underscores the role of gender, combat, and competition in the design and manufacture of wheels, adding vivid imagery to illustrate each stage of their development.

Solar Energy-Olindo Isabella 2016-01 This comprehensive textbook takes you through everything you need to know about solar energy from the physics of photovoltaic (PV) cells through to the design of PV systems for real-life applications. Solar Energy is an invaluable reference for researchers, industrial engineers and designers working in solar energy generation. The book is also ideal for university and third-level physics or engineering courses on solar photovoltaics, with exercises to check students' understanding and reinforce learning. It is the perfect companion to the Massive Open Online Course (MOOC) on Solar Energy (DelftX, ET.3034TU) presented by co-author Arno Smets. The course is available in English on the nonprofit open source edX.org platform, and in Arabic on edraak.org. Over 100,000 students have already registered for these MOOCs.

King Lear-William Shakespeare 2012-03-09 Powerful tragedy of an aging king, betrayed by his daughters, robbed of his kingdom, descending into madness. Perhaps the bleakest of Shakespeare's tragic dramas, complete with explanatory footnotes.

21 Lessons for the 21st Century-Yuval Noah Harari 2019-01-29 #1 NEW YORK TIMES BESTSELLER • In Sapiens, he explored our past. In Homo Deus, he looked to our future. Now, one of the most innovative thinkers on the planet turns to the present to make sense of today's most pressing issues. "Fascinating . . . a crucial global conversation about how to take on the problems of the twenty-first century."—Bill Gates, The New York Times

Book Review NAMED ONE OF THE BEST BOOKS OF THE YEAR BY FINANCIAL TIMES AND PAMELA PAUL, KQED How do computers and robots change the meaning of being human? How do we deal with the epidemic of fake news? Are nations and religions still relevant? What should we teach our children? Yuval Noah Harari's 21 Lessons for the 21st Century is a probing and visionary investigation into today's most urgent issues as we move into the uncharted territory of the future. As technology advances faster than our understanding of it, hacking becomes a tactic of war, and the world feels more polarized than ever, Harari addresses the challenge of navigating life in the face of constant and disorienting change and raises the important questions we need to ask ourselves in order to survive. In twenty-one accessible chapters that are both provocative and profound, Harari builds on the ideas explored in his previous books, untangling political, technological, social, and existential issues and offering advice on how to prepare for a very different future from the world we now live in: How can we retain freedom of choice when Big Data is watching us? What will the future workforce look like, and how should we ready ourselves for it? How should we deal with the threat of terrorism? Why is liberal democracy in crisis? Harari's unique ability to make sense of where we have come from and where we are going has captured the imaginations of millions of readers. Here he invites us to consider values, meaning, and personal engagement in a world full of noise and uncertainty. When we are deluged with irrelevant information, clarity is power. Presenting complex contemporary challenges clearly and accessibly, 21 Lessons for the 21st Century is essential reading. "If there were such a thing as a required instruction manual for politicians and thought leaders, Israeli historian Yuval Noah Harari's 21 Lessons for the 21st Century would deserve serious consideration. In this collection of provocative essays, Harari . . . tackles a daunting array of issues, endeavoring to answer a persistent question: 'What is happening in the world today, and what is the deep meaning of these events?'"—BookPage (top pick)

Africa in Florida-Amanda Carlson 2014 This collection of essays encourages a critical evaluation of the concept of "Florida" as a cultural and geographical entity and the influences and effects of the numerous African and Africa American-influenced cultures.

Need, Speed, and Greed-Vijay V. Vaitheeswaran 2012-03-13 World-renowned economist Vijay V. Vaitheeswaran provides a deeply insightful, brilliantly informed guide to the innovation revolution now transforming the world. With echoes of Clayton Christensen's The Innovator's Dilemma, Tim Brown's Change by Design, and Jared Diamond's Guns, Germs, and Steel, Vaitheeswaran's Need, Speed, and Greed introduces readers to the go-getters, imagineers, and visionaries now reshaping the global economy. Along the way, Vaitheeswaran teaches readers the skills they must develop to unleash their own inner innovator and reveals why America and other wealthy, privileged societies must embrace a path of inclusive growth and sustainability—or risk being left behind by history.

The Road to Good Nutrition-M. Eggersdorfer 2013-09-11 This is a work of advocacy, whose prime objective is to inform people about the relationship between nutrition security and public health. It draws on the thinking and experience of a selected number of experts in the field of nutrition and public health. Collating up-to-the-minute information in a clear and accessible way, the book forms a 'one-stop information source', and paves the way for further, science-led publications in this field. 'The Road to Good Nutrition' puts the topic of nutrition security on the agenda of policy-makers, academics, private sector organizations and civil society, as well as of organizations dedicated to the nutrition space. It is also of interest to the educated lay reader who is generally well informed in matters of health, nutrition and sustainability.

Smart Power-Peter Fox-Penner 2010-04-05 A new national policy on climate change is under debate in the United States and is likely to result in a cap on greenhouse gas emissions for utilities. This and other developments will prompt utilities to undergo the largest changes in their history. Smart Power examines the many facets of this unprecedented transformation. This enlightening book begins with a look back on the deregulatory efforts of the 1990s and their gradual replacement by concerns over climate change, promoting new technologies, and developing stable prices and supplies. In thorough but non-technical terms it explains the revolutionary changes that the Smart Grid is bringing to utility operations. It also examines the options for low-carbon emissions along with the real-world challenges the industry and its regulators must face as the industry retools and finances its new sources and systems. Throughout the book, Peter Fox-Penner provides insights into the policy choices and regulatory reform needed to face these challenges. He not only weighs the costs and benefits of every option, but presents interviews with informed experts, including economists, utility CEOs, and engineers. He gives a brief history of the development of the current utility business model and examines possible new business models that are focused on energy efficiency. Smart Power explains every aspect of the coming energy revolution for utilities in lively prose that will captivate even the most techno-phobic readers.