# Books Briefly Noted

Cathcart, B. (2004). *The fly in the cathedral: How a small group of Cambridge scientists won the race to split the atom*. London, UK: Viking Press. ISBN: 0-670-88321-2, CAN $34.00 (Not available in US).

The book in your hand is mostly empty space. Each of the billions of atoms that make it up is hollow, its true mass concentrated in a tiny core which, if the atom were a cathedral, it would be no bigger than a fly.

Three quarters of a century ago no one could describe the atomic nucleus. Discovering its existence was Lord Rutherford's greatest scientific achievement but even he caught only a glimpse. Incapable of stopping there, he ached to know more – to catch the fly, examine it, dissect it and illuminate its mystery.

For a time all efforts to crack it open were stalled. No theory was possible until it could be tamed experimentally and no experiment seemed feasible since it guarded its secrets so fiercely. Then, just at the point of despair, John Cockcroft and Ernest Walton, two young researchers in a grubby basement room at the Cavendish Laboratory in Cambridge, came under Rutherford's guidance. And, with paper-and-pencil calculations, hand-made apparatus and the odd lump of plasticine, they changed everything.

Recreating the frustrations, excitements and obsessions of 1932, the 'miracle year' of British physicists, *The Fly in the Cathedral* reveals the astonishing story behind the splitting of the atom – the most celebrated scientific experiment of its time. Involving intense international competition, a cast of Nobel prize-winners, a few silly experiments and some revolutionary physics, Brian Cathcart's lucid, learned, high-voltage narrative is inspired by the dreams and endeavor that led the last true gentlemen scientists to the very essence of the universe: the heart of matter.

Cornish, E. (2004). *Futuring: The exploration of the future*. Bethesda, MD: World Future Society. ISBN: 0-930242-57-2, $29.95 (Hardcover).

This comprehensive guide to the study of the future, written by Edward Cornish, president of the World Future Society and editor of *The Futurist* magazine, is an essential and indispensable tool for anyone interested in the future.

*Futuring* is an authoritative introduction to scientific thinking about the future. Written in a clear, readable style, *Futuring* explains what we know about the future and what we can't, some of the techniques used by futurists, and the role that forward-looking people can play in creating a better tomorrow.

Cornish describes specific methods for anticipating future events so that readers can prepare to seize emerging opportunities and avoid unnecessary problems. *Futuring* can help readers make better decisions, develop worthwhile goals, and find the means to achieve them. *Futuring* is a powerful tool for achieving a better future.

*Futuring* also explains how serious thinking about the future has changed through the years, including the development of the idea of progress in the 17th century, the disillusionment with progress in the 20th century, and recent developments in thinking creatively and practically about the future. Readers will learn how far-sighted business trend watchers, military planners, and think-tank scholars now have a growing number of ways to think scientifically about the future so that leaders in government and business can prepare for opportunities and risks ahead. Cornish explains how these new methods are being used and how you too can use many of these methods in simplified but useful forms.

Davis, L.J. (2003). *Fleet fire: Thomas Edison and the pioneers of the electronic revolution*. New York, NY: Arcade Publishing. ISBN: 1-55970-655-4, $27.95.

The electric revolution, which eclipsed the Industrial Revolution by the end of the nineteenth century and continues to this day, changed our world forever. *Fleet Fire* tells us how it all began. In this entertaining narrative, science writer L.J. Davis introduces us to the men behind both the stunning successes and forgotten failures. Among them are Benjamin Franklin, whose kite first

ignited the spark of curiosity; Alessandro Volta, who invented the storage battery; Joseph Henry, who gave us the electromagnet; Thomas Davenport, the electric motor; Samuel Morse, the electromagnetic telegraph; Cyrus Field, the transatlantic cable; Thomas Edison, the phonograph and electric light; and Nikola Tesla and Guglielmo Marconi, who raced frantically against each other to create the radio. Though in retrospect these devices may seem simple, they revolutionized the way we work and, more important, the way we view the world by redefining our concept of time and space.

Thoroughly researched and engagingly written, *Fleet Fire* shines a bright new light on the formative years of the electric revolution, capturing one of the most creative periods of experimentation and discovery, an inventive epoch unmatched in history.

Dean, T. (2004). *Talking with computers: Explorations in the Science and Technology of computing*. NY: Cambridge University Press. ISBN: 0-521-54204-9, $30.00.

In this lively series of essays, Tom Dean, Professor of Computer Sciences at Brown University and a Fellow of AAAI, explores interesting fundamental topics in computer science with the aim of showing how computers and computer programs work and how the various subfields of computer science are connected. Along the way, he conveys his fascination with computers and enthusiasm for working in a field that has changed almost every aspect of our daily lives.

The essays touch on a wide range of topics, from digital logic and machine language to artificial intelligence and searching the World Wide Web, considering such questions as:

- How can a computer learn to recognize junk email?
- What happens when you click on a link in a browser?
- How can you program a robot to do two things at once?
- Are there limits on what computers can do?

The author invites readers to experiment with short programs written in several languages. Through these interactions he grounds the models and metaphors of computer science and makes the underlying computational ideas more concrete. The accompanying website www.cs.brown.edu/~tld/talk provides easy access to code fragments from the book, tips on finding and installing software, links to online resources, exercises, and sample lectures.

DeGregori, T.R. (2002). *Bountiful harvest: Technology, food safety and the environment*. Washington, DC: The Cato Institute. ISBN: 1-930865-31-7, $12.95.

Millions of lives have been saved from malaria and typhus - two of the world's greatest killers - by DDT, a chemical that anti-technology groups in the United States managed to get banned. Yet these same groups oppose regulation of products with proven toxicity-for example, organic foods and alternative medicines-but this contradiction does not seem to bother them. Bountiful Harvest debunks these myths about the dangers of technology.

Arguing that humans are inherently technological beings and that technology has supported immense human progress over the past century, author DeGregori, who is a professor of economics at the University of Houston, provides a resounding critique of the modern Greens, vegetarians, organic and natural food advocates, and critics of genetically modified foods.

Doeringer, P., Evans-Klock, C. & Terkla, D.G. (2002). *Start-up factories: High-performance management, job quality, and regional advantage*. NY: Oxford University Press and Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. ISBN: 0-19-514747-2, $24.50.

*Start-Up Factories* charts the experience of start-up factories in adopting high performance management practices and provides insights into how U.S. manufacturing can improve labor productivity and job quality in the coming years. Based on an extensive study of 48 new branch plants – with both U.S. and Japanese parent companies – that began operating between 1978 and 1990, this book explains how best practice manufacturing companies are raising productivity and lowering unit costs by introducing innovative high performance management practices.

*Start-Up Factories* answers six key questions related to high performance management practices in the American workplace and provides criteria for evaluating certain strategies:

- To what extent do the newest and technologically most advanced manufacturing plants adopt high performance management practices?
- Are there complementarities among these practices?
- Is there a single "best practice" model of high performance management being used by top-performing plants?
- Do high performance management practices contribute to jobs of high quality?
- Are there unique regional characteristics that reinforce high performance workplace standards?
- How can factories that combine state-of-the-art technologies with comprehensive high performance management strategies generate a large competitive advantage?

This book demonstrates to economists, labor and management professionals, and policymakers that there is a set of principles about how to rebuild management systems in ways that simultaneously provide higher rates of growth in business productivity and a greater sharing of these productivity gains with workers.

Fuhrman, S.H. & Elmore, R.F. (2004). *Redesigning accountability systems for education*. NY: Teachers College Press. ISBN: 0-8077-4425-5, $45.00,

Now more than ever, policymakers face a number of difficult and technical questions in the design and implementation of new accountability approaches. This book gathers the emerging knowledge and lessons learned offered by leading scholars in the field to provide an invaluable resource for policymakers, educators, and anyone interested in the pressing issue of accountability and public schools.

Expert contributors examine and offer recommendations on crucial issues such as:

- The effect of accountability policies on the ability of schools to improve over time.
- The significant variation in the design and effect of accountability systems in different states.
- The validity of assessment measures, including the use of scores for high-stakes decisions about students and schools.
- The choice of accountability measures and the levels of progress to expect.
- How to avoid penalizing schools for socioeconomic problems and other factors out of their control.
- The use of multiple measures of student achievement.
- Inclusion of students with disabilities and limited English proficiency in accountability systems.
- Building teachers' capacity to use information provided by assessments to improve instruction.

Gordin, M.D. (2004). *A well-ordered thing: Dmitrii Mendeleev and the shadow of the periodic table*. New York, NY: Basic Books. ISBN: 0-465-02775-x, $30.00.

When a young Dmitrii Mendeleev drafted the Periodic Table of Elements as a guide for his chemistry students at St. Petersburg University, he already had dreams of building a unified scientific empire in his home of Russia, with a place for himself in the limelight.

That the Periodic Table predicted the existence of three unknown elements and became the framework for modern chemistry helped Mendeleev's cause; it gave him a platform for social change and sensationalism. When he battled the emergence of Spiritualism in Russia, playing the skeptical foil in the séances he attended, newspapers across St. Petersburg paid attention. When he ventured into the sky as the novice pilot of a hot-air balloon, it made meteorology noteworthy in Russia. His attempts to distill a pure "ether" from the earth's atmosphere were similarly brave, but that chemical prophecy turned out to be less inspired.

Mendeleev's relationship with the Russian establishment was equally turbulent. He was an advisor to the Tsar, vitriolic proponent of protectionism, and he later introduced the metric system to the Russian empire. But his dramatic rejection at the hands of the Russian Academy of Sciences sent him into a tailspin that saw him spend his later years clawing to hold onto the reputation he established in his youth, while trying to reinvent himself as a scientific legend, a

Siberian Isaac Newton. Mendeleev was a loyal subject of the Tsar, but he was also a maverick who thought that only an outsider could perfect a modern Russia. He wanted to remake Russia just as he had remade chemistry, and his successes – and failures – were significant.

And yet, Mendeleev may be the most important scientist about whom we have almost nothing in English – until now, that is. In *A Well-Ordered Thing*, historian and Princeton assistant professor Michael Gordin changes that, drawing a portrait of the man in three full dimensions. A clever and detailed portrait of a man who had nearly been lost to history, *A Well-Ordered Thing* is a fascinating journey into the world of Imperial Russia – and into the life of one of its most notorious minds.

Gusterson, H. (2004). *People of the bomb: Portraits of America's nuclear complex*. Minneapolis, MN: University of Minnesota Press. ISBN: 0-8166-3860-8, $19.95.

This book tells the story of how – like it or not, know it or not – we have become "the people of the bomb." Integrating fifteen years of field research at weapons laboratories across the United States with discussion of popular movies, political speeches, media coverage of war, and the literature of defense intellectuals. Hugh Gusterson, associate professor of anthropology and science studies at MIT, shows how the military-industrial complex has built consent for its programs and transformed our public culture and personal psychology since we entered the nuclear age.

Hakken, D. (2003). *The knowledge landscapes of cyberspace*. New York, NY: Routledge. ISBN: 0-415-94509-7, $24.95.

*The Knowledge Landscapes of Cyberspace* is a provocative and pioneering analysis of information technology from a humanistic perspective. David Hakken – a leading anthropologist of computer culture and Professor of Anthropology and Director of the Policy Center at the State University of New York Institute of Technology at Utica/Rome – examines some fundamental about the cultural impact of cyberspace: Is the character or social function of knowledge changed profoundly – so profoundly as to justify terms like "Knowledge Society"? How are knowledge technologies tied to various agendas and forms of power?

In this richly documented and powerfully argued work, Hakken outlines a fresh way of thinking about the dynamics of technology and offers a new anthropologically-informed method of studying cyberspace from a cultural perspective. He also investigates the political economy of knowledge in cyberspace, and responds to the many aesthetic, ethical and political questions posed by uses and abuses of information technology.

This book is essential reading for anyone seeking to understand the human implications of the so-called computer revolution.

Hart, J.F. (2003). *The changing scale of American agriculture*. Charlottesville, VA: University of Virginia Press. ISBN: 0-8139-2229-1, $37.50.

Few Americans know much about contemporary farming, which has evolved dramatically over the past few decades. In *The Changing Scale of American Agriculture*, the award-winning geographer and landscape historian John Fraser Hart describes the transformation of farming from mid-twentieth century, when small family farms were still viable, to the present, when a farm must sell at least $250,000 of farm products each year to provide an acceptable standard of living for a family.

The increased scale of agriculture has outmoded the Jeffersonian ideal of small, self-sufficient farms. In the past farmers kept a variety of livestock and grew several crops, but modern family farms have become highly specialized in producing a single type of livestock or one or two crops. As farms have become larger and more specialized, their number has declined.

Hart contends that modern family farms need to become integrated into tightly orchestrated food-supply chains in order to thrive, and these complex new organizations of large-scale production require managerial skills of the highest order. According to Hart, this trend is not only inevitable, but it is beneficial, because it produces the food American consumers want to buy at prices they can afford.

Although Hart provides the statistics and clear analysis such a study requires, his book focuses on interviews with farmers: those who have shifted from mixed crop-and-livestock farming to cash-grain farming in the Midwest agricultural heartland; beef, dairy, chicken, egg, turkey, and hog producers around the periphery of the heartland; and specialty crop producers on the East and West Coasts. The invaluable case studies bring the reader into personal contact with the entrepreneurs who are changing American agriculture. Hart believes that modern large-scale farmers have been criticized unfairly and *The Changing Scale of American Agriculture*, the result of decades of research, is his attempt to tell their side of the story.

Heilbrun, M. (2000). *Inventing the skyline: The architecture of Cass Gilbert*. New York, NY: Columbia University Press. ISBN: 0-231-11873-2, $20.00.

Designed by the architect of the Broadway Chambers Building, the US Custom House, the Minnesota State Capitol, the St. Louis Art Museum, and large-scale projects like the city plan for New Haven, Connecticut, Cass Gilbert's pioneering skyscrapers – "symbols of our national genius and unrestraint" – profoundly influenced architects during the first decades of the twentieth century and epitomize the Beaux Arts "City Beautiful" aesthetic he embraced throughout his career. Containing essays by major Gilbert scholars, this lavishly illustrated volume considers the full breadth of Gilbert's career. The book also documents fascinating details about the buildings: the color scheme of the main entrance of the Minnesota State Capitol, made to resemble the Byzantine tombs of Galla Placidia in Ravenna; the controversy that erupted over the use of female nudes on the relief of the Essex County Courthouse; and the ill-fated plans for the George Washington Bridge as a Beaux Arts monument with elaborate plazas, fountains, and sculptures.

Hocker, F.M. & Ward, C.A. (2004). *The philosophy of shipbuilding: Conceptual approaches to the study of wooden ships*. College Station, TX: Texas A&M University Press. ISBN: 1585443131, $75.00.

No boat or shipbuilder has ever started from scratch. Skilled craftsmen construct vessels based on a combination of their own skills and those of their predecessors, and these techniques tell how people of the past, from ancient Egypt's First Dynasty to North America's Golden Age of Navigation, perceived the physical world.

Edited by Frederick M. Hocker and Cheryl A. Ward, who both received their PhDs from Texas A&M University, *The Philosophy of Shipbuilding: Conceptual Approaches to the Study of Wooden Ships* explores the concepts underlying basic ship design and construction during various periods of history. Experts in the field study ancient boat models, present the latest research methodologies, and furnish information from nautical archaeology excavations.

"The study of ship remains begins with the recording of seemingly trivial details: the thickness of a plank, the numbers and sizes of nails, the direction of an adze stroke, the color and texture of stains in half-rotten bits of wood," Hocker writes. "Those tool marks and stains, grain patterns and botched repairs, are the voices of the people who owned, built, and sailed the vessels archaeologists excavate and ship specialists study. Their voices can tell us who they were and why they built their boats and ships the way they did."

The first essays explore the earliest plank-built ships of ancient Egypt and the evidence contained in Egyptian papyri, the mortise-and-tenon joined hulls of the ancient Mediterranean, and principles and methods of construction used in ancient naval architecture. Further chapters discuss Nordic clinker construction, bottom-based shipbuilding in northwestern Europe, and Nile skippers of the mid-third century B.C. A wide range of ships is examined, including those from the third millennium B.C., the Tantura wrecks, and Iberian ships from the fifteenth and sixteenth centuries. A final chapter examines the evolution of Lake Champlain's sailing merchant fleet.

Hood, Clifton (2004). *722 miles: The building of the subways and how they transformed New York centennial edition*. Baltimore, MD: Johns Hopkins University Press. ISBN 0-8018-8054-8, $18.95.

The 22 miles, from City Hall to 145th Street and Lenox Avenue, was once considered a

remarkable engineering feat. By the 1940s, the New York City subway system grew to 722 miles, including the Independent Subway line. In the process, the subway system transformed New York. In this definitive history, Clifton Hood traces the complex and fascinating story of the New York City subway system, one of the urban engineering marvels of the twentieth century. For the subway's centennial the author supplies a new foreword explaining that now, after a century, "we can see more clearly than ever that this rapid transit system is among the twentieth century's greatest achievements."

Hosek, J.R., Mattock, M.G., Fair, C.F., Kavanagh, J., Sharp, J., Totten, M. (2004). *Attracting the best: How the military competes for information technology personnel*. Arlington, VA: RAND National Defense Research Institute. ISBN: 0-8330-3550-9, $27.50.

During the 1990s, the private-sector demand for information technology (IT) workers, escalating private-sector pay in IT, growing military dependence on IT, and faltering military recruiting led to a concern that the military capability was vulnerable to a shortfall in IT personnel. This report addresses that concern by use of a literature description, field interviews, data analysis, and a dynamic model that, taken together, offer some policy implications for military planners in terms of how to recruit and retain qualified IT personnel.

Hughes, T. P. (2004). Human-built world: How to think about technology and culture. Chicago, IL: The University of Chicago Press. ISBN: 0-226-35933-6, $22.50.

Technology surrounds us: Millions of homes have digital cable and wireless internet connections; telephones can also serve as cameras, music players, and personal organizers; and everything from stereos to computers grow more sophisticated every year. This, of course, is the technology that most of us encounter and even embrace. But lurking behind these gadgets is an arena in which the topic of technology raises troubling questions. Cosmetic surgery, chemical weapons, and cloning are just some of the more recent examples of the uneasy results of our technological progress, and they remind us that technology is Janus-faced – something capable of immeasurable good as well as a test of the limits of human morality and power.

Thomas P. Hughes, the eminent historian of technology and acclaimed author of *American Genesis*, a finalist for the Pulitzer Prize, wrote *Human-Built World* as a similar reminder, revealing the concept of technology as it was framed historically by thinkers who ran the gamut from horrified to euphoric. For just as Henry Ford's factories were revolutionizing the productive capacity of the American automobile industry, social critics were warning of the increasing "dehumanization" of machine-age culture. And just as Ralph Waldo Emerson was celebrating the transformative power of technology and its ability to express the ultimate creativity of the human race, the steam engine and coal production were beginning to ravage the nineteenth-century landscape.

Exploring such competing perspectives, *Human-Built World* is a concise intellectual biography of the tools of technology. Drawing on a vast body of work created over the centuries by philosophers and architects, social theorists and web designers, politicians and engineers, Hughes charts the multiple ways that technology has been viewed – sometimes with elation, sometimes with skepticism – by various thinkers. Technology, as he shows here, has not been a slow and steady march to the ever-increasing complexity and sophistication of objects; it has been the subject of debate for centuries about the human will to create, the inherent danger of progress for its own sake, and the Mephistophelean urge to alter everything from the natural landscape to the daily activities of millions. "In its variety," Hughes writes here, "technology is full of contradictions, laden with human folly, saved by occasional benign deeds, and rich with unintended consequences." Hughes' mission here is to restore to technology these contradictions and unintended consequences, and his *Human-Built World* is a necessary and original guide that recreates technology as the philosophical, moral, and social dilemma it rightfully is.

Jackson, W. J. (2004). *Heaven's fractal net: Retrieving lost visions in the humanities*. Bloomington: Indiana University Press. ISBN: 0-253-21620-6, $29.95.

"Fractal" is a term coined by mathematician Benoit B. Mandelbrot to denote geometry of nature, which traces inherent order in chaotic shapes and processes. Using lines so intricate they

are more than one-dimensional and surfaces so rough they are more than two-dimensional, fractal geometry can articulate new ways of considering and describing nature. In the recursive patterns of religious music, in temple architecture in India, in cathedral structures in Europe and America, in the imagery of religious literature depicting infinity and abundance, and in poetic descriptions of the nature of consciousness, fractal-like configurations are pervasive. Fractal concepts are part of our emerging vocabulary and can describe patterns of human behavior, culture and history while enhancing our understanding of the nature of consciousness.

Karoly, L.A. & Panis, C.W.A. (2004). *The 21st century at work: Forces shaping the future workforce and workplace in the United States*. Arlington, VA: RAND Labor and Population. ISBN: 0-8330-3492-8, $30.00.

What are the forces that will continue to shape the US workforce and workplace over the next 10 to 15 years? With such inevitabilities as the proliferation and acceleration of technology worldwide, will more individuals work at home, will more businesses outsource their noncore functions – and with what consequences? Answering such questions can help stakeholders – workers, employers, educators, and policymakers – make informed decisions. With its eye on forming sound policy, the US Department of Labor asked the RAND Corporation to look at the future of work in the near-to-medium term. The authors analyzed shifting demographic patterns, the pace of technological change, and the path of economic globalization. They observe, for example, that the workforce will continue to grow – however, at a markedly declining pace – and that the ongoing education of employees will be paramount as new technologies, such as bio- and nanotechnologies, come onto the scene and develop. They also look at the trend of globalization and how it fares for the United States' economy and those of other countries. Overall, the authors provide for the reader expectations about the key forces in the economy today and their implications for the future workforce and workplace, including the size, composition, and skills of the workforce; the nature of work and workplace agreements; and worker compensation.

Kent, P. (2004). *Search engine optimization for dummies*. NY: Wiley Publishing, Inc. ISBN: 0-7645-6758-6, $24.99.

Find out how to make your site pop to the top when the search is on. Search engines, search directories, search systems – it's enough to make you search for antacids! Well, relax – this book not only tells you which is which, it gives you the inside track on which ones to impress. Find out about pay-per-click search engine advertising, what your site needs to lure search engines, how and where to register, and more.

Krebs, R.E. (2004). *Groundbreaking scientific experiments, inventions & discoveries of the Middle Ages and the Renaissance.* Westport, CT: Greenwood Press. ISBN: 0-313-32433-6, $65.00.

The Middle Ages and the Renaissance were a period of scientific and literary awakening. Scientific development and a renewed interest in classical science led to new discoveries, inventions, and technologies. Between 500 and 1600A.D., scientific explorers rediscovered ancient Greek and Eastern knowledge, which led to an eruption of fresh ideas. This reference work describes more than 75 experiments, inventions, and discoveries of the period, as well as the scientists, physicians, and scholars responsible for them. Individuals such as Leonardo da Vinci, Marco Polo, and Galileo are included, along with entries on reconstructive surgery, Stonehenge, eyeglasses, the microscope, and the discovery of smallpox.

Part of a unique series that ranges from ancient times to the 20th century, this exploration of scientific advancements during the Middle Ages and the Renaissance will be useful to high school and college students, teachers, and general readers seeking information about significant advances in scientific history.

Launius, R.D. & Daly Bednarek, J.R. (2003). *Reconsidering a century of flight*. Chapel Hill, NC: The University of North Carolina Press. ISBN: 0-8078-5488-3, $19.95.

On December 17, 1903, Orville and Wilbur Wright soared into history during a twelve-second flight on a secluded North Carolina beach. Commemorating the 100th anniversary

of the first flight, these essays chart the central role that aviation played in twentieth-century history and capture the spirit of innovation and adventure that has characterized the history of flight.

The contributors, all leading aerospace historians, consider four broad themes relating to the development of flight technology: innovation and the technology of flight, civil aeronautics and government policy, aerial warfare, and aviation in the American imagination. Through their attention to the political, economic, military, and cultural history of flight, the authors establish that the Wrights' invention – and all that followed in both air and space – was one of the most significant technologies of the twentieth century, fundamentally reshaping our world.

Levick, S.E. (2004). *Clone being: Exploring the psychological and social dimensions*. NY: Rowman & Littlefield Publishers, Inc. ISBN: 0-7425-2990-8, $28.95.

Marshalling psychological and sociological theory and research, and drawing upon extensive clinical experience as a psychiatrist and psychotherapist, Levick explores the various dimensions of cloning. This book attempts to anticipate the possible consequences of cloning for a clone, his or her "parents" and family, and society. Levick, who is also a clinical assistant professor of psychiatry at the University of Pennsylvania School of Medicine, does this through models of situations that are relevant by analogy to various aspects of cloning. Psychotherapy case material enlivens and illustrates each model, and the reader is helped to identify "clone-like" aspects of his or her own experience and mental life, and also to see evidence of the clone-like around them. Through this process, the book comes to important conclusions about human nature, including the crucial roles of intimacy, sex and sexuality for society. The clinical and scientifically grounded insights of this book should help inform the reader's ethical judgments and attitudes about the reproductive cloning of human beings.

Lottman, H. (2004). *The Michelin men: Driving an empire*. New York, NY: I.B. Tauris. ISBN: 1-86064-896-7, $27.95.

Herbert Lottman is an American writer based in Paris and is the European correspondent for *Publishers Weekly.* In his new book, *The Michelin Men: Driving an Empire* he offers the previously untold account of the Michelin dynasty – one of the world's most successful and secretive companies – and the inside story of the Michelin hotel and restaurant guides, as well as their tires, both products that revolutionized the way people travel today.

Andre and Edouard were two brothers trying to rescue their family's family rubber plant in Clermont-Ferrand, France. After repairing a faulty tire as a favor, Edouard became determined to design a superior one. Deciding to pursue the business, Andre, who was based in Paris, began a public relations campaign. Trying to convince the public that riding on a cushion of air was the more comfortable way to travel, he came up with the phrase that the Michelin tire "swallows the obstacle." That slogan would give name to Bibendum, the endearing and immediately recognizable tire man. Back in the factory, Edouard's management style and focus on innovation kept the Michelin brand ahead of the competitors. At the same time Andre, defending the company in his weekly promotional articles, prepared a free travel guide touting Michelin tires, which would encourage motorists to explore the countryside. The free guides grew in popularity and the Paris travel office, which offered free route plans, began to become a business of its own.

The company grew from its success, but as competitors entered the fray, the Michelin men began protecting their empire. Whether a factory worker or a guide inspector, all staff were required not to reveal company secrets – with good reason, Lottman tells just how far some people would go to get the world-renowned three star designation for their restaurant. The Michelins were also protecting plans for a radial tire that would revolutionize the tire industry for the latter half of the twentieth century. They even managed to keep their plans secret from the Germans during the Occupation. However, the company faced another hurdle when Francois Michelin took the helm of the company in 1959. He stressed that the company needed to expand into the international marketplace to remain viable. Through intense criticism and economic ups and downs, he remained convinced of his long-term plan. In the end proving his critics wrong, Lottman describes how Francois made Michelin one of the most successful worldwide companies.

With Herbert Lottman's skillful narration, *The Michelin Men* tells how two brothers saved their family's company, created an international industry, and invented the world's best guidebooks to promote their tires. In the process, he gives readers a history of the automobile and travel industries, and how Michelin revolutionized them both.

Livingstone, D.N. (2003). *Putting science in its place: Geographies of scientific knowledge.* Chicago, IL: The University of Chicago Press. ISBN: 0-226-48722-9, $27.50.

As any fan of Patrick O'Brian's series devoted to the voyages of Captain Jack Aubrey and Stephen Maturin knows, part of the appeal of books is the vivid descriptions of Maturin's botanic and scientific labors and discoveries during the course of the series. The character of Maturin is based on the historical figure of the seafaring scientist, encountering new species, collecting specimens, and bringing his researches home to a fascinated public. But while we recognize Maturin as fictional, we forget that the work of the men he represents is conditioned by time and place as the recent "Master and Commander" movie demonstrated. Science, far from a universal pursuit, always has a setting, and this setting in turn affects the shapes of scientific discoveries.

David N. Livingstone's *Putting Science in Its Place* is an elegant, concise story of how science has been affected by its setting. As Livingstone, who is professor of geography and intellectual history at Queen's University in Belfast, points out, landmark discoveries have been made not only on boats but also in asylums, in royal gardens that served as the home of exotic animals, on living and dead bodies, and in sterile laboratories. All of these places – and more – have made their mark in determining the questions that scientists have been able to ask and answer. Livingstone's narrative charts the ways that place and space have organized science, bringing the latter fully into discussion with social and political history.

Livingstone, a fellow of the British Academy and member of the Royal Irish Academy, does not restrict himself solely to place. Measurement, for example, has a history, as does representation. The advent of photography, the invention of the metric system, even the relative wealth of nineteenth-century "gentleman scientists" are all connected to the scientific enterprise. *Putting Science in Its Place* fills out this necessary context for understanding the history of human discovery and invention. "Scientific knowledge", Livingstone writes, "is always the product of specific spaces. To claim otherwise is to displace science from the culture of which it is so profoundly a part."

*Putting Science in Its Place* is a fascinating view of how science is specific and local. While it may make claims to universality, Livingstone shows, science is as much a product of place and time as operas and politics, technology and travel. He reminds us in accessible language and through fascinating examples. This clear, thought-provoking book brings the scientific endeavor back from the lofty realm of the abstract and situates it solidly in the historical circumstances from which it emerged. In the process, a geography of science is born.

May, W.F. (2001). *Beleaguered rulers: The public obligation of the professional*. Louisville, KY: Westminster John Knox Press. ISBN: 0-664-22671-X,$19.95.

Professionals today wield an enormous public power. Collectively, their decisions affect the patient's plight, the client's fate, the student's future, the city's scape, the earth's sustainability, the worker's fair treatment, and the durability of institutions great and small. Yet professionals do not perceive themselves as power wielders. They feel beleaguered, marginal, insufficiently appreciated, often under siege. Thus they tend to obscure for themselves their obligations to the common good. This book explores eight professions as their struggle with their double identity – as a means to a livelihood and as a "common calling in the spirit of public service." An interpretation of American culture emerges from its pages, as social critic and Professor of Ethics at Southern Methodist University William May opens up the ways in which each profession answers to something deep in the American spirit.

Misa, T.J. (2004). *Leonardo to the internet: Technology & culture from the Renaissance to the present.* Baltimore, MD: The Johns Hopkins University Press. ISBN: 0-8018-7809-8, $19.95.

The image of the lone inventor transforming society from the outside has a strong hold on the public's imagination. In reality, though, technologies are products of ongoing social and cultural processes. In *Leonardo to the Internet*, historian and associate professor of history at the Illinois Institute of Technology Thomas J. Misa provides a sweeping comparative history of the interrelationship between technology and society since the Renaissance, revealing how technological innovations have been shaped by the cultures in which they arose and how such technologies have, in turn, shaped these cultures. From the careers and contributions of the Renaissance court inventors Johann Gutenberg and Leonardo da Vinci to beer brewing in industrial London to the telecommunication revolution of the late twentieth century, Misa uses carefully chosen and engagingly told case studies to develop his thesis.

Over eight thematic chapters, Misa provides detailed portraits of the inventors and users of technologies. Beginning his narrative at the dawn of the "modern" era, Misa surveys the intersections of technology, politics, and culture in the Renaissance court system of Western Europe; the role of technology in Holland's commercial expansion; the diverse "paths" to and through Britain's industrial revolution; the links among technology, imperialism, and trade in the nineteenth century; and the application of scientific discoveries in chemistry and physics to industry in Germany and the United States at the turn of the twentieth century. Misa then examines the introduction of mass-produced consumer goods and their impact on daily life and modernist sensibilities, the rise of the military-industrial complex during World War II, the technological innovations generated by the command-and-control economics of the Cold War, and the emergence of a technology-oriented global culture since the 1970s. The work concludes with a provocative essay laying out the technological choices we face today and considering their impact on the type of society we wish for the future.

A masterful analysis of the ways in which technology and culture have influenced each other over five centuries, *Leonardo to the Internet* encourages students and general readers alike to think both more widely and more deeply about the invention, development, transfer, and adaptation of technologies within Western civilization.

Mitchell, R. & Thurtle, P. (2004). *Data made flesh.* New York, NY: Routledge. ISBN: 0-415-96905-0, $24.60.

In an age of cloning, cyborgs, and biotechnology, the line between bodies and bytes seems to be disappearing. *Data Made Flesh* is the first collection to address the increasingly important links between information and embodiment, at a moment when we are routinely tempted, in the words of Donna Haraway, "to be raptured out of the bodies that matter in the lust for information," whether in the rush to complete the Human Genome Project or in the race to clone a human being. From cybernetics to genomics, this timely collection is essential reading for anyone interested in the fate of the body at the cutting edge of technology.

Mom, G. (2004). *The electric vehicle: Technology and expectations in the automobile Age.* Baltimore, MD: The Johns Hopkins University Press. ISBN: 0-8018-7138-7, $54.95.

Recent attention to hybrid cars that run on both gasoline and batteries has made the electric car an apparent alternative to the internal combustion engine and all of its attendant environmental costs and geopolitical implications. Yet few people realize that the electric car – neither a recent invention nor a historical curiosity – has a story as old as that of the gasoline-powered automobile. Indeed, at one time many in the nascent automobile industry believed battery-powered engines would become the dominant technology. Before World War II, in both Europe and America, electric cars and trucks succeeded in meeting the needs of a wide range of consumers. As many as 30,000 electric cars and more than 10,000 electric trucks then plied American roads; European cities were busy with electrically propelled fire engines, taxis, delivery vans, buses, heavy trucks, and private cars.

Even so, popular memory and automotive historiography have left the impression that it was an inferior technology, and that view has remained stubbornly in place. In *The Electric Vehicle*, Gjis Mom, who teaches the history of technology at the Technical University of Eindhoven, challenges this view, arguing that at the beginning of the automobile age neither the internal

combustion engine nor the battery-powered vehicle enjoyed a clear advantage. He explores the technology and marketing/consumer-feedback relationship over four "generations" of electric-vehicle design, with separate chapters on privately owned passenger cars and commercial vehicles. He makes abundant comparisons among European countries and between Europe and America.

Professor Mom finds that the electric vehicle offered many advantages, among them greater reliability and control and less noise and pollution. He also argues that a nexus of factors – cultural (under-powered and less rugged, electric cars seems "feminine" at a time when most car buyers were men), structural (the shortcomings of battery technology at the time), and systemic (the infrastructural problems of changing large numbers of batteries) – ultimately gave an edge to the internal combustion engine. As a new generation of electric vehicles becomes a reality, *The Electric Vehicle* offers a long-overdue reassessment of the place of this technology in the history of street transportation.

Murmann, J.P. (2003). *Knowledge and competitive advantage: The coevolution of firms, technology, and national institutions*. NY: Cambridge University Press. ISBN: 0-521-81329-8, $60.00.

Entrepreneurs, managers, and policy makers must make decisions about a future that is inherently uncertain. Since the only rational guide for the future is the past, analysis of previous episodes in industrial development can shape informed decisions about what the future will hold. Historical scholarship that seeks to uncover systematically the causal processes transforming industries is thus of vital importance to the executives and managers shaping business policy today. With this in mind, John Peter Murmann, who is an Assistant Professor of Management and Organizations at the Kellogg School of Management at Northwestern University, compares the development of the synthetic dye industry in Great Britain, Germany, and the United States through the lens of evolutionary theory. The rise of this industry constitutes an important chapter in business, economic, and technological history because synthetic dyes, invented in 1856, were the first scientific discovery to quickly give rise to a new industry. Just as with contemporary high-tech industries, the synthetic dye business faced considerable uncertainty that led to many surprises for the agents involved. After the discovery of synthetic dyes, British firms led the industry for the first eight years, but German firms came to dominate the industry for decades; American firms, in contrast, played only a minor role in this important development. Murmann identifies differences in educational institutions and patent laws as the key reasons for German leadership in the industry. Successful firms developed strong ties to the centers of organic chemistry knowledge. As Murmann demonstrates, a complex coevolutionary process linking firms, technology, and national institutions resulted in very different degrees of industrial success among the dye firms in the three countries.

Nichols, F.D. & Griswold, R.E. (1978). *Thomas Jefferson, Landscape architect*. Charlottesville, VA: University of Virginia Press. ISBN: 0-8139-0899-X, $13.96.

Collaboration with the greatest botanists of his time, an instinctive humanitarianism, and a natural ingenuity in landscape design combined to make Thomas Jefferson a pioneer in American landscape architecture. Frederick D. Nichols and Ralph E. Griswold, in this close study of Jefferson's many notes, letters, and sketches, present a clear and detailed interpretation of his extraordinary accomplishments in the field.

*Thomas Jefferson, Landscape Architect* investigates the many influences on--and of--the Jeffersonian legacy in architecture. Jefferson's personality, friendships, and convictions, complemented by his extensive reading and travels, clearly influenced his architectural work. His fresh approach to incorporating foreign elements into domestic designs, his revolutionary approach to relating the house to the surrounding land, and his profound influences on the architectural character of the District of Columbia are just a few of Jefferson's contributions to the American landscape. Eighteenth- and nineteenth-century maps, plans, and drawings, as well as pictures of the species of trees that Jefferson used for his designs, generously illustrate the engaging narrative in *Thomas Jefferson, Landscape Architect*.

Oudshoorn, N. *The male pill: A biography of a technology in the making*. Durham, NC: Duke University Press. ISBN: 0-8223-3195-0, $21.95.

Why, forty years after the introduction of the contraceptive pill for women, is there still no equivalent for men? Nelly Oudshoorn seeks an answer in her new book *The Male Pill: A Biography of a Technology in the Making.*

Oudshoorn, who is a Professor of Gender and Technology at Twente University and an author of several books on gender and reproduction, explains why it is that, although the technical feasibility of male contraceptives was demonstrated as early as the late 1970s, there is, to date, no male pill. Ever since the idea of hormonal contraceptives for men was introduced, Oudshoorn stresses, scientists, feminists, journalists and pharmaceutical entrepreneurs have questioned whether men and women would even accept a new male contraceptive if one were available. *The Male Pill* provides a detailed examination of the cultural, policy, and scientific work around the male pill from the 1960s through the 1990s.

Oudshoorn emphasizes that the introduction of contraceptives for men depends to a great extent on changing ideas about reproductive responsibility. Initial interest in the male pill, she shows, came from outside the scientific community: from the governments of China and India, which were interested in population control, and from Western feminists, who wanted the responsibilities and health risks associated with contraception shared more equally between the sexes. She documents how in the 1970s, the World Health Organization took the lead in investigating male contraceptives by coordinating an unprecedented, worldwide research network.

Oudshoorn chronicles how the search for a male pill required significant reorganization of drug-testing standards and protocols and of the family-planning infrastructure – including founding special clinics for men, creating separate spaces for men within existing clinics, enrolling new professionals, and defining new categories of patients. *The Male Pill* is ultimately a story as much about the history of masculinity in the last decades of the twentieth century as it is about the development of safe and effective technologies.

Overly, Esq., M., & Kalyvas, Esq., James R. (2004). *Software agreements line by line: A detailed look at software agreements & how to change them to fit your needs*. Aspatore Books. ISBN: 1-58762-369-2, $49.95.

Today's business climate demands the ability to leverage essential technologies, as well as a heightened understanding of how the Software Agreement underlying such essential technologies may adversely affect your business. There has long been a disconnect between the interests of the end user and the objectives of the vendor in developing, drafting, and executing such agreements. *Software Agreements Line* by Line serves to bridge this gap. Taking a standard "vendor oriented" software agreement and breaking it down clause by clause, explaining the nuances of the language, and the business implications inherent therein, leading technology lawyers Michael Overly and James Kalvyas, both of whom are partners in the Los Angeles law firm Foley & Lardner specializing in technology, present a penetrating insight into the Software Agreement. The authors detail why such agreements should be modified, how to modify them, and offer practical solutions to promote your ability to successfully implement critical technologies in your business. A never before offered glimpse into the often daunting world of these highly technical agreements, *Software Agreements Line* by Line highlights the often overlooked, unnoticed and even hidden aspects of procuring and implementing business systems. The ability to understand and develop user-friendly software agreements offers great advantages for any company making investments in, and developing strategies around, software. This book will provide any reader the tools to become an informed user, a more strategic thinker, and above all, an empowered consumer.

Peskin, L.A. (2003). *Manufacturing revolution: The intellectual origins of early American industry*. Baltimore, MD: The Johns Hopkins University Press. ISBN: 0-8018-7324-x, $49.95.

"While much has been written about the industrial revolution", writes Lawrence A. Peskin, "we rarely read about industrial revolutionaries." This absence, he illustrates, reflects the preoccupation of both classical and Marxist economics with impersonal forces rather than individuals. In

*Manufacturing Revolution* Peskin, who is an assistant professor of history at Morgan State University, deviates from both dominant paradigms by closely examining the words and deeds of individual Americans who made things in their own shops, who met in small groups to promote industrialization, and who, on the local level, strove for economic independence.

In speeches, petitions, books, newspaper articles, club meetings, and coffeehouse conversations, they fervently discussed the need for large-scale American manufacturing a half-century before the Boston Associates built their first factory. Peskin shows how these economic pioneers launched a discourse that continued for decades, linking industrialization to the cause of independence and guiding the new nation along the path of economic ambition. Based upon extensive research in both manuscript and printed sources from the period between 1760 and 1830, this book will be of interest to historians of the early republic and economic historians as well as to students of technology, business and industry.

Porter, T. M. (2004). *Karl Pearson: The scientific life in a statistical age*. Princeton, NJ: Princeton University Press. ISBN: 0-691-11445-5, $35.00.

Karl Pearson, founder of modern statistics, came to this field by way of passionate early studies of philosophy and cultural history as well as ether physics and graphical geometry. His faith in science grew out of a deeply moral quest, reflected also in his socialism and his efforts to find a new basis for relations between men and women. This biography recounts Pearson's extraordinary intellectual adventure and sheds new light on the inner life of science.

Theodore Porter's intensely personal portrait of Pearson extends from religious crisis and sexual tensions to metaphysical and even mathematical anxieties. Pearson sought to reconcile reason with enthusiasm and to achieve the impersonal perspective of science without sacrificing complex individuality. Even as he longed to experience nature directly and intimately, he identified science with renunciation and positivistic detachment. Porter, who is Professor of History at UCLA, finds a turning point in Pearson's career, where his humanistic interests gave way to his statistical ones, in his *Grammar of Science* (1892), in which he attempted to establish scientific method as the moral educational basis for a refashioned culture. In this original and engaging book, a leading historian of modern science investigates the interior experience of one man's scientific life while placing it in a rich tapestry of social, political, and intellectual movements.

Rabinovitz, L. & Geil, A. (2004). *Memory bytes: History, technology, and digital culture*. Durham, NC: Duke University Press. ISBN: 0-8223-3241-8, $22.95.

Digital culture is often characterized as radically breaking with past technologies, practices, and ideologies, rather than as reflecting or incorporating them. *Memory Bytes* seeks to counter such ahistoricism, arguing for the need to understand digital culture – and its social, political, and ethical ramifications – in historical and philosophical context. Looking at a broad range of technologies, including photography, print and digital media, heat engines, stereographs, and medical imaging, the contributors present a number of different perspectives from which to reflect on the nature of media change. While foregrounding the challenges of drawing comparisons across varied media and eras, *Memory Bytes* explores how technologies have been integrated into society at different moments in time.

These essays from scholars in the social sciences and humanities cover topics related to science and medicine, politics and war, mass communication, philosophy, film, photography, and art. Whether describing how the cultural and legal conflicts over player piano rolls prefigured controversies over the intellectual property status of digital technologies such as MP3 files, comparing the experiences of watching QuickTime movies to Joseph Cornell's "boxed relic" sculptures of the 1930s and 1940s, or calling for a critical history of electricity from the Enlightenment to the present, *Memory Bytes* is a lively, enlightening examination of the interplay of technology and culture.

Riggs, K.E. (2004). *Granny @ work: Aging and new technology on the job in America*. New York: Routledge. ISBN: 0-415-96583-7, $19.75.

The advancing age of baby boomers, who are living longer and retiring later, has generated an unprecedented number of older workers in America. The Bureau of Labor Statistics predicts

that the population of workers 55 and over will practically double from 18 million in 2000 to more than 33 million by 2025.

In *Granny @ Work*, Karen Riggs- a renowned expert on aging and Associate Professor of Communication and Director of the School of Telecommunications at Ohio University – examines how this older workforce is coping with radical technological changes being introduced to the workplace – from e-mail to automation. Drawing on extensive interviews, she brings to light what employers, software engineers, and public policy makers seem to be thinking behind the scenes about the roles older adults might play in the workplace of the future – and asks whether those on the front lines of corporate life are actually looking out for the interests of a graying workforce. Riggs also challenges dominant beliefs about aging and technology as they are disseminated in popular culture, offering incisive analysis of a wide range of material from films focused on older characters such as *Cocoon* and *Space Cowboys* to specialty websites and magazines aimed at older workers.

*Granny @ Work* is an impassioned comment on aging, work, and technology in American culture. As Riggs challenges popular assumptions with surprising research – for example, people over the age of 60 sped more time on the Internet than people of any other age group – and trenchant cultural critique, she also forces us to confront the deeply entrenched ageism in today's technology-driven workplace.

Scarlett, M. (2004). *The great rip-off in American education: Undergrads underserved*. Amherst, NY: Prometheus Books. ISBN: 1-59102-031-x, $22.00.

Is a bachelor's degree from an American university really worth the ever-rising cost of obtaining one? According to former university president Dr. Mel Scarlett, who is currently president emeritus of Middle Tennessee State University, unless major changes are made to the American system of higher education, the disparity between the quality and the price of education is only going to get worse. The rise in tuition has substantially outpaced inflation over the last few decades, while the resources of larger "research" universities have shifted dramatically to feed the insatiable appetite of today's faculties, whose "publish or perish" culture has eclipsed any real concern for innovative teaching and sparking young minds to think independently. The undergraduate student is left in the cold: huge classes, an uninspiring lecture format, and perhaps worst of all, inexperienced teaching assistants whose English is often highly suspect. Scarlett spares no sacred cows when identifying the obstacles that prevent efforts to improve post-secondary education throughout the country. He offers a variety of "Radical Recommendations" to steer undergraduate education in a direction that will inspire and invigorate the learning experience. Be prepared to question everything you know about higher learning in America.

Schneier, B. (2003). *Beyond fear: Thinking sensibly about security in an uncertain world*. NY: Copernicus Books. ISBN: 0-387-02620-7, $25.00.

Searching kids and grandmas actually improves airport security, but arming pilots makes us all less secure; shopping with a credit card is just as secure as using it over the phone or by mail. These, and the dozens of other surprising insights in this book, will help you develop a keen sense of what today's most talked-about security measures can and cannot do.

Security is not mysterious, Bruce Schneier tells us, and contrary to popular belief, it is not hard. What is hard is separating the hype from what really matters. You already make security choices every day, from what side of the street you walk on to whether you park your car under a streetlight. You do it naturally. This book guides you, step by step, through the process of making all your security choices just as natural.

Schneier, a security expert for policy makers and business leaders, invites us all to move beyond fear and to start thinking sensibly about security. He tells us why security is much more than cameras, guards, and photo Ids, and why expensive gadgets and technological cure-alls often obscure the real security issues. Using anecdotes from history, science, sports, movies, and the evening news, *Beyond Fear* explains basic rules of thought and action that anyone can understand and, most important of all, anyone can use.

The benefits of Schneier's non-alarmist, common-sense approach to analyzing security will

be immediate. You'll have more confidence about the security decisions you make, and new insights into security decisions that others can make on your behalf. Whether your goal is to enhance security at home, at the office, and on the road, or to participate more knowledgeably and confidently in the current debates about security in our communities and the nation at large, this book will change the way you think about security for the rest of your life.

Shagena, J. L. (2004). *Who really invented the steamboat? Fulton's Clermont coup.* Amherst, NY: Humanity Books (Prometheus). ISBN 1-59102-206-1, $35.

Contrary to accounts found in school textbooks, and the claims of Robert Fulton himself, he did not invent the steamboat. This is the first work to chronicle the entire story of the steamboat and to place Fulton's contribution in perspective. Jack L. Shagena, a retired professional engineer, clarifies the nature of invention, examines various individuals who contributed to the steamboat's development, and identifies a more credible candidate for the title of its inventor. He also shows how the Fulton myth evolved.

Silberglitt, R.,Howell, D.R. & Sherry, L. (2003). *Research priorities of the Supporting Industries Program: Linking industrial R&D needs.* Arlington, VA: RAND Science and Technology. ISBN: 0-8330-3490-1, $20.00.

This documented briefing summarizes the results of an independent analysis of the vision statements and other documents relevant to the Industries of the Future initiative of the US Department of Energy (DOE) Industrial Technologies (IT) program. The RAND Corporation analyzed this information to identify links between the DOE/IT Supporting Industries program and other DOE/IT programs, which could potentially form the basis for alliances to facilitate the achievement of research goals.

Smith, J.E. (2004). *Biotechnology: Fourth edition*. Cambridge, UK: Cambridge University Press. ISBN: 0-521-54077-1, $26.99.

Biotechnology will undoubtedly be the major technology of the twenty-first century. It concerns the practical application of biological organisms or their various components to the benefit of humankind, and spans a multitude of modern and traditional industries. The rise of genetic engineering, genomics, proteomics, and the creation of transgenic crops and animals has revolutionized activities as varied as brewing beer and the treatment of sewage and wastewater, to drug development and agriculture.

In this expanded fourth edition of his popular textbook, Emeritus Professor of Applied Microbiology at the University of Strathclyde in Glasgow, John Smith once again demystifies biotechnology, and especially genetic manipulation, clearly and accessibly explaining the history, techniques and applications of modern biotechnology for students and the general reader. All aspects of biotechnology are covered and a positive stance is taken concerning the potential benefits to human society. In this edition, greater emphasis is given to the public perception of biotechnology and the ethical and safety questions raised.

Spitz, P.H. (2003). *The chemical industry at the millennium: Maturity, restructuring, and globalization*. Philadelphia, PA: Chemical Heritage Press. ISBN: 0-941901-34-3, $45.00.

The global chemistry industry is big business and growing every year. But impressive growth has not recently impressed investors, and increasingly both individuals and money managers have turned to other areas of the economy for better returns. A 4 percent growth rate throughout the 1990s was not enough to keep US chemical companies from seeking opportunities in more rapidly growing regions with low-cost feedstock, and the US trade balance in chemicals turned downward in the late nineties; by 2001 chemical imports exceeded exports.

Why has an industry that provides so many of the essentials of modern life been so severely challenged? In The Chemical Industry at the Millennium, Peter Spitz, who is a renowned expert on the evolution of the global chemical industry, and a team of industry experts look at this complex and fascinating industry. Concentrating on basic and specialty chemicals, chapter authors examine many of the trends and market factors that have affected the chemical industry in the

recent past. The book offers an insider's view of the restructuring and reengineering crazes and the improvements and roadblocks offered by information technology and the Internet. Other factors that came into play include the impact of environmental regulations and globalization and the financial community's demand for greater shareholder value. The Chemical Industry at the Millennium is a must read for industry professionals and anyone else interested in the changes and challenges facing a great and essential industry.

Squier, S.M. (2003). *Communities of the air: Radio century, radio culture*. Durham, NC: Duke University Press. ISBN: 0-8223-3095-4, $21.95 (Paperback).

A pioneering analysis of radio as both a cultural and material production, *Communities of the Air* explores radio's powerful role in shaping Anglo-American culture and society since the early twentieth century. Scholars and radio writers, producers, and critics look at the many ways radio generates multiple communities over the air – from elite to popular, dominant to resistant, canonical to transgressive.

Drawing on the perspectives on literary and cultural studies, science studies and feminist theory, radio history, and the new field of radio studies, these essays consider the development of radio as technology: how it was modeled on the telephone, early conflicts between for-profit and public uses of radio, and amateur radio (HAMS), local programming, and low-power radio. Some pieces discuss how radio gives voice to different cultural groups, focusing on the BBC and poetry programming in the West Indies, black radio, the history of alternative radio since the 1970s, and science and contemporary arts programming. Others look at radio's influence on gender (and gender's influence on radio) through examinations of Queen Elizabeth's broadcasts, Gracie Allen's comedy, and programming geared toward women. Together the contributors demonstrate how attention to the variety of ways radio is used and understood reveals the dynamic emergence and transformation of communities within the larger society.

Steiner, G. (2004). *Descartes as a moral thinker: Christianity, technology, and Nihilism*. Amherst, NY: Humanity Books. ISBN: 1-59102-212-6, $59.00

Although commentary on Descartes is extensive, the importance of morality in his thought has been all but overlooked in contemporary English-language scholarship. Considered to be the first modern philosopher, Descartes is often interpreted as a wholly secular thinker who acknowledged no authority above the human will. In this important reassessment of the great French philosopher, Gary Steiner, who is an associate professor of philosophy at Bucknell University, shows the influence of Christian thought on the moral foundations of Descartes' philosophy.

Steiner provides a close analysis of all of Descartes' texts and correspondence bearing on morality. By placing his work in historical context, Steiner demonstrates Descartes' indebtedness not only to Galileo and Bacon in developing his conception of autonomous human reason, but also to Augustine and Aquinas in conceptualizing the human condition and the role of belief in God. Providing a detailed survey of German, French, and English scholarship on Descartes, Steiner concludes with an in-depth examination of contemporary debates about secularization, nihilism, and modernity in such thinkers as Nietzsche, Heidegger, Hans Blumenberg, and Karl Lowith. Steiner shows how Descartes' own ambivalence about the relation between faith and reason can shed light on contemporary controversies regarding what Blumenberg calls "the legitimacy of the modern age."

Sterne, J. (2003). *The audible past: Cultural origins of sound reproduction*. Durham, NC: Duke University Press. ISBN: 0-8223-3013-x, $22.95 (Paperback).

We take our noisy world, full of artificial sounds, for granted today. Jonathan Sterne, who teaches in the Department of Communication and the Program for Cultural Studies at the University of Pittsburgh and writes about media, technology and the politics of culture, takes us back to the cultural origins of sounds reproduction. He describes a distinctive sound culture that gave birth to the sound recording and transmission devices so ubiquitous in modern life. With an ear for the unexpected, scholar and musician Sterne uses the technological and cultural precursors of telephony, phonography, and radio as an entry point into a history of sound in its own right.

Blending cultural studies and the history of communication technology, Sterne follows modern sound technologies back through a historical labyrinth. Along the way, he encounters capitalists and inventors, musicians and philosophers, embalmers and grave robbers, doctors and patients, deaf children and their teachers, professionals and hobbyists, folklorists and tribal singers. *The Audible Past* tracks the connections between the history of sound and the defining features of modernity: from developments in medicine, physics, and philosophy to the tumultuous shifts of industrial capitalism, colonialism, urbanization, modern technology, and the rise of a new middle class.

A provocative history of sound, *The Audible Past* asserts that sound is not a natural category and that what we hear and how we hear it has its cultural origins in the nineteenth and twentieth centuries. With its truly interdisciplinary approach, the book will fascinate those interested in the history of technology, cultural studies, communication, and music.

Stoltzenberg, D. (2004). *Fritz Haber: Chemist, Nobel Laureate, German, Jew*. Philadelphia, PA: Chemical Heritage Press. ISBN: 0-941901-24-6, $40.00.

The long-awaited biography of Fritz Haber, now abridged by the author and translated into English, illuminates the life of one of the most gifted yet controversial figures of the twentieth century.

Haber, a brilliant physical chemist, carried out pioneering research in electrochemistry and thermodynamics and won the Nobel Prize for his synthesis of ammonia, a process essential for synthetic fertilizer – and for the explosives Germany needed in World War I.

An ardent patriot, Haber also developed chemical weapons. Believing them to be no worse than other types of warfare, he directed the first true gas attack in military history from the front lines in Flanders. His nationalism also spurred his failed attempt to extract gold from seawater, in hopes of paying off Germany's huge war reparations.

Yet Haber, a Jew by birth, was exiled from his homeland in 1933 by the Nazi party. He died the following year, never knowing the full dire effects of his work, as Zyklon B, a gas studied in his institute around 1920, was used to murder prisoners in concentration camps, including members of Haber's own family.

With the help of previously unpublished documents and sources, Dietrich Stoltzenberg explores Haber's personal life, including the breakdown of his two marriages, his efforts to develop industrial and political support for scientific study in Germany, his directorship of the Kaiser Wilhelm (now Max Planck) Institute, his ethical struggles in times of war, and much more. A detailed and fascinating portrait of a brilliant scientist who is both revered and reviled, this book is a must read for historians and scientists, as well as those with an interest in the history of Germany in the early twentieth century.

Sturken, M., Thomas, D. & Ball-Rokeach, S.J. (2004). *Technological visions: the hopes and fears that shape new technologies*. Philadelphia, PA: Temple University Press. ISBN: 1-59213-226-X, $23.95.

For as long as people have developed new technologies, there has been a debate over the purposes, shape, and potential for their use. A range of contributors, including Sherry Turkle, Lynn Spigel, John Perry Barlow, Langdon Winner, David Nye, and Lord Asa Briggs, discuss the visions that have shaped "new" technologies and the cultural implications of technological adaptation. Focusing on issues such as the nature of prediction, community, citizenship, consumption, and the nation, as well as the metaphors that have shaped public debates about technology, the authors examine innovations past and present, from the telegraph and the portable television to the Internet, to better understand how our visions and imagination have shaped the meaning and use of technology.

Van Dulken, S. (2004). *American inventions: A history of curious, extraordinary, & just plain useful patents*. Washington Square, NY: New York University Press. ISBN: 0-8147-8813-0, $26.95.

An American, Thomas Alva Edison, invented the light bulb, but who invented the pregnancy test? Or the air bag? Who patented the first computer? Stephen van Dulken, an expert curator in the Patents Information Services of the British Library, examines the way inventions and patents such as these have helped to create the American Dream.

Between 1911 and 1999, the number of registered US patents rose from 1 million to 6 million. Showcasing dozens of those original patent drawing from the US Patent and Trademark Office, *American Inventions* shows how trends in the history of the United States are reflected in the patent records. For example, the invention of the Frisbee dates back to 1920 when a Yale University student recalled throwing around the lids from the pie cans of the nearby Frisbie Baking Company, but it was not until 1948 that Fred Morrison and Warren Francioni capitalized on Americans' new-found fascination with flying saucers by applying for a patent on a flying plastic disk. Van Dulken surveys the inventions and patents of the workplace, the home, the kitchen, the open road, and the beauty parlor, to name a few, to find the compelling stories and eureka moments in American history. From bobby pins to in-line skates, from the jukebox to the fax machine, *American Inventions* is a captivating catalog of the famous and not-so-famous contraptions that have shaped the American way of life.

Vicente, K. (2004). *The human factor: Revolutionizing the way people live with technology*. New York, NY: Routledge. ISBN: 0-415-97064-4, $27.95.

Technological innovation is progressing at such a rapid pace that we have fallen behind in our ability to manage it. Our world is filled with objects that invite human error, from VCRs to stoves. But the negative impact of technology on contemporary society goes well beyond the frustrations caused by these everyday items, often affecting areas as significant as hospital administration, airplane cockpits, and nuclear power plants. Problems – some potentially catastrophic- continuously arise when designs are developed without human nature in mind. Our reaction to this dilemma has been to create more sophisticated and ultimately confusing technology, perpetuating a vicious cycle as we struggle to keep up.

Now, in *The Human Factor*, McLean Award winning author and former Hunsaker Distinguished Visiting Professor of Aeronautics and Astronautics at MIT Kim Vicente makes vividly clear how people can bridge the widening gap between human beings and technology. He investigates every level of human activity – from simple matters such as hand-eye coordination to complex human system such as government regulatory agencies, and why businesses would benefit from making consumer goods easier to use. He shows readers why we all have a vital stake in reforming the aviation industry, the health industry, and the way we live day-to-day with technology.

Our traditional ways of thinking have ignored – and virtually made invisible – the relationship between people and technology. In *The Human Factor*, Vicente defines his theory of mechanistic versus humanistic schools of thought and how these two disparate ideologies – essentially technological tunnel vision versus the purely human/emotional mode of thinking – would be best served if they were more complimentary, or, as he defines it, more "human-tech."

With "human-tech," the author seeks to reconcile two heretofore incompatible elements and provide examples and suggestions of how ever-advancing technology can better serve, rather than rule, mankind. Vicente discusses everything from the "human-tech" successes of such items as the Reach toothbrush and the Fender Stratocaster electric guitar to the "human-tech" shortcomings of the medical and nuclear power industries. Citing historical events such as the disaster at Chernobyl and the Space Shuttle *Challenger* accident, among others, Professor Vicente demonstrates how this lack of "human-tech" thinking helped lead to these most likely preventable calamities.

Human beings are capable of many remarkable things, but if we become alienated from technology, our full capacities won't be realized. This incessantly readable and ultimately hopeful, groundbreaking work offers solutions that have enormous implications for human life. As accessible and entertaining as it is provocative, *The Human Factor* is certain to create vigorous public debate.