The Ethics Of Invention Technology And The Human Future By Sheila Jasanoff

A no-holds-barred examination of 'ethical' consumerism.

From North Korea's recent attacks on Sony to perpetual news reports of successful hackings and criminal theft, cyber conflict has emerged as a major topic of public concern. Yet even as attacks on military, civilian, and commercial targets have escalated, there is not yet a clear set of ethical guidelines that apply to cyber warfare. Indeed, like terrorism, cyber warfare is commonly believed to be a war without rules. Given the prevalence cyber warfare, developing a practical moral code for this new form of conflict is more important than ever. In Ethics and Cyber Warfare, internationally-respected ethicist George Lucas delves into the confounding realm of cyber conflict. Comparing "state-sponsored hacktivism" to the transformative impact of "irregular warfare" in conventional armed conflict, Lucas offers a critique of legal approaches to governance, and outlines a new approach to ethics and "just war" reasoning. Lucas draws upon the political philosophies of Alasdair MacIntyre, John Rawls, and Jurgen Habermas to provide a framework for understanding these newly-emerging standards for cyber conflict, and ultimately presents a professional code of ethics for a new generation of "cyber warriors." Lucas concludes with a discussion of whether preemptive self-defense efforts - such as the massive government surveillance programs revealed by Edward Snowden - can ever be justified, addressing controversial topics such as privacy, anonymity, and public trust. Well-reasoned and timely, Ethics and Cyber Warfare is a must-read for anyone with an interest in philosophy, ethics, or cybercrime. "

The 21st century offers a dizzying array of new technological developments: robots smart enough to take white collar jobs, social media tools that manage our most important relationships, ordinary objects that track, record, analyze and share every detail of our daily lives, and biomedical techniques with the potential to transform and enhance human minds and bodies to an unprecedented degree. Emerging technologies are reshaping our habits, practices, institutions, cultures and environments in increasingly rapid, complex and unpredictable ways that create profound risks and opportunities for human flourishing on a global scale. How can our future be protected in such challenging and uncertain conditions? How can we possibly improve the chances that the human family will not only live, but live well, into the 21st century and beyond? This book locates a key to that future in the distant past: specifically, in the philosophical traditions of virtue ethics developed by classical thinkers from Aristotle and Confucius to the Buddha. Each developed a way of seeking the good life that equips human beings with the moral and intellectual character to flourish even in the most unpredictable, complex and unstable situations--precisely where we find ourselves today. Through an examination of the many risks and opportunities presented by rapidly changing technosocial conditions, Vallor makes the case that if we are to have any real hope of securing a future worth wanting, then we will need more than just better technologies. We will also need better humans. Technology and the Virtues develops a practical framework for seeking that goal by means of the deliberate cultivation of technomoral virtues: specific skills and strengths of character, adapted to the unique challenges of 21st century life, that offer the human family our best chance of learning to live wisely and well with emerging technologies.

A lively and entertaining guide to ethics in a technological age. Most people have a strong sense of right and wrong, and they aren't shy about expressing their opinions. But when we take a polarizing stand on something we regard as an eternal truth, we often forget that ethics evolve over time. Many shifts in the right versus wrong pendulum are driven by advances in technology. Our great-grandparents might be shocked by in vitro fertilization; our great-grandchildren might be shocked by the messiness of pregnancy, childbirth, and unedited genes. In Right/Wrong, Juan Enriquez reflects on what happens to our ethics as technology makes the once unimaginable a commonplace occurrence.

p.p1 {margin: 0.0px 0.0px 0.0px 0.0px; font: 10.0px Arial} This timely book provides an intellectual and conceptual history of a key representation of innovation: technological innovation. Tracing the history of the discourses of scholars, practitioners and policy-makers, and exploring how and why innovation became defined as technological, Benoît Godin studies the emergence of the term, its meaning, and its transformation and use over time.

Internationally honored for brilliant achievements throughout his career, author ofCybernetics, ExProdigy, and the essay God and Golem, Inc., which won the National Book Award in1964, Norbert Wiener was no ordinary mathematician. With the ability to understand how things workedor might work at a very deep level, he linked his own mathematics to engineering and provided basicideas for the design of all sorts of inventions, from radar to communications networks to computersto artificial limbs. Wiener had an abiding concern about the ethics guiding applications of theorieshe and other scientists developed. Years after he died, the manuscript for this book was discoveredamong his papers. The world of science has changed greatly since Wiener's day, and much of thechange has been in the direction he warned against. Now published for the first time, this book canbe read as a salutary corrective from the past and a chance to rethink the components of anenvironment that encourages inventiveness.Wiener provides an engagingly written insider'sunderstanding of the history of discovery and invention, emphasizing the historical circumstancesthat foster innovations and allow their application. His message is that truly original ideas cannotbe produced on an assembly line, and that their consequences are often felt only at distant timesand places. The intellectual and technological environment has to be right before the idea canblossom. The best course for society is to encourage the best minds to pursue the most interestingtopics, and to reward them for the insights they produce. Wiener's comments on the problem ofsecrecy and the importance of the "free-lance" scientist are particularly pertinent today.SteveHeims provides a brief history of Wiener's literary output and reviews his contributions to thefield of invention and discovery. In addition, Heims suggests significant ways in which Wiener'sideas still apply to dilemmas facing the scientific and engineering communities of the 1990s.Norbert Wiener (1894-1964) was Institute Professor at the Massachusetts Institute ofTechnology.

This book is but the draft of a draft, as Melville said of Moby Dick. There is no prose here to match Melville's, but the scope is worthy of the great white whale. No one could possibly write a comprehensive, authoritative book on ethics, invention and discovery. I have not tried to, though I hope my bibliography will be a useful starting point for other explorers, and the cases and ideas presented here will keep people arguing for years. Although this book is nothing like a textbook, it is written for my students. I was trained as a teacher of psychology in graduate school and ended-up, by one of those happy chances of the job market, teaching psychology to engineering students rather than psyche majors. My dissertation and early research were in the psychology of scientific hypothesis-testing (see Chapter 2). When I team-taught a course with W. Bernard Carlson, a historian of technology, I saw how cognitive psychology might be applied to the study of invention. Bernie and I received funding from the National Science Foundation for three years of research on the invention of the telephone; a portion of that work is described in Chapter 3.

We live in a world increasingly governed by technology—but to what end? Technology rules us as much as laws do. It shapes the legal, social, and ethical environments in which we act. Every time we cross a street, drive a car, or go to the doctor, we submit to the silent power of technology. Yet, much of the time, the influence of technology on our lives goes unchallenged by citizens and our elected representatives. In The Ethics of Invention, renowned scholar Sheila Jasanoff dissects the ways in which we delegate power to technological systems and asks how we might regain control. Our embrace of novel technological pathways, Jasanoff shows, leads to a complex interplay among technology, ethics, and human rights. Inventions like pesticides or GMOs can reduce hunger but can also cause unexpected harm to people and the environment. Often, as in the case of CFCs creating a hole in the ozone layer, it takes decades before we even realize that any damage has been done. Advances in

biotechnology, from GMOs to gene editing, have given us tools to tinker with life itself, leading some to worry that human dignity and even human nature are under threat. But despite many reasons for caution, we continue to march heedlessly into ethically troubled waters. As Jasanoff ranges across these and other themes, she challenges the common assumption that technology is an apolitical and amoral force. Technology, she masterfully demonstrates, can warp the meaning of democracy and citizenship unless we carefully consider how to direct its power rather than let ourselves be shaped by it. The Ethics of Invention makes a bold argument for a future in which societies work together—in open, democratic dialogue—to debate not only the perils but even more the promises of technology.

The Ethics of Invention: Technology and the Human FutureW. W. Norton & Company

The variety, pace, and power of technological innovations that have emerged in the 21st Century have been breathtaking. These technological developments, which include advances in networked information and communications, biotechnology, neurotechnology, nanotechnology, robotics, and environmental engineering technology, have raised a number of vital and complex questions. Although these technologies have the potential to generate positive transformation and help address 'grand societal challenges', the novelty associated with technological innovation has also been accompanied by anxieties about their risks and destabilizing effects. Is there a potential harm to human health or the environment? What are the ethical implications? Do this innovations erode of antagonize values such as human dignity, privacy, democracy, or other norms underpinning existing bodies of law and regulation? These technological developments have therefore spawned a nascent but growing body of 'law and technology' scholarship, broadly concerned with exploring the legal, social and ethical dimensions of technological innovation. This handbook collates the many and varied strands of this scholarship, focusing broadly across a range of new and emerging technology and a vast array of social and policy sectors, through which leading scholars in the field interrogate the interfaces between law, emerging technology, and regulation. Structured in five parts, the handbook (I) establishes the collection of essays within existing scholarship concerned with law and technology as well as regulatory governance; (II) explores the relationship between technology development by focusing on core concepts and values which technological developments implicate; (III) studies the challenges for law in responding to the emergence of new technologies, examining how legal norms, doctrine and institutions have been shaped, challenged and destabilized by technology, and even how technologies have been shaped by legal regimes; (IV) provides a critical exploration of the implications of technological innovation, examining the ways in which technological innovation has generated challenges for regulators in the governance of technological development, and the implications of employing new technologies as an instrument of regulatory governance; (V) explores various interfaces between law, regulatory governance, and new technologies across a range of key social domains.

An anniversary edition of an influential book that introduced a groundbreaking approach to the study of science, technology, and society. This pioneering book, first published in 1987, launched the new field of social studies of technology. It introduced a method of inquiry—social construction of technology, or SCOT—that became a key part of the wider discipline of science and technology studies. The book helped the MIT Press shape its STS list and inspired the Inside Technology series. The thirteen essays in the book tell stories about such varied technologies as thirteenth-century galleys, eighteenth-century cooking stoves, and twentieth-century missile systems. Taken together, they affirm the fruitfulness of an approach to the study of technology that gives equal weight to technical, social, economic, and political questions, and they demonstrate the illuminating effects of the integration of empirics and theory. The approaches in this volume—collectively called SCOT (after the volume's title) have since broadened their scope, and twenty-five years after the publication of this book, it is difficult to think of a technology that has not been studied from a SCOT perspective and impossible to think of a technology that cannot be studied that way.

Technology is changing all the time, but does it also have the ability to change us and the way we approach religion and spirituality? In Technology and Religion: Remaining Human in a Co-created World, Noreen Herzfeld examines this and other provocative questions as she provides an accessible and fascinating overview of the relationship between religion and the ever-broadening world of technology. In order to consider fully a topic as wide as technology, Herzfeld approaches the field from three different angles: technologies of the human body—such as genetic engineering, stem cells, cloning, pharmaceutical technologies, mechanical enhancement and cyborgs; technologies of the human mind—like human and artificial intelligence, virtual reality and cyberspace; and technologies of the external environment—such as nanotechnology, genetically modified crops and new agricultural technologies, and energy technology. She takes a similarly broad approach to the field of religion, focusing on how these issues interface with the three Abrahamic traditions of Christianity, Islam, and Judaism. Throughout, readers will find nuanced examinations of the moral and ethical issues surrounding new technologies from the perspectives of these faith traditions. The result is a multifaceted look at the ongoing dialogue between these two subjects that are not commonly associated with one another. This volume is the third title published in the new Templeton Science and Religion Series.

Discussing cutting-edge debates in the field of international ethics, this key volume builds on existing work in the normative study of international relations. It responds to a substantial appetite for scholarship that challenges established approaches and examines new perspectives on international ethics, and that appraises the ethical implications of problems occupying students and scholars of international relations in the twenty-first century. The contributions, written by a team of international scholars, provide authoritative surveys and interventions into the field of international ethics. Focusing on new and emerging ethical challenges to international relations, and approaching existing challenges through the lens of new theoretical and methodological frameworks, the book is structured around five themes: • New directions in international ethics • Ethical actors and practices in international relations • The ethics of climate change, globalization, and health • Technology and ethics in international relations • The ethics of global security

Interdisciplinary in its scope, this book will be an important resource for scholars and students in the fields of politics and international relations, philosophy, law and sociology, and a useful reference for anyone who wishes to acquire 'ethical competence' in the area of international relations.

"This book is the first publication that takes a genuinely global approach to the diverse ethical issues evoked by Information and Communication Technologies and their possible resolutions. Readers will gain a greater appreciation for the problems and possibilities of genuinely global information ethics, which are urgently needed as information and communication technologies continue their exponential growth"--Provided by publisher.

This collection of essays by Sheila Jasanoff explores how democratic governments construct public reason, that is, the forms of evidence and argument used in making state decisions accountable to citizens. The term public reason as used here is not simply a matter of deploying principled arguments that respect the norms of democratic deliberation. Jasanoff investigates what states do in practice when they claim to be reasoning in the public interest. Reason, from this perspective, comprises the institutional practices, discourses, techniques and instruments through which governments claim legitimacy in an era of potentially unbounded risks—physical, political, and moral. Those legitimating efforts, in turn, depend on citizens' acceptance of the forms of reasoning that governments offer. Included here therefore is an inquiry into the conditions that lead citizens of democratic societies to accept policy justification as being reasonable. These modes of public knowing, or "civic epistemologies," are integral to the constitution of contemporary political cultures. Methodologically, the book is grounded in the field of Science and Technology Studies (STS). It uses in-depth qualitative studies of legal and political practices to shed light on divergent cross-cultural constructions of public reason and the reasoning political subject. The collection as a whole contributes to democratic theory, legal studies, comparative politics, geography, and ethnographies of modernity, as well as STS.

Hard Science Fiction Films that Predict the Future "As the breakneck advance of technology takes us into a world that is both exciting and menacing, sci-fi films give us an inkling of what is to come, and what we should avoid." —Seth Shostak, senior astronomer at the SETI Institute, and host of Big Picture Science #1 Best Seller in Nanotechnology and Computers & Technology Dr. Andrew Maynard, physicist and leading expert on socially responsible development of emerging and converging technologies, examines science fiction movies and brings them to life. Advances in science and technology are radically changing our world.Films from the Future is an essential guide to navigating a future dominated by complex and powerful new technologies. The jump from room-filling processors to pocket-size super computers is just the beginning. Artificial intelligence, gene manipulation, cloning, and inter-planet travel are all ideas that seemed like fairy tales but a few years ago. And now their possibility is very much here. But are we ready to handle these advances? As Maynard explains, "Viewed in the right way?and with a good dose of critical thinking?science fiction movies can help us think about and prepare for the social consequences of technologies we don't yet have, but that are coming faster than we imagine." Films from the Future looks at twelve movies that take readers on a journey through the worlds of biological and genetic manipulation, human enhancement, cyber technologies, and nanotechnology. Gain a broader understanding of the complex relationship between science and society. The movies include old and new, and the familiar and unfamiliar, to provide a unique, entertaining, and ultimately transformative take on the power and responsibilities of emerging technologies. If you have read books such as The Book of Why, The Science of Interstellar, or The Future of Humanity, you will love Films from the Future.

Since the discovery of the structure of DNA and the birth of the genetic age, a powerful vocabulary has emerged to express science's growing command over the matter of life. Armed with knowledge of the code that governs all living things, biology and biotechnology are poised to edit, even rewrite, the texts of life to correct nature's mistakes. Yet, how far should the capacity to manipulate what life is at the molecular level authorize science to define what life is for? This book looks at flash points in law, politics, ethics, and culture to argue that science's promises of perfectibility have gone too far. Science may have editorial control over the material elements of life, but it does not supersede the languages of sense-making that have helped define human values across millennia: the meanings of autonomy, integrity, and privacy; the bonds of kinship, family, and society; and the place of humans in nature.

The technological revolution has reached around the world, with important consequences for business, government, and the labor market. Computer-aided design, telecommunications, and other developments are allowing small players to compete with traditional giants in manufacturing and other fields. In this volume, 16 engineering and industrial experts representing eight countries discuss the growth of technological advances and their impact on specific industries and regions of the world. From various perspectives, these distinguished commentators describe the practical aspects of technology's reach into business and trade.

Technology permeates nearly every aspect of our daily lives. Cars enable us to travel long distances, mobile phones help us to communicate, and medical devices make it possible to detect and cure diseases. But these aids to existence are not simply neutral instruments: they give shape to what we do and how we experience the world. And because technology plays such an active role in shaping our daily actions and decisions, it is crucial, Peter-Paul Verbeek argues, that we consider the moral dimension of technology. Moralizing Technology offers exactly that: an in-depth study of the ethical dilemmas and moral issues surrounding the interaction of humans and technology. Drawing from Heidegger and Foucault, as well as from philosophers of technology such as Don Ihde and Bruno Latour, Peter-Paul Verbeek locates morality not just in the human users of technology but in the interaction between us and our machines. Verbeek cites concrete examples, including some from his own life, and compellingly argues for the morality of things. Rich and multifaceted, and sure to be controversial, Moralizing Technology will force us all to consider the virtue of new inventions and to rethink the rightness of the products we use every day.

As technological developments multiply around the globe--even as the patenting of human genes comes under serious discussion--nations, companies, and researchers find themselves in conflict over intellectual property rights (IPRs). Now, an international group of experts presents the first multidisciplinary look at IPRs in an age of explosive growth in science and technology. This thought-provoking volume offers an update on current international IPR negotiations and includes case studies on software, computer chips, optoelectronics, and biotechnology--areas characterized by high development cost and easy reproducibility. The volume covers these and other issues: Modern economic theory as a basis for approaching international IPRs. U.S. intellectual property practices versus those in Japan, India,

the European Community, and the developing and newly industrializing countries. Trends in science and technology and how they affect IPRs. Pros and cons of a uniform international IPRs regime versus a system reflecting national differences.

Technocapitalism, an emerging form of market capitalism, is rooted in invention and the development of new technologies. In this study of technocapitalism, author Luis Suarez-Villa explores the infrastructure that supports invention as well as the relationship of technocapitalism with science, corporate business, and government. The emergence of the new order is examined in the light of the historic evolution of capitalism.

A documentary filmmaker, bringing together Artificial Intelligence experts from around the world, explores the terrifying possibility of catastrophic outcomes once we share the planet with intelligent machines who are smarter and more powerful than we could ever have imagined. 25,000 first printing.

A critical exploration of today's global imperative to innovate, by champions, critics, and reformers of innovation. Corporate executives, politicians, and school board leaders agree—Americans must innovate. Innovation experts fuel this demand with books and services that instruct aspiring innovators in best practices, personal habits, and workplace cultures for fostering innovation. But critics have begun to question the unceasing promotion of innovation, pointing out its gadget-centric shallowness, the lack of diversity among innovators, and the unequal distribution of innovation's burdens and rewards. Meanwhile, reformers work to make the training of innovators more inclusive and the outcomes of innovation more responsible. This book offers an overdue critical exploration of today's global imperative to innovate by bringing together innovation's champions, critics, and reformers in conversation. The book presents an overview of innovator training, exploring the history, motivations, and philosophies of programs in private industry, universities, and government; offers a primer on critical innovation studies, with essays that historicize, contextualize, and problematize the drive to create innovators; and considers initiatives that seek to reform and reshape what it means to be an innovator. Contributors Errol Arkilic, Catherine Ashcraft, Leticia Britos Cavagnaro, W. Bernard Carlson, Lisa D. Cook, Humera Fasihuddin, Maryann Feldman, Erik Fisher, Benoît Godin, Jenn Gustetic, David Guston, Eric S. Hintz, Marie Stettler Kleine, Dutch MacDonald, Mickey McManus, Sebastian Pfotenhauer, Natalie Rusk, Andrew L. Russell, Lucinda M. Sanders, Brenda Trinidad, Lee Vinsel, Matthew Wisnioski

A unique A-to-Z reference of brilliance in innovation and invention Combining engagingly written, well-researched history with the respected imprimatur of Scientific American magazine, this authoritative, accessible reference provides a wide-ranging overview of the inventions, technological advances, and discoveries that have transformed human society throughout our history. More than 400 entertaining entries explain the details and significance of such varied breakthroughs as the development of agriculture, the "invention" of algebra, and the birth of the computer. Special chronological sections divide the entries, providing a unique focus on the intersection of science and technology from early human history to the present. In addition, each section is supplemented by primary source sidebars, which feature excerpts from scientists' diaries, contemporary accounts of new inventions, and various "In Their Own Words" sources. Comprehensive and thoroughly readable, Scientific American Inventions and Discoveries is an indispensable resource for anyone fascinated by the history of science and technology. Topics include: aerosol spray * algebra * Archimedes' Principle * barbed wire * canned food * carburetor * circulation of blood * condom * encryption machine * fork * fuel cell * latitude * music synthesizer * positron * radar * steel * television * traffic lights * Heisenberg's uncertainty principle

A guide to journalistic ethics for today's digital technologies With contributions from an international panel of experts on the topic, News Media Innovation Reconsidered offers a guide for the revitalizing of the ethical and civil ideals of journalism. The authors discuss how to energize journalistic practices and products and explore how to harness the power of digital technological innovations such as immersive journalism, the automatization and personalization of news, newsgames, and artificial-intelligence news production. The book presents an innovative framework of "creative reconstruction" and reviews new journalistic concepts, models, initiatives, and practices that clearly demonstrate professional ethics that embrace truth seeking, transparency, fact checking, and accuracy, and other ethical considerations. While the contributors represent numerous countries, many of examples are drawn from the Spanish-speaking media and can serve as models for an international audience. This important book: Explores the impact on the news media from mobile-first, virtual reality, and artificial intelligence-driven platforms Examines the challenges of maintaining journalistic ethics in today's digital world Demonstrates how to use technology to expose readers to news outside their comfort zones Provides information for discerning truth from fake news Written for researchers, students in journalism and communication programs, New Media Innovation Reconsidered offers a much-needed guide for recreating journalistic ethics in our digital age.

In the modern era each new innovation poses its own special ethical dilemma. How can human society adapt to these new forms of expression, commerce, government, citizenship, and learning while holding onto its ethical and moral principles? The Changing Scope of Technoethics in Contemporary Society is a critical scholarly resource that examines the existing intellectual platform within the field of technoethics. Featuring coverage on a broad range of topics such as ethical perspectives on internet safety, technoscience, and ethical hacking communication, this book is geared towards academicians, researchers, and students seeking current research on domains of technoethics.

This anthology focuses on the ethical issues surrounding information control in the broadest sense. Anglo-American institutions of intellectual property protect and restrict access to vast amounts of information. Ideas and expressions captured in music, movies, paintings, processes of manufacture, human genetic information, and the like are protected domestically and globally. The ethical issues and tensions surrounding free speech and information control intersect in at least two important respects. First, the commons of thought and expression is threatened by institutions of copyright, patent, and trade secret. While institutions of intellectual property may be necessary for innovation and social progress they may also be detrimental when used by the privileged and economically advantaged to control information access, consumption, and expression. Second, free speech concerns have been allowed to trump privacy interests in all but the most egregious of cases. At the same time, our ability to control access to information about ourselves--what some call "informational privacy"--is rapidly diminishing. Data mining and digital profiling are opening up what most would consider private domains for public consumption and manipulation. Post-9/11, issues of national security have run headlong into individual rights to privacy and free speech concerns. While constitutional guarantees against unwarranted searches and seizures have been relaxed, access to vast amounts of information held by government agencies, libraries, and other information storehouses has been restricted in the name of national security.

Dreamscapes of Modernity offers the first book-length treatment of sociotechnical imaginaries, a concept originated by Sheila Jasanoff and developed in close collaboration with Sang-Hyun Kim to describe how visions of scientific and technological progress carry with them implicit ideas about public purposes, collective futures, and the common good. The book presents a mix of case studies—including nuclear power in Austria, Chinese rice biotechnology, Korean stem cell research, the Indonesian Internet, US bioethics, global health, and more—to illustrate how the

concept of sociotechnical imaginaries can lead to more sophisticated understandings of the national and transnational politics of science and technology. A theoretical introduction sets the stage for the contributors' wide-ranging analyses, and a conclusion gathers and synthesizes their collective findings. The book marks a major theoretical advance for a concept that has been rapidly taken up across the social sciences and promises to become central to scholarship in science and technology studies.

We have long recognized technology as a driving force behind much historical and cultural change. The invention of the printing press initiated the Reformation. The development of the compass ushered in the Age of Exploration and the discovery of the New World. The cotton gin created the conditions that led to the Civil War. Now, in Beyond Engineering, science writer Robert Pool turns the question around to examine how society shapes technology. Drawing on such disparate fields as history, economics, risk analysis, management science, sociology, and psychology, Pool illuminates the complex, often fascinating interplay between machines and society, in a book that will revolutionize how we think about technology. We tend to think that reason guides technological development, that engineering expertise alone determines the final form an invention takes. But if you look closely enough at the history of any invention, says Pool, you will find that factors unrelated to engineering seem to have an almost equal impact. In his wide-ranging volume, he traces developments in nuclear energy, automobiles, light bulbs, commercial electricity, and personal computers, to reveal that the ultimate shape of a technology often has as much to do with outside and unforeseen forces. For instance, Pool explores the reasons why steam-powered cars lost out to internal combustion engines. He shows that the Stanley Steamer was in many ways superior to the Model T--it set a land speed record in 1906 of more than 127 miles per hour, it had no transmission (and no transmission headaches), and it was simpler (one Stanley engine had only twenty-two moving parts) and quieter than a gas engine--but the steamers were killed off by factors that had little or nothing to do with their engineering merits, including the Stanley twins' lack of business acumen and an outbreak of hoof-and-mouth disease. Pool illuminates other aspects of technology as well. He traces how seemingly minor decisions made early along the path of development can have profound consequences further down the road, and perhaps most important, he argues that with the increasing complexity of our technological advances--from nuclear reactors to genetic engineering--the number of things that can go wrong multiplies, making it increasingly difficult to engineer risk out of the equation. Citing such catastrophes as Bhopal, Three Mile Island, the Exxon Valdez, the Challenger, and Chernobyl, he argues that is it time to rethink our approach to technology. The days are gone when machines were solely a product of larger-than-life inventors and hard-working engineers. Increasingly, technology will be a joint effort, with its design shaped not only by engineers and executives but also psychologists, political scientists, management theorists, risk specialists, regulators and courts, and the general public. Whether discussing bovine growth hormone, molten-salt reactors, or baboon-to-human transplants, Beyond Engineering is an engaging look at modern technology and an illuminating account of how technology and the modern world shape each other.

Notes on contributors Acknowledgements 1. The Idiom of Co-production Sheila Jasanoff 2. Ordering Knowledge, Ordering Society Sheila Jasanoff 3. Climate Science and the Making of a Global Political Order Clark A. Miller 4. Co-producing CITES and the African Elephant Charis Thompson 5. Knowledge and Political Order in the European Environment Agency Claire Waterton and Brian Wynne 6. Plants, Power and Development: Founding the Imperial Department of Agriculture for the West Indies, 1880-1914 William K. Storey 7. Mapping Systems and Moral Order: Constituting property in genome laboratories Stephen Hilgartner 8. Patients and Scientists in French Muscular Dystrophy Research Vololona Rabeharisoa and Michel Callon 9. Circumscribing Expertise: Membership categories in courtroom testimony Michael Lynch 10. The Science of Merit and the Merit of Science: Mental order and social order in early twentieth-century France and America John Carson 11. Mysteries of State, Mysteries of Nature: Authority, knowledge and expertise in the seventeenth century Peter Dear 12. Reconstructing Sociotechnical Order: Vannevar Bush and US science policy Michael Aaron Dennis 13. Science and the Political Imagination in Contemporary Democracies Yaron Ezrah 14. Afterword Sheila Jasanoff References Index

Ethics and Technology, 5th Edition, by Herman Tavani introduces students to issues and controversies that comprise the relatively new field of cyberethics. This text examines a wide range of cyberethics issues--from specific issues of moral responsibility that directly affect computer and information technology (IT) professionals to broader social and ethical concerns that affect each of us in our day-to-day lives. The 5th edition shows how modern day controversies created by emerging technologies can be analyzed from the perspective of standard ethical concepts and theories. -- Provided by publisher.

It has become a widely-recognized fact that entrepreneurs and information technology have become the backbone of the world economy. The increasing penetration of IT in society and in most of industries/businesses, as well as the joining forces of entrepreneurship and innovation in the economy, reinforce the need for a leading and authoritative research handbook to disseminate leading edge findings about entrepreneurship and innovation in the context of IT from an international perspective. Information Technology Entrepreneurship and Innovation presents current studies on the nature, process and practice of entrepreneurship and innovation in the development, implementation, and application of information technology worldwide, as well as providing academics, entrepreneurs, managers, and practitioners with up-to-date, comprehensive, and rigorous research-based articles on the formation and implementation of effective strategies and business plans.

As insightful and wise today as it was when originally published in 1954, Jacques Ellul's The Technological Society has become a classic in its field, laying the groundwork for all other studies of technology and society that have followed. Ellul offers a penetrating analysis of our technological civilization, showing how technology—which began innocuously enough as a servant of humankind—threatens to overthrow humanity itself in its ongoing creation of an environment that meets its own ends. No conversation about the dangers of technology and its unavoidable effects on society can begin without a careful reading of this book. "A magnificent book . . . He goes through one human activity after another and shows how it has been technicized, rendered efficient, and diminished in the process."—Harper's "One of the most important books of the second half of the twentieth-century. In it, Jacques Ellul convincingly demonstrates that technology, which we continue to conceptualize as the servant of man, will overthrow everything that prevents the internal logic of its development, including humanity itself—unless we take necessary steps to move human society out of the environment that 'technique' is creating to meet its

own needs."—The Nation "A description of the way in which technology has become completely autonomous and is in the process of taking over the traditional values."of every society without exception, subverting and suppressing these values to produce at last a monolithic world culture in which all non-technological difference and variety are mere appearance."—Los Angeles Free Press

The cultural, social, and economic history of mankind is characterized by a succession of needs and problems that have stimulated the invention of operational and conceptual tools to facilitate their solution. The continuous presentation of new needs, an attempt to improve partial solutions to old problems, curiosity, and the disinterested search for knowledge then constituted the fundamental push for scientific, cultural, economic, and social progress. In an increasingly digital society, where software technological tools permeate daily life and, consequently, change the management of reality, mastering of transversal skills is crucial for success. Computational thinking is a set of transversal skills related to the foundations of computer science as a scientific discipline and means a mastering to the process of solving problems. The goal of computational thinking is to acquire interpretative perspectives of reality, which allows one to read the digital experience competently and responsibly. Computational Thinking for Problem Solving and Managerial Mindset Training explores how individuals can be trained into managerial mindsets through computational thinking and computer science. It explores how computer science can be used as a valid guideline to develop skills such as effective soft skills, communication skills, and collaboration. Further, the chapters explore the adoption of computational thinking for individuals to gain managerial mindsets and successfully solve questions and problems in their domain of interest. This will include artificial intelligence applications, strategic thinking, management training, ethics, emergency managerial mindsets, and more. This book is valuable for managers, professionals, practitioners, researchers, academicians, and students interested in how computational thinking can be applied for the training of managerial mindsets.

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

"More than anything else technology creates our world. It creates our wealth, our economy, our very way of being," says W. Brian Arthur. Yet despite technology's irrefutable importance in our daily lives, until now its major questions have gone unanswered. Where do new technologies come from? What constitutes innovation, and how is it achieved? Does technology, like biological life, evolve? In this groundbreaking work, pioneering technology thinker and economist W. Brian Arthur answers these questions and more, setting forth a boldly original way of thinking about technology. The Nature of Technology is an elegant and powerful theory of technology's origins and evolution. Achieving for the development of technology what Thomas Kuhn's The Structure of Scientific Revolutions did for scientific progress, Arthur explains how transformative new technologies arise and how innovation really works. Drawing on a wealth of examples, from historical inventions to the high-tech wonders of today, Arthur takes us on a mind-opening journey that will change the way we think about technology and how it structures our lives. The Nature of Technology is a classic for our times.

The robot population is rising on Earth and other planets. (Mars is inhabited entirely by robots.) As robots slip into more domains of human life--from the operating room to the bedroom--they take on our morally important tasks and decisions, as well as create new risks from psychological to physical. This makes it all the more urgent to study their ethical, legal, and policy impacts. To help the robotics industry and broader society, we need to not only press ahead on a wide range of issues, but also identify new ones emerging as quickly as the field is evolving. For instance, where military robots had received much attention in the past (and are still controversial today), this volume looks toward autonomous cars here as an important case study that cuts across diverse issues, from liability to psychology to trust and more. And because robotics feeds into and is fed by AI, the Internet of Things, and other cognate fields, robot ethics must also reach into those domains, too. Expanding these discussions also means listening to new voices; robot ethics is no longer the concern of a handful of scholars. Experts from different academic disciplines and geographical areas are now playing vital roles in shaping ethical, legal, and policy discussions worldwide. So, for a more complete study, the editors of this volume look beyond the usual suspects for the latest thinking. Many of the views as represented in this cutting-edge volume are provocative--but also what we need to push forward in unfamiliar territory.

An innovative theory of pragmatic objectivity to guide journalism today.

Widely praised for its balanced treatment of computer ethics, Ethics for the Information Age offers a modern presentation of the moral controversies surrounding information technology. Topics such as privacy and intellectual property are explored through multiple ethical theories, encouraging readers to think critically about these issues and to make their own ethical decisions.

We live in a world increasingly governed by technology--but to what end?