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

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Evaluating New Technologies

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HANA CARINA

The Fourth Industrial Revolution Addison-Wesley

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.

Shaping Our Selves John Wiley & Sons

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.

Technopoly National Geographic Books

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.

Ethics, Technology, and Engineering Vintage

human practices? How are we to morally evaluate technology developments that have open horizons, encompass uncertainties, and lack control? Technology is influential on society; technological innovations act upon the perception of ourselves, the world, and our relation with fellow humans and other objects. Technology is changing everything we do by creating new entities (such as software, nanoparticles, or Internet), by changing the scale of activities (e. g. vast amounts of data about people can be stored and analysed, and not infrequently without people - ing

aware of this), by generating new kinds of knowledge (for instance about illnesses, the human genome and so on).

Technologies, as a consequence, impinge upon our morality and for this reason an ethics of technology should not wait passively until moral problems arise and not only focus on identified and existing moral problems, but contemplate technology developments and possible impacts proactively. However, this is easier said than done, because a prospective and proactive evaluation of technology developments is complicated by complexity and uncertainty. The uncertainty of technology development is closely related to one of the striking features of technology, namely what Jim Moor has coined logical malleability. (1985, 269)

Technological devices are logically malleable in that they can be shaped to do any activity that can be characterised in terms of logical operations.

Moralizing Technology University of Chicago Press

Information and Communication Technologies (ICTs) have profoundly changed many aspects of life, including the nature of entertainment, work, communication, education, healthcare, industrial production and business, social relations and conflicts. They have had a radical and widespread impact on our moral lives and hence on contemporary ethical debates. *The Cambridge Handbook of Information and Computer Ethics*, first published in 2010, provides an ambitious and authoritative introduction to the field, with discussions of a range of topics including privacy, ownership, freedom of speech, responsibility, technological determinism, the digital divide, cyber warfare, and online pornography. It offers an accessible and thoughtful survey of the transformations brought about by ICTs and their implications for the future of human life and society, for the evaluation of behaviour, and for the evolution of moral values and rights. It will be a valuable book for all who are interested in the ethical aspects of the information society in which we live.

The Code Breaker Simon and Schuster

Professionalism is arguably more important in some occupations than in others. It is vital in some because of the life and death decisions that must be made, for example in medicine. In others the rapidly changing nature of the occupation makes efficient regulation difficult and so the professional behaviour of the

practitioners is central to the good functioning of that occupation. The core idea behind this book is that Information and Communication Technology (ICT) is changing so quickly that professional behaviour of its practitioners is vital because regulation will always lag behind.

The Ethics of Invention Oxford University Press

The concept of competition is frequently regarded with ambivalence. While its champions wholeheartedly endorse it for reasons of efficiency, critics believe competition undermines ethics. They denounce competitive thinking, call for modesty in profit-making, and rail against economisation. However, Christoph Lütge argues convincingly that intensified competition can work in favour of ethical goals, and that many criticisms of competition stem from an inadequate understanding of how modern societies and economies function. The author illustrates his view with examples from ecology, healthcare and education, and concludes with a call for more entrepreneurial spirit.

Reframing Rights Univ of California Press

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.

Innovation, Ethics and our Common Futures Oxford University Press, USA

Featuring a wide range of international case studies, *Ethics, Technology, and Engineering* presents a unique and systematic approach for engineering students to deal with the ethical issues that are increasingly inherent in engineering practice. Utilizes a systematic approach to ethical case analysis -- the ethical cycle -- which features a wide range of real-life international case studies including the Challenger Space Shuttle, the Herald of Free Enterprise and biofuels. Covers a broad range of topics, including ethics in design, risks, responsibility, sustainability, and emerging technologies Can be used in conjunction with the online ethics tool Agora (<http://www.ethicsandtechnology.com>) Provides engineering students with a clear introduction to the main ethical theories Includes an extensive glossary with key terms *Techno-Fixers* W. W. Norton & Company

“Deftly shows how a seemingly frivolous film genre can guide us in shaping tomorrow’s world.” —Seth Shostak, senior astronomer, SETI Institute Artificial intelligence, gene manipulation, cloning, and interplanetary travel are all ideas that seemed like fairy tales but a few years ago. And now their possibilities are very much here. But are we ready to handle these advances? This book, by a physicist and expert on responsible technology development, reveals how 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 us on a journey through the worlds of biological and genetic manipulation, human enhancement, cyber technologies, and nanotechnology. Readers will gain a broader understanding of the complex relationship between science and society. The movies mix old and new, and the familiar and unfamiliar, to provide a unique, entertaining, and ultimately transformative take on the power of emerging technologies, and the responsibilities they come with.

The Ethics of Invention: Technology and the Human Future Oxford University Press

In this witty, often terrifying work of cultural criticism, the author of *Amusing Ourselves to Death* chronicles our transformation into a Technopoly: a society that no longer merely uses technology as

a support system but instead is shaped by it—with radical consequences for the meanings of politics, art, education, intelligence, and truth.

Ethics for the Information Age Cengage Learning

When bioethicists debate the ethics of using technologies like surgery and pharmacology to shape our selves, they are debating what it means for human beings to flourish. They are debating what makes animals like us truly happy, and whether the technologies at issue will bring us closer to or farther from such happiness. The positions that participants adopt in debates regarding such ancient and fundamental questions are often polarized, and cannot help but be deeply personal. It is no wonder that these debates are sometimes acrimonious. How can critics of and enthusiasts about technological self-transformation move forward in the midst of polarizing arguments? Based on his experience as a scholar at The Hastings Center, the oldest free-standing bioethics research institute in the world, Erik Parens proposes a habit of thinking, which he calls Binocular thinking lets us benefit from the insights that are visible from the stance of the enthusiast, who emphasizes that using technology to creatively transform our selves will make us happier, and to benefit from the insights that are visible from the stance of the critic, who emphasizes that learning to let ourselves be will make us happier. Because these debates ultimately entail critics and enthusiasts giving justifications for their own ways of being in the world, they entail the exchange of more than just impartial reasons. In the throes of our passion to make our case, we exaggerate our insights and all-too-often fall into the conceptual traps that our languages constantly set for us: Are human beings by nature creators or creatures? Are technologies morally neutral or value-laden? Is disability a medical or a social phenomenon? Indeed, are we free or determined? Parens explains how participating in these debates helped him articulate a habit of thinking, which is better at benefiting from the insights embedded in both poles of those binaries than was the habit of thinking he brought *The Cambridge Handbook of Information and Computer Ethics* Edinburgh University Press #1 NEW YORK TIMES BESTSELLER • “The story of modern medicine and bioethics—and, indeed, race relations—is refracted beautifully, and movingly.”—Entertainment Weekly NOW A MAJOR MOTION PICTURE FROM HBO® STARRING OPRAH WINFREY AND

ROSE BYRNE • ONE OF THE “MOST INFLUENTIAL” (CNN), “DEFINING” (LITHUB), AND “BEST” (THE PHILADELPHIA INQUIRER) BOOKS OF THE DECADE • ONE OF ESSENCE’S 50 MOST IMPACTFUL BLACK BOOKS OF THE PAST 50 YEARS • WINNER OF THE CHICAGO TRIBUNE HEARTLAND PRIZE FOR NONFICTION NAMED ONE OF THE BEST BOOKS OF THE YEAR BY The New York Times Book Review • Entertainment Weekly • O: The Oprah Magazine • NPR • Financial Times • New York • Independent (U.K.) • Times (U.K.) • Publishers Weekly • Library Journal • Kirkus Reviews • Booklist • Globe and Mail Her name was Henrietta Lacks, but scientists know her as HeLa. She was a poor Southern tobacco farmer who worked the same land as her slave ancestors, yet her cells—taken without her knowledge—became one of the most important tools in medicine: The first “immortal” human cells grown in culture, which are still alive today, though she has been dead for more than sixty years. HeLa cells were vital for developing the polio vaccine; uncovered secrets of cancer, viruses, and the atom bomb’s effects; helped lead to important advances like in vitro fertilization, cloning, and gene mapping; and have been bought and sold by the billions. Yet Henrietta Lacks remains virtually unknown, buried in an unmarked grave. Henrietta’s family did not learn of her “immortality” until more than twenty years after her death, when scientists investigating HeLa began using her husband and children in research without informed consent. And though the cells had launched a multimillion-dollar industry that sells human biological materials, her family never saw any of the profits. As Rebecca Skloot so brilliantly shows, the story of the Lacks family—past and present—is inextricably connected to the dark history of experimentation on African Americans, the birth of bioethics, and the legal battles over whether we control the stuff we are made of. Over the decade it took to uncover this story, Rebecca became enmeshed in the lives of the Lacks family—especially Henrietta’s daughter Deborah. Deborah was consumed with questions: Had scientists cloned her mother? Had they killed her to harvest her cells? And if her mother was so important to medicine, why couldn’t her children afford health insurance? Intimate in feeling, astonishing in scope, and impossible to put down, *The Immortal Life of Henrietta Lacks* captures the beauty and drama of scientific discovery, as well as its human consequences. *The Ethical Algorithm* Springer Science & Business Media

This is the story of a seductive idea. Over the past century, the potential of new technology to solve social dilemmas has captivated modern culture. From apps that encourage physical activity to airport scanners meant to prevent terrorism, the concept that clever innovation can improve society is irresistible, but faith in such technological fixes is seldom questioned. Where did this idea come from, what makes it so appealing, and how does it endanger our future? *Techno-Fixers* traces the source of modern confidence in technology to engineering hubris, radical utopian movements, science fiction fanzines, policy-makers’ soundbites, corporate marketing, and optimistic consumer culture from the turn of the twentieth century until today. Sean Johnston demonstrates that, through the promotion of prominent government scientists, technocrats, entrepreneurs, and popular media, modern invention became the favourite tool for addressing human problems and society’s ills. Nonetheless, when it comes to assessing the success of cigarette filters as the solution to safe smoking, or DDT as the answer for agricultural productivity, the evidence is sobering. Cautioning that the rhetoric of technological fixes seldom matches reality, Johnston examines how employing innovation to bypass traditional methods can foster as many problems as it solves. A critical examination of modern faith in technology, *Techno-Fixers* evaluates past mistakes, present implications, and future opportunities for innovating societies.

Invention MIT Press

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 Rabearisoa 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 Ezrahi 14. Afterword Sheila Jasanoff
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Films from the Future MIT Press

What do we know about ordinary people in our towns and cities, about what really matters to them and how they organize their lives today? This book visits an ordinary street and looks into thirty households. It reveals the aspirations and frustrations, the tragedies and accomplishments that are played out behind the doors. It focuses on the things that matter to these people, which quite often turn out to be material things – their house, the dog, their music, the Christmas decorations. These are the means by which they express who they have become, and relationships to objects turn out to be central to their relationships with other people – children, lovers, brothers and friends. If this is a typical street in a modern city like London, then what kind of society is this? It’s not a community, nor a neighbourhood, nor is it a collection of isolated individuals. It isn’t dominated by the family. We assume that social life is corrupted by materialism, made superficial and individualistic by a surfeit of consumer goods, but this is misleading. If the street isn’t any of these things, then what is it? This brilliant and revealing portrayal of a street in modern London, written by one of the most prominent anthropologists, shows how much is to be gained when we stop lamenting what we think we used to be and focus instead on what we are now becoming. It reveals the forms by which ordinary people make sense of their lives, and the ways in which objects become our companions in the daily struggle to make life meaningful. *Society, Ethics, and Technology* National Geographic Books 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 these innovations erode or 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.

Technology and the Virtues The Ethics of Invention

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.

Beyond Bioethics John Wiley & Sons

The Ethics of Invention National Geographic Books

Transforming Nature Edward Elgar Publishing

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.