

# Technology Ethics A Philosophical Introduction and Readings

EDITED BY GREGORY J. ROBSON and JONATHAN Y. TSOU



## **Technology Ethics**

The first of its kind, this anthology in the burgeoning field of technology ethics offers students and other interested readers 32 chapters, each written in an accessible and lively manner specifically for this volume. The chapters are conveniently organized into five parts:

- I Perspectives on Technology and its Value
- II Technology and the Good Life
- III Computer and Information Technology
- IV Technology and Business
- V Biotechnologies and the Ethics of Enhancement

A hallmark of the volume is multidisciplinary contributions both (1) in "analytic" and "continental" philosophies and (2) across several hot-button topics of interest to students, including the ethics of autonomous vehicles, psychotherapeutic phone apps, and bio-enhancement of cognition and in sports. The volume editors, both teachers of technology ethics, have compiled a set of original and timely chapters that will advance scholarly debate and stimulate fascinating and lively classroom discussion.

Downloadable eResources (available from www.routledge.com/9781032038704) provide a glossary of all relevant terms, sample classroom activities/discussion questions relevant for chapters, and links to Stanford Encyclopedia of Philosophy entries and other relevant online materials.

#### **Key Features:**

- Examines the most pivotal ethical questions around our use of technology, equipping readers to better understand technology's promises and perils.
- Explores throughout a central tension raised by technological progress: maintaining social stability vs. pursuing dynamic social improvements.
- Provides ample coverage of the pressing issues of free speech and productive online discourse.

**Gregory J. Robson** is an Assistant Professor of Philosophy at Iowa State University and a Visiting Assistant Research Professor in the Mendoza College of Business at the University of Notre Dame. His research focuses on ethics (including business and technology ethics) and social and political philosophy.

**Jonathan Y. Tsou** is a Professor of Philosophy and the Marvin and Kathleen Stone Distinguished Professor of Humanities in Medicine and Science at the University of Texas at Dallas. He has teaching and research interests in philosophy of science, philosophy of technology, and philosophy of psychiatry.



## **Technology Ethics**

A Philosophical Introduction and Readings

Edited by Gregory J. Robson and Jonathan Y. Tsou



First published 2023 by Routledge 605 Third Avenue, New York, NY 10158

and by Routledge 4 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

Routledge is an imprint of the Taylor & Francis Group, an informa business

 $\ensuremath{\mathbb{C}}$  2023 selection and editorial matter, Taylor & Francis, individual chapters, the contributors

The right of Gregory J. Robson and Jonathan Y. Tsou to be identified as the authors of the editorial material, and of the authors for their individual chapters, has been asserted in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

ISBN: 978-1-032-03871-1 (hbk) ISBN: 978-1-032-03870-4 (pbk) ISBN: 978-1-003-18946-6 (ebk)

DOI: 10.4324/9781003189466

Typeset in Bembo by codeMantra

Access the Support Material: www.routledge.com/9781032038704

## Contents

List of Contributors	ix
<b>Introduction</b> Gregory J. Robson and Jonathan Y. Tsou	1
PART I Perspectives on Technology and Its Value	5
1 The Definition of Technology VAL DUSEK	6
2 Value-Free Technology? JOSEPH C. PITT	14
3 The Values Built into Technologies DAVID MORROW	18
4 Technological Determinism: What It Is and Why It Matters SALLY WYATT	26
5 Heidegger's Philosophy of Technology DAVID R. CERBONE	34
6 Postphenomenology and Ethics PETER-PAUL VERBEEK	42
7 Technology and the Extended Mind SHAUN GALLAGHER	52
PART II Technology and the Good Life	61
8 Ethical Theory and Technology Jonathan Y. TSOU AND KATE PADGETT WALSH	62

vi	Contents	
9	Disagreeing Well about Technology DANIEL C. RUSSELL	73
10	<b>Technology and the Virtue of Honesty</b> CHRISTIAN B. MILLER	83
11	Confucian Ethics of Technology QIN ZHU	93
12	Utilitarianism and Happy-People-Pills MARK A. WALKER	102
13	Marxist Perspectives on Technology	112
14	Technology and Trust – A Kantian Approach BJØRN K. MYSKJA	122
	RT III Imputer and Information Technology	131
15	Values in Artificial Intelligence Systems JUSTIN B. BIDDLE	132
16	A Kantian Course Correction for Machine Ethics AVA THOMAS WRIGHT	141
17	Ethical Issues Surrounding Artificial Intelligence Technologies in Mental Health: Psychotherapy Chatbots Serife Tekin	152
18	Privacy, Security, and Surveillance ADAM D. MOORE	160
19	Being-in-the-Screen: Phenomenological Reflections on Contemporary Screenhood LUCAS D. INTRONA AND FERNANDO ILHARCO	169
20	Race, Gender, and Visibility on Social Media MEGAN RIM	175
21	Fake News: There's No App for Truthfulness	185

	PART IV Technology in Business	
22	Adam Smith on the Dangers of the Digital World JAMES R. OTTESON	196
23	Social Media Firms, Echo Chambers, and the Good Life GREGORY J. ROBSON	204
24	Data Science and Business Ethics DAVID C. ROSE	215
25	<b>Technology Firms and the Business Case for Diversity</b> ADAM GJESDAL	224
26	<b>Big Tech &amp; Political Equality</b> Saura Masconale and Simone M. Sepe	232
27	AI and the Law: Can the Legal System Help Us Maximize Paperclips and Minimize Deaths? MIHAILIS E. DIAMANTIS, REBEKAH COCHRAN, AND MIRANDA DAM	242
	RT V otechnology and the Ethics of Enhancement	251
28	<b>Biomedical Technology and the Ethics of Enhancement</b> DANIEL MOSELEY AND CHRISTINA MURRAY	252
29	Genetic Enhancement: Just Say Yes Jason Brennan	261
30	Feminism and the Ethics of Reprogenetic Technologies	270
31	<b>Rethinking Ethical Subjectivity in the Biomedical Treatment of</b> <b>HIV Risk</b> EMERICH DAROYA AND STUART J. MURRAY	279
32	Against Doping in Sport John William Devine	288
	Index	299



## Contributors

- **Justin B. Biddle** is an Associate Professor in the School of Public Policy at the Georgia Institute of Technology, as well as the director of the Ethics, Technology, and Human Interaction Center (ETHICx) and a Faculty Affiliate in the Machine Learning Center. His research interests are interdisciplinary in nature, drawing on fields such as philosophy of science and technology, ethics of emerging technologies, and science and technology policy. Conceptually, his research explores the relationships between (1) the role of values in science and technology, (2) the epistemic and ethical implications of the social organization of research, and (3) ethics and policy. His current work explores these relationships in artificial intelligence (AI) and machine learning, and he has also worked in the areas of biomedical research and agricultural biotechnology.
- **Jason Brennan** is the Robert J. and Elizabeth Flanagan Family Professor of Strategy, Economics, Ethics, and Public Policy at Georgetown University in the McDonough School of Business. He is the Editor of *Public Affairs Quarterly* and the Associate Editor of *Social Philosophy and Policy*.
- **David R. Cerbone** is a Professor of Philosophy at West Virginia University. His research interests include 20th-century continental philosophy (especially phenomenology) and Wittgestein. He is the author of *Understanding Phenomenology* (Acumen, 2006; republished by Routledge, 2014), *Heidegger: A Guide for the Perplexed* (Continuum, 2008), and *Existentialism: All that Matters* (Hodder-Stoughton, 2015).
- **Rebekah Cochran** is a Law Clerk at the Iowa Supreme Court. She completed a J.D. at the University of Iowa.
- Miranda Dam is a Law Student in the College of Law at the University of Iowa.
- **Emerich Daroya** is a Postdoctoral Research Fellow at the Dalla Lana School of Public Health, University of Toronto. He works at the intersection of queer-feminist science and technology studies and HIV prevention technologies. His research interests include queer theory, HIV/AIDS, new materialisms, sexuality studies, and race/racism. His work has been published in *Critical Race and Whiteness Studies Journal, First Monday*, and *The Psychic Life of Racism in Gay Communities*, edited by Damian W. Riggs and published by Lexington Books.
- **Inmaculada de Melo-Martín** is a Professor of Medical Ethics at Weill Cornell Medicine– Cornell University. Her research focuses on ethical and epistemic challenges regarding biomedical science and technology. She is the author most recently of *Rethinking Reprogenetics* (Oxford University Press, 2017), and with K. Intemann, *The Fight against Doubt* (Oxford University Press, 2018).

- **John William Devine** is a Lecturer in Sports Ethics and Integrity at Swansea University and the Chair of the British Philosophy of Sport Association. He is the co-author of the *Stanford Encyclopedia of Philosophy* entry on the 'Philosophy of Sport' and he has written on a wide range of philosophical topics in sport, including 'excellence', 'enhancement', and 'leadership'.
- **Mihailis Diamantis** is a Professor of Law at the University of Iowa. His research focuses on corporate crime, law and technology, and legal theory. He is concerned with how emerging technologies and familiar concepts like mens rea shape corporate incentives. He has also written about privacy law and surveillance.
- Val Dusek is the Professor Emeritus at the University of New Hampshire. He has written *Philosophy of Technology: An Introduction, Knowledge in Social World: The Path of Steve Fuller's Social Epistemology,* and *The Holistic Inspirations of Physics* and he co-edited *Philosophy of Technology: The Technological Condition, An Anthology, Critiques of Evolutionary Psychology,* and on the philosophies of C. S. Peirce, Imre Lakatos, and Nikolai Bukharin, as well as the biology of Stephen Jay Gould and Richard Lewontin.
- Shaun Gallagher, PhD, Hon DPhil., is the Lillian and Morrie Moss Professor of Excellence in Philosophy at the University of Memphis, and a Professorial Fellow at the School of Liberal Arts, University of Wollongong (AU). His areas of research include phenomenology, philosophy of mind, embodied cognition, social cognition, and concepts of self. His recent publications include *Action and Interaction* (Oxford 2020); *Performance/Art: The Venetian Lectures* (Milan 2021); and *The Phenomenological Mind* (Routledge 2021 3rd ed.). He is the editor-in-chief of the journal *Phenomenology and the Cognitive Sciences*.
- **Axel Gelfert** is a Professor of Theoretical Philosophy at the Technical University of Berlin. Much of his work focuses on the intersection of social epistemology and philosophy of science and technology. He is the author of *A Critical Introduction to Testimony* (Bloomsbury 2014) and *How to Do Science with Models* (Springer 2016).
- Adam Gjesdal is a Visiting Assistant Professor in the Gabelli School of Business, Ethics, and Law at Fordham University. His research interests include social and political philosophy, social contract theory, and philosophy of law.
- **Fernando Ilharco** is an Associate Professor at the Faculty of Human Sciences (FCH) and the Communication and Culture Research Centre at the Catholic University of Portugal. His research interests include (i) the philosophy of communication and information and (ii) communication and leadership.
- **Lucas D. Introna** is a Distinguished Professor of Organization, Work, and Technology and the Centre for Technological Futures at Lancester University. His research interests include sociomateriality, phenomenology of technology, information and power, privacy, surveillance, IT and post-modern ethics, and virtuality.
- Christian B. Miller is the A. C. Reid Professor of Philosophy at Wake Forest University. His main research areas are contemporary ethics and philosophy of religion. His books include *The Character Gap: How Good are We?* (2018, Oxford University Press), *Moral Psychology* (2021, Cambridge University Press), and Honesty: *The Philosophy and Psychology of a Neglected Virtue* (2021, Oxford University Press).
- **Saura Masconale** is an Assistant Professor in the Department of Political Economy and Moral Science and the Center for the Philosophy of Freedom at the University of Arizona. Her research addresses a broad range of topics in the domain of law and political economy.

- Adam D. Moore is a Professor in the Information School at the University of Washington and examines the ethical, legal, and policy issues surrounding intellectual property, privacy, freedom of speech, accountability, and information control. He is the author of *Intellectual Property and Information Control* (Routledge, 2001) and *Privacy Rights* (Pennsylvania State University Press, 2010).
- **David R. Morrow** is the Director of Research at the Institute for Carbon Removal Law and Policy and the Forum for Climate Engineering Assessment, both at American University. He is also a Research Fellow at the Institute for Philosophy and Public Policy at George Mason University. His research focuses mainly on the ethics and governance of climate change, especially issues related to carbon removal and solar geoengineering. He is the author of numerous articles and books, including *Values in Climate Policy* (2020, Rowman & Littlefield International).
- **Daniel Moseley** is a Research Instructor in the Department of Psychiatry and a Research Assistant Professor in the Department of Social Medicine at the School of Medicine at the University of North Carolina at Chapel Hill. His research interests include Bioethics, Practical Ethics, Moral Psychology, Philosophy of Mind, Political Philosophy, and Philosophy of Law.
- **Christina Murray** is a UNC Consultation-Liaison Fellow in the Department of Psychiatry at the University of North Carolina at Chapel Hill.
- **Stuart J. Murray** is a Professor of Rhetoric and Ethics in the Department of English Language and Literature at Carleton University. He holds appointments in the Department of Health Sciences and the Institute for Comparative Studies in Literature, Art, and Culture. His work considers biopolitical discourses on health, sexuality, and identity. His recent book is titled *The Living from the Dead: Disaffirming Biopolitics* (Penn State University Press, 2022).
- **Bjørn K. Myskja** is a Professor of Ethics and Political Philosophy at the Norwegian University of Science and Technology. His research interests include Kantian ethics, bioethics, ethics of technology and animal ethics. He has published numerous articles within these research areas.
- James R. Otteson is the John T. Ryan Jr. Professor of Business Ethics, the Rex and Alice A. Martin Faculty Director of the Notre Dame Deloitte Center for Ethical Leadership, and the Faculty Director of the Business Honors Program in the Mendoza College of Business at Notre Dame. He is the author of numerous books, including Adam Smith's Marketplace of Life (Cambridge University Press, 2002), Actual Ethics (Cambridge University Press, 2006), Adam Smith (Bloomsbury, 2013), The End of Socialism (Cambridge University Press, 2014), Honorable Business (Oxford University Press, 2019), and Seven Deadly Economic Sins (Cambridge University Press, 2021).
- Kate Padgett Walsh is an Associate Professor of Philosophy at Iowa State University. She has research interests in ethics, metaethics, Hegel's ethics, and the ethics of debt.
- Joseph C. Pitt is the Professor Emeritus of Philosophy at Virginia Tech. His research interests include philosophy of science, philosophy of technology, and pragmatism. His books include Doing Philosophy of Technology: Essays in a Pragmatist Spirit (Springer, 2011) and Heraclitus Redux: Technological Infrastructures and Scientific Change (Rowman & Littlefield, 2020).
- Megan Rim is a PhD Candidate in Digital Studies in the Department of American Culture at the University of Michigan. Her research interests include race and digital

technologies, algorithmic bias, infrastructure, and surveillance. Her current project focuses on the ways that face recognition technologies operate as part of sociotechnical landscapes and reinvigorate racist systems, infrastructures, and logics.

- **Megan Rim** is a PhD Candidate in Digital Studies in the Department of American Culture at the University of Michigan. Her research interests include race and digital technologies, algorithmic bias, infrastructure, and surveillance. Her current project focuses on the ways that face recognition technologies operate as part of sociotechnical landscapes and reinvigorate racist systems, infrastructures, and logics.
- **Gregory J. Robson** is an Assistant Professor of Philosophy at Iowa State University and a Visiting Assistant Research Professor in the Mendoza College of Business at the University of Notre Dame. His research focuses on ethics (including business and technology ethics) and social and political philosophy.
- **David C. Rose** is a Professor of Economics at the University of Missouri-St. Louis and a Senior Fellow at Common Sense Society. He is also a member of the US Commission on Civil Rights. His research interests include behavioral economics, political economy, and organization theory. He is author of *The Moral Foundation of Economic Behavior* (Oxford University Press, 2011) and *Why Culture Matters Most* (Oxford University Press, 2019).
- **Daniel C. Russell** is a Professor in the Department of Philosophy at the University of Arizona. His research focuses on human flourishing: what it is to live well (human well-being), how people do better at living their lives (virtue and moral development), and what people in free societies might aspire to become (social institutions and political economy). He is the author of *Owning Yourself* (forthcoming), *Happiness for Humans* (2013), *Practical Intelligence and the Virtues* (2009), *Plato on Pleasure and the Good Life* (2005), and the editor of *The Cambridge Companion to Virtue Ethics* (2013).
- **Simone M. Sepe** is the Chester H. Smith Professor and Professor of Law and Finance at the University of Arizona. His research interests include business organizations, corporate finance, contract theory, law and economics, law and philosophy, and empirical methods.
- **Tony Smith** is a Professor of Philosophy and Political Science (emeritus) at Iowa State University. His main areas of interest are Marxism, normative social philosophy, and the philosophy of technology. His books include *Technology and Capitalism in the Age of Lean Production* (SUNY Press 2000) and *Beyond Liberal Egalitarianism: Marx and Normative Social Theory in the Twenty-First Century* (Brill 2017).
- **Şerife Tekin** is an Associate Professor of Philosophy and the Director of the Medical Humanities Program at the University of Texas at San Antonio. Her work in philosophy of psychiatry takes place at the intersection of feminist philosophy of science, philosophy of mind, bioethics, and neuroethics.
- Jonathan Y. Tsou is a Professor of Philosophy and The Marvin and Kathleen Stone Distinguished Professor of Humanities in Medicine and Science at the University of Texas at Dallas. He has teaching and research interests in philosophy of science, philosophy of technology, and philosophy of psychiatry. He is the author of *Philosophy of Psychiatry* (Cambridge University Press, 2021) and co-editor of *Objectivity in Science: New Perspectives from Science and Technology Studies* (Springer, 2015).
- **Peter-Paul Verbeek** is the Rector Magnificus and Professor of Philosophy and Ethics of Science and Technology in a Changing World at the University of Amsterdam. His

research focuses on the relations between humans and technologies and aims to contribute to philosophical theory, ethical reflection, and responsible practices of design and innovation. He is currently one of the six Principle Investigators of a 10-year, multiuniversity research program on the Ethics of Socially Disruptive Technologies.

- Mark A. Walker is a Professor in the Philosophy Department at New Mexico State University where he occupies the Richard L. Hedden Endowed Chair in Advanced Philosophical Studies. His current primary research interests are in epistemology and in ethical issues arising out of emerging technologies, e.g., genetic engineering, advanced pharmacology, artificial intelligence research, and nanotechnology. His published work includes *Happy-People-Pills for All* (Blackwell) and *Free Money for All: A Basic Income Guarantee Solution for the Twenty-First Century* (Palgrave).
- **Ava Thomas Wright** is an Assistant Professor of Philosophy at Cal Poly San Luis Obispo. Wright's main areas of research are in AI Ethics, Ethics, Political Philosophy, and Philosophy of Law, with an emphasis on Kantian moral theory. Some of Wright's recent publications can be found in *Philosopher's Imprint, Kant-Studien*, and the anthology, *Kant and Artificial Intelligence*.
- **Sally Wyatt** is a Professor of Digital Cultures at Maastricht University in the Netherlands. For many years, her work has focused on various social and ethical issues arising from the development and use of digital technologies, particularly in healthcare. Her books include *CyberGenetics. Health Genetics and New Media* (co-authored with Anna Harris and Susan Kelly, Routledge, 2016) and *Virtual Knowledge. Experimenting in the Humanities and the Social Sciences* (co-edited with Paul Wouters, Anne Beaulieu and Andrea Scharnhorst, The MIT Press, 2013).
- **Qin Zhu** is an Associate Professor in the Department of Engineering Education and Affiliate Faculty in the Department of Science, Technology & Society and the Center for Human-Computer Interaction at Virginia Tech. His research interests include engineering ethics, global and international engineering education, engineering cultures, and the ethics of human-robot interaction and artificial intelligence.



## Introduction

Gregory J. Robson & Jonathan Y. Tsou

If there is one factor that most characterizes today's changing world, it is perhaps the rise of technology made possible by the growth of scientific knowledge within commercial society. Of course, stunning technological change is nothing new. Computers, artificial intelligence, medical advances, and other innovations are improving human lives today much as anesthesia, cars, and plastics did not so long ago. We develop technologies. Innovations are replicated and spread. Then, we take them for granted like the air we breathe. It is thanks to technological innovation that we have not only the internet but also chairs, pianos, and even indoor plumbing!

We can glimpse the value of various technologies by asking how things would differ in their absence. How would your life change if, awakening one morning, you learned that the internet no longer exists and never will again? Or that there are now no pipes carrying clean drinking water at your convenience? No indoor heating and air conditioning? No mobile phones? No anesthesia for surgery? No cars and planes but only horses and wagons for travel?

Or, imagine your life without computers. How would your daily life change? How would your studies or work differ? With whom would you cease communicating? How would your modes of entertainment alter?

In countless ways, technologies increase the potential for valuable human cooperation. Sadly, though, it is also because of technological innovation that gas chambers operated in Auschwitz and warlords profit from the sale of illicit weapons and drugs. And even the internet, which is immensely valuable and perhaps most people put to good purposes most of the time, has led to severe addiction, depression, and other problems.

Seen as the application of science in the creation of human artifacts, technology interfaces with countless aspects of our individual and social lives, propelling us forward while simultaneously creating special ethical challenges. The ways in which technologies enhance or undermine our capacity to lead good lives are so numerous and varied that no single book can delineate them all. We can, however, identify pivotal ethical questions around our use of technology. We can examine these questions rigorously. And we can thereby come to better understand the promises and perils of technology. This is the central task of *Technology Ethics*.

\* \* \*

Despite the clear importance of technology ethics for contemporary individuals and societies, many books written in the area are either too narrowly focused for university courses, too generic or unfocused to assist researchers, or too dry to excite the interest of university students. Other books lack consideration of key areas (e.g., business and medicine) that would draw a wide readership. Still others are, simply put, too academic. The language and analysis employed can be convoluted, imposing a high cost in terms of readers' time and attention. The co-editors of this volume have sought to ensure both that the topics selected are diverse and interesting and that the chapters are written in accessible writing styles that engage a broad audience of readers. This makes for easy citation by researchers and easy learning by students. We have striven to make this anthology thought-provoking, relevant to leading ethical issues today, and accessible. We have aimed to provide a diverse range of arguments and perspectives, which give researchers and teachers a broad range of materials with which to engage critically. And we have endeavored to give ample attention to business ethics, a vital subject often not discussed by technology ethicists.

The ethics of technology is a burgeoning area, but few if any anthologies include multidisciplinary contributions from leading scholars in both (1) "analytic" and "continental" philosophy and (2) across several hot-button topics of interest. Technology Ethics is an anthology of new work to fill this gap. The book covers five main areas. Part I, "Perspectives on Technology and Its Value," addresses topics such as whether technology is value-neutral or value-laden, the relationship between science and technology, and debates over technological determinism. Part II, "Technology and the Good Life," covers normative ethical theories (e.g., Aristotelianism, Confucianism, and Kantianism) and the value and roles of technology in lives well-lived. The essays investigate specific ethical theories and technological topics with reference to influential authors and leading research. Part III, "Computer and Information Technology," addresses issues at the intersection of ethics and computing, such as privacy, internet ethics, and robot ethics. Part IV, "Technology and Business," covers the value and roles of technology in firms and in the economy overall, with discussions of key ethical issues at the intersection of technology, business, and economics. Part V, "Biotechnologies and the Ethics of Enhancement," explores the value or disvalue of technology regarding the human body, addressing issues such as genetic enhancement and performance enhancement in sports.

In this anthology, we have also sought to include a fair amount of discussion on the pressing issues of free speech and productive online discourse. For example, Axel Gelfert's chapter addresses the problem of fake news, its negative societal consequences, and how it might be regulated. And Gregory Robson's essay discusses how social media users avoid gaining exposure to alternative perspectives, rendering online moral, social, and political discourse incomplete or rife with bias. Robson details steps that social media firms and users can take to make online discourse more constructive.

We have also aimed to explore the effects of technology on the social tension between dynamism and stability. A key form of this tension is the conflict between preserving traditional modes of technology (hence, promoting social stability) and trying to improve society with technology (hence, promoting social change and potential instability). Several chapters explore this theme. One example is consider Ava Thomas Wright's chapter on Kantian ethical approaches to autonomous vehicles. Wright highlights ethical complexities in expanding the option set for human modes of travel and association while also dynamically changing those modes, possibly in destabilizing ways. Moreover, Şerife Tekin's chapter on artificial intelligence critically examines the use of smartphone applications (psychotherapeutic chatbots), which are intended to help individuals with mental health issues. Tekin's chapter addresses whether such technologies facilitate or undermine more traditional mental health interventions (e.g., therapy), including the stability of social values. Christian B. Miller's chapter investigates how our use of technology can aid or undermine our cultivation of the virtue of honesty, an important virtue for the promotion of stable and healthy online interactions. And, as a final example, James R. Otteson's essay considers the impacts of digital technology on the formation of moral sentiments. Looking to insights

from the philosopher and economist Adam Smith, Otteson examines how our use of social media affects our capacity to lead happy and fulfilling lives in the digital age.

We hope this book will be judged to meet two particular goals. First, we have sought to provide for *students* a set of illuminating essays that will expand and deepen their engagement with key issues in technology ethics. Second, we have endeavored to provide for *instructors* and *researchers* an easy-to-reference guide to existing literature and viewpoints—including many arguments developed specifically for this book. This guide is the culmination of considerable reflection by both rising and distinguished scholars.

The authors gratefully acknowledge the generous support of The John Templeton Foundation, including funding through the Key Challenges Project. We also wish to thank the Institute for Humane Studies for assistance with the funding process and for reviewing much of the manuscript. The editors particularly thank Jonathan Fortier, Maria Rogacheva, and Gregory Wolcott. We also owe thanks to Gavin Oliver, Jayant Shah, and Caroline Stark for their valuable help in reviewing the chapters. We are grateful, as well, to the contributors for their illuminating essays. Finally, we thank our students, with whom we have had the privilege of exploring fascinating and important questions in technology ethics.