
Preface

This book is a product of our good fortune in being selected as Templeton Research Fellows at Arizona State University in 2007 and 2008. Our assignment: explore the implications of radical technological enhancement of human beings—transhumanism—for the environment. We gladly undertook that task, as transhumanism in various guises was of growing interest to us. For example, in May of 2006, we had organized a workshop involving Arizona State University’s Consortium for Science and Policy Outcomes and Sandia National Laboratory’s Advanced Concepts Group on the public policy implications of emerging technologies for human cognitive enhancement. (The report of the workshop can be found at www.cspo.org.) The workshop touched on the possibility of cognitive de-enhancement technologies as a tool of cultural and even traditional warfare, and on what exactly constituted cognitive enhancement anyway. For example, “off-label” uses of drugs such as Ritalin appeared to most of the people at the workshop to be cognitive enhancement, but caffeine use didn’t, and the question of whether Internet search engines were cognitive enhancement or not proved vexing (in part because it required defining “cognitive,” and the group—mostly hapless academics who make a living arguing over distinctions between things that look indistinguishable to the real world—could reach no closure even on that).

Thus primed, we approached our charge: How might technology-induced changes in human capabilities affect the environment? This book is the result, but it is nothing like what we—or our sponsors—expected when we started. For one thing, “the environment” quickly proved to be an unhelpful concept for our endeavor, in part because engaging transhumanism requires grappling with the meaning of technological *change*, and mainstream discussions around “the environment” have little that is helpful to say on this subject beyond stale debates between techno-optimistic cornucopians and neo-Luddite catastrophists. But then another weird thing happened: Transhumanism itself turned out to be as conceptually limiting as “the environment,” and we soon came to recognize it as, at best, a gesture towards a far more complicated and difficult terrain, where notions of the human, the technological, and the natural seem to become ever more fuzzy and problematic, giving rise instead to . . . what? And that is what this book, drawn from our reflections and public lectures we prepared in the course of our Fellowship, is about. We think.

A note on style: This is an extended essay, rather than an academic treatise, and we have tried to make it readable and enjoyable rather than academic and tedious. For those who want to dig deeper, we offer occasional footnotes and a more complete bibliography at the end of the book.

Our collaboration (in reality a several-year running argument) in writing this book was continually enhanced through our interactions with many colleagues, to whom we respectfully and humbly offer thanks. Among these at Arizona State University are Hava Samuelson, Sander van der Leeuw, Gary Marchant, David Guston, George Poste, Peter French, and Ann Schneider; other perhaps-unwilling co-conspirators in the provocation of our thinking on these matters include Richard Nelson (Columbia), Helen Ingram (UC Irvine), Carl Mitcham (Colorado School of Mines), Roger Pielke (University of Colorado), Steve Rayner (Oxford), Ned Woodhouse (RPI), Mark

Frankel (American Association for the Advancement of Science), and David Rejeski (Wilson Center). Jennifer Brian (ASU) provided invaluable research support to Sarewitz during his Fellowship year; Carolyn Mattick (ASU) did the same for Allenby.

We thank the Metanexus Institute for the grant supporting our Templeton Research Fellowships and the production of this volume, which builds on the Templeton Research Lectures that we presented at Arizona State University in 2007 and 2008. We also thank the ASU Center for the Study of Religion and Conflict, under whose auspices the Fellowship was created and administered, and Carolyn Forbes of the Center for her always-good-natured support of our often complicated and confused path as Fellows. Additionally, we thank the ASU Lincoln Center for Applied Ethics, which integrated a number of their projects with our Fellowship activities to the benefit of all, and Michael Crow, president of ASU, for creating an intellectual environment that permits the likes of this book to emerge.

Finally, we thank our families, who have been subjected to vague ramblings about transhumanism, emerging technologies, human enhancement, Kondratieff waves, and other random phenomena, for all too long. Unfortunately, we can't promise that will stop.