BOOK REVIEW

Balancing Approaches to Philosophy of Technology — A Critical Review of The Oxford Handbook of Philosophy of Technology edited by Shannon Vallor, New York, NY: Oxford University Press, 2022, Pp. 696, ISBN: 9780190851187.

This volume is a timely contribution to the philosophy enterprise. Although philosophical discussion of issues involved in technology can be traced back to the very beginning of philosophy, philosophical studies of technology as a distinct kind of philosophy—a domain, or an area, or a sub-field, or a branch of philosophy—that intrigues a large number of philosophers is relatively young in the long history of philosophy. The philosophy of technology, whose term was coined by Ernst Kapp in the late 19th century, became popular and rapidly developed in the 20th century, especially after World War II. Extending beyond the traditional view of technology as imitation and reproduction of nature for improving human life, philosophers of technology in the 20th-21st century saw technology as reshaping nature with both positive and negative effects on current human life and with tremendous implications for future human development. The philosophers of technology in the 20th century mostly focused on the humanistic evaluation of these effects and implications, which has been labeled the Continental Approach as it was mainly grounded in Continental Philosophy. At the turn of the 21st century, however, philosophical reflection on technology and its development experienced a transformation to the empirically-informed approach—analytically investigating technology *per se* rather than merely dealing with the philosophical issues raised by but external to technology. This transformation has been called "the empirical turn" or "analytical turn," and it has generated issues about the identity of the philosophy of technology, including but not limited to the dichotomies of the continental and the analytic, the conceptual and the empirical, the theoretical and the practical as well as the distinctions between artificial and natural objects and between science and technology. *The Oxford Handbook of Philosophy of Technology* aims to bridge these divides in addition to disclosing and exploring current issues and debates in the studies of technology. It collects thirty-two essays and has them arranged in seven parts, each devoted to a distinct area of study in the philosophy of technology.

Part I presents four essays that jointly provide a methodological overview and a historical account of the philosophy of technology. It describes how a philosophy of technology, the burgeoning and highly controversial field of academia, has grown from the classic Continental model, through the empirical turn at the turn of the 21st century, into the Analytic one, and what methodological issues have been raised.

Part II offers four essays that take up epistemological problems posed by the development of technologies. The central problem has been whether technological knowledge is derivative of scientific knowledge—i.e., whether technology is merely an application of science—or it is a distinctive form of knowledge. The debates and discussions of this problem necessarily expand to the significant areas of epistemology, such as belief, truth, coherence, justification, simplicity, and

explanation. The essays collected in Part II feature such topics as objectivity, engineering knowledge, epistemic role, and intelligence.

Part III contains five essays that address social and political issues generated by the development of technologies. Notwithstanding, the analytical approach to the philosophy of technology has grown strong in the 21st century. Many philosophical reflections on technology take the form of socio-cultural critique, as technological innovations are aimed at serving human ends. Hence, evaluating the technology's intended consequences on human life is legitimate and vital. The essays collected in Part III address technology-based politics, personal identity and identification, and the sociotechnical bases of self-respect.

Part IV gathers five essays that focus on metaphysical issues debated by the philosophers of technology. Metaphysical scrutiny of technology revolves around the ontological status and characteristics of artifacts in general and technological artifacts in particular. As it is traditionally understood, an artifact is created out of natural things by an author for some purpose typically defined by the function the artifact is designed to play. Then, there are questions as to whether technologies have such dual nature and how the author's design and intention of an artifact are linked to its functions. The essays collected in Part IV attempt to make some progress in answering these fundamental questions.

Part V groups together four essays on the topic of engineering design. It is generally agreed among the philosophers of technology that design is central to technology. As the design is both a form of rational action and a form of creative activity, there are philosophical questions about the relationships between the application of rationality and the play of creativity. Meanwhile, design is partly an art and not merely an application of science; thus, there are philosophical questions about the relationships between art and science. The essays collected in Part V discuss the topic of aesthetic evaluation and social, political, and moral dimensions of engineering design.

Part VI aggregates the dimensions of biomedical and environmental ethics and puts together four essays to discuss the impact of technological advances on health and the environment. The essays collected in Part VI update the reader with issues involved in Anthropocene, genetically modified organisms, technologies for disability, and ethical conduct in outer space.

Part VII provides five essays to update readers on ethical discussions of technology. The relationship between technology and the good life is the central topic in any ethical analysis and evaluation of technology. The main issue raised in this field is whether or not technology is ethically neutral. Technology is ethically neutral, but its use is subject to ethical evaluation. An essential part of the main issue is whether a technology developer is a moral agent. It hence bears moral responsibility for the impact of technology on human life. The essays collected in Part VII update the reader with recent ethical issues concerning technological development's direction, tendency, and upshot.

The Oxford Handbook of Philosophy of Technology is an important event in the academic community due to the following features. First, it is a salient example of interdisciplinary studies. The thirty-four contributors are scholars across multiple

academic disciplines, including Arts, Communication, Cultural Studies, Environmental Science, Information Science, Legal Studies, and Media Studies. Philosophy, Political Science, Public Affairs, and Technology. This volume also exemplifies an international collaboration as its contributors represent multiple cultural backgrounds, including American, Austrian, Canadian, Chinese, Dutch, English, Finnish, German, Irish, Italian, Norwegian, New Zealand, and Swedish. The third distinct feature that makes the publication of this volume a significant event in the academic community is that the thirty-two essays collected in this volume represent and/or intersect diverse philosophical traditions, covering both the Continental and the Analytical approaches to philosophical issues concerning human development in relation to technological advance. All of the above features afford this volume's usefulness in multiple ways—an introduction to major issues, a resource for understanding updated research, and a thought-provoking text for a graduate seminar in the philosophy of technology.

Dr. ZHAOLU LU, Professor Emeritus, Tiffin University, LUZ@tiffin.edu.