

Foreword:

Challenges and Opportunities

Buddhism Faces in the Digital Ages

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Buddhism and science represent two drastically different spheres that differ in their goals, the approaches to achieving these goals, and their impacts on the world. In its early form, Buddhism sought, above all, liberation from the cycle of existences and the attainment of the ultimate truth. Later in Mahāyāna Buddhism, the goals extended to cultivating compassion and benefiting all sentient beings. In contrast, science develops by inquiring *objectively* about the world and by advancing technologies. Its central tenets are empiricism and a kind of epistemology firmly rooted in logic. Its goal is to explain the unknown world and to bring material advancement to human societies. It is marked by its ‘verifiability’ and it evolves by constantly verifying hypotheses through trials and errors.

In history, however, the relationship between science, technology, and Buddhism has in fact been a symbiotic one. For instance, in Indian Buddhism, Buddhist monastics played not only the role of the ‘healer’ of the mind, but also that of the body. Likewise, in medieval Chinese Buddhism, Buddhist medicine contributed to the treatment of tropical disease. Moreover, as Buddhism spread to China, it carried with it the knowledge of Indian mathematics, astrology, calendrical calculation, surgery, and chemistry, all of which expanded the horizon of Chinese science. The Tang-Dynasty Buddhist Yixing 一行 (683–727), for instance, is not only a Buddhist master but also a calendrical mathematician. Similarly, Buddhists also contributed to

the invention gun powder, while the advent of woodblock printing was likewise facilitated by the need of Buddhists to widely distribute Buddhist texts. At the same time, Chinese Buddhism spread abroad through the efforts of Buddhist missionaries such as Jianzhen 鑑真 (688–763) who notably not only brought Vinaya but also Chinese culture and technologies to Japan. These imports would then exercise indelible influences on Japanese civilization.

Buddhism and science both emphasize observation and empirical verification as the way of deriving knowledge. Science does so through experimentation, while Buddhists seek truths through meditation and mindfulness. Despite their different approaches, both Buddhism and science aim to solve questions of existential import, with some scientific research even affirming, to certain extent, Buddhist answers to these questions.

Separation between Buddhism and science is a late modern invention. It came about after the Industrial Revolution that saw an ever finer splitting of disciplines and social labours. Science and Buddhism are thereby relegated to two distinct spheres and are sometimes even portrayed as in opposition. In reality, Buddhism and science have been complementary throughout history. Even now, Buddhism could still inform science where the latter falls short, especially with regard to the challenges that accompany the trend of globalization and the rampant development of technology. These include the challenges posed by artificial indulgence (AI) for the fate of the humanity, population explosion, and environmental pollution. More specifically, Buddhism and science have interacted—or are interacting—in at least a few areas that have influenced the course of human civilization: 1. Buddhism and medicine; 2. Buddhism and mathematics; 3. Buddhism and astronomy; 4. Buddhism and calendrical calculation; 5. Buddhism and printing; 6. Buddhism and scientific and technological revolutions; 7. Buddhism and cross-cultural transmission of science; 8. Buddhism and Artificial Intelligence.

In order to explore the complex relationship between Buddhism and science from a more comprehensive and far-reaching perspective, The Glorisun Global Network for Buddhist Studies has taken advantage of the special occasion of the first annual Glorisun Forum

on ‘Beyond Civilizational Clash: The Coalescence of Human Civilizations’ held in Hong Kong from August 9 to August 12, 2023, by including Buddhism and science and technology as one of the three themes for the Forum (the other two themes are: 1) Local Globalization and Global Indigenization of Buddhism, and 2) New Perspectives on Human Buddhism.) The sub-forum on Buddhism and Technology was enthusiastically supported by scholars all over the world, and a total of thirty-five papers were received. Except for Robert Sharf (University of California, Berkeley) who gave a keynote speech entitled ‘Sarvāstivāda, the Block Universe, and Superdeterminism’ to the whole forum, thirty-four papers were presented and discussed in the following nine panels:

1. Buddhist Calendars and Astronomy;
2. Physics and Cosmology in Buddhism;
3. Buddhist Medical Sciences;
4. Logic and Mathematics in Buddhism;
5. Technological Aspects of Buddhist Monasticism
6. Learn to Not Learn: Techniques for Buddhist Meditation;
7. Marginalized Ethics in a Digitalized Time: Buddhist Perspectives
8. ‘Insentient Intelligence’?
9. Digital Buddhist Practices.¹

The sub-forum turned out to be a great success, with participants not only giving but also receiving constructive comments from each other, and truly achieving the goal of ‘those who benefit will always be benefited’. Not only did the scholars actively participate during the forum, but their enthusiasm for the theme of the forum even continued beyond the forum, so that within a short period of three months after the forum, most of the scholars submitted revised versions of their papers to the conference organizer for official publication. After further selection and editing, some of these papers

¹ Featured at <https://glorisunglobalnetwork.org/buddhism-science-and-technology-schedule/>.

have been published in special issues of journals.² Most of the eleven papers collected here are published for the first time, with the exception of a few that have already been published in journals.³ We believe that the above research results from the sub-forum on Buddhism and Science and Technology will be a powerful impetus to the exploration of related issues.

On the occasion of the publication of this volume, the editors would like to express their deepest respect and gratitude to the Glorisan Charitable Foundation and Dr. Charles Yeung, who have generously sponsored the convening of this forum and the publication of this collection of papers.

² Five of them have been published in the Special Issue of 'Buddhism, Science and Technology: Challenges to Religions from a Digitalized World' for *Religions*, the AH&CI's cataloging magazine. The five scholars are: 1. Douglas Duckworth of Temple University; 2. Brianna K. Morseth of the Chinese University of Hong Kong; 3. Niu Weixing 鈕衛星, 4. Qijun Zheng 鄭麒駿 of École Pratique des Hautes Études; and 5. Liqun Zhou 周利群 of Peking University. This special issue is co-edited by Prof. Zhan Ru, one of the coeditors of the present volume, and Jeffrey Kotyk (then Università di Bologna and currently the Max Planck Institute for the History of Science).

Three other participants—Jessica Falcone of Kansas State University, Imre Galambos of Zhejiang University and the University of Cambridge, and Alessandro Polletto of Washington University in St. Louis—had their papers published in another special issue on the theme, this time hosted by the *Hualin International Journal of Buddhist Studies* (first issue of volume 7), which is coedited by the two co-editors of this volume.

³ Finally, it is worth mentioning that this collection of essays has a sister volume, *Kunjing yu tupo: Fojiao zai rengong zhineng shidai demiandui de tiaozhan yu jiyu* 困境與突破：佛教在人工智能時代面對的挑戰與機遇 [Dilemmas and Breakthroughs: The Challenges and Opportunities Buddhism Faces in the Digitalized Ages], which is also being released this year by the same publisher, the Singapore-based World Scholastic Publishers.