
Science, Technology, and Religion VI

Science through Buddhist Eyes

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Buddhism is a combination of both speculative and scientific philosophy. It advocates the scientific method and pursues that to a finality that may be called Rationalistic. In it are to be found answers to such questions of interest as: "What is mind and matter? Of them, which is of greater importance? Is the universe moving towards a goal? What is man's position? Is there living that is noble?" It takes up where science cannot lead because of the limitations of the latter's instruments. Its conquests are those of the mind.

—Bertrand Russell

The idea of a complementary relationship between Buddhism and science is today a subject of serious investigation in the West, though it has long been a fad. The current excitement echoes an earlier hope, expressed in the late nineteenth century by thinkers who saw in Buddhism a reconciliation of religious belief and scientific thought. The particulars vary but the motif remains.

The historical rise of European and American interest in Eastern religions coincided with one of the major phases of modern science's ascendance in the West and the apparent corresponding decline of religious orthodoxy. In particular, the flowering of Buddhism in the West, while fueled by growth in emigration from and travel to the East, was driven by a post-Darwinian hunger for religious belief to be grounded in new scientific truth, a task over which the old gods seemed to be floundering. Buddhism was viewed—and constructed—by many Western thinkers as an alluring and exotic spiritual tradition that could reunite the estranged worlds of matter and spirit. The theologian Harvey Cox, in his 1977 book *Turning East*, views this move as the expression of a larger Western spiritual crisis, the result of "two tubercles in the body politic which debilitate both our churches and our culture—the erosion of human community and the evaporation of genuine experience."

By the early twentieth century, the growing fascination with Asian thought led William James, and in the following decades Arnold Toynbee, F. S. C. Northrop, and others, to envision a new world civilization emerging

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from a convergence of East and West. Blend the aesthetic and intuitive Oriental approach with the theoretic and scientific view of the Occident, and the result could provide a philosophical basis for world unity. Joseph Needham, while avoiding such gross overgeneralizations in his massive multi-volume *Science and Civilisation in China* (published 1954–2008), nonetheless described a synthesis that could balance out a scientific mode he saw as underdeveloped in Asia and overdeveloped in the West. Bring the Western scientific methodology to Asia, and the Asian organismic conception of Nature to the West, he said, and the Orient could experience a “Renaissance” to wake it from its “empirical slumbers” while the Occident could recover from the mechanistic and atomistic excesses of modern science. Projections like these played into the tendency to view the Orient as a mysterious, exotic other through which the Westerner might find a salve for his “sickness of the soul,” to borrow a phrase Jung popularized.

Consciously and unconsciously, a new, modernized Buddhism began to take shape, one adapted to and by Western ways of thought. A trend called “Buddhist modernism” arose, aimed at reinterpreting Buddhism as a system of thought rather than a religion. Buddhist modernists downplay the mystical, mythological, and psychical aspects of the religion in favor of the rational and psychological. Traditional cosmology, the belief in miracles, rituals, and devotions, and other elements that were unacceptable to the modern mind were dismissed as inessential accretions or modifications of Buddhism accumulated during its long historical development. Early leaders of this movement embraced mainly those elements of Buddhism that seemed to address the Western problems they were after, while rejecting elements that could not be made consonant with cherished notions like individualism and progressivism.

Many of the Asian missionaries to the West deliberately prefigured a Buddhism for export that would challenge Western dominance over Asia. One of these missionaries wrote of a “distress among Christians conscious of the destruction of the basis of their faith by the forces at work in civilization,” adding, “Here is hope for Buddhism.” Another wrote, “Religion is the only force in which the Western people know that they are inferior to the nations of the East... Let us wed the Great Vehicle [Buddhism] to Western thought.”

If the endurance of these ideas until today is any evidence, the Eastern missionaries and the Western thinkers who were so eager to receive them would indeed go on to seed a growing and evolving fascination with their cause, if not perhaps the fundamental transformation of Asian influence on Western thought. But how close and profound is the real relationship

between Buddhism and science? Are Buddhism and science brothers, comrades, or even mutual saviors, as is so often claimed today? Do scientists really understand Buddhism? And do Buddhists really understand science?

Claims of Congruence

Critical among the early efforts to meld Buddhism into the Western tradition were the attempts by English-speaking religious thinkers like Henry Steel Olcott to present the religion as resonant with Christianity. Olcott's 1881 *Buddhist Catechism* laid the foundation for what later scholars have described as "Protestant Buddhism." This attempted synthesis offered unique advantages to those who wanted to reject traditional faith due to its apparent authoritarianism and unscientific outlook, but without jettisoning the ingrained philosophy and value system that went along with it.

One similarity between Buddhism and Christianity that was immensely appealing is that each had an attractive personal founder who led a life of self-sacrifice—a welcome restoration of flesh and bone to the cold Darwinian worldview. The Buddha could also be seen as Asia's Luther: he swept away the superstitions and rituals with which the Brahman priesthood had enshrouded India, and took religion back to its pure and simple origins. Olcott and others highlighted the rational and empirical scriptural sources over those dealing with faith, the supernatural, and miracles. Buddhism itself was presented as an agnostic, superstition-free moral ideal: the universe was governed by a rule of law (*dharma*), which for Westerners suggested a "natural law" that resembled the scientific view of order more than the action of divine will.

Other thinkers took the apparent link between Buddhism and science further. The American who perhaps did more than any other of his day to stimulate and sustain public interest in Buddhism was Paul Carus, editor of the journals *Open Court* and *Monist*. Working closely with Buddhist missionaries like D.T. Suzuki, who arrived in the United States after the historic 1893 Parliament of World Religions held in conjunction with the Chicago World's Fair, Carus saw in Buddhism the spiritual equivalent of science—the basis, he believed, for a new, belief-free Religion of Science. In his *Gospel of Buddha* (1894), Carus dubbed the Buddha the "first prophet" of this religion, as well as "the first positivist, the first humanitarian, the first radical freethinker." "There are many similar agreements," he explained, "that can be traced between Buddhism and the tenets of science...and this is not at all surprising, for Buddhism is a religion which recognizes no other revelation except the truth that can be proved by science."

Carus derived much of his Buddhism from Suzuki, who came to live with Carus at his home in LaSalle, Illinois, working with him on the task of translating and publishing Asian religious and philosophical texts into English. Suzuki's rendering of Buddhism to Americans stressed its near-identity with science. In his *Outlines of Mahayana Buddhism* (1907), he presents the concepts of *karma* and *dharma* not so much as religious ideals but as truths attested by science: "This doctrine of karma may be regarded as an application in our ethical realm of the theory of the conservation of energy... We need not further state [that] the conception of dharma in its general aspect is scientifically verified."

In the 1940s and later, many physicists spoke of potential congruence between Eastern philosophy and post-Newtonian physics. Niels Bohr saw the quest of physics for a unified explanation of reality as presaged by early Buddhism, which sought, he wrote, "to harmonize our position as spectators and actors in the great drama of existence." Bohr often mentioned Buddha and Lao Tzu in his discussions of physics and even designed a coat of arms featuring the yin-yang symbol, illustrating the quantum principle known as "complementarity" that he developed. J. Robert Oppenheimer, the so-called "father of the atomic bomb" and a student of Eastern thought, saw Buddhism as foreshadowing the Heisenberg uncertainty principle:

If we ask, for instance, whether the position of the electron remains the same, we must say "no"; if we ask whether the electron's position changes with time, we must say "no"; if we ask whether the electron is at rest, we must say "no"; if we ask whether it is in motion, we must say "no." The Buddha has given such answers when interrogated as to the conditions of man's self after his death; but they are not familiar answers for the tradition of seventeenth and eighteenth-century science.

And the present-day physicist Fritjof Capra, in his 1975 book *The Tao of Physics*, expanded at some length on the rather tentative impressions of Bohr and Oppenheimer, arguing that modern science and Eastern mysticism offer not only parallel insights into the ultimate nature of reality, but "that the philosophy of mystical traditions, also known as the 'perennial philosophy,' provides the most consistent philosophical background to our modern scientific theories."

These concurrences sometimes seem to be ones of convenience. For example, the meditation practices that are today so wildly popular and described by many as convergent with scientific findings were discarded by the initial Buddhist popularizers as unscientific and unprogressive. From

the view of the mechanistic, enterprising spirit of the late nineteenth century, sitting in meditative detachment and quieting the mind was irrational, a withdrawal from conscious activity and self-determination, and was even denounced as a trance-induced hallucination. Zen meditation would not gain purchase on the Western imagination until the 1950s, when it was introduced as “direct experience”: a romantic, individualized mysticism, de-traditionalized and freed from the restraints of ecclesiastical and canonical authority, all of which made it attractive to the emerging counterculture.

In the 1950s and 1960s, Buddhist influence morphed and grew, as Buddhism came to be used to lend support to the new field of humanistic psychology and the self-realization movement by providing them with meditation techniques, exercises, and “enlightenment” narratives selectively borrowed from Buddhist original sources. Beginning in the 1970s, the focus shifted to Buddhism’s apparent concurrence with environmentalism, cognitive psychology, and most recently, neuroscience. The simple modern equation of science with truth seems to lend credence to Buddhism when these overlaps can be found—making it more apparently scientific—while our science in turn seems to gain legitimacy because the authority of an ancient wisdom tradition validates it.

The potential problems with these historical efforts at cross-cultural synergy ought to be obvious, yet they remain with us today. The current Dalai Lama has himself encouraged this project to some extent, looking to apply scientific discoveries to Buddhist thought and vice versa. In his 2005 book *The Universe in a Single Atom*, he asserted, “If scientific analysis were conclusively to demonstrate certain claims in Buddhism to be false, then we must accept the findings of science and abandon those claims.” Yet when he was invited the same year to lecture on the “science of meditation” for the Society for Neuroscience, some members protested that this subject was known for “hyperbolic claims, limited research, and compromised scientific rigor.”

Seeing and Believing, Saying and Doing

William James, the great psychologist, once wrote that “we keep unaltered as much of our old knowledge, as many of our old prejudices and beliefs, as we can. . . . it happens relatively seldom that the new fact is added *raw*. More usually it is embedded cooked, as one might say, or stewed down in the sauce of the old.” We must be aware of the dangers of distortion in the assimilation of Buddhism into Western ways, and I cautiously believe that this distortion is not inevitable. But getting at the distinctive flavor of

Buddhism requires a willingness to examine and abandon as far as possible those “old prejudices” of the system it is being integrated into. So the first question we must ask is: do we really understand what Buddhism is?

The term *Buddhism* is a rather late invention of eighteenth-century European Enlightenment thinkers, who sought to nestle religion within the larger fold of comparative sociology and secular history. The relativism and historicism of this perspective all too easily reduces Buddhist thought to cultural, social, and historical factors, not taking seriously its truth claims. Buddhists themselves have only recently adopted the term *Buddhism*; previously, they referred to their spiritual tradition as the *Dharma*, or the *Buddha’s teaching*.

Even when the possibility of its truthfulness is granted, the very notion of *Buddhism* presumes that religion is a philosophical system proceeding from premises based on which all else is the logical consequence, and that the Buddha was one such systematic philosopher. But none of these understandings of religion applied to Buddhism before its encounter with the West. Rather, Buddhism is a cumulative tradition with a different kind of validity than comprehensive Western philosophies. Its adherents follow not *Buddhism*, an encompassing ideology of belief and action, but *Buddha’s way*, a prescription for a way of life and practice. Rather than a philosophical exposition, the Buddha’s teachings were more of an event, a sequence of dialectic responses pragmatically concerned with ending human suffering by liberating the mind from attachments to impermanent things.

The problem of misleading terminology permeates the very language in which Buddhist texts are written and read. To begin to understand Buddhism from the inside out—“through Buddhist eyes,” to borrow a phrase the scholar Richard Robinson used for Hinduism—we must begin with close readings of primary Buddhist sources. But finding idiomatic and dynamic equivalents of these original works in modern English is a daunting task. Moreover, beyond the usual semantic and philosophical difficulties of translation, one must also contend with the fact that the Buddha adhered to a lively, engaged oral tradition, in which over many years he adapted his teachings to the varying intellectual and moral dispositions of his listeners. He saw himself less as a religious figure and more as a healer of suffering—a physician of the mind who varied the remedies according to the diseases to be cured. Thus a translation of Buddhist texts must take account not merely what a text is *saying* but what it is attempting to *do*.

Precisely because Buddhist texts are an echo of oral teaching, they are best understood as a set of exercises intended to produce a certain psychic

effect. The Buddhist scholar Edward Conze argued that these texts would become meaningless if they were not “reintegrated with meditational practice,” as they are “spiritual documents, and the spirit alone can fathom them.” The aim of the teacher, and by extension the text, was more to form than to inform—to stimulate the student to take up a practice of spiritual engagement. Taking account of what a text is asking us to *do* means asking how it is directing us to act and feel, and to live in a certain way.

This affective approach to philosophy applies not only to ancient Buddhist texts, but to classical works more generally, including some ancient Greek philosophy and literature. The French classicist Pierre Hadot, in his book *Philosophy as a Way of Life* (1995), lamented that philosophy as we now regard it, especially as it appears in the university, has been stripped of one of its original purposes: therapeutics. The texts were aimed at forming people and transforming souls. Philosophy as a way of life entailed study, lively dialogue, existential challenge, and spiritual exercises. These exercises sought not only to produce correct logic, right action, and sound theories of physics, but “concerned actually speaking well, thinking well, acting well, being truly conscious of one’s place in the cosmos.” As Arnold I. Davidson puts it in his introduction to Hadot’s book, “Spiritual exercises were *exercises*, because they were practical, required effort and training, and were lived; they were *spiritual* because they involved the entire spirit, one’s whole way of being.”

The Buddhist parallel to philosophy as a way of life is well documented. Its specific methodology consists of moral cultivation, meditative concentration, and the development of insight (in Sanskrit, *śīla*, *samādhi*, and *prajñā*). The *Visuddhimagga* (*Path of Purification*), an early Buddhist manual compiled in the fourth century A.D., describes this method as the Buddha’s “science.” Aspects of this formula appear throughout the Asian religious traditions. Taoism speaks of cultivating the mind (*xin*), regarding it as the repository of perceptions and knowledge, like a divinity that rules the body but requires purity. The Confucian philosopher Mencius (ca. 372–289 B.C.) talks of obtaining an “unmoving mind,” the equanimity resulting from the exercise of refined moral sense. Other examples abound.

Even with these corrections to our understanding of Buddhism, we may still face a problem of fundamental limitations in the very way we perceive reality. Ernst Benz, a noted German scholar of religion, discovered in Japan a Buddhism very different than the one he studied at Marburg. The Buddhists he met face-to-face in the lived context of their tradition held both intellectual and emotional assumptions about historical, philosophical, and theological issues that were radically different from

his own. He tried to study Buddhism experientially, from within itself, but found himself unconsciously slipping back into his inherited ways of thinking. In a 1959 essay, he wrote:

Our scientific-critical thinking, our total experience of life, our emotional and volitional ways of reaction, are strongly shaped by our specific Christian presuppositions and Western ways of thought and life. This is true even as regards the pseudo-forms, and secularized forms of thought and life, which are antithetical to the claims of Christianity. Indeed, we are frequently, in most cases even totally, unconscious of these presuppositions.

Consider, for example, what Edmund Husserl called the “mathematization of nature,” a Western pattern of thought by which we assume that the quantifiable properties of objects and space are more real, or at least more objectively significant, than the messy contents of our everyday experience. The trouble is not simply that we fail to describe certain aspects of our experience, but that our descriptions are part of what shape the experiences themselves. Science is not simply a neutral tool of discovery, but something that also partially constitutes the very reality we purport to observe, particularly insofar as we seek to use science to study the human mind itself. It may be true, as the old phrase goes, that seeing is believing; but believing is also seeing.

Because the study of Buddhism has been largely filtered through the lenses of Western thought, we have yet to grasp more deeply the sophisticated conceptual systems, rich theoretical materials, symbols, psychological exercises, and contemplative techniques contained within the Buddhist sources themselves. And this means that, as the Buddhist translator J. C. Cleary recently put it in an article in the *Harvard Divinity Bulletin*, “there may be basic facts about the human condition and human potential that are mostly unsuspected by our own modern Western civilization, despite its claims to epistemological supremacy and universal scope... there may be a form of direct perception of reality, a perception outside of cultural conditioning, that enables a superior objectivity and efficiency of operation in the everyday human world.”

Different Realities

Buddhism’s central focus is on observing and knowing oneself—the very being that observes and knows. Only by understanding and refining the workings of one’s own mind can one hope to fully understand the external

world. Self-knowledge and self-cultivation are the basis of everything else. Thich Nhat Hanh, a Zen Buddhist monk and peace activist, interpreting an ancient Buddhist text in his book *Cultivating the Mind of Love* (1996), explains that what we see

depends on the way we see. The mind invents countless forms and ideas, and our world is a product of that kind of grasping. The elements—water, fire, earth, and space—and the form in your mind seem to be two different things. But if you look deeply, you see there is no form in your mind unless the elements are there, and there are no elements unless the forms are there. Forms and elements inter-are. One cannot be without the other. . . . A master painter may not know his own mind, but he draws from his own mind. The nature of phenomena in the world is like that. The nature of things (dharmas) is that they are born from our own mind. . . . If we practice, we will understand the way the mind constructs things, and we will touch the Buddha.

In Buddhism, the mind is not simply a name for the brain. It encompasses the body and its organs, including the brain, but also the entire field of cognitive experience, together with the apparent external world of sensory objects, and the almost instinctive habits of feeling and emotion that color this experience. Both through formal study (theory) and existential testing (practice) one observes, investigates, and sorts through the deep underlying structures of consciousness and formative forces at work. This method aims to lay bare the causal nexus of accumulated conditioning, the unexamined impulses of attraction and aversion (*klesha* and *samskara*), that give rise to, shape, and limit what we see, know, and even imagine. To see “through Buddhist eyes” requires a systematic and continuous process of self-reflection, of observing the observer as he observes: noticing when and how he projects, rejects, sets up, constructs, ignores, attaches to, selectively attends to, desires, and fears. The seemingly separate external world gradually reveals itself to be inescapably conditioned by and of a piece with oneself. Our sense of the world—of the self and the other—depends on our position, our interpretations, our intentions, and our desires. What we perceive is, paradoxically, at once both there and not there. Sometimes called quietism, learning by subtraction, or *dhyana*, this system is not to be accepted as a matter of faith, tradition, or authority, but only by practicing and knowing it for oneself.

In this focus on the phenomenal—things that are temporal and spatial, that can be understood by sensation and perception—Buddhism might seem to share much common ground with modern science. But Buddhism

asserts that these phenomena are fundamentally insubstantial; they arise and fade away before our eyes “like dreams, illusions, bubbles, shadows,” in the words of the *Vajra Sutra* (*Diamond Sutra*). Solid as it might seem to us, the world upon closer examination reveals itself to be a transitory bundle of flickering impressions and interpretations given by our mind, which is ever knitting it all together, moment-to-moment, thought-to-thought, into a coherent fabric—much as a series of still frames, when run together at a certain speed, gives the illusion of being real and alive. On the one hand, our experience *is* real; but it is at the same time impermanent (*anicca*), lacking in self (*anatta*), and ultimately unsatisfying (*dukkha*), as every element of it, including our own being, arises, changes, and inexorably slips away. Heraclitus famously observed that no man ever steps into the same river twice; the Buddha might add that, moreover, it would not even be the same man who stepped back into the river.

A more fundamental break between Buddhism and Western science concerns the relation of man to the world and of the knower to the known. Buddhism is based on a notion of non-duality, by which it denies many of these basic distinctions that are essential to Western science. The *Flower Ornament Scripture* (*Avatamsaka Sutra*) says, “awakened ones see no difference between themselves and all worlds (the entire universe).” In this holistic vision of the universe, man and nature are differing forms of a shared substance. The cosmos is continuous and organismic—not created out of nothing, but self-generating, complete, and existing forever. Rather than a permanent, transcendent realm behind all existence, there can be found only an orderly and ceaseless change within and through all existence.

Non-duality does not describe some feel-good sentiment that we are all kin, but rather points to a profound direct experience of reality, in which mind and matter are undivided features along a single plane of consciousness. The observer and the observed are not strictly separate, but rather are interwoven. We do not encounter reality as something ready-made to be discovered, or as an “out there” that someone “in here” senses and beholds. Rather, that which *exists* is being *made* here and now—set up and sustained by objects, sense organs, and consciousness, woven together into a single fabric of experience. The Buddhist texts suggest that this is the only reality we know, or could know, as human beings.

Confront Contradiction

It would be tempting to note some striking parallels between the Buddhist notion of consciousness and recent developments in neuroscience. As

Daniel Dennett famously argued, the “Cartesian theater” model of the mind, by which I am a sort of observer inside my head watching a live representation of events in the outside world, has been refuted by recent developments in science. So too has been the notion that I experience the world through a series of discrete pieces of “sense data” and then separately, without affecting those senses, I perform actions in the world. The research increasingly suggests that something far less demarcated and more subject-centered is at work in consciousness, a process in which sensing, attending to, and acting in the world all affect each other at once, and perhaps can even be considered interrelated aspects of the same activity.

At the same time, the study of perceptual flaws like “change blindness”—the phenomenon in which we do not notice obvious changes in what we are observing, usually because we are focused on something else—has revealed how strongly our senses are affected by our thoughts, and how our interpretations tend to reinforce our existing beliefs. What we see at any given moment is a subtle interaction of expectation, projection, selective attention, and conscious manipulation. This manipulation may be purely mental, or it may be physical: shift your attention and reality shifts; act in the world and the way it feels will change. Our experience of the world is active, not passive. That I *feel* like a “me”—a self-contained mind and body, an atomistic individual walled off from other individuals, insulated from the world out there—is an illusion.

All of this—the interdependence of what we perceive, what we do, and what we are—of course sounds very Buddhist. The teaching of *anatta*, or no-self, holds that the idea of the self, the subject who experiences things through *me* and *mine*, is just a fleeting impression that arises and evaporates. But the tantalizing correspondences between Buddhist thought and the latest science do not necessarily make them a match. Just as the early Western students of Asian thought did, in a quest to reach an easy and elegant reconciliation of faith and reason we too may unwittingly fall prey to a kind of selective perception—noticing and embracing those elements of Buddhism that seem consonant with our current scientific thought and overlooking the rest. Deliberately approaching a foreign system of thought through the lens of a familiar one is more likely to distort our view than to focus it. In Buddhism, this is called “the impediment of what is known.”

Notwithstanding their all too frequent protests to the contrary, religion and science today often appear to have more in common than either would like to admit, particularly when they lapse into self-referential certainty, show mutual disdain, and make exclusive truth claims. But

while some of the aims, methods, and attitudes of Buddhism and modern science may appear similar, at the most fundamental level they are quite different. Properly formed, the spiritually inclined mind doubts the infallibility of the human more than it avows the existence of the divine. Human beings, whatever their ultimate noble potential, are in their more immediate condition frail, unreliable, mortal, and sometimes thoughtless, tragic figures—as Alexander Pope put it, “the glory, jest, and riddle of the world.” A Buddhist meditation teaching goes: “small doubt, small awakening; big doubt, big awakening; no doubt, no awakening.” Fundamentalists of all persuasions, religious and sometimes scientific, share in this: they do not doubt.

Buddhism’s real contribution to the debates over religion and science might not lie in its affirmation of the scientific method, nor in its happy correspondence with scientific discoveries in any particular field, nor in its serving as a rainbow bridge to reunite faith and reason. By its own self-definition, the Dharma is merely a raft, an expedient device for crossing over a difficult stretch of water. As the famous parable goes, once one reaches the other shore, the raft is useless and should be discarded, not carried around on one’s back. Rather than seeing itself as an end, and rather than attaching to any absolute positions, Buddhism is meant eventually to dismantle itself. So we might better advance the discussion not by highlighting where Buddhism and science see eye-to-eye, but precisely where they do not, perhaps forcing each to confront its own contradictions and shortcomings.

Despite our persistent confidence in our powers of reason and discernment, we have only begun to understand ourselves. Human consciousness remains the most uncharted of all our scientific domains. A third of our life is spent in sleep, yet we still do not know everything about why we sleep or why we dream. The Buddhist teaching on consciousness proffers a view of human nature as neither innately good nor evil, but capable of either, and sometimes both at once. Once dismissed as nihilistic, socially apathetic, godless and atheistic, Buddhist teachings offer some grounds for embracing our spiritual capacity, albeit closer to earth than previously imagined. The human may be all we have; from the Buddhist perspective it is all we need. The biggest challenge facing us in the coming era may not be gaining mastery over the natural or the heavenly worlds, but over ourselves.