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Mind and Life, Religion and Science: His Holiness the Dalai Lama and the Buddhism-Christianity-Science Trialogue

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In this essay, I explore what happens to the Buddhist-Christian dialogue when another party is introduced into the conversation, in this case, the sciences. My question concerns how the interface between religion and science is related to the Buddhist-Christian encounter and vice versa. I take up this question in four steps, correlating with the four parts of this essay. First, I sketch a brief overview of the Buddhism-science encounter, and then turn my attention more specifically to the recent exchanges in the Mind and Life dialogues involving Western scientists and philosophers and Tibetan Buddhist practitioners, including His Holiness the Dalai Lama. Then, in our lengthiest discussion, I focus on three of the most recent books related to the Mind and Life series in order to flesh out some of the details of how Tibetan Buddhists in general and His Holiness more specifically are interacting with the sciences. Finally, I return to the larger implications that the Buddhism-science conversation has not only for the Buddhist-Christian dialogue but also potentially for the religion-science encounter.

The goal of this essay is to identify the promise and the challenges involved for Buddhists and Christians when the sciences are added into the equation. I am led by a threefold hypothesis. First, the religion side of the “religion and science” dialogue needs to be further specified. Whereas it used to be the case that “religion and science” meant “Christianity and science,” no longer can or should this be assumed. Rather, there is an emerging recognition that distinctive shifts occur in the religion and science discussion when Buddhism is factored into the conversation. Second, the interreligious dialogue in general can itself benefit from engaging a third party, in this case, the natural sciences. More specifically, I am convinced that the Buddhist-Christian dialogue has much to gain when the various scientific disciplines are allowed to inform the discussion. To be sure, there will be distinctive challenges that will present themselves, not the least of which are the methodological complexities regarding the interface between religion and science added to the already complicated methodological issues that perennially beset the interreligious encounter. However it is precisely the emergent comparisons and contrasts in dialogical approaches that

may contribute to pushing the discussion forward. Finally, if it is the case that religion does indeed have something to contribute to its dialogue with the sciences, so much more is it the case that science may benefit not only from the separate insights of two religious traditions, but also from the cross-fertilization that occurs in the interreligious dialogue.

Two caveats before proceeding with the essay. First, I speak first and foremost as a Christian theologian with academic training in the study of religion, rather than in Buddhist traditions in particular. While my Christian perspectives will inevitably color my understanding of Buddhism, I believe it is possible in this case, given the hypotheses outlined above, that such “biases” can be profitably harnessed to explore what happens when the Buddhist-Christian dialogue is enlarged to become a triologue between Buddhism, Christianity, and the sciences. In fact, I am convinced that Christian theology for the twenty-first century needs to dialogue both with other faiths and with the sciences, and this essay is an attempt to bring these essential dialogues together.¹

Second, I approach the following review essay with a certain degree of fear and trembling given that in a very real sense my primary dialogue partners are Tibetan Buddhist adepts as well as His Holiness the Dalai Lama. I do not in any way intend to be presumptuous about claiming to be able to critically interact with his knowledge of Buddhism or the sciences. On the contrary, I am a mere novice and amateur in these fields of inquiry compared to his lifelong study and practice of the Buddhist tradition, and his decades-long engagement with the sciences. Yet I find encouragement from his own openness to interacting with the Christian tradition and from his willing to learn from Christians and the Christian faith.² Further, while I began this project with a focus on the Mind and Life dialogues, I soon came to see that this was an invitation to interact more specifically with and learn from Tibetan Buddhist traditions in general, and, because of the centrality of His Holiness to the entire project, from the Dalai Lama himself. Hence my critical questions are designed less to interrogate Buddhist perspectives than they are to open up new lines of investigation for Christian theology. Of course, if in the process Buddhists are also led to new insights, this would be an added benefit to the following reflections.

THE BUDDHISM AND SCIENCE ENCOUNTER: A VERY BRIEF HISTORY

The question of Buddhism and its relationship to modern science can be understood in part against the backdrop of the occidental “discovery of” and fascination with the “exotic” East in the nineteenth century.³ At the same time that Max Müller and others were beginning to translate Buddhist texts into English (in the Sacred Books of the East series), members of the Theosophical Society were traveling East to explore its wisdom. Insofar as the West itself was wrestling then with what it meant to be both religious and scientific, it was inevitable that similar questions were asked of the Eastern religious and philosophical traditions. At the 1893 Parliament of Religions of the World’s Fair in Chicago, Shaku Soyen spoke about the rationality of the “law of cause and effect, as taught by the Buddha,” and Anagarika Dharmapala waxed

eloquent about Buddhism's "sublime psychology" and its compatibility with evolutionary theory.⁴

Shortly thereafter, one of the first books was published arguing not only for the compatibility of Buddhism to science, but for the former's superiority.⁵ Two main theses were presented. First, Western "science" is not as different from (Christian/theistic) faith insofar as it has emerged in the West both as an apologetic strategy in the hands of persons of faith and as having its own "faith" presuppositions; as such, science (understood by the author as "Western science") has served to fill in the gaps of knowledge in faith's striving to know the divine and the realm of the transcendent. Second, and by way of contrast to the first thesis, it is Buddhism alone that provides satisfactory assurance, not by "the creation of any new knowledge [science] *but by bringing to an end a beginningless ignorance.*"⁶ As such, Buddhism is the true "science" that provides the most satisfactory worldview for our engaging and experiencing reality. The author then proceeds in the attempt to demonstrate the superiority of Buddhism (the Buddha's dharma and teachings) to the sciences of his time—for example, physics, physiology, biology, cosmology, and epistemology/rationality. In some respects, these early apologetical encounters with science did not consider how their easy division between "true" Buddhism and popular Buddhism was itself the result of the Buddhist encounter with modernity.

Similar efforts at Buddhist apologetics vis-à-vis the claims of science have continued. The rhetoric of these efforts expands on the argument that Buddhism is the true science in large part not only because it provides for a rigorous empirical method, but also because, with its therapeutic and existential dimensions, it is more inclusive than science.⁷ Now of course there has always been resistance put up against this marriage of Buddhism and science, especially insofar as Buddhism is understood primarily as either a religious and existential philosophy or worldview.⁸ Yet even in cases like this, what comes to the forefront is the dimension of Buddhism that includes an extensively developed psychology or method of cultivating the mind, thus leading in some ways back toward convergence via this route. Against this background, it is understandable that the need to legitimate Buddhism in a colonialistic world dominated by technological (read: scientific) progress led some Buddhist intellectuals to apologetic strategies that engaged with rather than discounted the sciences.⁹

Thus, the twentieth century has seen a spectrum of claims regarding Buddhism not only as superior to science, but also as at least compatible and in harmony with science. In the latter cases, advocates have also urged, in light of the threats of technological advance that were beginning to be realized, that wisdom is needed to handle the deliverances of science and that such wisdom is available in the Eastern traditions. So Buddhist mysticism—specifically the kind productive of wisdom, *not* of the superstitious kind—was important to guide the future progress of science as a whole.¹⁰

But Buddhism's contribution was not limited, of course, to its wisdom. There were also many who were convinced that the overturning of classical physics and the dawn of quantum mechanics provided evidence for the truth of Buddhist claims concerning ultimate reality through the ages. Those in this camp thought about Bud-

dhism and science not in terms of superiority but in terms of each being complementary or parallel to the other. However, they did not doubt that the central ideas of the Buddhist tradition could contribute to a deeper understanding of the new physics, especially in terms of providing reliable models for imaging, conceptualizing, and articulating the realities engaged in the microworld. Buddhism was, in this case, understood to be at least *parallel* to modern science, both in terms of its methods and approaches to the natural world and in terms of the content of knowledge delivered. And this was especially the case with explorations in philosophy of mind and quantum physics.¹¹ As one Buddhist writer put it, the ancient Buddhist “insistence on knowledge as the key for salvation suggests an anticipation of the information age.”¹² Not surprisingly, then, this genre of literature has inevitably featured genuine exuberance about the possibilities of a synthesis between Buddhism and science, in part in order to establish the credentials of Buddhism in the modern world, but also in part in order to salvage and redeem the scientific enterprise for those with religious and spiritual commitments rooted in the traditions of the East.

It is against this general background that we need to understand the emergence and development of the Mind and Life dialogues as documented in their published volumes.

THE MIND AND LIFE PROJECT: AN OVERVIEW OF THE DIALOGUES AND INITIAL VOLUMES

The Mind and Life Institute (see <http://www.mindandlife.org>) was established in the fall of 1985 under the joint leadership of R. Adam Engle, a North American attorney and businessman who became attracted to Buddhism after spending his first sabbatical in Tibet and the Himalayas, and Francisco J. Varela, a Buddhist practitioner and recognized biologist and cognitive neuroscientist.¹³ At the time they met, each was working independently to organize a series of cross-cultural dialogues between the His Holiness the Dalai Lama, Tibetan Buddhist practitioners-scholars/scientists, and scientists and philosophers from the West. The first meeting was held in the fall of 1987, and these have continued regularly since.

The Mind and Life dialogues follow a typical format spread out over the course of a few days. Usually formal scientific presentations are given in the mornings, in part to ensure that His Holiness would be informed of the consensus and unresolved debates in particular disciplines. This would be followed by open discussion and interaction between participants, during which the morning paper presenter would be free to then enter his or her own personal views where they differed from the scientific mainstream.¹⁴ Two interpreters—a Tibetan, usually Thupten Jinpa, who has been the personal translator for His Holiness since 1985, and a Western scholar, B. Alan Wallace, with familiarity and training in the sciences and Buddhist traditions¹⁵—help to facilitate the discussions and prevent miscommunications and misunderstandings. Each of the meetings have been audiotaped or videotaped for archival and transcription purposes.

Over the last twenty years, fifteen dialogues have been held, mostly private (with-

out press coverage), with the latest, “Mindfulness, Compassion, and the Treatment of Depression,” at Emory University in October 2007 (for a list of all dialogues and their topics, see the appendix to this article). Publication of these dialogues has proceeded at a slower and irregular pace, in part because they have involved different editorial teams—usually related to the leading organizers of each meeting—as well as different publishers. Nine volumes have appeared to date. In the remainder of this section, I very briefly summarize seven, before devoting more space to interacting with two volumes in the next section.

Mind and Life I (October 1987, Dharamsala, India, the home of His Holiness) and Mind and Life II (October 1989, Newport, California) were focused on the science of consciousness, featuring chapters on the cognitive neurosciences, experimental neuropsychology, philosophy of mind, artificial intelligence, evolutionary biology, neurobiology, psychiatry, memory, mental health and illness, and psychopharmacology.¹⁶ While the first meeting was an initial exploration in which the dialogue partners explored the contours of the discussion, including specific attention focused on methodological questions related to scientific research and to the encounter between science and Buddhism in general and the Tibetan Buddhist tradition in particular,¹⁷ it was nevertheless a success in identifying the possibilities and challenges for the Buddhism-science conversation. If Mind and Life I attempted to locate consciousness within the broader bio-evolutionary sciences, Mind and Life II focused more specifically on exploring the science of consciousness itself.

One specific area of debate already discernible in these first two Mind and Life meetings concerned the relationship of consciousness to the brain. Clearly, the Buddhists did not uncritically accept the dominant neuroscientific reduction of mind to brain. However, His Holiness’s explanations of the Tibetan Buddhist view also revealed nuances. In Mind and Life I His Holiness seemed to indicate consciousness to be dependent on objects cognized: “a subjective agent . . . has the potential to arise correspondent to an object that appears to it. Through the force of the stimulus of the object, consciousness has the ability to arise in an aspect corresponding to the object.”¹⁸ However, in Mind and Life II a more genuine interdependence between consciousness and its object is affirmed: “consciousness is understood as a multifaceted matrix of events. Some of them are utterly dependent on the brain, and, at the other end of the spectrum, some of them are completely independent of the brain. There is no one thing that is the mind or soul.”¹⁹ Herein we also see the fundamental Tibetan Buddhist understanding of consciousness at multiple levels: what the Buddhists called “gross consciousness” is now, in the modern context of dialogue with the cognitive sciences, brain- and body-dependent, while the more subtle levels of consciousness provide a metaphysics or ontology for karmic reincarnation without positing a personal mind or soul that is carried over from life to life.²⁰ As we shall see, this ontology of consciousness repeatedly surfaces as a contested issue in the ensuing dialogues.

The third Mind and Life meeting (November 1990, Dharamsala) carried the discussion forward on mindfulness, emotions, and health, with specific explorations of the interconnectedness between ethics, the virtues, emotions, and health; of the

interrelationship between the emotions, the brain, and the body; and of the correlations between mindfulness and behavior as medicinal factors.²¹ Central to these interactions were scientific and Tibetan Buddhist clarifications regarding notions such as self-acceptance, self-esteem, and the cultivation of loving-kindness toward oneself, all of which were agreed on as being essential to emotional health. Contrary to the stereotypical Western view that the Buddhist idea of emptiness included the rejection of “selfhood” or ego, there is a distinctively Bodhisattvic self-identity that allows for self-sacrifice benefiting other sentient beings.²² Also reintroduced and further developed was the Tibetan Buddhist notion of various (gross and subtle) levels of consciousness, much of which has been previously ignored by Western science, with the most fascinating comparisons and contrasts being drawn with regard to the how both traditions understand consciousness and bodily energies in relationship to the process of dying.

Not unexpectedly, then, *Mind and Life IV* (October 1992, Dharamsala) was devoted to an inquiry of the consciousness of sleeping, dreaming, and dying.²³ Discussion revolved around the role of the brain in sleep, dreams and the unconscious, lucid dreaming, the various levels of consciousness related to dream yoga, bodily death, and near-death experiences. As expected, further discussion emerged regarding the “subtleties of consciousness.” In contrast to the Western scientific resistance to a dualistic (Cartesian) view of mind and body, His Holiness explained that the body and brain provide the “cooperative conditions” rather than act as “substantial causes” for mental processes, which includes the various levels of gross and subtle consciousness.²⁴ However, epistemic access to the “subtle levels of mind” is available only through the kind of introspection practiced by accomplished contemplatives, and then communicable only through analogical rather than clear propositional discourse.

Building on *Mind and Life III*, the fifth dialogue (in April of 1995 at Dharamsala) further investigated the science of altruism.²⁵ Topics discussed included the nature of compassion in relation to the cognitive neurosciences, evolutionary biological views on kindness and cruelty, the sciences of empathy and responsibility, and altruism in psychosocial perspective. This volume includes a succinct statement by His Holiness on his view of human nature: that it is fundamentally good, compassionate, and altruistic; that it strives for happiness, truthfulness, and the beautiful; that it is needy of love and affection; and that humans are interdependent and interrelational creations.²⁶

The volume produced by *Mind and Life VIII* (March 2000, Dharamsala) carried the discussions of *Mind and Life III* and *Mind and Life V* forward, except that it looked instead at the theme of destructive emotions.²⁷ More specifically, it featured Buddhist and scientific examinations of mental afflictions and emotional imbalance and discussed how such could be transformed neuroscientifically, socioculturally, and through the practices of meditation so as to shape kinder, more empathetic, and compassionate lives. The core Buddhist soteriological concerns as identified in the Four Noble Truths were probably most palpable in the discussions and ensuing volume regarding identifying the cause and prescribing the course of transforming destruc-

tive emotions, although this central Buddhist motif also has permeated the entire series to date.²⁸

The most recent installment derives from *Mind and Life XII* (October 2004, Dharamsala), and reveals how far the dialogue has come over the years.²⁹ Although discussion has focused on the sciences of consciousness from the beginning, the technology and experimental research has continued to evolve—in part owing to the work of cognitive and neuroscientists involved in the dialogues—so as to include the specific topic of neuroplasticity as related to learning and brain transformation. Questions raised in previous dialogues such as the possibility and capability of transforming negative emotions into compassion, love, and happiness are now being experimentally investigated, and the initial findings seem to clearly support the age-old Buddhist conviction that the mind can, over the entire lifetime, exert causal powers over the body and even the patterns of the brain and its functions. Rather than being born with a set supply of brain neurons for life as had been assumed by a previous generation of researchers, sustained meditative practice confirms the capacity of the brain to add neurons to its arsenal (neurogenesis), which in turn aids in memory and other mental functions. The brain's plasticity is also confirmed in its capacity to reorganize itself to make up for the deprivation of any particular sense (e.g., sight or hearing). Last but not least, there now appears to be evidence that human creatures are neurologically “wired” for compassion—as long affirmed by the Tibetan Buddhist tradition—and that it is certainly possible, through the appropriate meditative techniques, to be transformed into being more and more compassionate beings. In short, rather than being deterministic properties of the brain, the mind—and the mental practices that constitute them—is not only able to act causally on the brain, but is also capable of transforming the brain itself.³⁰

There are a number of unique features to this series of dialogues and their related volumes. In the first place, His Holiness is a vibrant dialogue partner throughout, although by no means the dominant voice. In fact, with two exceptions, there are no chapters authored by His Holiness,³¹ which means that those interested in his contributions to the conversation will need to follow the references to the Dalai Lama identified in the indexes.³² This reveals His Holiness's dialogical posture as well as his willingness to listen to and learn from Western scientists (and philosophers) about matters which have been treated at great depth over the centuries by Tibetan Buddhist adepts, scholars, and philosophers.³³ In some instances, His Holiness speaks authoritatively and at some length in order to clarify issues under discussion from a Buddhist point of view. In other cases there are extended interactions in which His Holiness persists in asking for clarification from his scientific interlocutors, all the while probing to discern if mainstream science is compatible with or challenges Tibetan Buddhist understandings. On several specific issues, His Holiness and the Tibetan monks would “push back” against the dominant scientific fronts—for example, against materialistic theories of mind or consciousness, or reductionist or epiphenomenalist explanations of the emotions, or a bifurcated “two worlds” view of science and ethics. All this means that His Holiness's comments throughout are part of a wider conversation, informed not only by Buddhist monks and Buddhist prac-

titioners (from East and West) who are also scientifically trained, but also by Western scientists and their work.

Perhaps following the lead of His Holiness, then, it is remarkable to observe the genuinely dialogical shape of these interactions. There are minimal signs of defensiveness detectable among the Buddhist parties to the discussions and little, if any, sense of arrogance among the Western participants. To be sure, the Western scientists and philosophers have been carefully chosen for these dialogues from among those either eager to learn from or open to engaging Buddhist perspectives on common topics. One wonders to what degree the editorial processes behind each volume have smoothed out the difficult moments that in all probability were present in the actual dialogues, and if I were to have written a critical review of these volumes, the accent will have been placed instead on the fundamental differences that seem to have been downplayed in the dialogues. Yet a careful reading of these dialogues will enable the reader to identify the various points of contention that emerged over the course of the conversation, including both Western scientific resistance to Tibetan Buddhist interpretations and Tibetan Buddhist challenges to Western assumptions. In almost all instances, both sides recognize the limitations regarding attaining absolute knowledge of the disputed issues, acknowledge more research is needed, and grant that there is space for other perspectives and interpretations. Nevertheless, readers of these books will encounter solid mainstream scientific assessments and rich analysis and response from Buddhist perspectives. Those interested in the sciences will find point after point confirmed, extended, or challenged by Buddhist insights, while those interested in the Buddhist side of the conversation will also note repeated acknowledgments by scientists for further research even as they will be motivated to self-critical assessment in light of the scientific data.

THE DALAI LAMA AND THE CONTEMPLATIVE AND PHYSICAL SCIENCES:
RECENT MIND AND LIFE VOLUMES AND BACKGROUND

In this part of the essay, I want to deepen our interaction with the Buddhism-science dialogue by engaging more in depth with two recent books produced by the Mind and Life dialogues, and with an independently produced set of autobiographical reflections by His Holiness on the sciences. Along the way, I will provide some justification for focusing on these particular volumes at greater length. My primary objective in this section, however, is to gain further insight into the Dalai Lama's views about science and how that relates to his life as a Buddhist and as a monk.

I begin with the volume recording the interactions of Mind and Life XI, "Investigating the Mind."³⁴ This was the first meeting that was open to the press and the public (over 1,200 attendees), and involved limited interaction between the dialogue team and the wider audience. Held at the Massachusetts Institute of Technology in September 2003, the public nature of the dialogue meant that the presentations and discussions were a bit more "staged" than previous encounters. Interactions remained fairly substantive, although less fluid. Reading through this volume, however, the question arises about how dialogues are influenced by their organizational structure.

In this case, the presence of the general public may have implicitly shaped the direction of the conversation. In reflecting on the dialogue retrospectively, Arthur Zajonc, a physicist at Amherst College, wrote that the Western Buddhists at the meeting “all focused on the empirical and rational aspects of Buddhism and minimized its more esoteric and explicitly spiritual dimensions.”³⁵ I will return to this issue in my concluding comments below.

The discussions at MIT were focused on the following mental processes: attention and cognitive control, imagery and visualization, and the emotions. In many ways, this dialogue both summarizes and extends the results of the previous dialogues in the series, as might similarly be said of *Mind and Life XII* on neuroplasticity. The major point worth registering with regard to these (two) dialogues is that by this time in the history of the series of meetings, Buddhist practitioners were no longer merely “discussion partners” but “research collaborators,” at least at the level of framing experimental designs. When the dialogues first began in the mid 1980s, there were few individuals besides people like Varela who were known to be engaged simultaneously in scientific research and in the Buddhist way of life. Over the course of the dialogues, however, not only were more of such scholar-scientist-practitioners identified, but Buddhist contemplative practice had ceased to be just “talked about” and had become more and more the object and subject of experimental research. What had happened over time was that the Buddhist insistence on the centrality of the role of introspection for the sciences of the mind and of consciousness was gradually heeded. Whereas in previous generations introspection had been considered and rejected for fear of compromising the objectivity of the science of psychology, the dialogues had given further momentum to what was being increasingly recognized in the wider scientific community: that strict objectivity is an illusion and that there is an element of subjectivity related to all scientific experimentation that needs to be controlled but can nevertheless also be gainfully deployed for the purposeful advance of knowledge and the sciences.

It is precisely the role of introspection that had been cultivated for centuries by Buddhist practitioners and bequeathed to the present generation of monks and nuns that has proven to be invaluable in the contemporary cognitive, neurobiological, neurophysiological, and psychological sciences. Not only were Buddhist adepts skilled in controlling their attention, focusing their mental imagery, and directing their emotions, but they were now willing—with encouragement from His Holiness himself—to participate in neuroscientific research on their practices. Hence it was now possible to document, for example, that loving-kindness meditation activates those portions of the brain that are directed relationally toward other sentient beings. Even better, Buddhists meditators have been collaborating with neuroscientists to devise better neurological and psychological research on their practices. Because of the complexities involved in introspective techniques, research is progressing slowly but definitely steadily as work is being done in the sciences of the mind.

One final point should be noted before moving on: the MIT discussions were readily received by the wider public perhaps because, in my estimation, the Buddhist contingent, including His Holiness, repeatedly emphasized in their presentations

and discussion periods the connections between meditative practices and ethics, the cultivation of the virtues, and the goal of seeking to decrease suffering and increase happiness in the world.³⁶ This “holistic spirituality” resonated with the public (as documented at various points in the book by the applause of certain statements regarding this interrelationship) perhaps in part because the event drew people who were already attracted to Buddhist meditation to begin with, but perhaps also in part because this link meant that the sciences of contemplation and of the mind could not remain completely disengaged from these wider affective, moral, and ethical issues. From a religious point of view, it is noteworthy that the soteriological dimension of Buddhist practice here registers its import: even in a dialogue with the sciences, what is of supreme importance to a religious tradition—its soteriological aims—may be strategically bracketed here and there, but cannot be kept out of the discussion in the long run.

I now turn to a brief discussion of Mind and Life VI, which was held in Dharamsala in October 1997, but whose published volume did not appear until 2004.³⁷ I have reserved comment on this meeting until now because, of the published dialogues, it is uniquely focused on the “harder” natural sciences, especially physics.³⁸ As has by now been clearly evident, the distinctive strengths of the Tibetan Buddhist tradition derive from its contemplative traditions, and so it is unsurprising that the vast majority of the dialogues have focused at the intersection of the cognitive and neurosciences, the philosophy and psychology of mind, and contemplative spirituality. Mind and Life VI, however, turned to explore how the paradoxes of quantum physics (e.g., wave-particle duality, nonlocality and quantum entanglement, the measurement problem), the nature of time and space-time relativity, and the cosmological and astrophysical sciences related to especially Tibetan Buddhist philosophy, logic, and cosmology. Hence the discussions for this meeting were by far the most wide-ranging: from physics to metaphysics, ontology, philosophy, epistemology, and logic.

I want to focus my comments on the question of cosmic origins, partly because that has dominated the Christianity-science dialogue, but also partly because this topic illuminates the seamlessness of the Buddhist worldview. The team of physicists involved in the dialogue presented the *status quaestiones* of their fields with regard to various debates in current cosmology, including the notion of a finite but unbounded universe. There has also been increasing discussion of the idea that the moment of creation (the Big Bang) was a centerless explosion that occurred everywhere at once but yet with infinite velocity (i.e., faster than the speed of light, contrary to the universal constraints of the postinflationary period of the earliest moments in the history of the cosmos), resulting in a temporally finite but perhaps spatially infinite world without a boundary or edge. Others have also suggested the paradox that the expansion of the universe is the same everywhere but yet from various frames of reference, the galaxies closest to the observer are receding at a slower pace while those farthest away are moving away most rapidly. Mind and Life VI provided the occasion for the entire group of Western scientists (and philosophers) and Tibetan Buddhists to wrestle with the implications of these theoretical postulations with regard to fundamental philosophical questions such as causality, the nature of space and time, and

the origins and ultimate nature of the world. For example, is either space or time or spacetime absolute? Some physicists would say yes to some or all of the above; others would say no.³⁹ This in turn raises the Dalai Lama's question of how the notion of "absolute" functions in discussing this set of questions.

At various points in the conversation, His Holiness clarified some of the basic features of Buddhist cosmology. Three in particular are of comparative interest. First, His Holiness was inclined to say that the universe is infinite and without absolute beginning, since to say otherwise requires an uncaused first moment, a notion contrary to Buddhist intuitions. Alternatively, all things arise interdependently from "space particles" (which were catalytically energized by karmic forces so as to produce the Big Bang and the subsequent evolutionary history of the world), which is postulated especially in the Kalachakra (literally, "wheel of time") school of Tibetan Buddhism, the most complex set of Buddhist teachings presented in the Dalai Lama's tradition. Finally, the boundarylessness of the world implies either what scientists have called an oscillating universe (an innumerable sequence of Big Bangs followed by universal collapses) or that our "universe" with its beginning at the Big Bang is part of an infinite "multiverse" (as implied by the "many universes" theory related to the measurement problem suggested by some quantum cosmologists) with an incalculable number of worlds coming and going, albeit generally physically disconnected from one another.⁴⁰

These are clearly heady and speculative subjects, in some ways a stark contrast with Shakyamuni Buddha's reply, when asked about the origins of the world by inquiring disciples, regarding the uselessness of such matters for the purposes of curing human suffering. Yet in the spirit of the Buddha, *Mind and Life VI* closed with a clear affirmation of knowledge, even the knowledge afforded by the natural sciences, as a means to reduce the suffering of sentient beings.

His Holiness has recently published autobiographical work reflecting on his dialogues with *Mind and Life* and other scientists over the last three decades.⁴¹ As the spiritual and temporal leader of the Tibetan people with the established government-in-exile in Dharamsala in North India, His Holiness has been tirelessly working for peace and for the freedom of Tibet from Chinese rule since its takeover by the communists in the 1950s.⁴² Ironically, the invasion of Tibet, the persecution of Tibetans, and then the subsequent Tibetan diaspora has resulted in the flourishing of Tibetan culture and its various Buddhist traditions around the world. The attempted suppression of Tibetan religious culture by the communists and the imposition of the materialistic Marxism and Maoism on the Tibetan consciousness have generated an exilic Tibetan resistance as well as the intentional effort to preserve and promulgate Tibetan spirituality, piety, and intellectual culture.⁴³ The life of the Dalai Lama can be understood as representative of the revitalization and internationalization of the Tibetan Buddhist tradition. Born Lhamo Thondup on July 6, 1935, recognized in early childhood as the sixteenth reincarnation of the Dalai Lama, and then enthroned and renamed at the age of six, in its short form, Bstan-'dzin-rgya-mtsho or Tenzin Gyatso (the latter meaning "ocean" in Tibetan),⁴⁴ His Holiness has since his teenage years spearheaded the Tibetan Buddhist opposition against not only the Chinese

government but also the communist ideology.⁴⁵ Especially since receiving the Nobel Peace Prize in 1989, he is now a worldwide figure, recognized spiritual leader, and accomplished author.⁴⁶

His Holiness's science autobiography begins by reflecting on his own journey with science, beginning at a young age when he encountered mechanical items that he proceeded to take apart and reassemble. Over the course of time, and especially after going into exile in India in 1959 and then traveling the world working for the freedom of Tibet, he became convinced that there was much that Tibetans could learn from science in order for Tibet to take its place in the modern world, even as there were many specific teachings of the Tibetan Buddhist tradition that needed to be revised in light of modern scientific discoveries. At the same time, his widespread travels also persuaded him that Tibetan Buddhist practices, spirituality, and ethics, which were always connected, could also combine with science to transform the world and make it a better and more hospitable place for all people.⁴⁷ Hence there is a complementarity between Buddhism and science, each with established traditions, perspectives, and goals, but yet also revisable and focused on better understanding the world.

This complementarity is seen throughout His Holiness's reflections on his life with science. He discusses and presents, in successive chapters, Tibetan Buddhist perspectives on quantum physics, the Big Bang, the evolution of life, and the nature and science of consciousness. The concluding portions highlight the connections between ethics and the new genetics and the interrelationship of science and spirituality for human life in the twenty-first century. Many of the topics and themes from the *Mind and Life* dialogues reappear in this volume (e.g., on karma as the driving engine of the evolutionary history of the world, the reality of downward causation from mind to brain, the notion of brain plasticity) although in some cases, His Holiness indicates how his own mind has changed either as a result of those dialogues or since then, based on further inquiry. One example of the latter is his connecting the Kalachakra theory of space particles with the emerging view of the Big Bang as deriving from the thermodynamic instabilities that physicists have recently termed a quantum vacuum.⁴⁸ Yet throughout the book, rather than only at the end, there is a conscious attempt to show how science and Buddhist spirituality are connected (as indicated by the book's subtitle). More specifically, both science and Buddhism are focused on the formation of a better world, one in which there is less and less suffering and in which there is more happiness present as a result of our being here.

I note a tension throughout the *Mind and Life* dialogues that reappears in this book: that between science as providing a universal perspective and Tibetan Buddhism as providing a particular (religious or philosophical) vision. His Holiness has repeatedly insisted that the claims of the Tibetan Buddhist tradition, if true, are empirically and experientially confirmable quite apart from what Buddhism says. This is in part what has motivated his quest, evident throughout these dialogues, for a universal and secular ethics, one that is not tied down to any one religious or philosophical system. In his view, it is precisely science as a cross-cultural enterprise that is in the best position to identify an ethical posture based on nature itself. Interestingly, while many scientists also think that their's is the quest for a universally true "viewpoint" (or that

the domain of science is distinct from that of ethics—a minority position defended by a smaller number of Mind and Life scientists), some of them challenged the idea of a naturalistic ethics shorn of religious or philosophical presuppositions.⁴⁹ What is increasingly realized is both that science itself operates according to assumptions derived from elsewhere and that the fact-value dichotomy is problematic. What is not agreed upon is the precise nature of the relationship between religious and/or philosophical (in this case, Tibetan Buddhist) traditions and science. On the one hand, the Dalai Lama has no interest in promoting Buddhism in any kind of classically understood missionary sense (hence, note that the book is titled *Science and Spirituality*, not *Science and Buddhism*);⁵⁰ on the other hand, as a practicing Buddhist, there are certain motivating apologetic issues such that scientific legitimation for Buddhist beliefs and practices is embraced whenever such is discerned as present.

I suggest that this is unavoidable in cases when worldviews (or religious or philosophical systems) initially come into contact with science: there is an instinctive reaction to find confirmation from science for apologetic purposes, even while there is the recognition of the parochial and sectarian nature of one's religious or philosophical tradition. It is only natural that the recent emergence of Tibetan Buddhism on the world stage has brought with it these evident tensions. As a Christian theologian interested in the dialogue between religion and science, however, I am pleased to find in His Holiness another viewpoint that links the work of science more closely with ethical considerations. In his case, of course, the ethics of science is understood from the particularity of his own Buddhist tradition. Yet science cannot do without the ethical commitments of the wisdom traditions, and there is much that the Mind and Life dialogues can contribute to the science and religion conversation on this point.

MIND AND LIFE, BUDDHISM, AND SCIENCE: CHRISTIAN REFLECTIONS

I want to return to the issue motivating this lengthy review essay: the role of science in the Buddhist-Christian dialogue. In this concluding section, I make some methodological comments and then propose possible topics for further exploration.

The Mind and Life dialogues have provided one model of the religion and science conversation.⁵¹ However, when set within the framework of the interreligious dialogue in general and the Buddhist-Christian dialogue more specifically, there are both opportunities and challenges. From a Christian point of view, allow me to elaborate on two issues. First, bringing together the Buddhism-science and the Buddhist-Christian dialogues is not simply like adding a new member into an existing conversation. Rather, it is in some ways like adding two new members so that the directions of conversations potentially multiply exponentially: the Buddhist now talks not only with the Christian but also with his fellow Buddhist involved in the science discussion and with the scientist, the scientist now talks not only with the Buddhist but also with a Christian and the Christian's Buddhist dialogue partner, and so on. In other words, the complexity of the discussion increases considerably, and with it the possibility of misunderstanding.

Second, complexity is always the precondition for transformation for those who

are willing to persevere through the usually steep learning curve. Christians, I submit, can now learn from at least the following three additional lines of inquiry: about science from the Buddhism-science dialogue, about Buddhism from the Buddhism-science dialogue, and about the methodology of interdisciplinary conversation from the Buddhism-science dialogue, and how that compares and contrasts with the methodological complexities of interreligious dialogue. All of the challenges involved in the religion-and-science dialogue and the interreligious dialogue considered separately can now be mutually informing, in part because participants will now be speaking simultaneously as both “outsiders” and as “insiders,” albeit with respect to the different hats they are wearing in the Buddhism-Christianity-science triologue. In short, Christians may find resources from the Buddhism-science dialogue to enable a further and deeper comprehension of Buddhism, and to facilitate the transformation of their self-understanding when seen through the lenses with which Buddhists engage the sciences.

Having presented these methodological challenges and opportunities, I now present some concrete proposals for the Buddhism-Christianity-science triologue. Let me suggest three sets of triological conversations. First, given the centrality of the science of consciousness in the Mind and Life dialogues and the emerging role that Buddhist adepts and practitioners are playing not only in those discussions but also in the scientific research that is being carried out in those fields, what are the prospects for bringing these Buddhism-and-science perspectives to bear on the monastic interreligious dialogue that has been underway for some time now involving Buddhist and Christian contemplatives? Here, I am referring to the Buddhist-Christian dialogues organized around meditative retreats, usually in monastic settings.⁵² I am not thinking only about the possibility of conducting neuroscientific experiments for comparative religious and theological purposes, but also about how interreligious reflection on the science of consciousness is related to religious practice, to spiritual piety, and to engagement with the world. How might Buddhist emphases on the techniques of introspection compare and contrast with Ignatian self-reflection, Benedictine spirituality, or Taizé practices? How would the divergent goals of Buddhist and Christian contemplation be illuminating? How might scientific perspectives enable further connections or highlight points of tension? Intriguingly, given the Roman Catholic presence at the forefront of the Christian contemplative traditions of the world, a dialogue between the Tibetan Buddhists led by the Dalai Lama and Roman Catholic monks and nuns along with the Holy Father on science and the spiritual quest would surely be mutually enriching conversation that the world would be very interested in.⁵³

A second line of conversation for a Buddhism-Christianity-science triologue might revolve around the quest to further understand human nature. More specifically, Christian interests in exploring the philosophy of mind, mind-brain and mind-body relationships, and the nature of the human spirit would be of interest to those involved in the Buddhism-science dialogue, although perhaps for different reasons.⁵⁴ There are many trajectories included in this arena, so I will mention only three. The

minority of Christian philosophers and theologians who are drawn to more traditional dualistic notions of the mind-brain and mind-body relationship may wish to further explore their position in dialogue with (Tibetan) Buddhist views of the various levels of gross and subtle consciousness.⁵⁵ Alternatively, the majority who are exploring various forms of physicalist, nonreductionist, emergent, and related models of the human person would also be challenged by the gross-subtle consciousness distinction on the one hand, while being encouraged by the dynamic and interdependence ontology of Buddhist traditions on the other.⁵⁶ Last but not least, the inseparable relationship in Tibetan Buddhism between epistemology, philosophy of mind, psychology of emotions, and ethics may prove beneficial for Christians involved in the project of a naturalistic and yet theistic ethics.⁵⁷ In each of these areas, there are clearly bridges constructed by the Mind and Life dialogues for Christian interlocutors to engage.

Finally, given my recent work in theology and disability in general and intellectual disability in particular,⁵⁸ I cannot but note the implications for this topic of the Buddhist views regarding the interrelatedness of the sciences of mind and the task of alleviating suffering in the world. While the Mind and Life dialogues have focused primarily on dealing with and eliminating mental afflictions (negative emotional mind and bodily states), they have also motivated and guided the recent research on neuroplasticity. The possibility of neurogenesis and the capacity of the brain to transform itself can no doubt inform theories and practices related to people across the spectrum of intellectual disabilities from mild autism on the one side to even severe mental retardation on the other. In this latter domain dealing with people with minimal or perhaps even no recognizable self-consciousness, Buddhist and Christian soteriologies might indeed overlap and perhaps even be mutually informing while both engage the latest discoveries in brain research. At the same time, disability studies perspectives would challenge both religious traditions as well as the scientific and medical establishment to reconsider the individualistic model of suffering that is located in human bodies (or minds) only, and to adopt a more interrelational and social perspective on how suffering is also conventionally defined and then perpetuated by the “able-bodied” (and “able-minded”) through the discriminatory disregard for others who are (physically and) intellectually impaired. In this case, the Buddhism-Christianity-science triad would open up to a Buddhism-Christianity-science-disability “quadralogue”!

I have attempted in these pages to reflect on the possibilities of enriching the Buddhist-Christian dialogue through engaging the religion-and-science conversation. In particular, I have explored the Buddhism-and-science exchange, especially as that has occurred over the last twenty years in the Mind and Life discussions. In the process, His Holiness the Dalai Lama has proven himself as an “engaged Buddhist” with regard to the Buddhism-and-science encounter. He has modeled an approach to the sciences that reveals the vulnerability of his own Buddhist perspective on the one hand, but yet at the same time has shown how fundamental Buddhist intuitions have over the course of the dialogue been deepened and transformed, rather than compro-

mised. This has also been the burden borne by Christians entering the realms of both the interreligious and the religion-and-science dialogues. For the pursuit of truth, for the alleviation of the suffering of all sentient beings, and for the transformation of the world, may the Buddhism-Christianity-science dialogue proceed.⁵⁹

APPENDIX: MIND AND LIFE MEETINGS

1. Dialogues between Buddhism and the cognitive sciences, Dharamsala, India, October 23–29, 1987.
2. Dialogues between Buddhism and the neurosciences, Newport Beach, California, November 5–6, 1989.
3. Emotions and health, Dharamsala, India, November 5–9, 1990.
4. Sleeping, dreaming, and dying, Dharamsala, India, October 5–9, 1992.
5. Altruism, ethics, and compassion, Dharamsala, India, October 2–6, 1995.
6. The new physics and cosmology, Dharamsala, India, October 27–31, 1997.
7. Epistemological questions in quantum physics and eastern contemplative sciences, Innsbruck, Austria, June 15–22, 1998.
8. Destructive emotions, Dharamsala, India, March 20–24, 2000.
9. Transformations of mind, brain & emotion, Madison, Wisconsin, March 21–22, 2001.
10. The nature of matter, the nature of life, Dharamsala, India, September 30–October 4, 2002.
11. Investigating the mind: Exchanges between Buddhism & biobehavioral science with His Holiness the XIVth Dalai Lama, Cambridge, Massachusetts, September 13–14, 2003.
12. Neuroplasticity: The neuronal substrates of learning and transformation, Dharamsala, India, October 18–22, 2004.
13. The science and clinical applications of meditation, Washington, DC, November 8–10, 2005.
14. A dialogue on *The Universe in a Single Atom*, Dharamsala, India, April 9–13, 2007.

NOTES

1. I argue the importance of these points in my *Spirit-Word-Community: Theological Hermeneutics in Trinitarian Perspective* (Burlington, VT: Ashgate, 2002), 297–305, and *The Spirit Poured Out on All Flesh: Pentecostalism and the Possibility of Global Theology* (Grand Rapids, MI: Baker Academic, 2005), chaps. 6 and 7.

2. See Tenzin Gyatso, *Freedom in Exile: Autobiography of the Dalai Lama* (New York: HarperCollins, 1990), 189–190, 201–202.

3. For an overview of the history of the Buddhism and science encounter, see the two essays in part 1 of B. Alan Wallace, ed., *Buddhism and Science: Breaking New Ground* (New York: Columbia University Press, 2003).

4. Shaku Soyen, “The Law of Cause and Effect, as Taught by Buddha,” and Anagarika Dharmapala, “The World’s Debt to Buddha,” both in Richard Hughes Seager, ed., *The Dawn of Religious Pluralism: Voices from the World’s Parliament of Religion, 1893* (LaSalle, IL: Open Court, 1993), 406–409 and 410–419 respectively. Not surprisingly, of course, Dharmapala’s

connections with the Theosophists were quite strong; see Tessa Bartholomeusz, "Dharmapala at Chicago: Mahayana Buddhist or Sinhala Chauvinist?" in Eric J. Ziolkowski, ed., *A Museum of Faiths: Histories and Legacies of the 1893 World Parliament of Religions*, Classics in Religious Studies 9 (Atlanta: Scholars Press, 1993), 235–250, esp. 237–242.

5. Paul Dahlke, *Buddhism and Science*, trans. Bhikkhu Silâcâra (London: Macmillan, 1913).

6. Dahlke, *Buddhism and Science*, 81; italics orig.

7. K. N. Jayatilleke, Robert F. Spencer, and Wu Shu, *Buddhism and Science: Collected Essays* (Kandy, Ceylon: Buddhist Publication Society, 1958), and various essayists in Buddhadasa P. Kirthisinghe, ed., *Buddhism and Science* (Delhi: Motilal Banarsidass, 1984), make these claims.

8. For example, R. G. de S. Wettimuny, *Buddhism and Its Relation to Religion and Science* (Colombo, Sri Lanka: M. D. Gunasena and Co. Ltd., 1962).

9. A more recent volume in this genre is Mahinda Weerasinghe, *The Origin of Species according to the Buddha* (Colombo, Sri Lanka: Stamford Lake Publication, 2002), which argues that the Pali canon introduces ideas related to "sensory becoming" that anticipate Darwinian theory as well as provide a more comprehensive explanation for evolutionary processes.

10. E.g., R. G. H. Siu, *The Tao of Science: An Essay on Western Knowledge and Eastern Wisdom* (Cambridge, MA: MIT Press, 1957); Hideki Yukawa, *Creativity and Intuition: A Physicist Looks at East and West* (Tokyo: Kodansha, 1973); Richard H. Jones, *Science and Mysticism: A Comparative Study of Western Natural Science, Theravada Buddhism, and Advaita Vedanta* (Lewisburg, PA: Bucknell University Press, and London: Associated University Presses, 1986); and Mansel Davies, *A Scientist Looks at Buddhism* (Sussex, England: Book Guild Ltd., 1990).

11. The literature is now staggering. For a sampling, see Michael Talbot, *Mysticism and the New Physics* (New York: Bantam Books, 1981); Jeremy W. Hayward, *Shifting Worlds, Changing Minds: Where the Sciences and Buddhism Meet* (London: New Science Library, and Boston: Shambhala, 1987); Norman Friedman, *Bridging Science and Spirit: Common Elements in David Bohm's Physics, the Perennial Philosophy and Seth* (1990; reprint, St. Louis: Living Lake Books, 1994); Robin Cooper, *The Evolving Mind: Buddhism, Biology, and Consciousness* (Birmingham, UK: Windhorse Publications, 1996); Paul Barrows, *Beyond the Self: Consciousness, Mysticism and the New Physics* (London: Janus Publishing Company, 1998); R. J. Brissenden, *Zen Buddhism and Modern Physics: Morality and Religion in the New Millennium* (Atlanta: Minerva Press, 1999); Gay Watson, Stephen Batchelor, and Guy Claxton, eds., *The Psychology of Awakening: Buddhism, Science, and Our Day-to-Day Lives* (York Beach, ME: Samuel Weiser, Inc., 2000); and Kathleen H. Dockett, G. Rita Dudley-Grant, and C. Peter Bankart, eds., *Psychology and Buddhism: From Individual to Global Community* (New York: Kluwer Academic/Plenum, 2003).

12. Tsung-I Dow, "Modern Science and the Rediscovery of Buddhism," in Ramakrishna Puligandla and David Lee Miller, eds., *Buddhism and the Emerging World Civilization: Essays in Honor of Nolan Pliny Jacobson* (Carbondale, IL: Southern Illinois University Press, 1996), 113–124; quote from 124.

13. Varela's major publications include two books with Humberto R. Maturana: *Autopoiesis and Cognition: The Realization of Living* (Holland: Dordrecht, and Boston: D. Reidel, 1980), and *The Tree of Knowledge: The Biological Roots of Human Understanding* (Boston: New Science Library, 1987); with Eleanor Rosch and Evan Thompson, *The Embodied Mind: Cognitive Science and Human Experience* (Cambridge, MA: MIT Press, 1991); with Natalie Depraz and Pierre Vermersch, *A Pragmatics of Experiencing*, Advances in Consciousness Research 43 (Amsterdam: J. Benjamins, 2003); his own *Ethical Know-How: Action, Wisdom, and Cognition* (Stanford, CA: Stanford University Press, 1999); along with numerous other edited volumes. The Mind and Life project has missed his contributions since his death in 2001.

14. However, I should note that all of the scientists invited to the dialogues have been involved in what is more or less accurately called "mainstream science." Each one teaches or

conducts research at a recognized public university. To the credit of the Mind and Life organizers, they have resisted the temptation to engage, so far at least, with the marginal (some would say anomalous, parapsychological, or even pseudo-) sciences, preferring to interact with the scientific consensus. On the other hand, some might respond that the central theme of the science of consciousness is already an effort to explode the categories of the neurological or cognitive sciences “from within”; read on.

15. Wallace has served as the Western interpreter for all except one of the dialogues. He himself has emerged as a central figure in the Buddhism-science encounter, having written a number of important volumes on the science of consciousness. I discuss his work in my “Tibetan Buddhism Going Global? A Case Study of a Contemporary Buddhist Encounter with Science,” *Journal of Global Buddhism* 9 (2008) [<http://www.globalbuddhism.org/>].

16. See Jeremy W. Hayward and Francisco J. Varela, eds., *Gentle Bridges: Conversations with the Dalai Lama on the Sciences of Mind* (Boston: Shambhala, 1992), and Zara Houshmand, Robert B. Livingston, and B. Alan Wallace, eds., *Consciousness at the Crossroads: Conversations with the Dalai Lama on Brain Science and Buddhism* (Ithaca, NY: Snow Lion, 1999). A related publication, derived from a symposium involving His Holiness and sponsored by the Mind/Body Medical Institute of Harvard Medical School and the New England Deaconess Hospital, in conjunction with the Tibet House of New York, is Daniel Goleman and Robert A. F. Thurman, eds., *MindScience: An East-West Dialogue* (Boston: Wisdom, 1991).

17. For an overview of the Tibetan Buddhist system of thought operative in these dialogues, see Tenzin Gyatso the Fourteenth Dalai Lama, *The World of Tibetan Buddhism: An Overview of Its Philosophy and Practice*, trans. Geshe Thupten Jinpa (Boston: Wisdom, 1995).

18. Hayward and Varela, eds., *Gentle Bridges*, 194. In a sense, consciousness defines objects retroactively; put alternatively, objects are teleologically determined, and consciousnesses make such determinations. In either case, in the neuroscientific-and-Buddhist dialogue, perceivers and objects arise simultaneously or codependently.

19. Houshmand, Livingston, and Wallace, eds., *Consciousness at the Crossroads*, 40.

20. For discussion of karma vis-à-vis biological evolution, see Hayward and Varela, eds., *Gentle Bridges*, 239–243.

21. Daniel Goleman, ed., *Healing Emotions: Conversations with the Dalai Lama on Mindfulness, Emotions, and Health* (Boston: Shambhala, 1997).

22. See Goleman, ed., *Healing Emotions*, chap. 9, “The Roots of Self-Esteem,” esp. 201.

23. Francisco J. Varela, ed., *Sleeping, Dreaming, and Dying: An Exploration of Consciousness with the Dalai Lama* (Boston: Wisdom, 1997).

24. See Varela, ed., *Sleeping, Dreaming, and Dying*, 164–170.

25. Richard J. Davidson and Anne Harrington, eds., *Visions of Compassion: Western Scientists and Tibetan Buddhists Examine Human Nature* (Oxford: Oxford University Press, 2002).

26. His Holiness the Dalai Lama, “Understanding Our Fundamental Nature,” in Davidson and Harrington, eds., *Visions of Compassion*, 66–80. For more on how the idea of happiness is a central feature of the Dalai Lama’s view of human nature, see His Holiness the Dalai Lama, *Live in a Better Way: Reflections on Truth, Love, and Happiness*, ed. Renuka Singh (New York: Penguin Viking Compass, 2001); His Holiness the Dalai Lama with Howard C. Cutler, *The Art of Happiness at Work* (New York: Riverhead Books, 2003);

27. Daniel Goleman, ed., *Destructive Emotions; How Can We Overcome Them?* (New York: Bantam, 2003). Mind and Life VI and VII were devoted to the discussion of quantum physics; I discuss the volume produced by Mind and Life VI in more detail in the next section.

28. In a real sense, the Four Noble Truths—that there is *dukkha* (suffering), that *dukkha*’s causal factors can be identified, that *dukkha* can be eliminated, and that the elimination of *dukkha* begins with the Eightfold Path—can be said to be the soteriological engine driving Buddhism’s engagement with the sciences; for evidence, see B. Alan Wallace’s “Afterword: Buddhist Reflections,” in Houshmand, Livingston, and Wallace, eds., *Consciousness at the Crossroads*.

29. Sharon Begley, *Train Your Mind, Change Your Brain: How a New Science Reveals Our Extraordinary Potential to Transform Ourselves* (New York: Ballantine, 2007).

30. A massive volume that addresses the topic of brain plasticity from a Zen Buddhist perspective is James H. Austin, *Zen and the Brain: Toward an Understanding of Meditation and Consciousness* (Cambridge, MA: MIT Press, 1999).

31. In addition to his presentation on human nature (see note 26), there is a chapter in *Healing Emotions* titled “Medicine and Compassion,” which is attributed to the Dalai Lama; however the latter includes a substantive portion involving dialogue participants, unlike the former.

32. In general the indexes are quite detailed, with the unfortunate exception of *Consciousness at the Crossroads*, which does not include one at all.

33. At one point, His Holiness said, “if you find from your own scientific perspective any arguments against a particular issue asserted in Buddhism, I would like you to be very frank, because I will learn and benefit from that” (*Consciousness at the Crossroads*, 48).

34. Anne Harrington and Arthur Zajonc, eds., *The Dalai Lama at MIT* (Cambridge, MA: Harvard University Press, 2006).

35. Zajonc, “Reflections on ‘Investigating the Mind,’ One Year Later,” in Harrington and Zajonc, *The Dalai Lama at MIT*, 232.

36. See His Holiness’s closing remarks in Harrington and Zajonc, *The Dalai Lama at MIT*, 214–218; note also Alan Wallace’s succinct statement: “in Buddhism . . . the pursuit of knowledge, if it is to go very, very far, is inextricably related to the pursuit of virtue, and the pursuit of virtue is inextricably related to the pursuit of happiness” (206).

37. Arthur Zajonc, ed., *The New Physics and Cosmology: Dialogues with the Dalai Lama* (Oxford: Oxford University Press, 2004).

38. Mind and Life X (September–October 2002, Dharamsala) covered the spectrum from physics to biology in looking at the nature of matter and of life (see <http://www.mindandlife.org/conf02.html>). However, the proceedings of that dialogue have not yet appeared in print.

39. Interestingly, in other Buddhism-and-science conversations that His Holiness has been a part of, the notion of an absolute and irreversible time based on thermodynamics, the generation of electromagnetic radiation, and the expansion of the universe has been defended by Eastern scientists; e.g., Jayant V. Narlikar, “Concept of Time in Science,” in L. L. Mehrotra, ed., *Science, Spirituality and the Future: A Vision for the Twenty-First Century—Essays in Honour of His Holiness the Fourteenth Dalai Lama, Tenzin Gyatso* (New Delhi: Mudrit, 1999), 103–112, esp. 109–110.

40. See Ervin Laszlo, *Science and the Akashic Field: An Integral Theory of Everything*, 2nd ed. (Rosemont, VT: Inner Traditions, 2007), esp. 82–93, for an example of how such ideas are being entertained by those working out of the Western scientific tradition.

41. His Holiness the Dalai Lama, *The Universe in a Single Atom: The Convergence of Science and Spirituality* (New York: Morgan Road, 2005). Note that this volume was then made the subject of the Mind and Life XV meeting at Dharamsala in April 2007 (see <http://www.mindandlife.org/conf07.html>). I hope that the presentations and discussions will also see the light of publication at some point.

42. For an overview of the Dalai Lama’s life work as Tibetan leader vis-à-vis the Chinese takeover of Tibet, see Melvyn C. Goldstein, *The Snow Lion and the Dragon: China, Tibet, and the Dalai Lama* (Berkeley: University of California Press, 1997).

43. The Dalai Lama, *The Universe in a Single Atom*, 38; cf. B. Alan Wallace, *The Taboo of Subjectivity: Toward a New Science of Consciousness* (Oxford: Oxford University Press, 2000), 10, 165–166.

44. “Dalai Lama” literally means “ocean guru,” and the holders of this office are considered by Tibetan tradition to be manifestations of Avalokiteshvara (Tibetan: Chenrezig), the Bodhisattva of Compassion. His Holiness’s official Tibetan name is Jetsun Jamphel Ngawang Lobsang Yeshe Tenzin Gyatso (Holy Lord, Gentle Glory, Compassionate, Defender of the

Faith, Ocean of Wisdom). For histories of the office of Dalai Lama and Tenzin Gyatso's role in it, see Glenn H. Mullin, *The Fourteen Dalai Lamas: A Sacred Legacy of Reincarnation*, ed. Valerie Shepherd (Santa Fe, NM: Clear Light, 2001), and Thomas Laird, *The Story of Tibet: Conversations with the Dalai Lama* (New York: Grove Press, 2006).

45. In his official autobiography (written after receiving the Nobel Peace Prize)—Tenzin Gyatso, *Freedom in Exile: Autobiography of the Dalai Lama* (New York: HarperCollins, 1990)—His Holiness details traditional Tibetan Buddhist spiritual life and practices, including meditation practices, oracle consultations, and astrological divinations, and devotes one chapter to the discussion of such practices vis-à-vis modern science. For discussion of Buddhism in relationship to such parapsychological phenomena, see Victor Mansfield, *Synchronicity, Science, and Soul-Making: Understanding Jungian Synchronicity through Physics, Buddhism, and Philosophy* (Chicago: Open Court, 1995).

46. A volume celebrating the award of the Nobel Peace Prize to His Holiness is Sidney Piburn, ed., *The Dalai Lama: A Policy of Kindness* (Ithaca, NY: Snow Lion Publications, 1990). The central themes of His Holiness's life and work focus on the achievement of human happiness, human compassion as interrelational means, and universal responsibility as human ethic. For a sampling of his wide range of publications, see Rjavi Mehrotra, ed., *The Essential Dalai Lama: His Important Teachings* (New York: Viking, 2005).

47. These are themes that His Holiness emphasized early in the Mind and Life dialogues—e.g., Houshmand, Livingston, and Wallace, eds., *Consciousness at the Crossroads*, 150–152.

48. The Dalai Lama, *The Universe in a Single Atom*, 85–87.

49. For extensive accounts of the back-and-forth interactions on this issue, see Goleman, ed., *Healing Emotions*, 17–31 and 243–250; Davidson and Harrington, eds., *Visions of Compassion*, 214–222; and Harrington and Zajonc, eds., *The Dalai Lama at MIT*, 190–194, 206–210, 214–218, 236–241, and passim.

50. Elsewhere in the dialogues, His Holiness explicitly rejected any missionary motivations with regard to Tibetan Buddhist traditions; see Davidson and Harrington, eds., *Visions of Compassion*, 245.

51. Another that comes to mind is the “Divine Action Project” involving theologians, philosophers, and scientists, most of whom are Christian; for an overview, see Wesley J. Wildman, “The Divine Action Project, 1988–2003,” *Theology and Science* 2, no. 1 (2004): 31–75.

52. E.g., Susan Walker, ed., *Speaking of Silence: Christians and Buddhists on the Contemplative Way* (New York: Paulist, 1987); Gilbert G. Hardy, O. Cist., *Monastic Quest and Interreligious Dialogue* (New York: Peter Lang, 1990); Donald W. Mitchell and James Wiseman, OSB, eds., *The Gethsemani Encounter: A Dialogue on the Spiritual Life by Buddhist and Christian Monastics* (New York: Continuum, 1999); and Bruno Barnhart and Joseph Wong, eds., *Purity of Heart and Contemplation: A Monastic Dialogue between Christians and Asian Traditions* (New York: Continuum, 2001).

53. Note in this regard that His Holiness has already been an active participant in monastic interreligious dialogues involving Roman Catholic contemplatives; see His Holiness the Dalai Lama, *The Good Heart: A Buddhist Perspective on the Teachings of Jesus*, trans. Geshe Thupten Jinpa, ed. Robert Kiely (Boston: Wisdom, 1996), and *Spiritual Advice for Buddhists and Christians*, ed., Donald W. Mitchell (New York: Continuum, 1998).

54. I have begun to work on some of these matters myself, and some preliminary thoughts can be seen in my “Christian and Buddhist Perspectives on Neuropsychology and the Human Person: *Pneuma* and *Pratityasamutpada*,” *Zygon: Journal of Religion and Science* 40, no. 1 (2005): 143–165.

55. E.g., John Cooper, *Body, Soul, and Life Everlasting: Biblical Anthropology and the Monism-Dualism Debate*, 2nd ed. (Grand Rapids, MI: Eerdmans, 2000), and Ric Machuga, *In Defense of the Soul: What It Means to Be Human* (Grand Rapids, MI: Brazos Press, 2002).

56. E.g., William Hasker, *The Emergent Self* (Ithaca, NY: Cornell University Press, 1999); Kevin Corcoran, *Rethinking Human Nature: A Christian Materialist Alternative to the Soul*

(Grand Rapids, MI: Baker Academic, 2006); and Joel B. Green and Stuart L. Palmer, eds., *In Search of the Soul: Four Views of the Mind-Body Problem* (Downers Grove, IL: InterVarsity Press, 2005).

57. As seen, for example, in the work of Nancey Murphy—e.g., Nancey C. Murphy and George F. R. Ellis, *On the Moral Nature of the Universe: Theology, Cosmology, and Ethics* (Minneapolis: Fortress, 1996), and Nancey C. Murphy and Warren S. Brown, *Did My Neurons Make Me Do It? Philosophical and Neurobiological Perspectives on Moral Responsibility and Free Will* (Oxford: Oxford University Press, 2007).

58. See Yong, *Theology and Down Syndrome: Reimagining Disability in Late Modernity* (Waco, TX: Baylor University Press, 2007).

59. I am grateful to Francis Tiso for allowing me the extra space in *Buddhist-Christian Studies* for this review essay. Thanks to my student, Bradford McCall, for his critical reading of this manuscript, and to two anonymous referees for their many suggestions that have helped improved the argument. The infelicities that remain are my own fault.