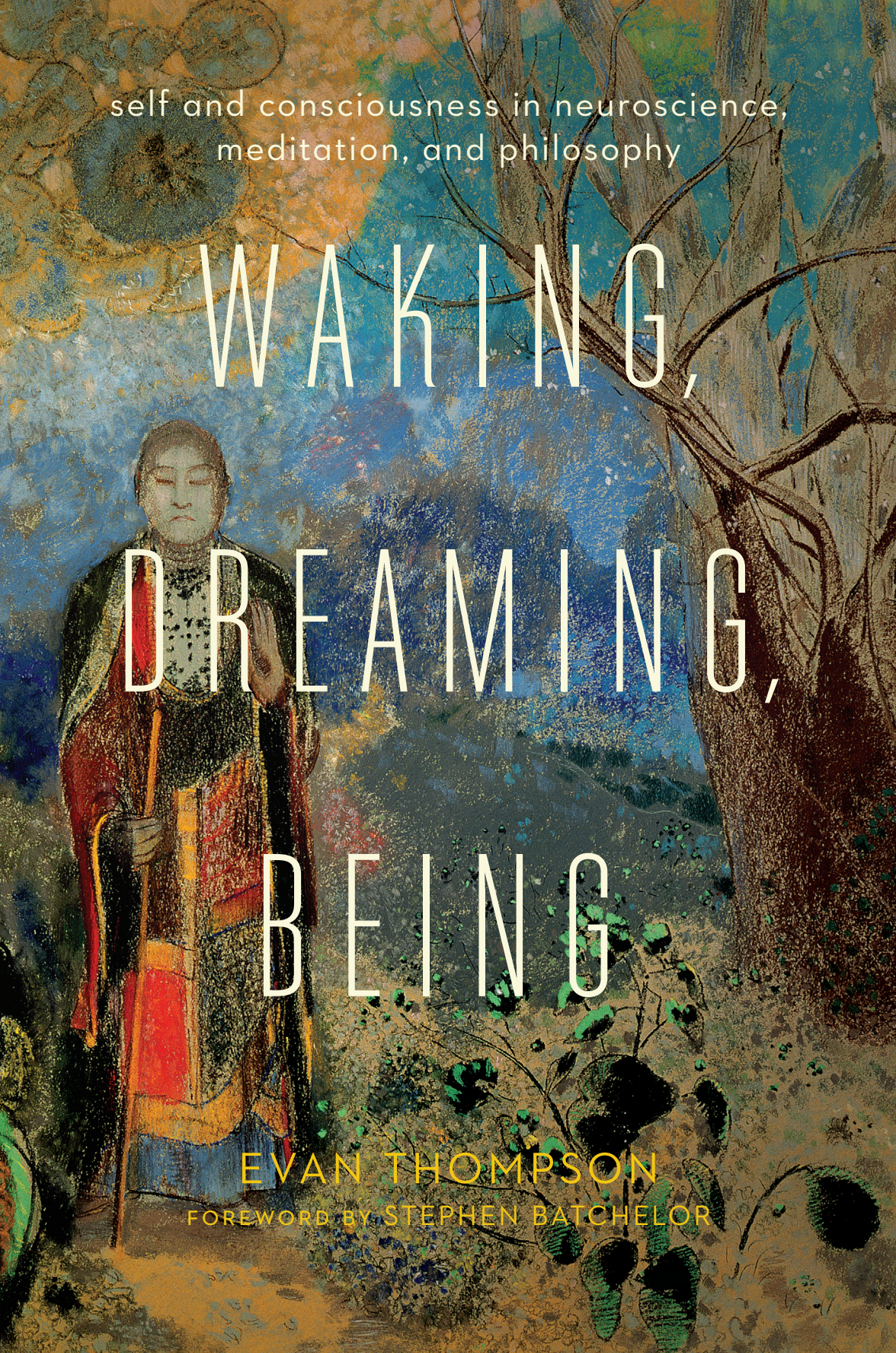

self and consciousness in neuroscience, meditation, and philosophy
WAKING, DREAMING, BEING
EVAN THOMPSON
FOREWORD BY STEPHEN BATCHELOR

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DREAMING,
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EVAN THOMPSON

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For my mother and father:

Gail Gordon Thompson and William Irwin Thompson



Someone who dreams of drinking wine at a cheerful banquet may wake up crying the next morning. Someone who dreams of crying may go off the next morning to enjoy the sport of the hunt. When we are in the midst of a dream, we do not know it's a dream. Sometimes we may even try to interpret our dreams while we are dreaming, but then we awake and realize it was a dream. Only after one is greatly awakened does one realize that it was all a great dream, while the fool thinks that he is awake and presumptuously aware.

—Chuang Tzu (Zhuang Zi), trans. Victor H. Mair,
Wandering on the Way: Early Taoist Tales and Parables of Chuang Tzu

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FOREWORD

Were you to ask someone today what comes to mind on hearing the word "meditation," I suspect that they would immediately think of a person sitting cross-legged on a cushion with her eyes closed. If you then asked: "Do you meditate?" they would likely take this as a question about whether they regularly practice a spiritual exercise, probably derived from an Asian religion. Yet such usage of the term "meditation" in the West is relatively recent. A hundred years ago, the word would rarely have been used this way. To say you were "meditating" would have meant that you were "considering something thoughtfully" (according to Chambers), a definition that now strikes us as odd or archaic. Few today would find the seventeenth-century poet John Milton's line "And strictly meditate the thankless Muse" comprehensible at all.

This is but one example of how non-Western ideas have slowly infiltrated our ways of thinking and speaking. Such shifting use of language forms part of a complex historical and cultural process that began with the first translations of classical Asian texts at the end of the eighteenth century. Interest in Eastern ideas has waxed and waned over the decades since, but during the past fifty years or so—largely triggered by the countercultural movements of the 1960s—it seems to have increased exponentially. While it may have

taken more than a century for "meditation" to have acquired its current usage, it seems to have taken only ten or fifteen years for the word "mindfulness" to have gained a similar currency in English.

When I lived as a Buddhist monk in the Tibetan community around the Dalai Lama in Dharamsala during the early 1970s, if someone had suggested that by 2013 mindfulness meditation would be freely available through the British National Health Service and that a U.S. congressman would have published a book called *A Mindful Nation*, I would have dismissed that person as a fantasist. Yet this is exactly what has happened. A term that was once used in its current sense only by a small number of Buddhist meditators has now spread virally into popular discourse.

The medical professionals who use mindfulness-based therapies have (or should have) no interest in promoting Buddhism. They have adopted the practice of mindfulness solely because clinical trials have shown that it is an effective treatment for certain pathological conditions such as relapse into depression. Yet this raises a crucial question: if one of its central practices can be shown to work in a nonreligious, secular setting, should we continue to regard Buddhism as a religion? According to the earliest canonical texts, Siddhattha Gotama presented his teachings as practical exercises that would lead to palpable and predictable results. Although the Buddha's teachings have given rise over the centuries to faith-based institutions and dogmas that we would unhesitatingly call "religious," might such developments be a digression from or even a betrayal of the founder's original intentions?

We need, therefore, to distinguish between Buddhism as a belief-based religion and Buddhism as a pragmatic philosophy with ethical and contemplative practices. Yet it is not so easy to know where to draw the line. Among contemporary Buddhists, opinions vary as to whether reincarnation, for example, should be treated as an empirical fact that will one day be confirmed by scientific evidence, or as merely an artifact of prescientific Indian cosmology. Some argue that Buddhism without reincarnation is unintelligible; others insist that the doctrine of reincarnation obscures the Buddha's primary concerns and should be discarded.

Evan Thompson refuses to take an a priori stand on such issues. He seeks instead to keep an open mind with regard to the metaphysical claims of traditional Buddhist, Hindu, and Taoist teachings, while at the same time subjecting them to a critique based on the findings of science. Likewise, he acknowledges the limitations of the scientific method in coming to terms with the felt reality of first-person experience, which involves what it is like to be a self endowed with consciousness. He thus envisages a synthesis of objective scientific rigor coupled with first-hand reports of contemplative experience. Moreover, although trained in the discipline of Western philosophy, he draws on the rich philosophical thought of India and China, thus building a way to a collaboration of ideas that is still resisted in the Eurocentric culture of the Western academy.

I first encountered the work of Evan Thompson in the early 1990s when I came across *The Embodied Mind: Cognitive Science and Human Experience*, which he coauthored with the neuroscientist Francisco Varela and the psychologist Eleanor Rosch. Reading this work from the perspective of a Buddhist scholar-practitioner who was neither a scientist nor a Western philosopher or psychologist, I found it a breath of fresh air to encounter authors (a scientist, a philosopher, and a psychologist) who were open to engaging respectfully and critically with non-Western traditions. *The Embodied Mind* is often spoken of as a pioneering work in developing the concept of "enactive" cognition, but it was equally pioneering as one of the first serious works of cross-cultural philosophy.

The Embodied Mind concludes with a question and a tentative answer:

> When these two planetary forces, science and Buddhism, come genuinely together, what might not happen? At the very least, the journey of Buddhism to the West provides some of the resources we need to pursue consistently our own cultural and scientific premises to the point where we no longer need and desire foundations and so can take up the further tasks of building and dwelling in worlds without ground.

Evan Thompson's *Waking, Dreaming, Being* offers us a detailed and more fully articulated response to this same question.

In the twenty-two years that have elapsed since the publication of *The Embodied Mind*, the dialogue between science and Buddhism has developed in leaps and bounds. A key to this development has been the enthusiastic involvement of Tenzin Gyatso, the Dalai Lama of Tibet, in a series of discussions under the auspices of the Mind and Life Institute. This program began modestly in Dharamsala in 1987 as an "intellectual experiment" by the Dalai Lama, Francisco Varela, and the entrepreneur Adam Engle. In January 2013, it held its twenty-sixth conference, where the Dalai Lama and twenty leading scientists and philosophers addressed an audience of eight thousand Tibetan monks and nuns at Drepung Monastery in South India on the topic of "Mind, Brain and Matter."

Evan Thompson is uniquely placed to draw together the complex elements that constitute this ongoing dialogue among Buddhism, the natural sciences, and philosophy. Home educated in the countercultural Lindisfarne Association—founded in 1972 by his father, the writer, poet, and social critic William Irwin Thompson—he went on to earn a degree in Asian studies at Amherst College, followed by a doctorate in philosophy from the University of Toronto. He first met Francisco Varela while still a teenager, and later studied and collaborated with him in the Ecole Polytechnique in Paris in the late 1980s. As part of his unconventional upbringing, he was introduced to yoga and meditation practices as a child, and he continues to practice today.

Waking, Dreaming, Being is thus the culmination not only of a lifetime's concern with ideas but also of a life personally engaged with the core existential questions raised in this book: *Who am I? What is the self? How is it related to being conscious?* As an illustration of his concern for both first- and third-person perspectives, Thompson interweaves personal reflections with careful analyses of the latest research in neuroscience and illuminating interpretations of classical doctrinal and philosophical concepts from Asia. As one of those rare individuals who has sought to integrate these diverse approaches to human experience into his own way of being in the world, Thompson

embodies a historical and cultural movement in which the antiquated distinction between "East" and "West" is breaking down to be replaced, perhaps, with a more globally informed understanding of what it means to be fully human.

Stephen Batchelor
Aquitaine

PROLOGUE

The Dalai Lama's Conjecture

When I was eight years old my father gave me *Gautama Buddha: In Life and Legend* by Betty Kelen. I still have the copy, a 75-cent paperback, with my name in my own handwriting on the first page. I couldn't put the book down. I read it in the backseat of our old blue Volkswagen station wagon, as we drove along Highway 400 from York University in Toronto (where my father taught Humanities) to our home in Bradford, Ontario, about 40 miles north.

I asked my father why he sometimes marked sentences in books he was reading with a red pen. He told me they were important ones he wanted to remember and find again. Like father, like son: the red ink I marked on the paragraphs describing the aspiration to attain enlightenment and become a buddha hasn't faded against the yellow paper.

Something about this drama of enlightenment appealed to me. It was the 1970s, after all, and my father had already taught me breath-mantra yoga meditation and read to me at bedtime from Paramahansa Yogananda's *Autobiography of a Yogi*. The serenity and confidence of enlightenment enthralled me. Like most kids, I loved animals. So it's not surprising I also marked the passage telling the story of how the Buddha's wicked cousin, Devadatta, sent a rogue elephant to trample him, only to find the animal tamed by the Buddha's emanating love and calm composure.

Thirty-two years later I find myself, not exactly calm and composed, about to give a keynote speech to open a two-day conference at MIT called "Investigating the Mind: Exchanges Between Buddhism and the Biobehavioral Sciences on How the Mind Works."[1] I am to speak immediately after the opening remarks by the Dalai Lama. Walking onto the stage of Kresge Auditorium, I feel dizzy. At the center, to my left, sit the Dalai Lama and his English translator. Between us sits a row of prominent psychologists and brain scientists. To the Dalai Lama's right are two well-known Buddhist scholars and meditation teachers. Before us is an audience of over a thousand people. My legs shake midway through my speech, and I hold onto the lectern for support. And then the Dalai Lama sneezes—a loud sneeze that fills the auditorium. Smiling sheepishly, he breaks into a laugh, and his laughter proves contagious as everyone joins in. Startled at first, I immediately feel relieved, and my stage fright starts to dissipate.

I've been asked to give a speech honoring the memory of my close friend and mentor, Francisco Varela, and his vision of a new kind of science of the mind and brain.[2] Widely known for his work as a cognitive scientist and neurobiologist, Varela was also a practitioner of Buddhist meditation and a student of Buddhist philosophy. He cofounded the Mind and Life Institute, which organized this conference.

In the last decade of his life, a few years before this meeting, Varela made groundbreaking discoveries about how different areas of the brain coordinate their activities when we perceive and recognize something, such as a familiar face.[3] Building on this work, he proposed an approach to the scientific study of the mind called "neurophenomenology."[4] This approach combines the careful study of experience from within (phenomenology) with neuroscience or the scientific investigation of the brain.

As neuroscientists now appreciate, much of brain activity arises from within the brain rather than being determined by the outside world. Neuroscientists call this ongoing and spontaneous brain activity "intrinsic activity." But its relationship to our subjective experience remains unclear. Varela thought phenomenology could help address this issue.[5] He hypothesized that the flow of subjective mental events—what William James called the stream of

consciousness—reflects intrinsic brain activity more than activity arising from external stimuli. The careful description of moment-to-moment experience could therefore help to reveal and make sense of hidden patterns of brain activity. But to play this role, phenomenology should be based on the kind of exacting exploration of the mind that Buddhists use in meditation.[6] Meditative insight provides a way to observe mental events as they happen from moment to moment; brain imaging and electrophysiology supply tools for recording brain activity during the flow of thought and feeling. Combining these perspectives would help scientists to relate the mind and the brain in meticulous ways.

As I come to the end of my speech, I propose that we need to see the dialogue between Buddhism and cognitive science from this neurophenomenological perspective. The full import of this dialogue isn't that we get a new Buddhist guinea pig to study. It's rather that we gain a new scientific partner whose firsthand expertise in mental life can play an investigative role directly within science. Working together, we can create a new and unprecedented kind of self-knowledge—a way of knowing ourselves that unites cognitive science and the contemplative view of the mind from within.

THE DALAI LAMA'S CONJECTURE

My speech honoring Varela took place in the morning, before the conference's first main session on attention and cognitive control. It's now the afternoon, and I'm happy to be sitting in the audience, listening to the panelists discussing mental imagery, the conference's second main topic. Matthieu Ricard, a French Tibetan Buddhist monk from Sechen Monastery in Nepal, has opened the session with a description of Buddhist visualization practices and their role in mental transformation. Steven Kosslyn, a psychologist at Harvard University, has followed with an overview of scientific studies of mental imagery. The discussion so far has focused on how the experience of mental imagery relates to the underlying processes in the brain.

Midway into this discussion, the Dalai Lama says something that takes me by surprise. It connects to a question about consciousness and the brain I've thought about for a long time. Varela and I debated the question just before he died, as we shared a quiet weekend in my father's apartment in Manhattan, writing what would be our last coauthored paper.[7] Is consciousness wholly dependent on the brain or does consciousness transcend the brain?

The Dalai Lama, addressing the Buddhists more than the scientists, wonders whether all conscious states—even the subtlest states of "luminous consciousness" or "pure awareness" without any mental images—require some sort of physical basis.[8] The thought is striking, given the traditional Indian and Tibetan Buddhist view that this sort of pure awareness isn't physical in nature (at least not in any ordinary sense). Sitting next to me, Richard Davidson, a psychologist, neuroscientist, and longtime participant in the science-Buddhism dialogue, whispers, "I've never heard him say anything like that before!"

The discussion returns to mental imagery, but I'm still thinking about what the Dalai Lama just said. He certainly can't mean that the basis for pure awareness is the brain. The traditional Buddhist view is that consciousness transcends the brain. For example, Buddhists believe in rebirth—that consciousness carries on from one life to the next—but the brain decays at death. So what exactly does the Dalai Lama have in mind? Does he mean something physical that affects or informs the brain, but isn't limited to that particular material structure? What sort of relation would there be between the physical basis and the consciousness it supports?

And what, I can't help thinking, if there were no convincing evidence for any type of consciousness without the brain, or for the continuation of any kind of consciousness after death? Could pure awareness be contingent on the brain? How far would the Dalai Lama be willing to go in considering these possibilities?

Four years later I was able to ask him these questions at a small meeting with leading neuroscientists, psychologists, and physicists at his refugee home in Dharamsala, India—a story I tell later in this book.

According to Indian and Tibetan Buddhist philosophy, the definition of consciousness is that which is luminous and knowing. Luminosity means the ability of consciousness to reveal or disclose. Knowing refers to the ability of consciousness to perceive or apprehend what appears. As the Dalai Lama explains in his book, *The Universe in a Single Atom: The Convergence of Science and Spirituality*, "As the primary feature of light is to illuminate, so consciousness is said to illuminate its objects. Just as in light there is no categorical distinction between the illumination and that which illuminates, so in consciousness there is no real difference between the process of knowing or cognition and that which knows or cognizes. In consciousness, as in light, there is a quality of illumination."[9]

Matthieu Ricard had already introduced this notion of luminous consciousness or pure awareness during his account of how certain types of Buddhist meditation rely on creating and contemplating visual mental images. Like the surface of a mirror, distinct from whatever image it happens to reflect, pure awareness is distinct from whatever transitory thought or mental image happens to arise. Luminosity is like the mirror's clean surface, and knowledge like its capacity to reflect an object. One can experience directly this luminous and knowing awareness, distinct from any passing thought or mental image, through certain types of meditation especially prized and cultivated in a number of Buddhist lineages.

Steven Kosslyn, at the end of his presentation, had expressed doubts about the notion of pure awareness. Introspection, the act of looking within one's own mind, he believes, can't occur without mental imagery, for what we become aware of when we introspect will always be some sensory or mental image. Anne Harrington, a historian of science at Harvard University, had then opened the discussion, claiming that the Western scientific tradition has no concept like that of pure awareness and hence wondering whether there's any way that brain scientists can begin to engage with Buddhists on this fundamental issue.

This is the context in which the Dalai Lama makes his remarks about the physical basis of consciousness. Speaking through his translator, Thupten Jinpa, he notes the tendency among Tibetan

Buddhists to think of these subtle states of pure awareness as if they lack embodiment or have no material basis. Yet he has come to think that even the subtlest "clear light state of mind," which manifests at the exact moment of death, must have some kind of physical base. He declares his view to be like the scientific standpoint that the brain is the basis for all mental events. And then, switching to his partial English, he explains that without the brain, the ordinary mind can't function. So, similarly, without some subtle physical base, there can't be subtle states of consciousness. "Whether there is something independent or not, I don't know."

I'm struck by the science-Buddhism encounter taking place within the Dalai Lama's own reflections. He has called attention to a profound type of consciousness supposedly revealed to highly trained contemplative insight, but currently missed by science. He has also forthrightly allowed that this type of consciousness might have a physical basis, maybe even a correlate in the brain, and hence that this correlate might be detectable by science (at least in principle). More striking still, he has ended his comments not with any statement of religious belief or dogma, but with a cheerful admission of his ignorance, along with his characteristic infectious chuckle.

FACING UP TO THE CHALLENGES

Is consciousness wholly dependent on the brain, or does consciousness transcend the brain? Given the cultural and philosophical differences between Western neuroscience and Tibetan Buddhism, how should we move forward in thinking about this issue?

Many Western scientists and philosophers would dismiss both the notion of pure awareness and the proposition that there may be types of consciousness that transcend the brain. Many Indian and Tibetan contemplative scholars and practitioners would be equally dismissive of the proposition that consciousness is a wholly biological process supported by the brain. Neither attitude attracts me as

a philosopher committed to the deep importance of the dialogue beween Asian philosophical traditions and Western science.

Buddhism is a millennia-old tradition that has developed numerous forms of philosophical thought and religious practice across a huge range of cultural and historical settings. Western scientists and philosophers need to take seriously the knowledge this tradition has accumulated through its methods of training the mind and analyzing consciousness. We should study its ways of classifying mental functions and its philosophical accounts of the nature of awareness. We must also understand how this kind of knowledge grows out of an ethical concern with human suffering and liberation, as well as a deep existential understanding of the human fear of death.

Western psychology and neuroscience are still young—hardly more than a hundred years old. Yet in this short time we've acquired an impressive amount of knowledge about how the mind works, especially in relation to the evolution and development of the brain and living body as a whole. The Asian meditative and philosophical traditions have nothing comparable to this kind of knowledge. We must take it seriously, including its broad philosophical implications for how we should understand the mind and its place in nature.

A fair amount has been written in recent years about the ways Buddhism and cognitive science converge. But these traditions also challenge each other in forceful ways. Buddhism, along with other contemplative traditions, challenges the assumption that we can know everything there is to know about the mind without examining it carefully from within. Incorporating meditative insight into cognitive science signals a potentially profound transformation of science. The classical scientific ideal of a completely neutral perspective untainted by the observer—already shaken to its core by twentieth-century physics—confronts another kind of profound limit in the impossibility of understanding the mind without including the first-person exploration of how we experience our own consciousness.

At the same time, neuroscience and evolutionary biology challenge the view that the ultimate nature of consciousness is nonphysical, or more pointedly, nonbiological. Expanding cognitive science

to include meditative insight need not require accepting all the traditional metaphysical beliefs and theories accompanying Indian and Tibetan contemplative knowledge. Many of those beliefs and theories involve ancient Indian conceptions of mind and matter very different from our modern scientific ones. Although cognitive science needs to give contemplative experience an active role to play in the scientific investigation of the mind, Buddhism and the other yogic traditions need to test their ancient Indian conceptions of mind, body, and rebirth against modern scientific knowledge.

If we're going to achieve a new kind of self-knowledge based on science and contemplative wisdom, as I believe we must, then both partners to this endeavor must put these challenges to each other openly and energetically. This is the spirit in which I've tried to write this book.

STAYING WITH THE OPEN QUESTION

Shortly before his death, Francisco Varela talked about the Tibetan Buddhist notion of "subtle consciousness" in an interview with Swiss filmmaker Franz Reichle.[10] Subtle consciousness isn't an individual consciousness; it's not an ordinary "me" or "I" consciousness. It's sheer luminous and knowing awareness beyond any sensory or mental content. It's rarely seen by the ordinary mind, except occasionally in special dreams, intense meditation, and at the very moment of death, when one's ordinary "I" or "me" consciousness falls apart. It's the foundation for every other type of consciousness, and it's believed to be independent of the brain. Neuroscience can't conceive of this possibility, while for Tibetan Buddhists it's unthinkable to dismiss their accumulated experience testifying to the reality of this primary consciousness.

Varela's position is to suspend judgment. Don't neglect the Buddhist observations and don't dismiss what we know from science. Instead of trying to seek a resolution or an answer, contemplate the

question and let it sit there. Have the patience and forbearance to stay with the open question.

I try to do so in this book. For a philosopher, staying with the open question means turning it around and examining it from all sides, without trying to force any particular answer or conclusion. But it also means not being afraid to follow wherever the argument leads.

Where the argument has led me reflects my ongoing personal journey over many years. When my father taught me Rāja Yoga meditation when I was seven, he instilled in me a philosophical and spiritual worldview in which the mind and consciousness are the primary reality. Growing up as a teenager at the Lindisfarne Association—the community of scientists, artists, and contemplatives he founded in the 1970s—I experienced firsthand how the scientific and contemplative worldviews can enrich each other. This upbringing led me to study Asian religion and philosophy at Amherst College, and Western philosophy and cognitive science in graduate school at the University of Toronto. Yet, while pursuing my own research in philosophy of mind and cognitive science over the past twenty-five years, I've often found myself doubting whether consciousness—even in its most profound meditative forms—transcends the living body and the brain. At the same time, I think we need a much deeper understanding of the brain in order to do justice to the nature of consciousness and its embodiment. I also remain firmly committed to the partnership between the scientific and contemplative worldviews, which is crucial for giving meaning to human life in our time and culture.

To stay with the open question while following wherever the argument leads requires that we be resolutely empirical in our approach. By this I mean cleaving to experience and suspending judgment about speculative matters falling outside what's available to experience. Experience includes inward experience of the mind and body gained through meditation, and outward experience of the world gained through scientific observation and experimentation. In neither case can there be genuine knowledge without communal testing and agreement on what the valid findings are. Buddhism and science both share this critical and experiential stance.

Western science has so far explored one small corner of the mind—the one accessible to individuals with little contemplative insight into their own minds, reporting to equally inexperienced scientists. The encounter with contemplative traditions raises another prospect—individuals with a high degree of meditative expertise reporting to knowledgeable scientists. Varela's vision, in its boldest form, was that future cognitive scientists would be skilled in meditation and phenomenology, in addition to neuroscience, psychology, and mathematics. And contemplative adepts would be deeply knowledgeable in Western cognitive science.

My hope for this book is that it can help to foster this original kind of self-knowledge.

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