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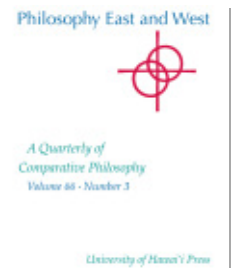
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*Précis of Waking, Dreaming, Being: Self and Consciousness  
in Neuroscience, Meditation, and Philosophy*



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The central idea of *Waking, Dreaming, Being* is that the self is a process, not a thing or an entity.<sup>1</sup> The self isn't something outside experience, hidden either in the brain or in some immaterial realm. It is an experiential process that is subject to constant change. We enact a self in the process of awareness, and this self comes and goes depending on how we are aware.

When we're awake and occupied with some manual task, we enact a bodily self geared to our immediate environment. Yet this bodily self recedes from our experience if our task becomes an absorbing mental one. If our mind wanders, the mentally imagined self of the past or future overtakes the self of the present moment.

As we start to fall asleep, the sense of self slackens. Images float by, and our awareness becomes progressively absorbed in them. The impression of being a bounded individual distinct from the world dissolves. In this hypnagogic state, the borders between self and not-self seem to fall away.

The feeling of being a distinct self immersed in the world comes back in the dream state. We experience the dream from the perspective of the self within it, or the dream ego. Although the entire dream world exists only as a content of our awareness, we identify our self with only a portion of it—the dream ego that centers our experience of the dream world and presents itself as the locus of our awareness.

At times, however, something else happens. We realize we're dreaming, but instead of waking up we keep right on dreaming with the knowledge that we're dreaming. We enter what is called a lucid dream. Here we experience a different kind of awareness, one that witnesses the dream state. No matter what dream contents come and go, including the forms the dream ego takes, we can tell they're not the same as our awareness of being in the dream state. We no longer identify only with our dream ego—the "I" as dreamed—for our sense of self now includes our dreaming self: the "I" as dreamer.

Similarly, while meditating in the waking state, we can simply witness being conscious and watch whatever sensory or mental events occur within the field of our awareness. We can also watch how we may identify with some of them as "Me" or appropriate some of them as "Mine."

According to the Indian yogic traditions, which broadly construed include Buddhism, we can distinguish three aspects of consciousness.<sup>2</sup> The first aspect is awareness, the second is the contents of awareness, and the third is how we experience some of these contents of awareness as "I" or "Me" or "Mine." From this perspective, to understand how we enact a self we need to understand three things—the nature

of awareness and its sensory and mental contents, the mind-body processes that produce these contents, and how some of these contents come to be experienced as “I” or “Me” or “Mine.”

In *Waking, Dreaming, Being*, I take this threefold framework of awareness, contents of awareness, and self-experience—or what the Indian tradition calls “I-making” (*ahaṃkāra*)—and put it to work in cognitive science. Whereas the Indian thinkers mapped consciousness and I-making in philosophical and phenomenological terms, I show how their insights can also help to advance the neuroscience of consciousness by weaving together neuroscience and Indian philosophy in an exploration of wakefulness, falling asleep, dreaming, lucid dreaming, out-of-body experiences, deep and dreamless sleep, forms of meditative awareness, and the process of dying.

The organizing principle for the book comes from the Indian tradition, specifically from the Upaniṣads, which arguably contain the world’s first recorded map of consciousness. The earliest texts—the *Bṛhadāraṇyaka* and *Chāndogya Upaniṣads*—delineate three principal states of the self—the waking state, the dream state, and the state of deep and dreamless sleep. The later text of the *Māṇḍūkya Upaniṣad* adds a fourth state—“the fourth” (*turīya*) or pure awareness. Waking consciousness relates to the outer world and apprehends the physical body as the self. Dream consciousness relates to mental images constructed from memories and apprehends the dream body as the self. In deep and dreamless sleep, consciousness rests in a dormant state not differentiated into subject and object. Pure awareness is variously described as underlying these changing states of waking, dreaming, and dreamless sleep or as witnessing them without identifying with them or with the self that appears in them. I use this fourfold structure to organize my exploration of consciousness and the sense of self across the waking, dreaming, and deep-sleep states, as well as meditative states of heightened awareness and concentration.

In the yogic traditions, meditation trains both the ability to sustain attention on a single object and the ability to be openly aware of the entire field of experience without selecting or suppressing anything that arises. In both modes of meditation—one-pointed concentration and open awareness—one learns to monitor specific qualities of experience, such as moment-to-moment fluctuations of attention and emotion, that are difficult for the restless mind to see.<sup>3</sup> One of the guiding ideas of *Waking, Dreaming, Being* is that individuals who can move reliably and flexibly between these different modes of attention and awareness, and who can describe in precise terms how their experience feels from moment to moment, offer a new source of information about the self and consciousness for neuroscience and the philosophy of mind.

Let me give a brief overview of the main ideas from the book’s chapters. Chapter 1 explains the formative Indian image of light or luminosity as the basic nature of consciousness.<sup>4</sup> Indian philosophers often define consciousness as that which is luminous and knowing. “Luminous” means having the power to reveal; “knowing” means being able to apprehend whatever appears. In the waking state, consciousness reveals and apprehends the outer world through the senses; in the dream state,

consciousness reveals and apprehends the inner world of mental images. This chapter also introduces the ancient Indian map of consciousness, which comprises the four states of wakefulness, dreaming, deep and dreamless sleep, and pure awareness.

Chapter 2 focuses on attention and perception in the waking state. I compare theories and findings from cognitive neuroscience with Indian Buddhist theories of attention and perception. According to both perspectives, although the stream of consciousness may seem to flow continuously, upon closer inspection it appears to be made up of discrete moments of awareness that depend on how attention shifts from one thing to another. I review evidence from neuroscience showing that focused attention and open-awareness forms of meditation have measurable effects on how attention structures the stream of consciousness into discrete moments of awareness. I conclude by using both Buddhist philosophy and cognitive neuroscience to argue that in addition to these discrete moments we also need to recognize a more slowly changing background awareness that includes the sense of self and that shifts across waking, dreaming, and dreamless sleep.

Chapter 3 takes up the question of whether the basic nature of consciousness as pure awareness transcends the brain and living body, as Indian and Tibetan philosophers traditionally claim, or whether it is dependent on the brain and living body. I describe a dialogue on this question with the fourteenth Dalai Lama at his refugee home in Dharamsala, India, in which I participated, and I explain the basis in Buddhist philosophy for the Dalai Lama's view that consciousness transcends the brain.<sup>5</sup> I argue, however, that there is no scientific evidence to support this view. All the evidence available to us indicates that consciousness is contingent on the brain. Nevertheless, my point of view is not a materialist one, for two reasons. First, consciousness has a cognitive primacy that materialism fails to see. There is no way to step outside consciousness and measure it against something else. Science always moves within the field of what consciousness reveals; it can enlarge this field and open up new vistas, but it can never get beyond the horizon set by consciousness. Second, since consciousness has this kind of primacy, it makes no sense to try to reductively explain consciousness in terms of something that is conceived to be essentially non-experiential, as physicalists conceive of fundamental physical phenomena. Rather, understanding consciousness as a natural phenomenon is going to require rethinking our scientific concepts of nature and physical being.

Chapters 4, 5, and 6 concern falling asleep, dreaming, and lucid dreaming. I begin with the state leading into sleep, the hypnagogic state, in which strange images make their way before our eyes and we hear sounds or what seem like conversations going on around us or inside us. Whereas normal waking consciousness is ego-structured—we experience ourselves as bounded beings distinct from the outside world—this structure dissolves in the hypnagogic state. There is no ego in the sense of an “I” who acts as a participant in a larger world, and there is no larger world in which we feel immersed. Instead, there is a play of images and sounds that holds consciousness spellbound. In short, two key features mark the hypnagogic state—a dissolution of ego boundaries and an attention drawn to what consciousness spontaneously imagines.

The ego structure of consciousness returns in the dream state. In the dream state we experience being in the dream world. Sometimes we experience it from an inside or first-person perspective; sometimes we see ourselves in it from an outside or third-person perspective. These two perspectives also occur in memory, where they are known as “field memory” and “observer memory.” Yet even in the case of the observer perspective in a dream, we experience ourselves as a subject situated in relation to the dream world. At the same time, the spellbound attention that arises in the hypnagogic state also characterizes the dream state, so it, too, is a kind of captivated consciousness.

All this changes in a lucid dream. The defining feature of a lucid dream is being able to direct attention to the dreamlike quality of the state so that one can think about it as a dream. When this happens, the sense of self shifts, for one becomes aware of the self both as dreamer—“I’m dreaming”—and as dreamed—“I’m flying in my dream.”

In these three chapters I review findings from sleep science that show that each state—the hypnagogic state, dreaming, and lucid dreaming—is associated with its own distinct kind of brain activity.

I end my discussion of dreaming by criticizing the standard neuroscience conception of the dream state as a form of delusional hallucination. Instead, I argue that dreaming is a kind of spontaneous imagination. I also argue that dreaming is not a passive epiphenomenon of the sleeping brain, for intentional mental activity in dreaming, especially in lucid dreaming and meditative practices of lucid dreaming, actively affects the sleeping brain.

Chapter 7 examines out-of-body experiences. In an out-of-body experience, you feel as if you’re located outside your body, often at an elevated vantage point. Yet far from showing the separability of the self from the body, out-of-body experiences reinforce the strong connection between the body and the sense of self. These aren’t experiences of disembodiment; they’re experiences of altered embodiment. You see your body as an object at a place that doesn’t coincide with the felt location of your visual and vestibular awareness. In this way, there’s a dissociation between your body as an object of perception and your body as a perceptual subject and attentional agent. Out-of-body experiences reveal something crucial about the sense of self: you locate yourself as an experiential subject wherever your attentional perspective feels located, regardless of whether this happens to be the place you see your body as occupying.

Out-of-body experiences provide no evidence that one can have an experience without one’s biological body, for the body remains present throughout. Furthermore, experiences with many of the features of out-of-body experiences can be brought about by direct electrical stimulation of certain brain regions and by virtual reality devices. So out-of-body experiences are brain-dependent.

Chapter 8 asks whether consciousness is or can be present in deep and dreamless sleep. Most neuroscientists and philosophers of mind today assume that dreamless sleep is a blackout state in which consciousness fades or disappears completely. In contrast, the Indian philosophical schools of Yoga and Vedānta, as well as

Indian and Tibetan Buddhism, maintain that a subtle form of awareness continues to be present in dreamless sleep. I present the Indian philosophical case for deep sleep being a mode of consciousness and show that none of the behavioral or physiological evidence from sleep science suffices to rule out there being a mode of consciousness in dreamless sleep. Hence, the standard neuroscience way of trying to define consciousness as that which disappears in dreamless sleep needs to be revised. Yoga, Vedānta, and Buddhism assert that the subliminal consciousness present in dreamless sleep can become cognitively accessible through meditative mental training. I present some preliminary evidence from sleep science in support of this idea. I end the chapter by proposing that we need to enlarge sleep science to include contemplative ways of training the mind in sleep. This project will require sleep scientists, anthropologists, meditation practitioners, and contemplative scholars of the Indian and Tibetan traditions to work together to map the sleeping mind.<sup>6</sup>

Chapter 9 investigates what happens to the self and consciousness when we die. Neuroscience and biomedicine talk about death as if it were essentially an objective and impersonal event instead of a subjective and personal one. From a purely biomedical perspective, death consists in the breakdown of the functions of the living body along with the disappearance of all outer signs of consciousness. Missing from this perspective is the subjective experience of this breakdown and the existential significance of the inevitable fact of one's own death. In contrast, Tibetan Buddhism presents a vivid account of the progressive breakdown of consciousness and the dissolution of the sense of self during the dying process. It also describes how to face this process in a meditative way. According to Tibetan Buddhism—as well as Yoga and Vedānta—great contemplatives can disengage from the sense of self as ego as they die. Resting in an experience of pure awareness, they can watch the dissolution of their everyday “I-Me-Mine” consciousness and witness their own dying with equanimity.

Near-death experiences during cardiac arrest provide an important case for investigating how the mind meets death and the relationship between consciousness and the body. Although these experiences are often presented as challenging the view that consciousness is contingent on the brain, I argue that none of the evidence brought forward to support this position is convincing. Instead, all the evidence to date, when examined carefully, supports the view that these experiences are contingent on the brain.

At the same time, we should avoid the trap of thinking that the reports of near-death experience after resuscitation from cardiac arrest must be either literally true or literally false. This way of thinking remains caught in the grip of a purely third-person view of death. Dying and death must also be understood from the first-person perspective. We need to stop using accounts of these experiences to justify either neuroreductionist or spiritualist agendas and instead take them seriously for what they are: narratives of first-person experience arising from circumstances that we will all in some way face.

Chapter 10 targets the view widespread in neuroscience and “neurophilosophy” that the self is nothing but an illusion created by the brain. I call this view “neuro-

nihilism.” I argue that although the self is a construction—or rather a process that is under constant construction—it isn’t an illusion. A self is an ongoing process that enacts an “I” and in which the “I” is no different from the process itself, rather like the way dancing is a process that enacts a dance and in which the dance is no different from the dancing. I call this the “enactive” view of the self. This chapter presents a systematic statement of the enactive view and shows how I-making happens at multiple biological, psychological, and social levels. The discussion combines elements from Buddhist philosophy (specifically from the “Middle Way” or Madhyamaka school), biology, cognitive science, and the neuroscience of meditation.

Although cognitive science and the Indian yogic philosophical traditions form the core of this book, I also draw from a wide range of other sources: poetry and fiction, Western philosophy, Chinese Daoism, and personal experience. By weaving together these diverse sources, I hope to demonstrate a new way to relate science and what many people like to call spirituality. Instead of being either opposed or indifferent to each other, cognitive science and the world’s great contemplative traditions can work together on a common project—understanding the mind and giving meaning to human life. Two extreme and regressive tendencies mark our era: (1) the resurgence of religious extremism and outmoded belief systems, and (2) the entrenchment of scientific materialism and reductionism. Neither mindset realizes the value of meditation and of the contemplative way of life as a source of wisdom and firsthand knowledge essential to a mature cognitive science that can do justice to our entire way of being—to our spirit, to use an older idiom.<sup>7</sup> My book upholds a different vision. By enriching science with contemplative knowledge and contemplative knowledge with cognitive science, we can work to create a new scientific and contemplative appreciation of human life, one that no longer requires or needs to be contained within either a religious or an anti-religious framework.

## Notes

- 1 – The following Précis draws extensively from the Introduction to *Waking, Dreaming, Being*, pp. xxxi–xl.
- 2 – I use the terms “yogic traditions” and “yogic philosophies” in a broad sense that includes Buddhism. For justification of this usage, see Stephen Phillips, *Yoga, Karma, and Rebirth: A Brief History and Philosophy* (New York: Columbia University Press, 2009), pp. 4–5.
- 3 – See Antoine Lutz, Heleen A. Slagter, John D. Dunne, and Richard J. Davidson, “Attention Regulation and Monitoring in Meditation,” *Trends in Cognitive Sciences* 12 (2008): 163–169, and Antoine Lutz, Amishi Jha, John D. Dunne, and Clifford D. Saron, “Investigating the Phenomenological and Neurocognitive Matrix of Mindfulness-Related Practices,” *American Psychologist* 70, no. 7 (2015): 632–658.

- 4 – See Chakravarthi Ram-Prasad, *Indian Philosophy and the Consequences of Knowledge: Themes in Ethics, Metaphysics, and Soteriology* (Hampshire, England and Burlington, VT: Ashgate, 2007), chap. 2.
- 5 – See Dalai Lama, *The Universe in a Single Atom: The Convergence of Science and Spirituality* (New York: Morgan, 2005).
- 6 – For further discussion of these issues, see Evan Thompson, “Dreamless Sleep, the Embodied Mind, and Consciousness: The Relevance of a Classical Indian Debate to Cognitive Science,” <http://open-mind.net/papers/dreamless-sleep-the-embodied-mind-and-consciousness-the-relevance-of-a-classical-indian-debate-to-cognitive-science>; Jennifer M. Windt, “Just in Time—Dreamless Sleep Experience as Pure Subjective Temporality: A Commentary on Evan Thompson,” <http://open-mind.net/papers/just-in-time-dreamless-sleep-experience-as-pure-subjective-temporality-a-commentary-on-evan-thompson>; and Evan Thompson, “Steps Toward a Neurophenomenology of Sleep: A Reply to Windt,” <http://open-mind.net/papers/steps-toward-a-neurophenomenology-of-consciousness-in-sleep-a-reply-to-jennifer-m-windt>.
- 7 – See Pierre Hadot, *Philosophy as a Way of Life: Spiritual Exercises from Socrates to Foucault*, ed. with introd. Arnold Davidson (Malden, MA: Blackwell Publishing, 1995). See especially “Part II: Spiritual Exercises.”