This study is a process analysis of probably the longest reported mystical experience: the six-month nirvikalpa samadhi of the Indian saint Ramakrishna Paramahamsa (1836-1886). Throughout this period he participated in Brahman, which is understood in the Vedantic tradition of India as the blissful, intrinsically conscious substance of being. Ramakrishna cycled between the states aligned with Brahman’s saguna (manifest) and nirguna (unmanifest) aspects. He was insensate and cataleptic during the nirguna phase of mystical cycles. Liminal consciousness, ecstatic emotion, and visions of God characterized the saguna phase. The respective states are likened to the onset and the resolution of the Minimally Conscious State, the least severe form of coma. The temporal pattern of individual cycles is attributed to the Basic Rest-Activity Cycle, a fundamental biological rhythm. Yoga practices that may have contributed to the onset and continuation of samadhi are reviewed. Ramakrishna’s nirvikalpa samadhi incorporated two basic forms of mystical experience: union with the personal God, and transient probing of the undifferentiated ground of being. Other mystical experiences may have a cyclical structure and conform with a biological rhythm.

Key words: samadhi, yoga, mysticism, coma, Basic Rest-Activity Cycle

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INTRODUCTION

Most mystical experiences are brief rather than prolonged. For example, St. Augustine’s experience of divine union occurred in “the flash of a trembling glance” (Outler, 1955 [VII, xvii, 23]). Symeon the New Theologian’s visions of the luminous presence of God showed “great rapidity” and “passed away immediately” (Maloney, 1976, pp. 80, 159). Zen reports of satori emphasize its sudden onset and brief duration (Suzuki, 2006). In the Upanishads, personal realization of the atman, the transcendent core of personality, is likened to “a sudden flash of lightning” (Olivelle, 1996 [BU 2:3:6]). The brevity of a mystical experience compresses its content and obscures its internal development, which leads to the impression that the experience is instantaneous, encapsulated, and discontinuous with the mental activity that precedes and follows it. These qualities create the sense that the experience is an indissoluble unit of meaning rather than an unfolding array of insights and feelings. Second-order inferences follow from these effects. In theistic traditions, for example, mystical experience is said to convey a simple or non-compound awareness of God. Theological reflection bolsters this inference in promoting the idea that the divine nature is simple and immutable. In my view, these ideas and impressions are artifacts of the brevity of mystical experience rather than an accurate portrayal of its form and development.

A different perspective is illustrated in this study: A mystical experience is an evolving, internally complex event composed of sequentially occurring states of mystical awareness (Bradford, 2011, 2012, 2014, 2016a, 2016b, 2017). Neighboring states are spanned by a series of transitions that begins and terminates in normal conscious awareness. A mystical experience is the overt expression of a process of change that transforms awareness into one and then another extraordinary state of awareness, each such state representing a phase of the responsible process. The temporal pattern and the internal development of a mystical experience are seen most clearly in highly extended examples. The new perspective will be illustrated through an analysis of probably the longest reported mystical experience: the six-month nirvikalpa samadhi of the Indian saint Ramakrishna Paramahamsa (1836-1886). Throughout this period he participated in Brahman, which is understood in the Vedantic tradition as the blissful, intrinsically conscious substance of being (Deutsch, 1969; Raju, 1985).

Ramakrishna was an expert yogin and a superlative devotional mystic. His “teachings consist of parables, advice and recollections given orally [...] interspersed with technical Sanskrit terms from various strands of Hindu yoga and philosophy” (Heehs, 2002, p. 431). He was a major figure in the nineteenth-century Hindu revival. His disciples introduced Hindu spirituality in Europe and America, primarily through the Vedanta Society, and were responsible for reviving and popularizing Patanjali’s yoga in India and the West (Vivekananda, 1989). To this day, Ramakrishna’s followers consider him an avatara or divine incarnation.

Key terms are explained in the first part of the study. One of Ramakrishna’s retrospective descriptions of nirvikalpa samadhi is examined in the second. Brah-
man’s *saguna* (manifest) and *nirguna* (unmanifest) aspects are discussed in the third. Ramakrishna’s experience of *saguna* Brahman as God, understood as a personal being, is described in the fourth part. The psychology of the *nirguna* state is discussed in the fifth. The sixth shows that the process governing Ramakrishna’s *samadhi* was formed of a series of cycles, in each of which he oscillated between two serially occurring states. In one state he envisioned God and felt ecstatic emotion while participating in *saguna* Brahman, and in the other he was insensate, cataleptic, and immersed in *nirguna* Brahman. In the seventh part, the behavioral features of the mystical cycle, particularly its *nirguna* phase, are likened to symptoms of the *Minimally Conscious State* (MCS), the least severe form of coma. In the eighth part, the temporal pattern of the mystical cycle is attributed to the *Basic Rest-Activity Cycle* (BRAC), a fundamental biological rhythm. Yoga practices that may have contributed to the induction and continuation of *samadhi* are reviewed in the ninth part. Ramakrishna’s *nirvikalpa* samadhi is exemplary in displaying two fundamental forms of mystical experience: union with the personal God, and transient probing of the undifferentiated ground of being. Other kinds of mystical experience may have a cyclical pattern and conform with a biological rhythm.

**Terms**

*Samadhi* is a general term for mystical states of absorption. In the traditional view, a mystical state entails direct participation in transcendent reality and is not reducible to mental representations or sociocultural influences. A mystical state is a metaphysical probe and a veridical contact with structures of ultimate meaning.

*Saguna* means “with qualities” and refers to Brahman’s manifest expressions, the foremost of which is God, the divine creator who upholds and animates the “world” (Zimmer, 1989). *Nirguna* means “without qualities” and refers to the undifferentiated ground of being, approximating the Christian mystic’s concept of the unknowable, abysmal depth of God. In non-dual Vedantic philosophy, Brahman’s two aspects are identical. Spiritual ignorance prevents our grasping this truth and results in the suffering and the impassioned, illusory beliefs that determine our involvement in the world.

*Nirvikalpa* means “without second” or “without alternative” (Zimmer, 1989). *Nirvikalpa* samadhi is so-named because its *nirguna* phase subsumes and transcends all forms. Encompassing all, *nirguna* Brahman does not allow for a second or alternative perspective through which one might grasp its content. Ramakrishna’s samadhi is called his *nirvikalpa* samadhi because his union with Brahman’s *nirguna* aspect occurred during particular segments of this experience.

**Nirvikalpa Samadhi**

Ramakrishna had experienced *nirvikalpa* samadhi for several days prior to his six-month experience. His intent on the later occasion was to remain in samadhi for months, and he set about this task through the sustained practice of yoga and meditation. He was “unconscious of the outer world” during much
of his later, highly prolonged experience (Nikhilananda, 1992, p. 151). His ne-
phew and an itinerant monk attended to his bodily needs. The monk would oc-
casionally strike Ramakrishna, and “during the resultant fleeting moments of
consciousness he would push a few morsels of food down Sri Ramakrishna’s
throat” (p. 32). The pain of dysentery brought Ramakrishna’s samadhi to a close.
He advised his disciples to cease pursuing nirvikalpa samadhi because of the
associated risks. They enjoyed “bliss” but also succumbed to “convulsions,”
“screaming,” and “frightful visions” (Rolland, 2000, pp. 46, 47).

One of Ramakrishna’s retrospective descriptions of nirvikalpa samadhi in-
cludes concrete details:

“For six months in a stretch I remained in that state from which ordinary men
can never return; generally the body falls off, after three weeks, like a dry leaf.
I was not conscious of day or night. Flies would enter my mouth and nostrils as
they do a dead body, but I did not feel them. My hair became matted with dust.”
(Nikhilananda, 1992, p. 32)

The “falling off” of the body refers to the inhibition of somatic awareness,
comparable to the autoscopic experience called asomatognosia (Bradford,
2005). In Ramakrishna’s words, “knowledge of Brahman is impossible without
the destruction of body-consciousness” (Nikhilananda, 1992, p. 468).

**Brahman’s Two Aspects**

In Vedantic scripture, Brahman is called “the Whole,” conveying “complete-
ness, wholeness, and health” and indicating “a higher-level totality that encom-
passes the universe” (Olivelle, 1996, pp. 289, 297). Brahman derives from the
root brh, “to grow,” which implies that ultimate reality is changeful in an orderly
and progressive way (Bowes, 1994, p. 56). During his samadhi Ramakrishna
transitioned repeatedly between the states aligned with Brahman’s saguna and
nirguna aspects. Brahman’s saguna or manifest expression is the personal God,
who is experienced in a panentheistic manner as both transcendent and imma-
nent. Brahman’s nirguna or unmanifest aspect is impersonal and formless. Any
form-generating latencies it contains are indistinct and undifferentiated, suggest-
ing its characterization as no-thing. The states mediating Ramakrishna’s partic-
ipation in Brahman were the inflection points of the process that shaped his entire
experience.

The relationship of Brahman’s aspects has been discussed in philosophical
terms for centuries (Raju, 1985). Two perceptual analogies will help to clarify its
meaning in the context of mystical experience. The states mediating awareness
of saguna and nirguna Brahman are related in the manner of the forms compos-
ing a reversible figure drawing. Examples of such drawings include the Necker
Cube, the Schroeder Stairs, and vase-face drawings (Schiffman, 1976). The
forms of a reversible figure are reciprocally related; the lines defining one also
define the other, but the figures do not appear simultaneously. An implicit form
becomes explicit through a spontaneous reversal. Similarly, the Brahman-related
states are reciprocally related. One state must have begun to dissipate before
the other can engage and transform awareness. Realization of the personal God who infuses the whole of things alternates with realization of the no-thing of nirguna Brahman. The states are neighboring phases of one and the same mystical cycle.

The relationship of the states that correspond with Brahman’s two aspects can also be understood in terms of the principle of contrast. Contrast organizes perception in setting a targeted object against its field. An example is the optical change during foveation when the lens of the eye adjusts to a target and meanwhile the objects composing the newly forming field lose visual definition and cease holding attention. In nirvikalpa samadhi, contrast sets the saguna and the nirguna states in opposition. The mystic must have partly exited one state before the other stands in sufficient contrast to engage and transform awareness. The absolute plenitude of saguna Brahman is fully apparent only when it is contrasted with the no-thing of nirguna Brahman, and vice versa. The mystic situated on the margin of contrasting states can discern the oncoming state or the one that is presently in recession. This is illustrated schematically in Figure 1.

**Saguna Brahman**

Ramakrishna typically experienced Brahman’s saguna manifestation as Kali, the goddess of ascetic renunciation. His early experiences of this kind occurred during daily periods of meditation and devotion. Two of Brahman’s prime attributes, namely consciousness (chit) and bliss (ananda), are mentioned in the following example:

“The Divine Mother revealed to me in the Kali temple that it was She who had become everything. She showed me that everything was full of Consciousness [...]. I found everything inside the room soaked, as it were, in Bliss—the Bliss of God.” (Nikhilananda, 1992, p. 15)

The timing of such experiences corresponded with the termination of Ramakrishna’s periods of meditation: “After coming down from samadhi, one may see that it is God himself who has become the universe and all that exists” (Isherwood, 1965, p. 298). Samadhi concludes gradually, followed by an awareness of the all-encompassing divine presence: “God himself [...] has become the universe and all that exists” (p. 298). The incrementally staged transition that con-
cludes meditation alters awareness such that the mystic and the surrounding objects become integrally related elements of a divinely infused world.

One of Ramakrishna’s experiences of the God-inhabited world occurred shortly before he died of cancer:

“Do you know what I see right now? I see that it is God Himself who has become all this. It seems to me that men and other living beings are made of leather, and that it is God Himself who, dwelling inside these leather cases, moves the hands, the feet, the heads. I had a similar vision once before, when I saw houses, gardens, roads, men, cattle — all made of One Substance; it was if they were all made of wax.” (Nikhilananda, 1992, pp. 941–942)

God is the “Substance” that upholds and animates material forms. He is “One” in His coherence and His unity with all the surrounding world. In saying that gardens, roads, men, and cattle seem “made of wax,” Ramakrishna was not describing symptoms of derealization. He perceived individual objects as unique and also as united in a field of awareness in which all have comparable value as the body of God. They seemed made of wax or leather because their existence was dependent on the divine animating presence of saguna Brahman.

Ramakrishna’s capacity to experience a God-inhabited world evolved from meditation experiences that included visionary phenomena. For example, he perceived images of Kali, photopsic hallucinations (“flashes like a swarm of fireflies”), and a watery luminous panorama (“a sea of deep mist with luminous waves of molten silver”; Nikhilananda, 1992, p. 14). He would succumb to transient episodes of paralysis during the course of meditation: He “would hear strange clicking sounds in the joints of his legs, as if someone were locking them up, one after another, to keep him motionless”; “I had no power to move my body and change my posture even slightly” (Heehs, 2002, p. 433; Nikhilananda, 1992, p. 14). The sounds recurrent at the conclusion of meditation when he heard his joints “unlocking and leaving him free to move about” (Nikhilananda, 1992, p. 14). Ramakrishna’s paralysis on these occasions is like the atonia that occurs in sleep paralysis and during REM sleep (Cheyne, et al., 1999; Cologan, et al., 2010; Jouvet, 1999). Similarly, his visionary experiences are like dreaming and the breakthrough of REM-related visual phenomena during wakefulness.

Psychology of the Nirguna State

A remark of Ramakrishna’s reveals the psychology of the nirguna state. He was asked, “Don’t you feel at that time even a trace of ego?”:

“Yes, generally a little of it remains. However hard you may rub a grain of gold against a grindstone, still a bit of it always remains [...]. In samadhi I lose outer consciousness completely; but God generally keeps a little trace of ego in me for enjoyment of divine communion. Enjoyment is possible only when “I” and “you” remain. Again, sometimes God effaces even that trace of “I”. Then one experiences jada samadhi or nirvikalpa samadhi. That experience cannot be described. A salt doll went to measure the depth of the ocean, but before it had gone far into the water it melted away. It became entirely one with the water of
the ocean. Then who was to come back and tell the ocean’s depth?” (Nikhilananda, 1992, pp. 196–197)

In this passage, “I” refers to conscious awareness and the sense of personal identity. “You” refers to objects generally, either subjective or physical. “Enjoyment” refers to the psychological capacity for personal experience, specifically the bliss of contact with Brahman. When the “I” is effaced, not a “trace of ego” remains; “enjoyment” is thus impossible. Jada refers to the behavioral expression of the nirguna phase of nirvikalpa samadhi, when the ascetic “appears lifeless [and insentient], like an inert object” (p. 1036). Ramakrishna’s condition during jada samadhi entailed the cessation of normal mentation and displayed behavioral features of the mystical state. He remarked: “In nirvikalpa samadhi, ego, name, and form do not exist”, where name-and-form (namarupa) refers to the objects that inform awareness and the cognitive means of their doing so (p. 468).

Once the “I” has been effaced, the mystic cannot personally participate in nirguna Brahman. It is inconsistent with traditional teachings and psychologically impossible to participate on a personal basis in nirguna Brahman. The “I” must have a minimal degree of coherence and stability before the mystic can attain either an anticipatory or a retrospective awareness of nirguna Brahman. In other words, nirguna Brahman can be discerned under only one or the other of two conditions: before the “I” has been effaced, when a “trace of ego” allows for the recognition, or when the nirguna state has begun to dissipate and the “I” has been partially restored (Nikhilananda, 1992, p. 196). Stated differently, Brahman’s nirguna aspect can be discerned when the nirguna state is incipient but has yet to nullify the “I,” or when it has begun to recede and no longer consumes awareness.

The Mystical Cycle

Ramakrishna oscillated between insensibility and liminal awareness during the course of samadhi. Western scholars and Ramakrishna’s disciples have described this pattern of change in similar ways. Romain Rolland (2000), writing in 1929, employed a contemporary medical term for immobility, rigidity, or waxy flexibility when he identified Ramakrishna’s behavior during periods of insensibility as cataleptic ecstasy (Campbell, 2009; Copland, 1866). Saradananda spoke of Ramakrishna’s intermittent periods of liminal awareness in saying that he would “come back now and again very gently”, at which time he was “semi-conscious” and “remained in bhavamukha”, where bhavamukha refers to the threshold condition that defines the common margin of the states aligned with Brahman’s saguna and nirguna aspects (Nikhilananda, 1992, p. 46). Mahendranath described Ramakrishna’s experience of bhavamukha in saying that he remained “on the threshold of relative consciousness, the border between the Absolute [nirguna Brahman] and the Relative [saguna Brahman]” (p. 30). Long (2005) described bhavamukha with exceptional clarity: Ramakrishna entered “a state in which he is said to have been aware simultaneously of both the one eternal substance at the foundation of existence [nirguna Brahman] and the ongoing personal presence of divinity [saguna Brahman]” (p. 145; emphasis in orig-
inal). In the process perspective, bhavamukha is the temporal margin and the point of transition that Ramakrishna crossed repeatedly in passing between the states aligned with Brahman's saguna and nirguna aspects. Nikhilananda (1992) captured this point in writing:

He gently oscillated back and forth across the dividing line. Ecstatic devotion to the Divine Mother [saguna Brahman] alternated with serene absorption in the Ocean of Absolute Unity [nirguna Brahman]. He thus bridged the Personal and the Impersonal. (p. 31)

The preceding analysis leads to this conclusion: The basic unit of change in Ramakrishna's samadhi was a cycle formed of a pair of serially occurring states. In one, he was insensate, cataleptic, and absorbed in nirguna Brahman, and in the other he lingered on the margin of wakefulness and experienced saguna Brahman through “ecstatic devotion to the Divine Mother” (Nikhilananda, 1992, p. 31). His oscillating between these states formed the mystical cycles that shaped the form and content of his samadhi. The peak of a cycle coincided with liminal awareness and devotional contact with the personal God; the trough coincided with catalepsy and “serene absorption in the Ocean of Absolute Unity” (p. 31). In the trough-to-peak transition, the “I” coalesces, resulting in the partial resumption of the sense of personal identity, the progressive differentiation of the perceptual world, and the emotionally rich imaginal forms of the saguna state. In the peak-to-trough transition, the “I” dissolves in the indeterminate darkness of the nirguna state. In Ramakrishna’s words, it “melts away,” which erases conscious awareness (p. 197). The cyclic nature of his experience is illustrated in Figure 2.

Cataleptic Ecstasy and the MCS

Ramakrishna’s behavior during the nirguna phase of mystical cycles is subject to neuropsychological interpretation. It most closely resembles the symptoms of the MCS (Giacino, et al., 2002; Pilon & Sullivan 1996). Four additional diagnostic possibilities are reviewed in the appendix. The leading example is his catalepsy, which is like the posturing, paralysis, and heightened muscle tone ob-

Fig. 2. Cycles of Mystical Process (SB = Saguna Brahman; NB = Nirguna Brahman)
Source: own elaboration
served in the MCS. Persons in this condition are able to hold objects in view, adjust their bodies in the direction of sounds or aversive stimuli, and reach for objects and handle them in a manner that accommodates their size and shape. They may smile, cry, or make intelligible utterances in response to external stimulation. Ramakrishna’s retention of these abilities during samadhi would have allowed him to eat and interact with his caretakers as reported in biographical material (Nikhilananda, 1992, p. 151). The MCS is often transient, consistent with Ramakrishna’s samadhi coming to a close and his subsequent resumption of everyday life.

Persons in the MCS demonstrate intermittent awareness of themselves and their environment (Bruno, et al., 2011; Schiff, et al., 2005). Similarly, the saguna phase of mystical cycles entails self- and other-awareness, the “other” being God. Ramakrishna retained conscious awareness and at least a minimal sense of personal identity during divine encounters: “God […] keeps a little trace of ego in me for enjoyment of divine communion” (Nikhilananda, 1992, p. 196).

Ramakrishna’s oscillating between the troughs and the peaks of mystical cycles can be understood as the recurrent waxing and waning of the MCS. The troughs corresponded with the condition’s presence, the peaks corresponded with its diminished severity, and his return to normal waking consciousness corresponded with the resolution of the MCS.

**Biological Rhythms**

The mystical cycle is highly patterned, recurs on a reliable basis, and has considerable automaticity. Its activity spans many diurnal cycle, even for months. Its effects are widespread and varied, influencing the mind and the body. These observations lead to a hypothesis: The temporal pattern of the mystical cycle was governed by a biological rhythm. Ultradian rhythms are in question, which run for at least an hour, either throughout or during only part of the 24-hour diurnal cycle.

A number of ultradian rhythms activate and organize psychological and physiological responses during the course of the 24-hour cycle (Broughton, 1975; Gerkema, 2002). The rhythm whose features are most like Ramakrishna’s behavior and experience during samadhi is the REM-NREM sleep cycle, which has a duration of approximately 90 minutes. The nirguna phase of the mystical cycle imposed unconsciousness, comparable to dreamless sleep, and the saguna phase mediated heightened emotion and visionary experience, comparable to REM-related dreaming. Ramakrishna’s blissful emotion while immersed in saguna Brahman is comparable to the “bliss” reported in the hypnogogic state, and his paralysis during visions is like the atonia that coincides with REM sleep and dreaming (Cheyne, et al., 1999, p. 319; Nikhilananda, 1992, pp. 14, 66). These similarities would support the impression that the mystical cycle is a variant of the REM-NREM cycle were it not for a significant conflicting observation: The REM-NREM cycle is a sleep-related phenomenon that recurs during only part of the diurnal cycle, whereas Ramakrishna’s samadhi was continuous throughout many diurnal cycles and included states (saguna peaks) when he was not asleep.
A different pace-setting rhythm must be sought. The most likely possibility is the BRAC, an ultradian rhythm of 90–100 minutes in duration that runs throughout the diurnal cycle (Kleitman, 1963, 1969, 1982). The BRAC activates and organizes mental and physiological activity in wakefulness, sleep, and dreaming, and has a comparable role in the MCS, in which near-to-normal patterns of sleep are preserved (Landsness, et al., 2011). Several 90-minute periodicities are considered BRAC-governed phenomena. Examples include the REM-NREM sleep cycle (Gerkema, 2002; Johnson, 1980; Schulz, et al., 1975); shifts in vigilance between the mental states of “rest” and “activity” (Tsuji & Kobayashi, 1988); and the oscillation of aroused and quiescent states in the autonomic nervous system (Hayashi, et al. 1994; Shannahoff-Khalsa, 1991; Shannahoff-Khalsa, et al., 2001). The BRAC corresponds with the relative activation of the cerebral hemispheres during wakefulness and is coordinated in both sleep and dreaming with alternating patterns of hemispheric dominance (Klein & Armitage, 1979; Neubauer & Frendenthaler, 1995).

The BRAC is older in phylogenetic terms than the REM-NREM cycle (Parmelee & Stern, 1972). Archaic in origin, and affecting many areas of mental and physical activity, it is a kind of “ur-rhythm” of ultradian cycles. As such, it is a suitable match for the profundity of the mystical process that shapes the experience of nirvikalpa samadhi.

Ramakrishna’s samadhi, at its most basic level of the mystical cycle, was a BRAC-governed spiritual phenomenon. Mystical cycles recurred at regular intervals, imposing a series of transformations that resulted in consecutive phases of saguna-related arousal and nirguna-related quiescence. This conclusion is illustrated in Figure 3.

![Figure 3. Mystical Process and the Basic Rest-Activity Cycle (BRAC = Basic Rest-Activity Cycle; m = margin; SB = Saguna Brahman; NG = Nirguna Brahman)](source: own elaboration)
Yoga Practice

Expert yogins can slow the cardiac rhythm and alter metabolism based on a number of practices. Examples include breath control (pranayama), concentration (ekagrata), and holding fixed postures (asanas) for extended periods. Of these practices, Ramakrishna’s most effective means of inducing samadhi was probably breath control, which “begins with making the respiratory rhythm as slow as possible” and advances to periods of arrest (Eliade, 1973, p. 55). The yogin sets out to harmonize the “moments” of inhalation, exhalation, and the retention of inhaled air, such that they eventually have the same duration (p. 58). Breath control is said to refine awareness to the degree that “the yogin can [...] experience, in perfect lucidity, certain states of consciousness that are inaccessible in a waking condition, particularly the states of consciousness that are peculiar to sleep” (p. 56). Eliade wrote: “Numerous sannyasis admitted to us that the goal of pranayama was to make the practitioner enter the state called turiya, the ‘cataleptic’ state” (p. 57). Ramakrishna’s behavior during the nirguna trough of mystical cycles displayed such a state.

Breath control has varied effects; many concern the circulation and chemical composition of blood. Studies of Indian yogins have shown a „reduction of respiration and of cardiac contraction to a degree that is usually observed only immediately before death” (Eliade, 1973, p. 57; Harinath, et al., 2004). The cardiac changes derive partly from a heightening of activity in the parasympathetic nervous system, which leads to widespread vasodilation and a lowering of blood pressure (Pramanik, et al., 2009). Slowed respiration (1/minute for an hour) reduces chemical sensitivity to hypercapnia, which refers to an elevated level of carbon dioxide in the blood stream resulting from the slowed respiratory rate. Under normal conditions hypercapnia forces an involuntary increase in the respiratory rate, such that carbon dioxide might be dissipated. The yogin’s lowered sensitivity allows the continuation of the slowed respiratory pattern on a voluntary basis (Miyamura, et al., 2002). A likely consequence of these effects is hypoxia, which refers to a lowered level of blood oxygen and thus a deficient amount of oxygen delivered to bodily tissue. Certain neuropsychological consequences occur on this basis: Neural structures sensitive to oxygen deprivation may function erratically, particularly the hippocampus (Saper, 2000). Hippocampal and neighboring anterior temporal dysfunction bears hallucinatory potential in circumstances of intense emotion, recalling Ramakrishna’s visions during the sa-guna phase of mystical cycles.

Yoga postures in which major joints are flexed and held tightly in place for lengthy periods may compound the circulatory changes. Such postures can reduce venous flow, impeding circulation to parts of the body; the blood pools and is not freshly oxygenated. The result is ischemia, which refers refers to an abnormally low level of oxygen supplied to the affected parts of the body.

Circulatory change was a prominent feature of the medical understanding of cataleptic ecstasy, and it was obvious in Ramakrishna from ongoing peripheral vascular engorgement: “It was noticed that [...] the ascent of the kundalini was
accompanied by a constant and powerful movement of the blood toward the chest and brain. In consequence of this, the skin of his chest was always flushed" (Isherwood, 1965, p. 64). In traditional religious terms, the force of the subtle energy called *kundalini* was activated through yoga practice, and its gross effect was apparent in Ramakrishna’s constantly flushed complexion. The circulatory change was most apparent in the “skin of his chest”, proximal to the heart chakra, whose activation correlated with his intense devotion to the goddess.

Concentration (*ekagrata*) would also have contributed to Ramakrishna’s samadhi. This practice calls for narrowing and maintaining one-pointed attention for highly extended periods. On this basis the yogin fulfills Patanjali’s definition of yoga as “the stilling of the changing states of the mind” (Bryant, 2015, p. 483). The narrowing and focusing of attention on a single target, when prolonged for lengthy periods, blocks ambient sensory stimulation and the associated mental content. Release effects can occur on this basis, specifically hallucination and intense emotion (Aron, 2007; Behrendt, 1998; Lance, 1986).

Ramakrishna’s practice of yoga allowed him to establish optimal physiological parameters, such that he could effectively apply his specially trained religious intentions to the end of passing into the mystical process that mediated his experience of *nirvikalpa* samadhi. But his passage into samadhi was not simply a technical matter of yoga practice and religious learning. Intense devotion informed his drive to secure an extreme form of spiritual realization.

**An Exemplary Mystical Process**

Ramakrishna’s samadhi displayed two fundamental forms of mystical experience: union with the personal God, and transient probing of the undifferentiated ground of being. Many mystical experiences are partial displays of what his showed in rounded form. The exemplary nature of his samadhi implies that the processes driving other forms of mystical experience may also have a cyclical temporal pattern and conform with a biological rhythm. Mystical experiences of shorter duration than Ramakrishna’s may be composed of fewer BRAC-governed cycles, or of one or more truncated cycles. Were the *saguna* phase of a mystical cycle accentuated and the *nirguna* phase truncated, the mystic would experience emotional communion with God and possibly envision His presence, but have little or no awareness of the *nirguna* state. Were the *nirguna* phase accentuated and the *saguna* phase truncated, as in non-theistic mystical experiences, the mystic would discern and possibly pass into the *nirguna* state but have little or no awareness of the possibly of contact with the personal God. Pre-existing ideas about personal identity contribute to these outcomes. In traditions in which personal identity is viewed as impermanent or illusory, the mystic would resist the momentum of a mystical process that accentuated personal identity and promoted the appearance of the personal God. Were the divine presence to appear, or were the sense of personal identity to become a prominent feature of the experience, the mystic would view such events as penultimate relative to
the desired mystical goal. In this manner, the mystic’s training and expectations influence the form and content of a mystical experience.

Process interpretations of mystical experience vary in their points of focus, which range from overt behavior and physiological change to mental and emotional content. But they are alike in revealing the temporal structure and the transitional margins of a mystical experience. One goal of this approach is to describe the fundamental mystical processes that account for the diverse, seemingly irreconcilable forms of mystical experience. A remote goal is to discern the single encompassing process whose partial expressions include these few fundamental processes.

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APPENDIX: RAMAKRISHNA’S CATALEPSY

Apart from the minimally conscious state, the remaining and less likely diagnostic interpretations of Ramakrishna’s catalepsy include catatonic schizophrenia, hysterical attack, narcoleptic atonia, and nonconvulsive complex partial status epileptics:

1. Ramakrishna’s catalepsy was not a symptom of catatonic schizophrenia. His treatment of others and the range and vitality of his emotional life are contrary to the blunted affect and other emotional consequences of schizophrenia. He showed facility in counseling and leading disciples and a sensitive manner in managing interpersonal relationships with devotees and secular persons. He employed metaphors, proverbs, and allegories in subtle and humorous ways as teaching devices and in casual conversation. Such verbal skill is inconsistent with schizophrenic thought disorder. His teachings were not bizarre or paranoid but consistent with sanctioned religious and philosophical views. He reported visual hallucinations; auditory hallucinations occurred less often. In general, his hallucinations did not occur in a clear sensorium or during normal levels of arousal.

2. His catalepsy was not the result of a hysterical attack (la grande hysterie). His samadhi lasted longer than an hysterical attack. The biographical material does not suggest classic conversion symptoms. In a late photograph of Ramakrishna in catalepsy, his hands, feet, neck, and torso are not positioned in the postures and the contractures of an hysterical attack (Nikhilananda, 1992; Didi-Huberman, 2004). His hands display symbolic religious gestures, or mudras, the same ones he demonstrated in another photograph taken when he was not cataleptic. His conviction and forcefulness in verbalizing and modeling his teachings are unlike the passivity and suggestibility in hysterical personality disorder. Ramakrishna sought privacy before beginning his periods of meditation. He did not arrange circumstances that would have allowed others to see his behavior and praise his skill and devotion, as would be expected in hysteria. Traditional writings on yoga distinguish samadhi and states of concentration with an auto-hypnotic basis (vikshipta; Eliade, 1975). The suggestible hysterical person is subject to auto-hypnotic states. Ramakrishna pursued samadhi.

3. His catalepsy is unlike the atonia that occurs in narcolepsy. The narcoleptic attack involves postural atonia rather than rigidity or waxy flexibility (Roth, 1978). A narcoleptic attack lasts minutes or hours; Ramakrishna’s meditation lasted much longer. He did not report sudden, unexpected spells of sleep, as found in narcolepsy, nor did observers mention their occurrence.

4. Ramakrishna’s catalepsy was probably not a symptom of nonconvulsive complex partial status epileptics. In seizures of this nature the discharge occurs in a limited area of the brain and without secondary generalization (Walker, et al., 2005). A primary manifestation is altered mental status; motor symptoms may also occur. Some biographical material supports the interpretation
that Ramakrishna was epileptic. At age 10 or 11, while singing, he fell and was “stricken dumb. His body stiffened and became numb. Tears poured from his eyes” (Isherwood, 1965). In adulthood he identified this experience as “one of my first ecstasies” (Nikhilananda, 1992, p. 933). He reported a comparable episode as an adult: “I had the wonderful vision of the Mother [Kali], and fell down unconscious [...]. But, in my heart of hearts, there was flowing a current of intense bliss” (Heehs, 2002, p. 433). The interpretation based on epilepsy is not entirely convincing. Ramakrishna’s behavior preceding and following mystical experiences, including those with catalepsy, was unlike aura-related or postictal behavior. Were he in status epilepticus for weeks or months, he would probably have developed brain damage or died (Chang & Shinnar, 2011; Logroscino, et al., 2005). The interpretation based on epilepsy may seem to draw support from two assumptions: Mystical experience is a seizure experience, and the ecstatic emotion in some mystical experiences is comparable to the affective content of the ecstatic seizure. These views are empirically unwarranted (Bradford, 2013).