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Chapter

Yoga, Mind-Body Coherence, and Zen

Junling Gao and Hin Hung Sik

Abstract

Eastern meditative traditions, such as yoga, Qigong, Tibetan Buddhism, and Zen/Chan, have long underscored the interplay of mind and body, and this mind-body problem is gaining empirical support through modern neuroscience. Our recent studies reveal a tangible link between the brain's electrical activity and the heart's rhythm, exemplifying the mind-body synergy. This chapter covers topics that Yoga integrates breath and posture to unify mind, body, and the environment; and furthermore, Zen/Chan meditation directly aims to dismantle all conceptual illusions, including those of self and universe, sharpening the practitioner's mental acuity, and challenging their perception of reality. This chapter explores the mind-body nexus and contrasts various meditative disciplines, primarily focusing on the nuances between Yoga and Zen/Chan meditation.

Keywords: yoga, mind-body coherence, Zen/Chan, brain-heart connectivity, EEG

1. Introduction

1.1 The concept of mind-body unity in Yoga philosophy

Yoga originated in ancient India, and it is grounded in the Yoga Sutras of Patanjali [1]. This holistic philosophy posits the unity of the body, mind, and spirit in humans. The practice of Yoga can lead to spiritual liberation or enlightenment, which is a pure state of consciousness and an Elysian spiritual state. A unity of the mind and body is emphasized in Yoga philosophy, extending to unity with other beings and our surroundings, and ultimately, a reunion of the self with the universe. The Yoga concept of Advaita, akin to nondualism, states that the true nature of the self mirrors the essence of the universe. However, due to avidya or ignorance, secular individuals harbor an illusion of separation between the self and others [2].

The dispelling of this illusion or avidya can be achieved only through the practice of Yoga, which includes physical postures (asanas), breathing exercises (pranayama), meditation, and other spiritual practices [3, 4]. Why is spiritual liberation pursued through physical and breathing training, rather than philosophical thinking and logical deduction? This stems from the ancient law of cause and effect, which asserts that all substantive actions entail consequences [5], and physical action can have a more practical effect than pure philosophical thinking. Moreover, the physical state of the body is

intertwined with, if not determinative of, the mental state [6, 7]. Therefore, the practice of Yoga seeks to purify the body and mind simultaneously, foster positive causal effects, and facilitate the attainment of greater physical happiness and spiritual growth.

Once the physical aspect of the body is well-trained and largely purified, the focus of practice moves on to spiritual exercises and purification. The philosophy of Yoga places particular emphasis on moral behavior and character, referred to as yamas and niyamas. Yamas incorporate principles such as non-violence, sincerity, and non-theft, while niyamas include principles such as cleanliness, contentment, and self-discipline [8]. Adhering to these moral standards is an inevitable manifestation of their practical implementation in real life. If practitioners genuinely embrace Advaita's "non-two" or "nondualism," they recognize that the self and the universe are not independent entities but interdependent and unified. There is no need for deception or theft as these acts are inappropriate and unnecessary [9].

Following the rule of causality, only the practice of Yoga with substantial action, including both the physical and mental training, can help us purify them as a unity. Training of either the body or the mind alone cannot overcome the illusion of dualistic separation. The combined physical and mental practice of Yoga helps the practitioner cultivate a sense of unity with all existence. Eventually, consciousness of the true nature of the self and the universe will appear and merge as the ultimate reality. This non-dualistic philosophy is closely related to the concept of Brahman as the source of existence and the cosmos. It is assumed that the true nature of the self is identical to the nature of Brahman. The ultimate goal of human existence is to realize this universal truth and achieve liberation and enlightenment [10].

Over thousands of years of development, yoga training has formed an integrated system that includes body posture (asanas), breath control (pranayama), sensory withdrawal (pratyahara), focused attention (dharana), deep meditation (dhyana), the highest state of absorption or superconsciousness (samadhi). There is ethical guidance all through the Yoga practices. Yoga's body movements are designed to balance different aspects of the practitioner's physiology, promote physical health and vitality, and prepare for meditation. Breathing training plays a particularly important role in the systematic training of yoga, where the practice of breathing in and out harmonizes the flow of life force (prana), calms the mind, and regulates emotional states [11]. Both yoga and the modern fashionable mindfulness place a special emphasis on breathing [12, 13]. From a neuroscientific point of view, breathing training lies in the effectiveness of any mental training, especially with its profound physiological basis (**Figure 1**).

Breath training, or "pranayama," as respiratory activity can act as a bridge, spanning the chasm between the conscious and unconscious realms, uniting them into a harmonious existence. The Sanskrit term "pranayama" combines "prana," representing life energy or breath and "ayama," denoting expansion or extension. Thus, pranayama encompasses the essence of breath control in yoga practice, serving as a critical element in yoga training. In yoga, conscious control of breathing can be considered a conduit, linking the conscious mind with physiological processes typically unconscious [14, 15]. This unique interaction can serve as a direct reminder of our innate ability to influence our physiological states through mindfulness observation. The continual inflow and outflow of breath provide a flexible and vivid phenomenon for observation, much like focused attention meditation, thereby helping to anchor our attention in the present moment and with our physical body [16, 17]. This focus on the breath can serve as a robust defense against the mental wandering or even storm in our brain that occasionally arises in our minds, granting us calmness. The relationship between physiological and psychological processes is characterized by distinct temporal dynamics. Cognitive

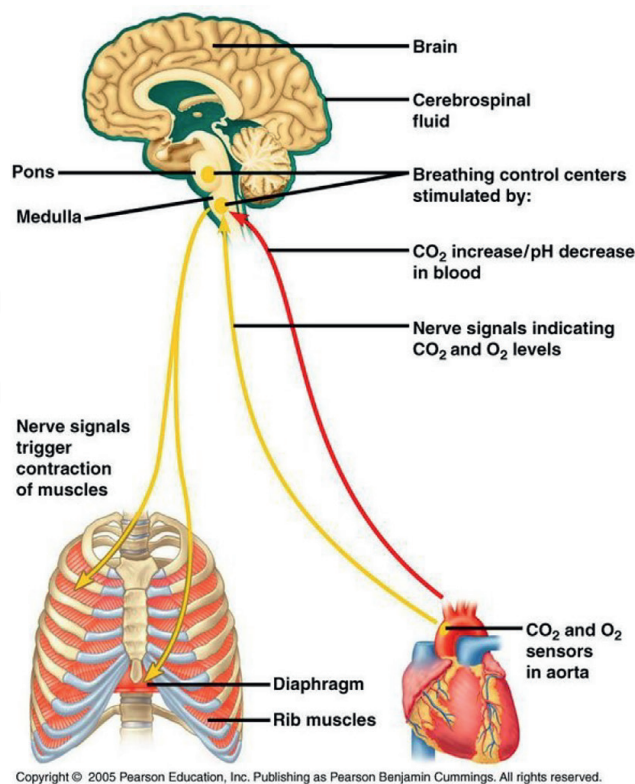


Figure 1.
The nervous control on respiratory activities.

functions generally operate at a more rapid pace compared to somatic responses, which are inherently slower and exhibit a finite range of adaptability. For instance, the human mind is capable of swiftly traversing a broad spectrum of thoughts and imaginings, often detaching from the present moment and engaging with abstract concepts or hypothetical scenarios. In contrast, the physical body is anchored here and now, constrained by the temporal and spatial limitations inherent to biological processes. By consciously coordinating breath and movement in yoga practice, we can gradually cultivate mind-body coherence. This resonance of physical and mental activities can guide the harmonious operation of our life energy, ultimately enabling our minds to become more focused, balanced, and harmonious [18].

Conscious breathing training can eventually make the mind to be more coherent with the natural rhythm of the biological body. It harmonizes psychological and physiological activities and achieves a state of effortless mastery. Once the mind can freely collide with and utilize this primal force, the union of mind and body can bring forth enduring spiritual power. When breath and consciousness are in tune, we become aware of the natural flow of our inner life force and experience how subjective consciousness can influence the physical state [19]. This “homecoming” simulates the process of our spirit returning to its roots, where the mind can release deeper insights and peace. Therefore, breath training can provide us with a journey back home—through the mind returning to the origin of the breath, ultimately retrieving our original intention [20]. This “homecoming” journey is realized through mindfulness-style breath training, bringing tranquility, unity, and joy [20]. By continuously practicing mindful breathing in yoga and cultivation, we can explore the operation of life energy within the body and establish harmonious interaction between physiological structure and subjective conscious experience. Pranayama provides us with a path to our inner rhythm [21].

Long-term practice of Pranayama and mindful breathing will increase the practitioner's interoception on the subtle interpenetration and merge between the physiological and psychological structures of human beings [22]. During the process, breathing is the bridge that can connect the conscious mind with the unconscious body. They have different rhythms by nature. Thus, breath can connect the primary physiological force of life and voluntary psychological control. With continuous practice, the boundary between the mind and body will gradually dissolve and be replaced by a macroscopic sense of unity. By deepening this cross-boundary link, we can touch upon the deeper layers of the self and experience the possibility of the self-transcending the mundane. The mind-body bridge established through the practice of mindful breathing is a solid starting point for exploring the inner realm and many other yogic practices. It closely joins the consciousness with the life force, endowing us with a transcendent form of existence [23]. Through it, we can strengthen the growth of the wisdom within the living body, and through this wisdom, return to the embrace of the supreme source of existence.

2. Brain-heart connection and neuroscience

Much of yoga's discourse has been fully described in other chapters of this book. This chapter will focus on the issue of mind-body unity based on the above discussion, especially from this novel perspective of modern neuroscience. The final part of the chapter will discuss other spiritual training, especially Zen Buddhism's, and their implication for yoga training and philosophical elicitation in terms of spirituality and enlightenment.

The interconnection between mind and body is a fundamental premise of various Eastern philosophies and practices, extending beyond yoga to include traditions such as Buddhism, qigong, tai chi, and traditional Chinese medicine. These systems all underline the inseparability of physical, mental, and spiritual wellness [24]. Till to date, these concepts largely resided within the realm of philosophical discourse and personal anecdote, lacking empirical validation. While practitioners and scholars spoke of the profound effects of these mind-body practices, objective evidence remain scarce. The emergence of modern neuroscience has started to shed light on the potential mechanisms underlying these age-old wisdom. With sophisticated tools to investigate brain processes and their relationships with bodily function, it is now possible to explore these concepts with scientific rigor [25].

Mind-body problem is the hard problem for philosophers and scientists. Nonetheless, the complexity of mind-body relationship can be partially elucidated through the relationship between the brain and the heart. Mind can be best researched upon the brain's responsibility. The heart, as a crucial organ, exemplifies the body's dynamic nature. Cardiac rhythm and strength continually adjust in response to bodily demands, and cessation of cardiac activity is the gold standard for the diagnosis of death in clinics. On the other hand, psychological measurement is complex, involving both subjective experiences and objective observations of brain activity. Although we cannot directly equate the electrical activity of the brain to mental processes, these electrical patterns are currently our closest approximation of mental activity [26–28]. For instance, stimulation of the brain's somatosensory and motor regions can elicit corresponding sensory and motor responses and subjective experience. Similarly, stimulating the temporal lobe can trigger patients to recall past events and even complex images. The seizures experienced by

individuals with epilepsy provide compelling evidence for the relationship between brain electrical activity and psychological states [29]. Even though we cannot yet fully equate electrical brain activity with mental processes and acknowledging that various factors, such as neurotransmitters, continually influence brain activity, neuroimaging remains the most objective measure of mental activity so far [30, 31]. As neuroscience continues to advance, we expect that the accuracy and immediacy of these measurements will improve, opening up extensive opportunities for further exploration and measurement of mind and its interaction with the physical body.

Early stages of our neuroscience research discovered that heart-brain synchronicity is enhanced during mindfulness breathing exercises [32]. Mindfulness meditation, along with other Eastern traditions that include yoga, places emphasis on both mind-body training and the aspiration to achieve unity between mind and body. Two observable aspects of the mental training are trait and state, terms familiar within psychological theory. Trait refers to the long-term changes in one's temperament after practice, while state describes temporary changes occurring at the time of practice.

Our early studies found that mindfulness training can cause temporary state changes, including synergistic alterations in heart activity and brain activity during mindful breathing. These changes primarily reflect a harmonization of the activity and cardiac activity entropy in relevant areas. However, no difference was observed before and after an 8-week training period, indicating that while state-related physical and mental changes were identified, trait-related changes were not [32]. As analytical techniques continue to advance, subsequent research found that changes in alpha wave peaks and cardiac synergy metrics increased after 8 weeks of training. This implies that 8 weeks of mindfulness training can also yield long-term benefits on traits, dominated by a change in brain-heart interaction, measured by the correlation between the peak of the frontal alpha wave and heart coherence. Brain-heart connection may be more a sensitive index to monitor mental practice [13]. This suggests that short-term mindfulness breathing exercises can immediately alter the state of physical control in the human brain, while long-term mindfulness training effects changes in the frontal lobe, the control area of human brain cognition. This corroborates the age-old wisdom that immediate adjustments can alter the physical behavior of the body, but changing mental behavior requires a more prolonged experience (**Figure 2**).

Meanwhile, medical research and neuroscience also increasingly recognize the significance of mind-body integration, affirming the intricate interconnections between the brain and the heart. These interactions significantly influence cognitive function, emotions, and physiological processes [33, 34]. Also, our research probes into the potential links between our brain and heart, the fascinating dynamic rhythm they perform together in our physiology and psychology, and why the harmony between them matters so much to our health. Understanding these essential facts would spark fresh ideas on how one can bolster the coordination between the brain and heart through individual training, such as yoga and other meditation routines (**Figure 3**).

The brain and heart both have electrical activity. For example, brain has different electrical waveforms and exhibits different cognitive-emotional and arousal states. Mental concentration is accompanied by fast waves such as beta and gamma waves, and the relaxed awake state is accompanied to alpha waves. The heart generates its own electrical rhythm, which is further refined by signals from the autonomic nervous system. Therefore, two-way communication is achieved mainly through the autonomic nervous system (ANS) connection [35]. The vagus nerve is the main channel for information transmission, which transmits perceptual data about the state of the cardiovascular

The effect of MBSR training on brain-heart connection, in terms of difference of r-value pre- and post-MBSR training.

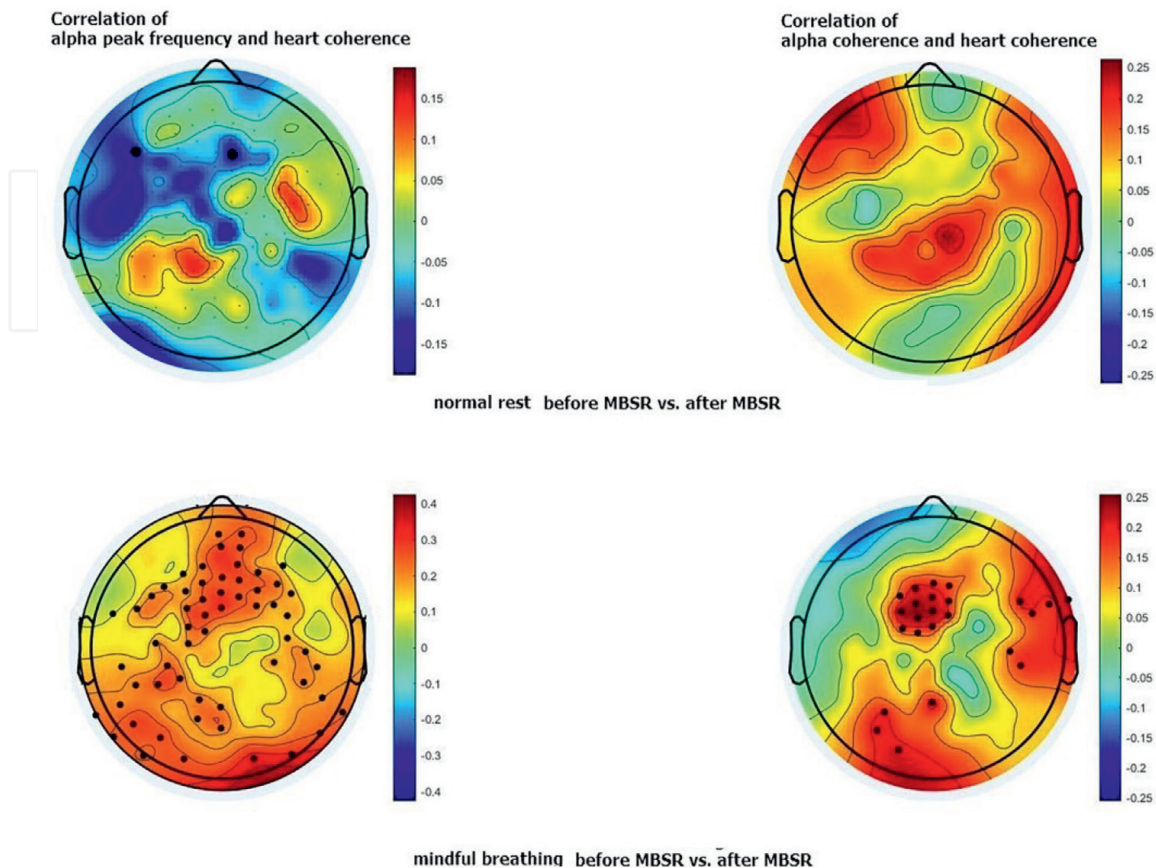


Figure 2.

Illustrates the brain-heart connections through maps. The connection strength (R-value) was determined by calculating the correlation between alpha peak frequency and heart coherence (left column), as well as the correlation between alpha coherence and heart coherence (right column). The upper row displays the normal rest condition before and after an 8-week mindfulness-based stress reduction (MBSR) training, while the lower row represents the mindful breathing condition before and after MBSR training. The color indicates the differences in R-values before and after MBSR training. The black dots indicate electrodes with significant differences before and after MBSR training ($p < 0.05$, uncorrected) <https://doi.org/10.3389/fnhum.2023.1008490>.

system through neural pathways to brain regions such as the brainstem, amygdala, and insular cortex. Cortical structures, in turn, regulate heart rate and heart function through vagus output [36]. This rate and pattern of information transmission produces rhythmic oscillations that synchronize brain and heart activity, referred to as neuropsychological coordination phenomena.

In humans, the nervous system is divided into the central nervous system (CNS) and the peripheral nervous system (PNS). The CNS includes the human brain and spinal cord. The PNS is made up of the somatic nervous system, which controls voluntary skeletal muscles, and the autonomic nervous system, which controls the heart muscle, smooth muscle, and glands [37]. The autonomic nervous system is further divided into the sympathetic nervous system (SNS) for fight or flight responses and the parasympathetic nervous system (PNS) for rest and digestion. The main communication channel between the brain and the heart is *via* the vagus nerve, which belongs to the PNS. However, other neural pathways exist while play minor roles in brain-heart connection [38].

The heart itself contains complex networks of clusters of nerve cells (ganglionated plexi or GP) on the outer surfaces of the atria and ventricles. These networks, located

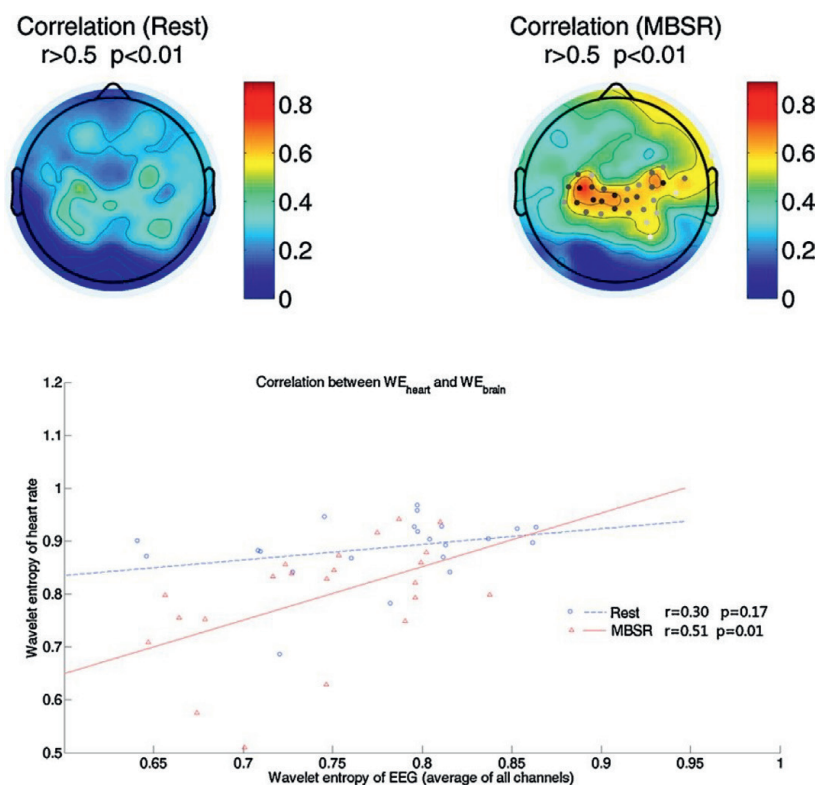


Figure 3. Depicts the correlation between the entropy of whole brain EEG and the entropy of heart rate during MBSR practice (red line), contrasting with the absence of such correlation during normal rest (blue line). The small dots represent channels with significant correlation between HR entropy and each EEG channel. For a more detailed understanding of the color references in this figure legend, please refer to the web version of this article. <https://doi.org/10.1016/j.neulet.2016.01.001>.

within the epicardial fat pads, constitute the intrinsic cardiac autonomic nervous system. This system consists of interconnected GP, ganglia, and nerve fibers [39]. It interacts with the extrinsic cardiac autonomic nervous system, which originates from the brain. The intrinsic GP nerve networks likely function as integrative hubs that coordinate complex autonomic signals between the extrinsic and intrinsic cardiac nervous systems, allowing sophisticated control over cardiac functions [39].

These nerves establish extensive neural connections for bidirectional information transmission and feedback between the brain and heart. These anatomical structures serve as interfaces linking the central and autonomous nervous systems and participate in the sympathetic regulation of cardiovascular and abdominal organs. The sensory nerves of the cardiovascular system and the heart convey information about blood pressure, heart rate, respiration, and oxygenation to the brainstem area *via* the vagus nerve, including the subnuclear area. This area integrates these visceral sensory data and sends them to brain regions, such as the amygdala and the insular cortex. Conversely, the brain regulates heart function through the vagal motor pathway, originating in the medulla oblongata. The circular respiratory center including subnuclear area can further integrate the visceral sensory data and send them to other brain regions, such as the amygdala and the insular cortex [40]. The latter is related to emotion and can influence cognition eventually.

When EEG and ECG rhythms are synchronized and maintain a stable phase relationship, this is known as neurocardiac synchronization. It is characterized by the frequency of heart rate variability matching the EEG alpha waves. Neurocardiac synchronization forms the foundation of the brain-heart connection and significantly

impacts physiological and psychological health [41]. The level of synchronization reflects the functional state of stress-related pathways. Different psychological states exhibit variations in synchronization with positive emotions and relaxed states showing higher harmony, while stress and anxiety are associated with dysregulation. As an indicator of overall resilience and adaptability, neurocardiac synchronization positively correlates with emotional stability and cognitive function [42].

Neuropsychological coordination aids in achieving emotional stability and the recovery from negative emotions. The extent of coordination can indicate how effectively the cerebral dopaminergic prefrontal lobe regulates the amygdala's emotional responses. Individuals with higher coordination levels experience lower anxiety and more robust positive emotions. Interestingly, in high-stress situations, such as combat training, individuals with greater neurocardiac coordination exhibit a reduced heart rate response and quicker recovery, indicating enhanced physiological resilience to stress [43]. A lack of brain-heart coordination often signals a poor clinical prognosis for conditions, such as depression.

Coordination between brain-heart rhythms positively correlates with emotional stability, cognitive enhancement, and increased physiological resilience. For instance, the balance between sympathetic and parasympathetic influences in heart rate variability affects emotional states with lower HRV in stress and depression [44]. Brain-heart connectivity significantly influences health, with ongoing studies revealing its impact on cognition, emotion, resilience, and clinical outcomes [45]. Higher cognitive readiness and capabilities are found to have a direct correlation with the index on synchronization of brain EEG alpha waves and heart rate variability with [46]. Enhanced brain-heart coordination is associated with improved performance in cognitive tasks, such as attention and memory, and this coordination is related to neurobiology of consciousness [47].

The disciplines of meditation and yoga always emphasize mind-body training that can confer benefits by optimizing neuropsychological coordination. This harmonization is considered one of the pivotal mechanisms contributing to their psychological and physiological advantages. Meditation, particularly the yoga practices is for cultivation of a synchronized relationship between the brain and the heart, which is believed to be crucial for deepening the mind-body connection. Generally, meditation practices are known to enhance the synergy between respiratory and circulatory rhythms, leading to a more coherent physiological state that supports overall well-being [48]. This improved synergy can result in a more efficient oxygen exchange and a calmer more rhythmic heartbeat, which together promote a state of relaxation and mental clarity [49]. Furthermore, the focused attention and mindfulness inherent in yoga and Zen meditation practices are instrumental in heightening inner awareness and interoception. This heightened awareness allows for a greater understanding of the body's internal signals, fostering a deeper connection with one's physiological states and emotional landscape [50]. Through these practices, individuals can develop a refined attunement to their internal experiences, contributing to improved self-regulation and presence.

3. Differences between Yoga and Zen meditation traditions

Although Zen and yoga both aim to foster mind-body integration and enlightenment, they adopt distinct methodologies and prioritize different aspects of the experience [50]. Nowadays, yoga often means training physical postures, but traditional yoga training involves much more on meditation and ethical living. The ultimate

objective of yoga training is to merge individual consciousness with universal consciousness, and Yogis refers this as self-realization or enlightenment. Zen Buddhism, a unique branch of Mahayana Buddhism that appeared in China and later spread to Japan and other East Asian regions, diverges from this approach. Zen mainly focuses on practice known as “zazen” or seated meditation, and more uniquely Can-Hua-Tou, the inquiry meditation [51]. This form of meditation is central to Zen practice and is aimed at achieving deep states of absorption and insight.

The core practice of Zen Buddhism revolves around cultivating “mushin,” a state of pure consciousness devoid of conceptual thought. Zen practitioners often employ short stories or paradoxical anecdotes known as koans to trigger this state and to illustrate the nonconceptual essence of reality [52]. Zen Buddhism prioritizes the attainment of direct experiential insight, downplaying the value of theoretical knowledge and eschewing superfluous and elaborate religious ceremonies. The ultimate aim of Zen is satori, a sudden flash of profound realization or awakening. This moment of enlightenment unveils the “true nature” of reality and the self, affirming that ordinary life itself embodies enlightenment. Zen and yoga, while distinct in their practices, both seek to engage practitioners into a direct yet profound experience of reality and self-awareness that transcends daily thought patterns. Both of the practices encourage and cultivate the virtues of mindfulness, discipline, and ethical living, both in pursuit of inner serenity and balance. Nevertheless, yoga offers a comprehensive approach that includes physical postures, breathwork, and meditation, whereas Zen mainly focuses on meditation and mindfulness all through the daily living. Despite their different paths, both aim to illuminate the mind and enrich the spirit [53, 54].

In addition, Zen meditation, in particular, offers a distinctive cognitive flexibility that yoga practice may not have, also there is intensive mental inquiry. Intuitive inquiry meditation is a specialized Zen technique that employs the cognitive function of doubt to actively and intuitively investigate the concept of self. Our neuroscience research examined the effects of long-term intuitive inquiry meditation of Zen practice on brain responses to self-pattern processing. This research offered intriguing insights into how Zen practice influences self-concept and concept of Buddha belief and doubt [51]. It is a meditative practice characterized by persistent questioning and doubt, fostering deep introspection [55]. This method prompts practitioners to challenge and eventually relinquish all fixed ideas, including those of the Buddha and the self. Research indicates that intuitive inquiry meditation can specifically alter the brain’s reaction to self-related concepts. When presented with images of themselves and the Buddha, seasoned monks exhibited a diminished neural response to their own image during meditation, but not to the image of the Buddha. This implies that for these practitioners, the meditation’s focus has shifted more toward an internal conceptualization of “self,” demonstrating a more flexible approach to processing self-identity [51]. The study’s outcomes suggest that intuitive inquiry meditation (Zen Buddhism) leads to a more adaptable and detached mindset when engaging with the concept of self.

Figure, Zen monks show a more flexible brain activity when comparing Zen and normal condition-Fig. 5ERSP data from channel Fz exhibit differences between the two conditions when viewing pictures of the self. Significant differences were found at approximately 200 ms among monks ($p < 0.05$, FDR corrected). No significant interaction was found using ANOVA (**Figure 4**).

This aligns with Zen Buddhism’s teachings on the wisdom of nonattachment and the transient nature of existence. It reveals that through prolonged practice, Zen

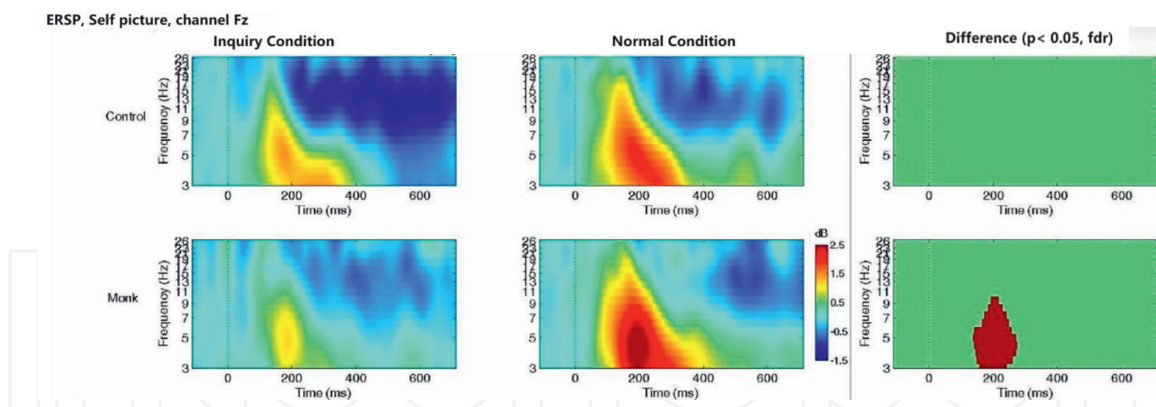


Figure 4. ERSP data from channel Fz indicate differences between the two conditions when viewing self-pictures. Monks showed significant differences around 200 ms ($p < 0.05$, FDR corrected) <https://doi.org/10.1016/j.heliyon.2023.e20075>.

meditators can cultivate a mental state that enables them to swiftly move beyond self-identity, thereby attaining a profound comprehension of selflessness.

Zen Buddhism, thus, necessitates continuous meditation to train the mind for direct enlightenment (Satori) through immediate, intuitive understanding of reality's nature. It emphasizes the practice of meditation (zazen) and mindfulness in daily life to recognize the true essence of self and reality, transcending conceptual and dualistic thought. Enlightenment in Zen is often described as an awareness of one's own nature or Buddha nature, acknowledging the transience and interconnectivity of all existence, and understanding the fundamental emptiness of all phenomena [56].

4. Implications for health, wellbeing, and self-realization

This chapter offers valuable insights into the distinct approaches Zen and yoga take toward the concept of self and their potential effects on the brain's processing of self-patterns. It underscores the importance of further research in this field to enhance our comprehension of these ancient practices and their implications for mental health and well-being. The research also suggests that Zen Buddhism and yoga, while different, are complementary systems within Eastern philosophy, sharing similarities and possessing fundamental differences. Both of Yoga and Zen aim for the elevation of the human spirit and self-transcendence, yet they offer divergent interpretations of the ultimate goal and conceptual understanding. Yoga, stemming from the Sanskrit word "Yuj," meaning "to join" or "to unite," aspires to realize the union of the individual self (Atman) with the universal consciousness (Brahman). Through this union, practitioners aim to transcend egocentricity in the process of self-realization, acknowledging the interconnectedness of life and the unity between the individual and the cosmic self. This union is believed to bring about inner peace and equilibrium [57].

Conversely, Zen Buddhism's philosophy is nuanced differently. It underscores the concept of "emptiness" (Sunyata), a central tenet of Mahayana Buddhism and the essence of Zen. In this context, emptiness is not mere "nothingness" or "void," but a state denoting the absence of inherent or independent existence. It is an appreciation of phenomena that all elements, including the self and the universe, are interdependent and in constant change, devoid of any eternal, and unalterable essence [58].

From this vantage point, the primary distinction between Zen Buddhism and yoga lies in their perception of the end goal. Yoga seeks the “union” of dualities, whereas Zen Buddhism aims to transcend duality, directly experiencing the fundamental emptiness and interrelatedness of all things, leading to a profound realization of the impermanence and dynamic nature of reality. Zen Buddhism advocates for surpassing the final barrier to enter a state of “non-duality” or “absolute reality,” transcending all concepts and illusions [58]. Within the theoretical framework of yoga, the individual self (Atman) and the cosmic self (Brahman) are viewed as distinct entities that can achieve “union.” In contrast, Zen Buddhism emphasizes the inherent emptiness and interdependence of all phenomena, dismissing the notion of an independent, immutable “self” or “universe.” In Zen, the non-dualistic awareness does not involve the fusion of two separate entities but rather a direct apprehension of the fundamental interconnectedness and mutual dependence of all existence.

While Zen Buddhism and yoga may seem to chart different paths, at their heart lies a shared quest for oneness, transcending the self-imposed boundaries of the individual ego. Yoga navigates through a dualistic lens seeking unity, whereas Zen Buddhism embraces a non-dualistic view that goes beyond such distinctions. This Zen perspective invites a profound shift in how we perceive our world, urging us to look past the mirage of separation and to appreciate the web of connections that bind everything together [59]. It is not just about grasping the fleeting nature of existence; it is about living in harmony with it finding tranquility in the very transience that defines life.

This essence of Zen is palpable in its practices, such as Zazen and Koan, where such non-dualistic truths are not just understood but lived moment to moment [60]. Meanwhile, emerging neurophilosophies have expanded our view beyond the brain-heart dialog to include a network of bodily communications, such as the gut-brain axis and the interplay between our breathing and heartbeat. Yet, even as science delves into the brain-heart connection with a reductive lens, it only scratches the surface of the profound interplay at work in the meditative traditions of Zen and yoga, where the dance of mind and body unfolds in layers far too intricate for simple models to capture.

In the practice of Zen Buddhism and yoga, this broader mind-body integration consciousness can only be implicitly recognized. For example, the practice of breath control in yoga, or pranayama, is seen not only as a way to regulate bodily processes but also as a way to achieve mental clarity and emotional calm. The practice of meditation sees a more holistic, systematic interweaving of physiological and cognitive processes, and more importantly, the interaction that collectively shapes our subjective experience. Zen Buddhism places particular emphasis on the direct role of mind consciousness and even enlightenment. Overall, both Zen Buddhism and yoga are effective tools for us to understand the world and the self and achieve self-transcendence. They offer two different but complementary perspectives that help us understand the nature of life and find peace and fulfillment (Ramsden). These philosophies may help modern people cope with the pressures of the multitude of tasks and the dizzying amount of information; after all, there is nothing new information in the world, mediocrity is self-inflicted, and all things are connected according to the philosophy of Yoga and Zen; There is no need of re-connection.

They provide complementary perspectives that help us grasp life’s nature and find peace and fulfillment. In a world, where the pressures of numerous tasks and overwhelming information weigh heavily, these ancient practices offer us tremendous mental benefit and health.

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