

Yoga's Triadic Foundation

Pio Garcia

Externado de Colombia University, Bogota, Colombia

Email: pio.garcia@uexternado.edu.co

How to cite this paper: Garcia, P. (2020).
Yoga's Triadic Foundation. *Open Journal
of Social Sciences*, 8, 112-132.
<https://doi.org/10.4236/jss.2020.87010>

Received: March 21, 2020

Accepted: July 12, 2020

Published: July 15, 2020

Copyright © 2020 by author(s) and
Scientific Research Publishing Inc.

This work is licensed under the Creative
Commons Attribution International
License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Obstinate intolerance, injustice or lies that favor privileged subgroups in today's civilization depend on the roots of one-dimensional and dyadic paradigms. Certain interpretations and orientations of yoga are affected by this phenomenon. Paradigmatic shifts towards the triadic approach allow highlighting the philosophical richness of yoga and a better understanding of its tripartite complexity as science, art and technique. This article shines a light on the complexity inherent in that triple foundation.

Keywords

Yoga, Triadic, Science, Art, Technique

The practice of yoga induces a primary sense of measure and proportion. Reduced to our own body, our first instrument, we learn to play it, drawing from its maximum resonance and harmony. With unflagging patience, we refine and animate every cell as we return daily to the attack, unlocking and liberating capacities otherwise condemned to frustration and death. Yehudi Menuhin, Forward to Iyengar's *Light on Yoga*.

1. Introduction

Yoga and yoke are both terms related to connectedness or union. The tradition of this philosophy and practice from India highlights the confluence of physical and mental dimensions or the convergence of mind/thought and body. Yoga embodies the Latin motto *mens sana in corpore sano* (A sound mind in a sound body) acknowledging that mood impacts humans physically as well as conversely, and the physical influences the mind. Ever since the middle of the past century and the dawning of neuroscience, there have been interesting hypotheses about the effect of emotions and social context on health. As one example, the study of disease and conflict by Uta Gerhardt (1989) is in clear agreement with

Yogic philosophy and is more valid than ever. Undeniably, “we celebrate or suffer what we think”. This evidence paved the way for the inexhaustible publication of self-help books and videos that result in better health for many people to this day.

From its beginning, yogi teachers were always aware of the human condition and were determined to establish the intellectual and behavioral frameworks that could amplify the impact of such consciousness available within the mystery of eternity. The challenge was nothing more and nothing less than leading the infinitely tiny self into the concert of light, sounds and cosmic vibrations to merge into incessant joy. Various names were given to this communion: satori, nirvana, enlightenment. To reach such a supreme degree of identification with and experience of infinity is the path to complete the process of human adaptation in the universe: understanding it, taking advantage of it and recreating it.

As an embodied discipline that exceeds the limits of contemporary knowledge or the science, yoga is still subject to criticism and denierism, despite testimonies championing the practice and its visible and real impact on human health. In addition to scientific critics, barriers have been imposed by religion. For example, in 2009, American bishops prohibited parishioners from practices reiki, yoga and Eastern religions. They wrote: “In fact, this worldview has its origins in eastern religions and has a certain monist and pantheistic character, in that distinctions among self, world, and God tend to fall away. We have already seen that Reiki practitioners are unable to differentiate clearly between divine healing power and power that is at human disposal.” (United States Conference of Catholic Bishops, 2009). Also, seriously and in jest, an article in the New York Times by Broadjan (2012) warned why yoga practitioners could hurt themselves and even die on their mats.

Indeed, medical warnings indicate that some postures compromise the neck and back (such as the cobra, the wheel or plow) and by pressing the vertebral arteries can reduce blood flow to the brain risking thrombosis. Reports abound that the practice does not help in maintaining ideal weight, because instead of accelerating, it slows down the metabolism; Stanland (2015) claimed that yoga does not improve body image or cardiovascular health. To these observations are added complaints around some yoga schools that persuade their disciples of supernatural psychic powers. Moreover, it is stressed that yoga is another diversion for Euro-American societies attracted to hedonism and body worship. Additionally, to others, a racial and elitist bias is implied in the practice of yoga (Earth Energy Reader, 2012).

On the other hand, the benefits of yoga for physical and mental health have been established in numerous studies. Clinical investigation has confirmed yoga’s positive effects over stress, cardiovascular and digestive problems or spinal diseases. Evidence in numerous studies shows it strengthens the immunologic system, prevents cancer, cures depression and improves brain performance and concentration (Cho et al., 2015; Khanna & Greeson, 2013; Louie, 2014; Berton

Learning Organization, 2012; Posadzki et al., 2014; Smith et al., 2007).

Yoga is a controversial topic. Regarding this discussion, one can conjecture that the wisdom of yoga is a powerful tool to better understand human existence and can marshal the ingredients to transform the human lifespan cycle in a pleasant, exciting, deep and prolonged experience. Accordingly, yoga's basic challenge is how to achieve a radical commitment to life, in all its magnificence, a conscious effort to shine forth to give unlimited combustion of the internal energy staff. Adopting the musical metaphor of the concert we discover its aesthetic dimension of existence. But, yoga also integrates a way of thinking and acting. Echoing the Menuhin epigraph, we ask a more precise question: Why is yoga science, technology and art all at the same?

This article upholds the hypothesis that, beyond any dichotomy, yoga reflects a triadic structure and a sense of harmony or proportionality that can be explained, in order to enrich the understanding and value of its civilizational contribution. Yoga's triune brain power is associated with the concepts of mind (left brain), body (central brain) and spirit (right brain). Physical and mental harmony is related to universal harmony; hence, the disposition of yogis towards mysticism. As yoga's scientific, technical and aesthetic values are usually studied separately, it is necessary to appreciate its triadic convergence and its inherent sense of proportionality.

This article main purpose is to explain the triadic foundation of yoga and its intuition of the harmony that proportionality provides. The theoretical framework is taken from the triadic platform of Proportionalist Social Cybernetics, a paradigm elaborated by Gregori (2002a, 2005) and its application to yoga (Sônego & Gregori, 2017). After introducing the uni-triadic worldview (Section 2), this article validates yoga's triple cognitive (Section 3), heuristic (Section 4) and technical foundation (Section 5). Section 6 embeds yoga in the ethics of proportionality, a new paradigm for social rebuilding.

2. Brain in Uni-Triadic Framework

It is possible to speak of the wisdom of yoga as the synthesis of the knowledge of human nature and its essential connections with the forces that move the cosmos. This implies connecting the understanding of the phenomenon of life with the dynamism of the universe, answering, in a scientific and philosophical way, the question about the position of the human existence - being in the world. Our species is found in the breakdown of that vector composed of the living phenomenon within an immeasurable space of forces and vibrations in continuous deployment, with a significant difference compared to other living entities: its conscious existence. Because of this, many philosophies and religions have idolized the human being as the "master of the universe".

The existence and privileged consciousness of homo sapiens is part of the general dynamism of energy and nature. The universe is made up of countless galaxies, planets and, surely, other life forms, in an expansive flow, thanks to its

self-propelled mechanism. Energy is triune; from its origins in quantum theory, triplet quarks are the basic building blocks that make up matter. According to [Gell-Mann \(1994\)](#), all the objects of the universe are composed of quarks, leptons and bosons. These elementary particles were launched by Big Bang magma into the cosmos fifteen billion years ago, which in subsequent cooling acquired mass and they began to interact, according to the four primary forces of: electromagnetism, strong and weak forces and gravity.

The law of the conservation of energy is relative, as this controls its decrease or entropy also, so that after its climax point, everything resets. From the beginning, the universe tends toward loss of its string or momentum. In the random cycling between order and disorder, the living conditions on planet Earth and the subsequent biological evolution were established, which, although not necessarily unique in space, is the one we enjoy. Actually, eleven billion years after the Big Bang, chance generated prebiotic forms of terrestrial life, dependent on the course of physical laws ([Gell-Mann, 1994](#)).

We access life through photosynthesis in plants, algae and some bacteria, which capture sunlight, water and carbon dioxide and turn them into glucose and the oxygen we breathe: The essential basic life forms on Earth began as biomolecules in the cell membranes of plant leaves, inside chloroplasts. Chlorophylls grouped in biomolecules of five to ten nanometers in length. These biomolecules function as “antennas” for absorbing light. When this happens, an electron of these chlorophylls passes to a higher energy level and there begins an internal process that produces a type of electrostatic energy, that is transferred from one molecule to another, until it reaches another molecular center where it is converted into chemical energy ([Olaya-Castro, 2016](#)).

Neurons and brains are the acquisition of complex organisms. For their development it was necessary that a set of nerve cells evolved to specialize in the functions of anticipation (foresight) giving the animal greater survival capacity, using nature’s method of trial and error. The essence of brain function (animal and human) is prediction: thanks to the nervous system, animals anticipate scenarios (goals) and move towards them, verifying movement through sensory information; subsequently without an internal plan subject to sensory modulation, active movement is dangerous. Movement provides them with better conditions for survival (food and defense). Plants that do not move actively do not need brains; they do not depend on anticipation. The first motor (brain) cells appeared in a type of marine tunicate, a species with sessile (still) adult life after a swimming larval stage. Over millions of years the central nervous system and the brain acquired the complex functional architecture necessary for movement by higher species ([Llinas, 2001](#)).

Thought, in turn, is internalized, abstract movement, and the reflection of its previous design. It is the neuron’s special function, in the same way that the heart gathers specialized heartbeat cells (which developed that cellular property as a result of the ionic difference between its external and internal environment).

They do it in aggregate synchronization, because they are electronically coupled. The brain arises from the development of intrinsic cell movement (myogenesis) that gives rise to neurogenic motor skills: motor neurons capable of establishing synaptic connections and neural networks that, through their axons, reach specific muscles. Thanks to intrinsic oscillatory properties and electrotonic coupling, the external properties are gradually internalized during evolution and within the nervous system they move towards the front pole of the neuroaxis and integrate by cephalization, resulting in the ability to think. Consequently, evolution used the properties of cell biology to generate thought; the human brain has the same genetic sequence as the rest of the organism; it shares the same geometry (Llinas, 2001).

Consciousness is a state of mind. The human brain has a set of neural networks that is specialized in the functions of coordination or coupling internal information with external data forming consciousness. Thus, the “self” is one of many functions (sensory, motor and associational) of the human brain, with consciousness being a functional state of mind (Llinas, 2001). Thought faxes the brain activity of neurons, those cells specialized in generating and transmitting information. Some animals can express feelings because they have brain capacity; but, only humans have the faculty of language and self-perception or awareness. Language supports social interaction and culture, extending the boundary between the irrational and the rational animal. The triune human brain capacity is poured into three basic intelligences: cognitive, operational and emotional.

Given the isomorphism of nature and its fractal composition (Mandelbrot, 2004), triune energy could generate triune cell combinations and, by derivation, the triune composition of nerve networks. The pioneering studies of human brain complexity were carried out by Alexander Luria (1902-1977) and Paul MacLean (1913-2007). The latter established in 1952 that the limbic system that separates the thalamus and cingulate is pronounced in mammals but not the lower vertebrates. This influences play, maternal care, auditory and visual communication with the baby (MacLean, 1973). Also, evolutionary pressures generated extensive neural networks in the brain, whose associations in certain areas such as Wernicke’s, acquired correlates of phonological and memory circuitry giving rise to learning and vocalization (Aboitiz & García, 1997).

The triune cognitive, emotional and motor intelligences correspond to the triune cerebral heritage of homo sapiens, whose mind is evolved from lizards, mammals and primates (MacLean, 1973). The human brain in its most primitive strata is reptilian, on which a limbic mammalian “girdle” was inserted, and was finally crowned by the neocortex. The tri-moderated human brain can be depicted simply for nonscientist children, teachers and caregivers by identifying: 1) the most recent neocortex as corresponding to the “cognitive Left hemisphere”; 2) the paleomammalian or limbic brain as our “affective-emotional Right hemisphere”; and 3) the primitive motor-sensory or reptilian strata as our “Central Brain” devoted to action and survival. The latter terminology has been popula-

rized by Gregori (2002a, 2002b, 2005) (pointing to the back of the head to indicate MacLean's R-Complex (including midbrain, cerebellum and brain stem) which bridges and communicates with lateralized left/right hemispheres. The 3 brain areas each evolved with specializations for conflict, conciliation, and reasoning but interconnect with each other. Life and culture further multiply our passion for study with work and leisure, intellect is joined to action and enjoyment.).

Daily we exercise and exhibit different, scientific and artistic and even mystical capacities. This happens because of the differences that family and culture impose on individuals, giving rise to more or less sophisticated uses of the 3 brains. Humans exhibit increasingly sophisticated hierarchical levels of functioning from a basic, or execution level, to a supervisory level, through the intermediate levels of mastery and higher order administrative ideation. These are the cerebral competencies that in the left brain complexify from language to classification, research and epistemology; affect in the right brain expands towards creativity, extra sensory perception, aesthetics, and mysticism, and the central brain graduates from the successful challenges of procreation and survival towards professions, innovation and administration. Individual neurological development can recapitulate the brain's tri-tetra tiered phylogeny (Gregori, 2002b).

This scientific hierarchization helps us to propose that the therapeutic resources of yoga can become much more effective going beyond the dualisms of spirit vs. matter, soul vs body., The duality persists in large part because yoga schools forget about triadicity, which originates at the level of matter and energy, and expands environmentally, individually, into groups, organizations, economies and cultures and the cosmos as a whole, always with tripartite proportionality. In this sense, it is necessary to make use of the discoveries of quantum physics to get out of such dichotomies. The triune brain is the key to human greatness or its misery. Thus, the individual achieves its true task of freeing itself from the norms imposed by culture, markets, and familial and biological recurrences that each of us carries.

3. Yoga as Science

The path of yoga is a path of perfection, beginning from knowledge, and is no stranger to any scientific discovery. Its purpose coincides with the mission of science, which is the search for truth. In the Bhagavad Gita, also known as Yoga Shastra, the dialogue held by Arjuna and Yogeshwar Krishna has as its main reason the search and discovery of truth. Yoga as a discipline does not obstruct or reject scientific research, on the contrary, encourages it. Applied to this inquiry are the tools of investigation, like arithmetic, logic, calculus or geometry. The body becomes the first field of study and application of knowledge; but, techniques for understanding harmony or the sense of totality are also used, which lead positive practical knowledge beyond its limits towards intuitive

knowledge.

Now, why do we look for truth? The left brain is the questioning structure par excellence. It is thirsty for explanations: where, when, why, what for. The initial substrate is the wonder that the world causes us. The starting point of all knowledge is a very special emotion, which ignites the inquisitive spark. Aristotle made it clear: research is activated by the surprise that a phenomenon produces, by the awe that arouses human curiosity. To answer dissatisfaction and methodic doubt, Descartes' wisdom introduced a clear and distinct existential truth; "I think, therefore I am."

This section unravels the cardinal question of logical intelligence for the left brain: how scientific is yoga? This question clears the concomitant question about what is to be understood by science, what fits into the concept of the scientific. Science is an explanation; a type of knowledge that characterizes elucidating the regularities of phenomena or the establishment of laws that move reality. From one side, the law of complexity is built on axioms or formal sciences. On the other hand, there are the objective laws that provide rationale for the manifestations of nature, a space that covers the natural sciences. And beyond those two, there is the third type of direct intuitive knowledge, which skips the observational requirements of the natural sciences.

In a way, this triple wellspring approaches the classical version of knowledge in yoga. True knowledge is one of the contents of the intellect (buddhi) stored in the mind, along with wrong knowledge, fantasies, sleep and memory, according to the Yoga Sutra of Patanjali. Knowledge comes from three sources: rational inference (anumana), reliable testimony (agama) and direct perception (pratyaksha) (Yoga Sutra, I: 6-7). The intellectual power (buddhi) clothed by discernment (viveka) has great resonance in the tradition of yoga. Hence, we can distinguish three modalities of knowledge: formal or linguistic; experimental- positive and holistic; comprehensive or hermeneutical.

First. Human survival in the environment and interpersonal relationships involve perceptual triads. The study of triadic relationships in musical appreciation, in visual perception, in language, in the use of tools and in social cooperation reveals the systemic repetition of the cognitive triad. Cook takes the example of chimpanzee use of a stone hammer to break open the shells of nuts placed on stone anvil as an impressive skill with a triadic cognitive core. Cook (2018) emphasizes the difference between dyadic associations and triadic relationships, as true triadic processing, and the essence of human intelligence.

Inference or the process of logic is applied to formal sciences like mathematics and language. Its elaboration in ancient Indian culture and its treatment by Islamic scholars preserved triadicity and applicability. Christian thinkers distorted logic through the influence of material-spiritual, mundane-celestial dichotomies and the metaphysics of infinity (Raju, 2011). Contemporary logic is not binary and versatile. Applied mathematics and computing has eliminated the concept of infinity, since computers cannot deal with this concept. However, dispropor-

tion is no stranger to yoga, as we will see later, in this same section.

In relation to language, recitations are used in yoga to raise awareness and perception to more abstract levels. All religions use repetitive vocalizations because they lower brain frequencies and create a state of peace and joy in the believer. In yoga, mantras induce appeasement of mind. Among the mantras, the expression OM, whose nature (A-U-M) is tripartite, stands out. The synthesis of the vowels A and U followed by the letter M, connotes the beginning and the end of life: the first breath and the final exhalation. Its recitation stimulates the brain, due to the magnetic effect on the vagus nerve strengthening memory. Mantras also flow in the form of waves through the body, vibrating the endocrine glands and other systems of the human body. Thus, the vibrations of the mind and body are synchronized. The work with the voice and sound is very important as a work of self-expression and energetic discharge, since sound is a powerful tool and a very powerful vehicle of energetic circulation. For example, the well-known “om mani padme hum” mantra relates to compassion and translates to “Oh, jewel in the lotus!” The mantra establishes deep unity between the profane and the supreme, connecting the physical with the spiritual (Bangalore, 2011; Naidu et al., 2013).

Second, from the aspect of experimental science, the cognitive strategy of the founding yogis and their followers is not different from modern scientific practice. They reached correct conclusions about the universe, through observation, with the tools of formal knowledge. Their observations (of light in nature and the adaptive behavior of plants and animals) allowed them to calculate regularities and extract lessons of universal application. Formal knowledge of logic, mathematics and language was used to explain tactile, visual, auditory, and environmental experience.

In fact, there is abundant medical and psychological confirmation of the therapeutic effect of yoga, despite neglect by researchers. According to Patwardhan (2017), the benefits of yoga have received minimal research attention, despite its effectiveness to prevent and treat multiple diseases. Haaz & Bartlett (2011) documented reports of yoga treating arthritis (during the period 1980-2010) having better results compared to other medical interventions in reducing inflammation, pain and disability. Although more systematic reviews were recommended, Innes & Vincent (2007) found beneficial changes in yoga practitioners in cases of diabetes mellitus. Positive effects are related to glucose tolerance and insulin sensitivity, lipid pictures, anthropometric characteristics, blood pressure, oxidative stress, coagulation symptoms, sympathetic activation and lung function. These authors also indicate the advantages of yoga in the prevention and management of cardiovascular complications.

The results of randomized and non-randomized clinical observations performed by Posadzki et al. (2011) showed significant reductions in spirometric measurements, air hypersensitivity and histamine doses for patients with chronic respiratory deficiency. Also, asthma attacks and the need for medications de-

creased. While there is no definitive conclusion about the real effect of yoga on these and other diseases, there is suggestive partial evidence. As a therapy to lessen pain, [Posadzki & Ernest \(2011\)](#) found that yoga got better results in nine out of ten clinical observations, compared to other interventions such as standard care, self-care or therapeutic exercises.

Recent investigations of the effect of yoga in the treatment of stress and depression reveal a positive correlation between the practice of this discipline and the decrease in the symptoms of both, suggesting better results than other current treatments. Several studies report yoga becoming an “effective active ingredient bringing positive effect in solving problems gathering biological, psychological and behavioral aspects in an auspicious way” ([Chong et al., 2011](#); [Uebelacker et al., 2010](#)).

Similarly, the treatment of addictions with the practice of yoga has shown promising results. According to [Khanna & Greeson \(2013\)](#), the levels of dexterity, intuition and self-awareness learned in yoga influence multiple psychological, neuronal, psychological and behavioral processes involved in addictions and their overcoming. According to both authors, some studies on addiction (tobacco, alcohol and illegal substances) support the hypothesis of improvement through yoga and mindfulness. These authors corroborate that it is necessary to carry out more precise research on the effect in specific groups of individuals related to particular addictions, but yoga as therapy appears to be a valid complementary cure.

Third, there is a set of phenomena unlikely to be detected by mechanical means and objective observation, which also transcend simple logical inference. They surpass the verifications of positive knowledge, insofar as they are accessible more by intuition. They are addressed on a subjective level. Philosophy calls these supra-positive dimensions the field of hermeneutics or the domain of shared meanings beyond laboratory testing.

In that sense, yogis, trained in the deep observation of their own nature, created the conditions for detecting and using cosmic, subtle and imperceptible energy. That energy is prana or chi, which is detectable only subjectively. The most universal form of assimilation is through conscious breathing. Incorporating correct forms of breathing (pranayama), enhances personal energy by stimulating the channels of energy circulation (Nadi), as well as the chakras, the centers or circles of energy. Chakras, nadis and bandhas are all involved in this network of bodily electromagnetic fields.

Nadis are the channels or networks through which energy circulates. Chakras extend from the perineum to the crown and are centers of energy repositories. These include a triadic distribution: The inferior ones (Muladhara, Swadhisthana) match the central or reptilian brain and are located in the perineum and pelvis, the intermediates (Manipura, Anahata) are related to the limbic or right brain and are located in the navel and solar plexus; Vishudda and Ajna corresponding to the left brain or neocortex are located in the neck and eyebrows. Sa-

hasrara chakra is usually located in a position above this tripartite structure in our crown (Rao, 2018). Maxwell (2009) verified the existence of almost imperceptible electrical energy changes that corresponds to the theory of the chakras. This current may be associated with the vibration between energy poles and confirms a physical phenomenon and not a metaphysical hypothetical, although it is difficult to quantify due to the subjective component.

Likewise, bandhas fulfill the function of locks, because they regulate the passage of energy, in the same way that tire valves prevent the escape of air once tires are inflated. Bandhas are forms of retention of prana that prevent their dispersion. They fulfill the function of transformers, fuses and switches in an electrical network. From top to bottom, there are three main bandhas: Jalandhara, Uddiyana and Mula. The first is located in the throat and regulates the passage of blood and oxygen to heart, neck glands and to the brain. The second, raises the diaphragm and presses the organs towards the back, letting the prana pass through the Shushuma nadi that runs through the nerves of the spine. Mula bandha or radical blockage is associated with the pelvic base and drives the energy towards the navel without dispersing it (Iyengar, 1966: pp. 435-438).

Each Bandha has therapeutic and preventive properties restoring physical, emotional and cognitive health, while retaining the cosmic energy in the body. The understanding of this universal union is attainable in yoga under a certain state of mind or alpha state, as will be explained below.

4. Yoga as Art

Scientific knowledge is a component of daily affairs. We know that mathematical laws explain a part of reality; in everyday life we bet on the unusual, we risk, because the system implies a margin of uncertainty. The fascination for unknown phenomena, of love for risk becomes the motive of human adventure for recreation, which extends from the lower level of the imagination to mystical experiences. Like the arts, yoga practitioner transmutes the everyday world into the experience of beautiful and sublime states. It is projected onto spheres of consciousness that alter immediate and tangible reality.

In the cybernetic cycle of transformation (Gregori, 2002a), the right brain is responsible for connecting knowledge with action. In this intermediate phase, imagination creates alternative scenarios, recreates reality, anticipates the new states of things. Creativity, emotion, aesthetic sense and sense of transcendence are characteristic of right hemisphere. Alpha cycles prepare the brain for more advanced mystical experiences. The Left-brain hemisphere operates within the normal range of neural stimulation rate at beta frequencies. Central brain tends to exceed those limits and operates in gamma frequencies. If adrenaline production predominates in the other cycles, in alpha there is a greater endorphin discharge, such as when we take a worry-free vacation.

Certain levels of oscillation affect the neuronal synapse and mental state. Accelerated frequencies create excessive pressure on the brain that can lead to its

collapse. More than 24 oscillations per second is the gamma level, typical of situations of heightened mood, anger or stress. Usually crises of this kind lead to heart attacks and thrombosis. Ordinarily, without significant anguish, the mind is at the normal level, where the synapse shows oscillations between 14 and 24 per second. This waking state is called beta level.

Certainly, during sleep, when the mind goes to rest, the synaptic activity drops to levels below 1 to 14 oscillations per second welcoming the alpha state. Not only the brain lowers its rhythm of action but also vital organs slow breathing and heartbeat. In deep sleep the brain can drop to 7 oscillations per second at delta level. The wonderful thing, thanks to meditation, is that the mind can experience lower rhythms of oscillations and remain awake. In Nidra yoga, meditation places the subject in the intermediate state between sleep and wakefulness to allow the systematic cycling of consciousness, to increase memory, knowledge and transform his own nature (Saraswati, 1976).

Patanjali (second century BC) in Yoga Sutra, detailed four phases to deep meditation. In the first, Pratyahara, mind freely observes until it achieves the isolation of material objects and physical forms with practice and is prepared for concentration. This is Dharana, when mind can concentrate on a single point. In the third Dhyana phase, meditation itself is achieved. At this level, perception, self-healing ability and memory are sharpened. Beyond that is Samadhi, the maximum point of identity with the universal, eternal and infinite. It is an experience impossible to transcribe into words.

Yoga is to the alpha state of mind like honey is to the bee or comb, like water for fish. The exercise of yoga is not understood without the practice of harmony, with full control of the breath and distancing of the obstructive data that floods the senses. In this way, mind activates intuition, reprograms itself and engages with infinity, thanks to the unconscious.

Mircea Eliade brought attention to the work of the unconscious: “Vasanas have their origin in memory,” wrote Vyasa (Yoga-Sutras, iv, 9), and thus highlights their subliminal character. Life is a continuous discharge of vasanas that manifest through the vrittis. In psychological terms, human existence is an endless upgrade of the subconscious through ‘experiences’. Vasanas condition the specific character of each individual, and this conditioning is given both by inheritance and by their individual karmic situation.” (Eliade, 1999: p. 53). There are many benefits of intervening by the unconscious.

Really, neurological researchers discovered important changes in the cerebral cortex caused by meditation. Those experiments have shown that increased cortical gyrification (folding which increases surface area and faster information processing) generates long-term alterations in practitioners, when greater degrees of introspection, self-awareness, controlled responses and compassion are present. Luders and his team (2008, 2012, 2018) found that the gyrification effect increased with the number of years dedicated to meditation. The increase in gyrification may reflect a greater integration of the autonomic, affective and cogni-

tive processes. Meditation not only preserves brain health, but more meditation years correlates with more gyrification and induced changes.

The three aspects of alpha brain wave states are extrasensory perception, self-energization, and mystical phenomenon. Beyond describing reality, a vast horizon opens where the human mind contemplates reality, enjoys it, transcends it and recreates it. From that special state of mind, the direct understanding of reality is possible; it is the clairvoyance of intuitive knowledge. The second power of alpha states is to rewrite the real, transform it with the mind. This entails special phenomena such as healing which stops stress, controls anxiety, lowers blood pressure, decreases pain, regulates immune, nervous and digestive systems, gets better emotional activity, enhances memory and elevates self-awareness, among other benefits (Health Encyclopedia, *sf*; The Human Origin Project, 2019). Thirdly, the experience of harmony and transcendence of reality through aesthetic and mystic experience is achieved in alpha.

From the intellectual side, the mind in alpha goes back over the senses and achieves the special capture of information in so-called extra sensory perception. It is a widely covered topic in the books of the Buddhist tradition and other schools that practice meditation. The dialogue of the Buddha in the Jaliya Sutra lists eight powers of intuitive knowledge achieved through meditation: self-awareness, self-perception, ubiquity, extra-ordinary hearing and vision, telepathy, unfolding and knowledge of the truth.

Medical science has sought clinical verification beyond the bibliographic record of these phenomena. Studies have provided evidence supporting the hypothesis that meditation, with reduced movement and external stimuli and greater focus on attention, generates perceptual and cognitive results. Sensory deprivation elevates neuroplasticity over current experience. This confirms the range of experiences that contemplative meditation provides (Lindhal et al., 2013).

Second, together with extra sensory perception and holistic knowledge, alpha-state of mind increases the capacity for self-programming and self-healing. A research study on silence and meditation revealed a high correlation with the overcoming of stress, tension and anxiety. This indicated the positive relationship between minimizing thought and the control of stress and its linked diseases. The silence associated with meditation seems to facilitate increased awareness by reducing distractions and unnecessary intellectual activity, leading to better perception, reduction of negativity and increased vitality. Silent meditation differs from simple relaxation, because there is a drop-in skin temperature with remarkable physiological effects, which does not occur in the latter. In meditation, the person focuses on attention and suspends the coursing of thoughts. (Manocha et al., 2011).

Third, in the alpha state, the mind expands reality by giving it magnificence and transcendence. This leads to the aesthetics and mysticism of authentic spirituality. The contemplation of the infinite is associated with uniting with the forces of the universe, achieving the transcendence of existential human limita-

tions. The history of religions retains numerous experiences of saint's trances, and entering into communication with cosmic energy. In *A Religion Without God* (Dworkin, 2013) denies the existence of an anthropomorphized creator but does not rule out reverence for and awe of the universe for its beauty, mystery and grandeur. Moreover, in the mystical experience, the subject feels like participant and co-creator of this phenomenon, which is the essence of enlightenment, Samadhi.

5. The Technique of Yoga

Yoga's science and spirituality depend on the proper technique of its realization. Some schools, such as Hatha yoga, highlight the technique, while Raja yoga emphasizes meditation. The technical component of yoga is also triadic. For the left brain, it is the use of the word, (mantras) to induce special states of consciousness; For the right brain it is relaxation, and for the central brain it is the correct execution of asanas, pranayama, bandhas and mudras.

Yoga is rooted deeply in the use of language to release therapeutic power of mantras through relaxation and meditation. Mantras consist of the rhythmic repetition of certain sounds or phrases, some of which are associated with reverence for deities in the Hindu tradition from Vedic hymns. From the physical point of view, mantra's sounds resonate throughout the body stimulating energy interactions, as explained in section one already. Mental sounds mimic the natural sequences. Mantras replicate physical movement and energy power by stimulating the nervous system, from which emerges language with its meanings and narratives (Axel, 2013).

More than full-fledged pronunciations, murmured recitations are advised. Of even more benefit is only moving the tongue without emitting sound. The most usual and simple mantra is OM, the sound that means existence-consciousness-bliss. When OM is recited there is attunement to universal power, and produces great harmony in the mind. The recitation must be accompanied by the fixation of the mind on the meaning of the mantra and an attitude of engagement with it and its hidden power, for personal discovery guided by the guru.

The sequence of the mantra is based on the selection of a word, phrase or fragment of the meditation poem that is easy to remember and recite. Then a comfortable position is taken on a chair or on the floor, with the body relaxed and the spine straight. Eyes are closed and breath becomes slow and deep. The mantra is repeated slowly and continuously with total concentration on the sound. The recitation can be split in two, emitting half with inhalation and the other half with exhalation, or completely with each inhalation and exhalation. After ten sound repetitions, lips close and the next ten repetitions are in silence. When thoughts return, mind comes to the mantra to sustain concentration. In the end, a relaxed body and leisurely breathing induce feelings of calm, centeredness and joy (Ramananda, 2007).

Secondly, technical aspect of yoga entails a compendium of asanas, pranaya-

ma, bandhas and mudras, associated with meditation, with specific forms of execution. Each of these practices has a certain performance protocol.

Asanas are different corporal figures depending on the energy circuits to be strengthened. There are thousands of different asanas. Healthy postures are intended to strengthen and tone muscles, joints, skeletal system; reduce blood pressure; and restore harmony to the body. The asanas can stimulate every part of the body, the vital organs and systems like the circulatory, respiratory, and endocrine. According to fifteenth-century commentator Svatmarama, "Asanas are spoken of first, being the first stage of hatha yoga. So, one should practice the asanas, which give (practitioner) strength, keep him in good health, and make his limbs supple". (Hatha Yoga Pradipika, I:17b). They remove accumulated impurities that cause diseases (Pal, 2004: p. 55). The practice develops body agility, balance, concentration and vitality. But its purpose is not simply physical enhancement but spiritual perfection, thanks to the release of physical impediments and mental barriers. Its goal is beauty and transcendence. According to Iyengar (1966: p. 41), "In the beauty of his pulse and the rhythm of his respiration, (the yogi) recognizes the flow of the seasons and the throbbing of universal life".

Asanas are postures, not gymnastic exercises, which must be executed in a sheltered place, with clean air and focused personal disposition. For their correct implementation the practitioner initiates breath control with concentration to activate each section of the body; proceeds to the closing posture and recovery. A quiet external environment is required, in moderate climatic conditions without excessive heat or cold, moderate light, mat and comfortable clothing. The positive effect of asanas depends on the effective circulation of oxygen through the body.

Pranayama refers to breathing techniques. Prana is understood as universal energy (Sivananda, 1935). Prana is to yoga the same as electricity to our civilization (Van Lysebeth, 1969). Prana is the vital energy present in the air, the earth, rays of the sun and moon, water and food. Oxygen contained in the Earth's atmosphere is the effective manifestation of prana essential to life; hence the importance of breathing for health and personal well-being.

Correct breathing entails a complete cycle through the body. Oxygen enters the nose, passes through the brain to the spine, then ascends through the abdomen and lungs and exits through the nose. Deep breathing encourages the definitive separation of the mind and its connection with the infinite, inducing mystical contemplation (Khan, 2008).

Understanding the technique of breathing enables us to master bodily functions. Breathing is perhaps the only physiological process that can be both involuntary and voluntary. Breathing affects the right vagus nerve that controls the sympathetic system, which secretes adrenaline, thyroxine and other hormones. The child in a tantrum can hold the breath until its color changes. Depressive and neurotic people have trouble breathing. According to Lowen (1975), the

neurotic personality type is unable to exhale and let go of problems. Schizoids generally avoid contact with the lower half of their body: they keep their diaphragm rigid and do not use the lower part of their lungs to breathe. When these persons are taught to breathe diaphragmatically they uncover the repressed feelings within. This is because each thought has its own vibrational quality that affects breathing.

In turn, bandhas are padlocks that prevent the dispersion of internal energy. In the correct execution of Jalandhara bandha, the chin rests on the notch forming bone above the chest, the sternum, which rises lightly while breathing is deep and harmonious. It is considered to regulate blood flow and energy around the neck. Uddiyana bandha drives the air from the navel towards the spine and upwards opening the thoracic cage. For Mula bandha, the pelvis and perineum contract and lift, so that this area is irrigated, the lumbar spine is stimulated and the energy is channeled to the upper part of the body to supply vital organs (Sweta, 2018).

Third, there are the relaxation techniques. In a civilization marked by haste, stress and mental agitation, finding time to rest the body and recover energy has become a widespread need. Physical and mental relaxation is innate to yoga. There are three kinds of relaxation: instant, fast and deep to accompany the exercise of yoga. The first one is usually done at the beginning, the second after completing a cycle of standing asanas, and the last is done at the end. In relaxation, the body rests as a result of the slowed breathing.

The most common form for deep relaxation is Savasana, which means corpse, because it mimics the absence of movement. In Savasana the body movement ceases but the mind remains completely attentive. It is easier to appease the body than the mind. For proper execution, the body lies on its back, with arms slightly apart, palms up, ankles apart and eyes closed. It takes the breath from deep inhalations to a thin and slow breath. The jaw is loose and the tongue and eyes are completely passive. The mind focuses on breathing. In relaxation, the flow of energy is felt from the back of the head towards the feet (Iyengar, 1966: pp. 422-424).

Harmony is an experience of the right brain, but it is not isolated from the sense of proportionality of relationships that the left brain captures, no less than the right one to proceed daily under the control of the central brain.

6. Yoga and Proportionality

Harmony present in nature is not a chance occurrence. The expansion of energy, as in the arrangement of flower petals, the growth patterns of tree branches, the convolutions of snail shells or the shape of galaxies, all obey a pattern of specific and measurable distribution. According to what pattern does energy spread? Gell-Mann (1994) and quantum physics explain the expansion of energy in triple beams of inseparable quarks. One quark is not released without the other two. These elemental subatomic particles always proceed in triadic formation. Addi-

tionally, the existence of quarks in matter and living beings creates a wave-like, infinite and fractal geometric order (Mandelbrot, 2004), while maintaining balance and homeostasis.

At the human level, personal and social harmony is also recognized in the concepts of balance and proportionality. Ancient Chinese and Greek wisdom elaborated their moral systems, from Confucius to Aristotle, on the concept of the third term or means that avoids vicious extremes. Vitality results in moving away from the extremes of pleasure and pain, joy and sadness, wealth and poverty. In ancient China there was a balance between the three powers: public administration, military and censorship. Modern European political organization established the division and balance of three powers: legislative, executive and judicial. Current international jurisprudence requires restraint in war to avoid disproportionate force that would create victims among the civilian population. The Principle of Proportionality is fundamental to International Humanitarian Law.

Also, in conceptual frameworks of ethical and religious antiquity there was great appreciation for triadic proportionality. Religions saw trinities in the complexity of reality through the projections of Horus, Isis and Osiris in Egypt; Brahma, Siva and Vishnu in Hinduism; Father, Son and Holy Spirit, in Christianity. Moreover, Triadic Groups predominate Mayan architecture.

The ancient wisdom was disrupted in the European modern age through the three intellectual currents that underpinned the development of capitalism: Protestantism, empiricism and rationalism. The first removed the barriers between the individual and the deity which held faith as the only path to Heaven. Calvinists incorporated a view of Lutheranism as an incentive to the accumulation of material wealth foreshadowing the reward in Paradise (Weber, (1920) 2010). The second promoted by Francis Bacon, established experimental science as the sole criterion of truth superior to sacred idols, social and individual prejudices, ideologies or ancestral influences. Descartes, on the other hand, extolled thought about nature and put *res cogitans* superior to the physicality (power/force) of the body. The father of rationalism contrasted the logical transparency of reason with the chaos of things. Thus, Protestantism, rationalism and empiricism forged between the sixteenth and seventeenth centuries created a monadic worldview of modernity: one Father God, one kind of Reason and a monadic Science.

Traditional eastern yogic schools maintain conceptual and ethical foundations distinct from parameters of European modernity. According to their view, the individual embodies cosmic energy, whose frequencies are lived in subjective experiences that obey experimental science or positive knowledge. Behavioral limitations and unrestricted respect are imposed on all living forms as part of universal life. Reason, senses and feelings must be subjected to controls to keep them within certain limits, so that the mind can reach liberation from desire and worldly bonds. Moreover, the concepts and practices are consistent with their

triadic foundations, as in Hatha Yoga Pradipika (V): “Only he can grasp the deepest sense of pranayama who is open-minded enough to view each concept in three dimensions: gross (physical), subtle (mental), and abstract (spiritual); or dynamic, static, and abstract.”

However, today, in certain yogic schools’ referential frameworks maintain the dichotomy between body versus soul, matter and spirit, mundane or divine taken as conflicting realities, where the physical dimension is conditioned by supernatural deities. In this way, yoga also becomes distorted in dyadic and superstitious worldviews, typical of religions.

The understanding of yoga within the parameter of proportionality creates limits and avoids the excesses of cognitive or metaphysical deviations (left brain), extremes of activism (central brain), magic and superstition (right brain). Instead, designing and implementing personal goals depends on commitment to harmoniously combining scientific power, esthetic and technic skills to achieve the full development of human triadic capabilities.

Personal harmony creates the happy tripartite integration of cognitive, emotional and practical intelligence. Social harmony becomes the successful blend of the three supreme intelligences or powers: political, religious and economic power. This replicates on the human scale the order that governs the universe. However, under current conditions, the dominance of economic power prevails, resulting in exorbitant inequality and social conflict. Such disorder in human relations and between countries are absurd asymmetries which cannot be an issue avoided by yoga schools, if their philosophy is to speak to the present and not be stuck in the past.

In this way, theory of proportionality offers to yoga philosophy an evaluative and normative horizon, which links the triune cognitive, heuristic and practical capacity in a harmonious way. In personal and social terms, this means defending informed public opinion, overcoming superstitious spirituality and proclaiming justice for all. It is the prospect on which to establish an authentic democracy, free from the manipulation of official subgroups, where each one exercises their rights as a citizen of nature, citizen/Master of Self, citizen of planetary abundance, citizen of direct democracy and citizen of infinity (Gregori, 2005).

7. Conclusion

Who we are? What is human destiny? What is the place of human beings in cosmos? These are questions posed by theologians and philosophers in all cultures.

Yoga is an ancient knowledge which places the human being in the awesome web of forces that move the universe and explain its *raison d’être* within it. It involves a scientific dimension, but it is not a simple intellectual initiation into the study of the universe. It is a deliberate action of the appropriation of these energies, of their domestication, to put them at the service of daily endeavors, through physical or asana exercises and the modalities of breathing or pranaya-

ma. Moreover, these dimensions of practical and cognitive intelligence do not exhaust the wealth of experience through yoga, because yoga facilitates access to unknowable and indescribable dimensions, accessible only through mystical experience.

In its integrated triadic foundations, yoga is science, technique and art. As soon as it integrates the three spheres, it resolves the great questions of humanity about the universe and its position in the cosmos. The three facets of the mind are projections of the tripartite evolution of the mammalian brain: left-cognitive, right-emotional and central-agent. Personal and civilizational success depends on the harmonious relationship between these three mental powers. This is contrasted with the individual and social chaos resulting from unidimensional and dyadic parameters of positivism, rationalism and religious superstition. Triadic proportionality harmonizes the three cultures or powers of science, economic production and healthy spirituality in a paradigm that abandons the problematic insufficiency of monadic and dyadic quasi-solutions for more life-supporting paradigms and mindsets.

This article analyzed yoga's triple nature from the point or view of triadic complexity paradigm. This examination revealed its technical, scientific and aesthetic components. Future fields of study should be how other practices access to alpha mental state or brain reprogramming state.

Conflicts of Interest

The author declares no conflict of interest.

References

- Aboitiz, F., & García, V. R. (1997). The Evolutionary Origin of the Language Areas in the Human Brain. A Neuroanatomical Perspective. *Brain Research Reviews*, 25, 381-396.
<https://www.ncbi.nlm.nih.gov/pubmed/9495565>
[https://doi.org/10.1016/S0165-0173\(97\)00053-2](https://doi.org/10.1016/S0165-0173(97)00053-2)
- Axel, G. (2013). *Your Brain on Om: The Science of Mantra*.
<https://health.usnews.com/health-news/blogs/eat-run/2013/10/02/your-brain-on-om-the-science-of-mantra>
- Bangalore, G. K. (2011). Neurohemodynamic Correlates of "OM" Chanting: A Pilot Functional Magnetic Resonance Imaging Study. *International Journal of Yoga*, 4, 3-6.
<https://doi.org/10.4103/0973-6131.78171>
- Berton Learning Organization (2012). *Yoga and Academic Achievement: A Preliminary Study in a Miami High School*.
<http://bentonlearning.org/wp-content/uploads/2012/11/yoga-and-academic-achievement.pdf>
- Broadjan, W. J. (2012). How Yoga Can Wreck Your Body. *New York Times*, 1.
- Cho, H. K., Moon, W., & Kim, J. (2015). Effects of Yoga on Stress and Inflammatory Factors in Patients with Chronic Low Back Pain: A Non-Randomized Controlled Study. *European Journal of Integrative Medicine*, 7, 118-123.
<https://doi.org/10.1016/j.eujim.2014.10.008>
- Chong, C. S., Tsunaka, M., Tsang, H. W., Chang, E. P., & Cheung, W. M. (2011). Effects

- of Yoga on Stress Management in Healthy Adults: A Systematic Review. *Alternative Therapies in Health and Medicine*, 17, 32-38.
- Cook, N. D. (2018). The Triadic Roots of Human Cognition: "Mind" Is the Ability to Go beyond Dyadic Associations. *Frontiers in Psychology*, 9, 1060. <https://www.frontiersin.org/articles/10.3389/fpsyg.2018.01060/full>
<https://doi.org/10.3389/fpsyg.2018.01060>
- Dworkin, D. (2013). *Religion without God*. Cambridge, MA: Harvard University Press.
- Earth Energy Reader (2012). *Why I Left Yoga (and Why I Think a Helluva Lot of People Are Being Duped)*. <https://earthenergyreader.wordpress.com/2012/05/04/why-i-left-yoga-and-why-i-think-a-helluva-lot-of-people-are-being-duped>
- Eliade, M. (1999 (1948)). *Técnicas del yoga*. Barcelona: Kairós.
- Gell-Mann, M. (1994). *The Quark and the Jaguar: Adventures in the Simple and the Complex*. New York: H. W. Freeman. <https://doi.org/10.1063/1.2808634>
- Gerhardt, U. (1989). *Ideas about Illness: An Intellectual and Political History of Medical Sociology*. London: Palgrave Macmillan. <https://doi.org/10.1007/978-1-349-20016-0>
- Gregori, W. (2002a). *Capital Intelctual. Administración sistémica. Manual de juegos de cooperación y competencia*. Bogotá: McGraw Hill.
- Gregori, W. (2002b). *Construcción familiar-escolar de los 3 cerebros*. Bogotá: Kimpress.
- Gregori, W. (2005). *Proportionality Manifesto for the Triune Reality Show of the World*. https://books.google.com.co/books?id=4b5ODwAAQBAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false
- Haaz & Bartlett (2011). Yoga for Arthritis: A Scoping Review. *Rheumatic Disease Clinic North America*, 37, 33-46. <https://doi.org/10.1016/j.rdc.2010.11.001>
- Health Encyclopedia (s.f.). *The Power of Meditation*. <https://www.urmc.rochester.edu/encyclopedia/content.aspx?contenttypeid=1&contentid=2509>
- Innes, K. E., & Vincent, H. K. (2007). The Influence of Yoga-Based Programs on Risk Profiles in Adults with Type 2 Diabetes Mellitus: A Systematic Review. *Evidence-Based Complementary and Alternative Medicine*, 4, 469-486. <https://doi.org/10.1093/ecam/nel103>
- Iyengar, B. K. (1966). *Light on Yoga*. New York: Schocken Books.
- Khan, H. I. (2008). *Universal Sufism: Path of Breath, Prayer, Zikar*. Kansas City, MO: International Sufi Movement USA Midwest.
- Khanna, S., & Greeson, J. M. (2013). A Narrative Review of Yoga and Mindfulness as Complementary Therapies for Addiction. *Complementary Therapies in Medicine*, 21, 244-252. <https://doi.org/10.1016/j.ctim.2013.01.008>
- Lindhal, J. R., Kaplan, C. T., Winget, E. M., & Britton, W. B. (2013). A Phenomenology of Meditation-Induced Light Experiences: Traditional Buddhist and Neurobiological Perspectives. *Frontiers in Psychology*, 4, 973. <https://doi.org/10.3389/fpsyg.2013.00973>
- Llinas, R. R. (2001). *I of the Vortex: From Neurons to Self*. Cambridge, MA: Massachusetts Institute of Technology. <https://doi.org/10.7551/mitpress/3626.001.0001>
- Louie, L. (2014). The Effectiveness of Yoga for Depression: A Critical Literature Review. *Issues in Mental Health Nursing*, 35, 265-276. <https://doi.org/10.3109/01612840.2013.874062>
- Lowen, A. (1975). *Pleasure. The Surrender to the Body and to Life*. New York: Penguin.
- Luders, E., Kurth, F., Mayer, E. A., Toga, A. W., Narr, K. L., & Gaser, C. (2008). Mapping

- the Relationship between Cortical Convolution and Intelligence: Effects of Gender. *Cerebral Cortex*, 18, 2019-2026. <https://doi.org/10.1093/cercor/bhm227>
- Luders, E., & Kurth, F. (2012). The Unique Brain Anatomy of Meditation Practitioners: Alterations in Cortical Gyrification. *Frontiers in Human Neuroscience*, 6, 34. <https://doi.org/10.3389/fnhum.2012.00034>
- Luders, E., & Kurth, F. (2018). The Neuroanatomy of Long-Term Meditators. *Current Opinion in Psychology*, 28, 172-178. <https://doi.org/10.1016/j.copsyc.2018.12.013>
- MacLean, P. (1973). A Triune Concept of the Brain and Behavior. In T. Boag (Ed.), *The Hincks Memorial Lectures* (pp. 6-66). Toronto: University of Toronto Press. <https://doi.org/10.3138/9781487576752>
- Mandelbrot, B. B. (2004). *Fractal and Chaos: The Mandelbrot Set and Beyond*. New Haven, CT: Yale University. <https://doi.org/10.1007/978-1-4757-4017-2>
- Manocha, R., Black, D., Sarris, J., & Stough, C. (2011). A Randomized, Controlled Trial of Meditation for Work Stress, Anxiety and Depressed Mood in Full-Time Workers. *Evidence-Based Complementary and Alternative Medicine*, 2011, Article ID: 960583. <https://doi.org/10.1155/2011/960583>
- Maxwell, R. W. (2009). The Physiological Foundation of Yoga Chakra Expression. *Zygon: Journal of Religion and Science*, 44, 807-824. <https://doi.org/10.1111/j.1467-9744.2009.01035.x>
- Naidu, P. et al. (2013). Beneficial Effects of 12-Week OM Chanting on Memory in School Children. *World Journal of Pharmaceutical Sciences*, 2, 1969-1971.
- Olaya-Castro, A. (2016). Vivir por los números y la biología. *El Espectador*, 30-31.
- Pal, S. (2004). *Yogasanas and Sadhana*. New Delhi: Pustak Mahal.
- Patwardhan, A. R. (2017). Yoga Research and Public Health. Is Research Aligned with the Stakeholders' Needs? *Journal of Primary Care & Community Health*, 8, 31-36. <https://doi.org/10.1177/2150131916664682>
- Posadzki, P., & Ernest, E. (2011). Yoga for Asthma? A Systematic Review of Randomized Clinical Trials. *Journal of Asthma*, 48, 632-639. <https://doi.org/10.3109/02770903.2011.584358>
- Posadzki, P., Ernest, E., Terry, R., & Lee, M. S. (2011). Is Yoga Effective for Pain? A Systematic Review of Randomized Clinical Trials. *Complement Therapy Medicine*, 19, 281-287. <https://doi.org/10.1016/j.ctim.2011.07.004>
- Posadzki, P., Cramer, H., Kudzal, A., Soon, M., & Ernest, E. (2014). Yoga for Hypertension: A Systematic Review of Randomized Clinical Trials. *Complementary Therapies in Medicine*, 22, 511-522. <https://doi.org/10.1016/j.ctim.2014.03.009>
- Raju, C. K. (2011). Teaching Mathematics with a Different Philosophy. Part 1: Formal Mathematics as Biased Metaphysics. *Science and Culture*, 77, 274-279. <http://www.scienceandculture-isna.org/July-aug-2011/03%20C%20K%20Raju.pdf>
- Ramananda, S. (2007). *Mantra Meditation*. <https://www.yogajournal.com/poses/mantra-meditation>
- Rao, S. (2018). *The Triune Brain*. <https://tsriramrao.wordpress.com/2018/03/03/the-triune-brain>
- Saraswati, S. S. (1976). *Yoga Nidra*. Munger-Bihar: Yoga Publications Trust.
- Sivananda, S. S. (1935). *The Science of Pranayama*. Tehri-Garhwal: The Divine Life Trust Society.
- Smith, C., Hancock, H., Blake-Mortimer, J., & Eckert, K. (2007). A Randomised Comparative Trial of Yoga and Relaxation to Reduce Stress and Anxiety. *Complementary*

- Therapies in Medicine*, 15, 77-83. <https://doi.org/10.1016/j.ctim.2006.05.001>
- Sónego, I., & Gregori, W. (2017). *Yoga triádico*. Brasilia: Mim.
- Stanland, L. (2015). *The Benefits of Yoga: Are They Proven by Science?* <https://theyogalunchbox.co.nz/the-benefits-of-yoga-are-they-proven-by-science>
- Sweta, K. A. (2018). Effect of Mula Bandha Yoga in Mild Grade Pelvic Organ Prolapse: A Randomized Controlled Trial. *International Journal of Yoga*, 11, 116-121. https://doi.org/10.4103/ijoy.IJOY_32_17
- The Human Origin Project (2019). *The 6-Step Science-Backed Healing Meditation*. <https://humanoriginproject.com/healing-meditation>
- Uebelacker, L. A., Epstein-Lubow, G., Gaudiano, B., Tremmont, G., Battle, C., & Miller, I. (2010). Hatha Yoga for Depression: Critical Review of the Evidence for Efficacy, Plausible Mechanisms of Action, and Directions for Future Research. *Journal of Psychiatric Practice*, 16, 22-23. <https://doi.org/10.1097/01.pra.0000367775.88388.96>
- United States Conference of Catholic Bishops (2009). *Guidelines for Evaluating Reiki as an Alternative Therapy*. <http://www.usccb.org/about/doctrine/publications/upload/evaluation-guidelines-final-ext-2009-03.pdf>
- Van Lysebeth, A. (1969). *Pranayama. La dynamique du souffle*. Paris: Flammarion.
- Weber, M. (2010 (1905)). *The Protestant Ethic and the Spirit of Capitalism (1920)*. New York: Oxford University Press.