

A Review: History of Revival of Yoga in 20th Century and Establishment of Yoga as a Science in the 21st century

Arun Raghuvanshi*
Bhopal University, Bhopal, India

Abstract: Last century may be regarded as the century of the revival and scientific scrutiny of yoga. The present paper is an effort to review the history of the revival of yoga during 20th century and tries to identify the persons, organisations, institutions, events, movements, research milestones and factors that resulted in the establishment of yoga as a science in 21st century.

We researched the milestones and turning points related to scientific inquiries and researches on the varied aspects of yoga during its historic journey from being merely a 'physical-spiritual discipline' to assuming the full significance as the 'Science of Consciousness'.

In this paper we also analyse and discuss the factors that lead to the massive popularity and scientific aspects of yoga and its therapeutic benefits as a 'mind-body' medicine, intervention and alternative therapy in recent times.

Key words: revival of yoga, yoga meditation, scientific aspects of yoga, consciousness

Introduction

Last century may be regarded as the century of the revival and scientific scrutiny of yoga that has resulted in the establishment of yoga as a science in this decade of 21st century. Result of that tendency are conferences and events that gather the greatest scientific world authorities who research effects of yoga practice interdisciplinary. The term yoga as science can be perceived in three different ways:

1. "Yoga as science" (ancient view) - refers to the research of yoga as the way to improve the level of understanding, compassion, freedom, health and extends back to the period before the beginnings of contemporary history. The methods that it uses are primarily subjective.
2. "Science of yoga" (modern view) - refers to the research of the effects of yoga practice and it uses methods of modern science. Methods are primarily objective.
3. "Science in the light of yoga" (it is present in all time and has timeless view) – the view and method that, at the same time, integrates subjective and objective method of research – “non-dual” view and method (Anderson, 2011).

However, going beyond these three categories is what we can call 'Yoga Science'. Having in mind that science is systematized knowledge derived from observation, study and experimentation carried on in order to determine the nature or principles of what is being studied, yoga as a concept completely fits into that requirements. Patanjali's 'Yoga Sutra' give conclusions about the laws of human existence, functioning of the human mind and reality.

* Corresponding author: arun_231248@hotmail.com

In this paper we will consider history of the yoga tradition, having in mind development of yoga in a modern science during the last 100 years. We will light the history of the revival of yoga during the 20th century, as well as factors that contributed to the establishment of the concept of yoga as a science in the 21st century.

The need for the concept of yoga

Yoga is a philosophical system, but also a practice that appear to be necessary. That is a concept that can bring back the faith in human values by offering experience of unity as the result of self-development steps.

Thomas P. Maxwell (2002) in his article *Conscious Evolution and the Emergence of Integral Culture* writes:

“There is a growing understanding that addressing the global crisis facing humanity will require new methods for knowing, understanding, and valuing the world. Narrow, disciplinary, mechanistic, and reductionist perceptions of reality are proving inadequate for addressing the complex, interconnected problems of the current age. The currently dominant worldview of scientific materialism, which views the cosmos as a vast machine composed of independent, externally related pieces, promotes fragmentation in our thinking and perception. The materialist view of natural systems as commodities to be exploited coupled with the ethos of consumerism and social Darwinism has encouraged widespread destruction of our natural life support systems. The cancerous spread of nihilism and dehumanization are driving the decay and disintegration of techno-industrial culture.”

Scientific approach to yoga: beginnings

As early as the last decade of 19th century, the scientific minded monk Swami Vivekananda has already proposed to the world to treat yoga as a science when he wrote in the introductory chapter of his book entitled – ‘Raj Yoga’, that: “Yoga - one of the greatest of sciences... there is no mystery in it... Anything that is secret and mysterious in these systems of yoga should be at once rejected... Just as you would take up any other science, exactly in the same manner you should take up this science for study. There is neither mystery nor danger in it.” And no doubt that his book ‘Raj Yoga’ dealt with the subject of yoga in most scientific way, and may be regarded as the first and the most accurate, scientifically authentic presentation and explanation of the subject of yoga ever presented. Another pioneering person in this respect, who placed yoga on the scientific track from the very start of revival in the first decade of the last century, was Annie Wood Besant (1847 – 1933), who wrote in the introduction of his book ‘Introduction to Yoga’ (1907) - “Yoga is a science, and not a vague dreamy drifting or imagining. It is an applied science, a systematized collection of laws applied to bring about a definite end. It takes up the laws of psychology, applicable to the unfolding of the whole consciousness of man on every plane, in every world, and applies those rationally in a particular case. This rational application of the laws of unfolding consciousness acts exactly on the same principles that you see applied around you every day in other departments of science.”

Significant contributors to the scientific approach to gave also: Sri Aurobindo (1872 - 1950), Swami Sivananda (1887 - 1963), Swami Kuvalayananda (1883-1966), Paramhansa Yogananda (1893 - 1952), Swami Vishnudevananda (1927 - 1993), Maharishi Mahesh Yogi (1914 - 2008), Swami Satyananda Sarswati (1923 - 2009), Pandit Gopi Krishna (1903 - 1984), Swami Dharendra Brahmachari (1924 - 1994), Swami Rama (1925 - 1996), B.K.S. Iyengar (1918 - present) and Nirmala Devi (1923 - 2011). Only few significant scientists will be elaborated here.

Aurobindo put forward yoga in most scientific way and even advanced the scientific approach a little farther to explain the process and technique for ‘conscious evolution’ of ‘new man’. He put forward a holistic approach of yoga in which various yoga styles - Bhakti, Karma and Tantra are combined as an integrated philosophy, which he called Purna or ‘Integral Yoga’. His concept of evolution of super mind is unique contribution to yoga as he elaborated – “The one aim of yoga is an inner self-development by which each one who follows it can in time discover the One Self in all and evolve a higher consciousness than the mental, spiritual and sacramental consciousness which will transform and divinize human.”

Sivananda was a medical practitioner by training, who later turned to a monastic life and preached and taught yoga and Vedanta till the end of his life. He wrote more than 200 books on these subjects and advocated yoga as a way of life. He called his yoga the Yoga of Synthesis. He founded the Divine Life Society (1936) in Rishikesh, on the banks of holy Ganga river. His spiritual authenticity attracted innumerable disciples including several prominent intellectuals and yogis of later years such as: U.G. Krishnamurti, Swami Satyananda Saraswati, founder of the Bihar School of Yoga, Swami Chinmayananda whose disciples founded Chinmaya Mission and Swami Satchidananda (Woodstock Guru), founder of Integral Yoga Institute and Yogaville in the USA.

Paramhansa Yogananda combined modern educational techniques and spiritual ideals. In 1920, he founded the Self-Realization Fellowship (SRF), headquartered in Los Angeles, California. Yogananda is regarded as the first Indian yoga Master who made America his home, living there from 1920 to 1952, till his death. His message was universal. 'Autobiography of a Yogi' published in 1946, contributed to the popularization of the philosophy of yoga and its application. Yogananda's autobiography describes meetings with the leading spiritualists and intellectuals, as well as well known scientists of that time, which contributed to the scientific credibility of his approach to yoga and religion.

Gopi Krishna was a yogi, teacher, social reformer, and writer. His autobiography entitled 'Kundalini: The Evolutionary Energy in Man', aroused critical scientific inquiry in the physiological and psychological aspects of Kundalini awakening. In 70's he founded a research foundation "for western sciences and eastern wisdom". He was of the opinion that there should be researched biological, psychological and sociological aspects of living beings, with the aim to find the regularities for kundalini awakening.

Scientific Researches in Yoga

The beginning of the scientific approach in yoga research are connected with the name of Swami Kuvalayananda (1883-1966) from Lonavala, India. He is considered to be an Indian pioneer in the scientific research of hatha yoga. In the preface of 'Abstracts and Bibliography of Articles on Yoga' (Bhole, 1985), writes: "After founding Kavalyadham Ashrama in the year 1924, Swami Kuvalayananda started the quarterly Journal 'Yoga Mimamsa' to publish research articles of scientific, semi-scientific and popular nature. Since 1930, the research work was continued by him and his colleagues in the scientific and philosophical literary research departments of the Kaivalyadham, which resulted in very valuable and useful research findings that were presented in this Journal."

Swami Kuvalayananda was a great visionary and a pioneering exponent of experimental studies on yoga, had a major contribution of scientific investigation in the field of yoga. He had cultivated immense interest for carrying out the experiments on yogic practices including kriya techniques (cleanings). He had also volunteered in many experiments. As early as in 1922, he has used some simple instruments like kymograph to study physiological changes in Uddiyana bandha and Nauli. Later in 1924, he established this institute with a well-organized Scientific Research Department (SRD). Along with his colleagues and in collaboration with medical specialists, he conducted a number of physiological and other researches involving radiological and biochemical investigations in the field of yoga. Due to his scientific work, yoga for the first time became more widely accepted and accessed in the field of health and healing even in those early days of 1930 to 60's, when very few people have realized and worked for providing scientific foundation to yoga.

Wenger and Bagchi (1957) carried out neuro-physiological studies in yoga practitioners and revealed that yoga Samadhi cannot be equated with hypnotic condition."

Until 1950, almost all the literature dealing with the healing and other beneficial effects of yoga, meditation and contemporary practices on the human personality was theological philosophical or popular (Malhotra, 2005). Scientists seemingly ignored this important realm of human experience. It was only during the past fifty years that students and teachers of yoga and meditation offered themselves for scientific study. Yogis like Swami Rama, Swami Dharendra Bharamachari and others, allowed themselves to be tested under laboratory conditions in order to demonstrate the efficacy of their meditation techniques. Encouraged by positive findings, scientists who at first had cautiously approached these investigations began to regard meditation and contemplative

practice as genuine subject of study. A number of scientific studies indicated that the yoga and meditative experience induced positive changes in the individual and social behaviour of the practitioner.

Swami Rama (1925 – 1996) was the first hatha yogi, who allowed himself to be studied and examined by the scientists in 1960s, at the Menninger Clinic. He demonstrated and surprised scientists by his ability to voluntary control major body functions, as heartbeat, blood pressure, body temperature. This provided the desired boost to the subsequent scientific interest, research and inquiry in almost all aspects of yoga.

Swami Rama wrote several authentic books on yoga. In the year 1971, he founded the Himalayan Institute of Yoga Science and Philosophy which has its headquarters in Honesdale, Pennsylvania, USA. Institute's mission is "to discover and embrace the sacred link - the spirit of human heritage that unites East and West, spirituality and science, and ancient wisdom and modern technology." The institute uses techniques of yoga, Ayurveda, integrative medicine, principles of spirituality, and holistic health.

Popularization of yoga

In early sixties Dhirendra Brahmachari (1924 – 1994) propagated yoga researches, with the help of modern medical science, on the effects and consequences of yogic exercises on human body and mind. He started 'Vishwayatan Yogashram' now renamed Morarji Desai National Institute of Yoga (MDNIY, New Delhi). In late sixties and early seventies he took part in promotion of scientific approach in yoga. He was asked by the Government of USSR to teach yoga to the astronauts as a technique to adjust and equip to the unknown situations of the space journey.

Maharishi Mahesh Yogi brought yoga back into the center of attention through media. Yoga gained popularity and greater scientific interest because member of the most popular group at that time, the Beatles (1968) went to study yoga with him. He adjusted one of the yoga techniques and offered it with the name transcendental meditation. HE started initiatives of opening schools and universities in order to spread TM. Program is practiced and researched as the program of meditation and self-development in many TM centers around the world. He talked at the seminar (Yoga, Science and Man, 1975) and expressed his view of interaction of yoga and science:

"We have come to a point where the most private and the most intimate, the most unbounded infinite experiences of pure consciousness are explainable by science, by objective approach to knowledge. So what we have today is the reliable tools of science to verify objectively pure subjectivity of life. The scientific age has been glorified into the 'Age of Enlightenment'."

Maharishi Mahesh Yogi became the most famous Indian guru when Beatles visited his ashram in 1968. The With the famous students, members of the music group Rolling Stones and Mia Farrow, he starts multimillion-dollar global business. Through his popularity he promoted intensive scientific research Wallace (1974), Branson (1974, 1978), Laden (1972) and Shapiro (1979) to study various aspects of yoga meditation scientifically.

Dean Ornish, a California based cardiologist who continued the long study of Sri Swami Satchidananda, in his research (British Medical journal the Lancet, 1990) showed that a program that combined hatha yoga with dietary changes, exercise, and group therapy can actually reverse blockages in the heart's main arteries-which doctors used to think wasn't possible.

In 1998, research led by Marian Garfinkel of the Medical College of Pennsylvania found that yoga practice could effectively reduce the symptoms of carpal tunnel syndrome, a malady of near epidemic proportions in this computer age. Of note, Garfinkel's study lasted only eight weeks and yet the intervention proved efficacious. Serious yoga practitioners realize that although some benefits may be noticed after even a single class, yoga's most profound effects accrue over six months, a year or even decades. Yoga can be powerful medicine but it is slow medicine.

Beside the above persons and scientists several other scholars, scientists and yogis who contributed significantly in popularizing scientific approach of yoga, directly or indirectly through their works or books

include names like Burton, Krishnamurti, Prabhupad, Muktananda, Joshi, Swami Niranjananda Saraswati, Swami Satchidananda, Funderburk, Ornish, Benson, Kabat-Zinn, Davidson, Frawley, Swami Rada, Feureistin, Coulter, Chaudheri, Chopra, Nikić from the Yoga Federation of Serbia, Bhole, Chhina, Kothari, Patel, Uddupa and Singh. It will be not out of place to particularly mention here that commendable scientific research work has been done and is being carried out now on the effect of yoga and meditation on common diseases like hypertension, diabetes and hormonal disorders in Bihar School of Yoga in Monger, SVYASA of Bangalore and Visvayaten Ashrama of New Delhi.

Yoga Societies, Associations and Schools

Indian Yoga Gurus who have been visiting various countries during last century, always tried to established societies and instructions in east and west to spread and conduct work of yoga smoothly, at times creating moments and waves related to spirituality and meditation, and not to mention some controversies also.

In Chapter entitled 'Yoga Moves West Ward' of her book 'A History of Yoga' Vivian Worthington (1982) writes "... In 1875 the Theosophical Society was formed in New York by Helena Petrova Bavatsky... Theosophical Society has been a catalyst in assisting the acceptance of yoga in the west." Another society - Vedanta Society of New York (VSNY) was started by Swami Vivekananda, in 1894, played important role initially to spread teachings on the Vedanta and yoga.

Several early yoga organizations, societies, associations and federations that have promoted and advanced the cause of scientific inquiry in the field of yoga and its standardization include: Divine Life Society (Est. 1936), Kavalya Dham (Est. 1944), Bihar School of Yoga - BSY (Est. 1964), The British Wheel of Yoga (Est. 1965), Bihar Yoga Bharti (Est. 1962), Himalayan Institute of Yoga Science and Philosophy (Est. 1971), European Union of Yoga Federations – UEFNY (Est. 1972), International Yoga Studies - IYS (Est. 1973), Yoga Journal (Est. 1975), Swami Vivekananda Yoga Anusandhana Samsthan - or SVYASA (earlier called Vivekananda Kendra Chikitsa Tatha Anusandhana Samsthan - VKYOCTAS, Est. 1981), International Yoga Federation (1987), and International Yoga Teachers' Registry (Est. 1987), International Society for Scientific Interdisciplinary Yoga Research - Belgrade, Serbia, Interantional Yoga Academy – Belgrade, Serbia.

Discussion

Barbara B. Brown in the introduction to the review 'Science Studies Yoga' by James Funderburk (1977) has rightly pointed out to the fact that –“After the first wave of western interest in yogic practices, there has come the realization of the importance of yoga to the emotional and physical well-being of Western as well as of Eastern man. The 1970's have been the development of a remarkable bonding between the mind–spirit approaches to health embodied in yoga and the physical approaches to health embraced by western medicine.

It has not been an easy union. Less than twenty years ago (in early 50's) the potential of yogic practices for ensuring well-being was disdained by American scientific authority. Yet today symposia, conferences, courses on the usefulness of yoga to recover and maintain both mental and physical health can be found in the curricula.”

There are many reason for the reversal in attitude. The expanding speed and depth of communications have provided us occidentals with an increasing understanding of the philosophic foundations of yoga and meditation. Jet travel and changing political attitude have fostered the means for direct exchanges of information, as well as the change of social and psychological interest and attitudes in the West.

Conclusion

Growing of yoga as the global culture is perceived through its acceptance as the general science of life (life science) as well as specific scientific disciplines. We can expect great shifts in the field of scientific researches of the effects of yoga practice, since the scientists who work in different fields – neurosciences, physiology, psychology, studies of consciousness, philosophy, management, are getting closer. All well-beings that will

bring this convergence may be assumed. Yoga, as the instrument of the consciousness evolution, has been recognised by many researchers as the need of this moment.

In order to bring yoga practice closer to the scientific circles, it is needed to propose mechanisms of action that conforms with science as the scientists understand it. There is a need for more relevant researches in order to make yoga closer to the scientific circles. Funding is a perennial problem. Unlike the situation with pharmaceuticals, there is no private industry to the scientific investigation of hata yoga. Given the incredible cost of long- range studies, which are more likely to demonstrate effectiveness, I suspect that we're unlikely to see any time soon the kind of overwhelming proof that sceptical scientists want. When you have an intervention which appears safe and effective - and when its side effects are almost entirely positive - should one wait for proof before trying it? This question lies at the heart of the recent debate over many traditional healing methods.

Although the yoga system is much more than that, yoga as the form of therapy for mind and body represents alternative treatment as the part of holistic modern medicine. It's application has good effects and it supports all forms of the complementary therapy and natural healing. Yoga relaxation and yoga meditation are the best cure. Standing at the turn of 2nd decade of 21st century it seems to me the right time and right place to emphasize the need and possibilities of research and studies on the self-developmental and spiritual (not religious) aspects of yoga. There is a great need for researches in the field of science about yoga meditation, specially having in mind fast tempo of growth, development and interests in the field of neuro-sciences and studies about consciousness in the whole world.

There is a need for further researches of all dimensions of yoga, having in mind all benefits that it offers to the modern individual and society.

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