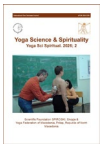
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The History of Scientific Yoga

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Abstract

BACKGROUND: The emergence of scientific yoga represents a significant milestone in the transformation of yoga from a traditional spiritual discipline into an evidence-informed approach for health promotion, disease prevention, and rehabilitation. Although the therapeutic potential of yoga has been recognized in classical yogic literature for centuries, the systematic scientific investigation of yoga began only in the nineteenth century. Understanding the historical origins and development of scientific yoga is essential for appreciating its current role in modern medicine and integrative healthcare.

AIM: To examine the historical foundations of scientific yoga by identifying the pioneering individuals, publications, institutions, and milestones that contributed to the emergence and evolution of scientific yoga from the mid-nineteenth century to the establishment of specialized research institutions.

METHODS: A historical narrative review was conducted using published books, historical documents, classical yoga texts, scientific publications, memoirs, and archival sources related to the early development of scientific yoga. Particular attention was given to the contributions of pioneering physicians, yoga scholars, and institutions that promoted scientific investigation of yogic practices.

RESULTS: The review identifies Dr. N. C. Paul's A Treatise on the Yoga Philosophy (1851) as the first known scientific attempt to explain yogic practices using contemporary medical and physiological concepts. His work represented a turning point in introducing yoga into scientific discourse despite considerable skepticism from contemporary medical circles. The historical analysis further highlights the influence of Swami Vivekananda in creating an intellectual environment favorable to scientific inquiry, followed by the establishment of pioneering research institutions, including The Yoga Institute and Kaivalyadhama, which laid the foundations of modern scientific yoga. Additional contributions from Western physicians investigating yogic breathing techniques demonstrated growing scientific interest in the physiological and therapeutic effects of yoga. The gradual progression from isolated observations to organized scientific research culminated in the establishment of specialized yoga research centers and international scientific collaboration, ultimately leading to the rapid expansion of yoga research during the early twenty-first century.

CONCLUSION: Scientific yoga emerged through the convergence of traditional yogic knowledge and modern scientific investigation. The pioneering efforts of early physicians, yoga masters, and research institutions established the foundations for contemporary evidence-based yoga research. Recognition of this historical development provides important insight into the evolution of yoga as a scientifically investigated complementary healthcare discipline and underscores the lasting importance of interdisciplinary collaboration between Eastern yogic traditions and Western medical science.

Introduction

It is essential to appreciate the importance of a historical perspective, not merely for the documentation of historical facts, but more importantly for understanding the civilizational development of a significant cultural phenomenon whose origins are as ancient as civilization itself.

Another important consideration is that, from its very inception, scientific yoga has possessed the capacity to contribute to the improvement of human health, both therapeutically and rehabilitatively.

A further significant point is the fact that the therapeutic dimension of yoga is not the result of recent “modern” developments.

At this stage, it is important to emphasize that this does not represent a new orientation within yoga. On the contrary, the therapeutic potential of yoga has deep historical roots.

Classical Haṭha Yoga texts, such as the *Haṭha Yoga Pradīpikā*, *Gheraṇḍa Saṁhitā*, *Śiva Saṁhitā*, and others, contain clear indications regarding specific yogic techniques that may possess therapeutic properties. In other words, these characteristics have been recognized for centuries.

A more careful and in-depth analysis reveals

that the roots of psychosomatic disorders are already addressed in the earliest systematic treatise on yoga, *Patañjali's Yoga Sūtras*, particularly through concepts such as *yama*, *niyama*, and the *pañca kleśas* (five afflictions).

It is necessary to distinguish a preliminary period in the development of scientific yoga, during which the first attempts emerged to formulate what might be termed a "scientific perspective" aimed at explaining the techniques of Haṭha Yoga through a scientific framework.

The aim of this study is to identify and highlight the events, organizations, and individuals that have played a significant role in the development of scientific yoga. More than 175 years have passed, and as time moves on—as has been observed in the case of other spiritual traditions—it is very easy for everything to inevitably fade into oblivion.

N. C. Paul and the First Scientific Analysis of Yoga (1851)

The first known attempt at a scientific analysis of yoga was made by a Bengali Indian physician in 1851 through the publication of "A Treatise on the Yoga Philosophy" [1].

His name was Nobin Chunder Pal, also frequently referred to as Nabina Chandra Pala, until he later adopted the Anglicized form N. C. Paul.

Regarding his date of birth, some discrepancies exist. Several sources cite the year 1829; however, William C. Broad, in "The Science of Yoga: The Risks and the Rewards" [2], indicates a lifespan of approximately 1820–1880. Based on records showing that Paul graduated from the Bengal Medical College in Calcutta in 1841, the 1829 birth date would imply that he obtained his medical degree at the age of twelve.

During his medical studies at Bengal Medical College in Calcutta, Paul had the opportunity to serve as an assistant surgeon. This experience enabled him to approach yoga from a scientific perspective and to describe the processes of this ancient system using contemporary scientific terminology.

Thus, the foundations were laid. However, if one seeks to remain fully objective, it must be emphasized that traditional yoga—particularly Haṭha Yoga—constitutes a rich source of preventive and therapeutic elements and represents the true foundation of yogic therapy.

Paul's work undoubtedly contributed to bridging a period during which yoga was viewed with suspicion, contempt, and skepticism by scientific and medical circles. At the time, Haṭha Yoga practices—including āsanas, prāṇāyāma, bandhas, mudrās, and related techniques that had become known in the West—were often dismissed as outdated, anachronistic, and unscientific.

Over time, yoga gradually attracted scientific interest, becoming the subject of systematic research and increasingly being implemented as a complementary approach for prevention and therapy. Paul's work represents the first pioneering effort to present yoga from a scientific perspective.

From Skepticism to Scientific Recognition

The limited assessments available from that period reveal the gradual emergence of profound transformations in attitudes toward yoga during the early twentieth century. Such fundamental changes occurred slowly. Approximately seventy years elapsed before the establishment of specialized first yoga research centers, another fifty years before the organization of the first scientific yoga congress [3], and a further thirty-five years before the "explosion" of scientific research on yoga observed during 2003–2004 [4].

It is important to recognize how far the field has progressed from earlier definitions of yoga found in various encyclopedias. For example, the "Great Soviet Encyclopedia" described yoga as "the darkest form of mysticism" [5]. Such characterizations significantly influenced the official scientific attitudes of countries sharing a similar philosophical orientation.

The beginning of the twentieth century created new conditions that facilitated the emergence of scientific works aimed at presenting and explaining yoga through the lens of modern science.

The Pioneers of Modern Scientific Yoga

It was no coincidence that the yogic tradition itself created the conditions that encouraged modern yoga teachers to engage in scientific inquiry and to bridge the gap between ancient tradition and contemporary science. From the school of the renowned yoga master Paramhansa Shrimad Madhavadasji [6] emerged two of the greatest pioneers of scientific yoga: Shri Yogendra and Swami Kuvalayananda. Each followed a distinct path in the development of scientific yoga.

I had the privilege and honor of visiting both institutions in 1994 and meeting the spiritual leaders, educational staff, and research personnel associated with them. This experience enabled me to appreciate firsthand their value and historical significance.

In the interest of objectivity, one should not overlook the contribution of another influential figure to

the scientific orientation of yoga, although such a contribution might not be immediately expected.

That individual was Swami Vivekananda [7], an outstanding representative of the traditional yogic tradition. Nevertheless, his influence in the late nineteenth and early twentieth century, particularly through his presence in the West, deserves recognition. He was not only instrumental in introducing the philosophy of yoga and Vedānta to Western audiences but also left a lasting imprint on the emergence of later exponents of scientific yoga. The precise extent of this influence remains a subject that warrants further scholarly investigation.

The real beginning of what we call the period of scientific yoga occurred with the appearance on the historical scene of Jayadeva Yogendra (1918), Swami Sri Kuvalayananda (1924), and their yoga institutions: the Yoga Institute of Bombay and the Kaivalyadhama Institute of Lonavala. They constitute the foundation of all future developments that would create the new scientific culture of yoga.

Helena P. Blavatsky and the Reception of N. C. Paul's Work

A characteristic moment is the reaction of Helena Petrovna Blavatsky, one of the founders of the Theosophical Society, to the book by N. C. Paul. Although at first she believed that the author of the book was an Englishman, she was deeply impressed by it. Mrs. Blavatsky quickly recognized the book's importance and significance."

What particularly impressed her was the way in which this pioneering work attempted to explain and understand the mystical phenomena performed by yogis, such as levitation, the experience of samadhi, prolonged hibernation, as well as the processes of gas exchange in the lungs. It is evident that Paul did not use any complex equipment at that time, relying instead largely on his own assumptions.

As evidence that she attached great importance to these accounts and to the scientific approach of Dr. Paul’s book, Blavatsky presented them in the theosophical journal The Theosophist, accompanied by her own comments [8].

Opposition from the Medical Establishment

One important event worth mentioning from a historical point of view is the extremely negative reaction of official Indian medical circles to the author's and Dr. Paul's book. Some sources claim that the book was burned, but this assertion has not been corroborated by other relevant historical sources. It may be true, but it may also be merely a historical myth. It is more likely that the book was banned rather than destroyed by burning.

This event was described by Madame Blavatsky herself in her book From the Caves and Jungles of Hindostan.

"The chief inspector of the medical department, considering Dr. Paul's pamphlet to be 'a direct slap in the face of science in its physiological and pathological fields,' ordered all published copies of it to be bought from private owners at a high price and publicly burned, no doubt as a sacrifice to science. As a result, the pamphlet became a rarity. Of the few copies that were saved, one is to be found in the library of the Maharaja of Benares [9] and another was given to me by the Takur."

Unfortunately, this tragic event was a sign—a foreshadowing of the conflict and challenges to yoga that would follow over the next 150 years and beyond.

N. C. Paul's Encounters with Yogis and Captain Seymour

As for Dr. Paul himself, sources claim that he had been involved with yoga for 35 years [10]. He met and followed various yogis, although at that time it was not easy to penetrate the mystical circles of yogis and fakirs. One example is the well-known Captain Seymour, a British officer who, fascinated by yoga, devoted himself entirely to its practice, abandoning the British colonial army.

Official military and administrative circles considered him insane, placed him in an institution for the mentally ill, and sent him back to England. Seymour, however, found a way to return to India, where he was again captured and sent back to England. Eventually, after some time, Seymour returned once more to India and sought refuge in the Himalayas. From there, he sent a letter to the Governor-General of India, stating that he was not insane and that he intended to remain there [11].

I mention all of this because N. C. Paul may have been the only person who remained in contact with him until the end of Seymour’s life. It appears that they were evidently closely associated, while on the other hand, the English yogi represented a gateway through which Paul gained access to yogic circles that were otherwise impenetrable to outsiders.

Lasting Influence of *a Treatise on Yoga Philosophy*

The book by N. C. Paul left a deep and long-lasting mark in both scientific and spiritual circles in India. It served as evidence that everything which had circulated as stories and legends about the powers of yogis was now being examined and explained. What is

surprising — without any particular intention on my part to evaluate the statements in his book — is the fact that, despite 35 years of experience and meetings with yogis, it is difficult to understand his definition of yoga as nothing more than “prolonged sleep.”

Another important moment that provides additional information about N. C. Paul’s book is revealed by Mary K. Neff in 1935 [12], with the publication of her book Personal Memoirs of H. P.Blavatsky, where we find her comments on parts of the book.

Mary Neff’s statement is particularly characteristic: “N. C. Paul, G.B.M.C. wrote a small, but very scientific pamphlet. He was only a regimental surgeon in Benares, but his name was well known among his compatriots as a very learned specialist in physiology. The pamphlet was called A Treatise on the Yoga Philosophy and produced a sensation.”

It is evident that the book had a longer-lasting echo in the medical circles of that time and did not remain only an initial impression.

Early Medical Applications of Yogic Breathing Techniques

In 1872, the prominent Philadelphia physician Dr. William G.A. Bonwill, [13] an American dentist and researcher, successfully utilized breathing techniques resembling those of pranayama. These experiences were published in the scientific journal New York Medical Record, in the September 1888 issue, in an article entitled “A New and Curious Plan Deadening Pain” [13].

Several years later, another important moment occurred. In 1875, Dr. Addinell Hewson, a prominent dentist and researcher from Philadelphia, shared his positive experience at the International Medical Congress. He also presented them at a meeting of the Philadelphia County Medical Society, where several papers discussed the practice of respiratory techniques aimed at reducing or completely eliminating pain [14].

According to Madame Blavatsky, the work of Dr. Bonwille and Dr. Addinell Hewson represented an important step in understanding how breathing techniques could be used to expand human capabilities and alleviate pain.

Conclusion

To conclude, we can say that several Western doctors and Eastern yogis, despite working independently and in different cultural traditions, shared a common understanding of the importance of controlled breathing in improving health and reducing pain.

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