

A View From India on Women Achievers, Knowledge Systems, Psychology, and Psi

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Abstract – In the millennia old cultural moorings of the Indian sub-continent, the feminine principle, Shakti (prakṛti, primordial cosmic energy, nature), is a core principle. Shakti is venerated in her benign and malevolent forms across the country. Despite the uncertainties of life, human nature, and society, women have played a significant role in the survival and progress of this ancient civilization. Indian women, in the formal and informal sectors, have contributed to the knowledge systems and the scientific enterprise. In the first part of this paper, I present a brief historical background on the status of women, and few recent examples of Indian women achievers. As a psi theorist, my interest rests in understanding the phenomena, for which understanding core concepts becomes a necessity. India is home to a diversity of philosophical schools and a vast body of literature that cover the body-mind-consciousness complex, with several scholars from the past to the present, contributing their views. Based in the Indian knowledge systems, Indian psychology has much to contribute to the theoretical issues in psi. In the context of this special issue, an inter- and intra-school discussion becomes too vast. Thus, in this paper I take the approach of presenting a consolidated view without fidelity to any specific school of thought. In the first section relevant core concepts are briefly described. This is followed by briefly describing the views on psi perceptions, both in agreement and disagreement, as noted by scholars from the various schools of thought.

Keywords: Indian women achievers – Indian knowledge systems – Indian psychology core concepts – psi in Indian psychology

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Ein Blick aus Indien auf erfolgreiche Frauen, Wissenssysteme, Psychologie und Psi

Zusammenfassung² – In der jahrtausendealten Kultur des indischen Subkontinents ist das weibliche Prinzip, Shakti (prakṛti, kosmische Urenergie, Natur), ein zentrales Prinzip. Shakti wird in ihren gütigen und böartigen Formen im ganzen Land verehrt. Trotz der Unwägbarkeiten des Lebens, der menschlichen Natur und der Gesellschaft haben Frauen eine bedeutende Rolle für das Überleben und den Fortschritt dieser alten Zivilisation gespielt. Indische Frauen haben sowohl im formellen als auch im informellen Sektor zu den Wissenssystemen und dem wissenschaftlichen Betrieb beigetragen. Im ersten Teil dieses Beitrags gebe ich einen kurzen historischen Überblick über den Status der Frauen und stelle einige Beispiele indischer Frauen vor, die in jüngster Zeit viel erreicht haben. Als Psi-Theoretikerin liegt mein Interesse darin, die Phänomene zu verstehen, wofür das Verständnis der Kernkonzepte eine Notwendigkeit ist. Indien beherbergt eine Vielzahl philosophischer Schulen und eine umfangreiche Literatur, die sich mit dem Komplex Körper-Geist-Bewusstsein befasst, wobei mehrere Gelehrte von der Vergangenheit bis zur Gegenwart ihre Ansichten beisteuern. Auf der Grundlage der indischen Wissenssysteme hat die indische Psychologie viel zu den theoretischen Fragen des Psi beigetragen. Im Rahmen dieses Sonderheftes würde eine schulübergreifende und schulinterne Diskussion zu weit führen. Daher verfolge ich in diesem Beitrag den Ansatz, eine konsolidierte Sichtweise ohne Bindung an eine bestimmte Denkschule zu präsentieren. Im ersten Abschnitt werden die relevanten Kernkonzepte kurz beschrieben. Anschließend werden die übereinstimmenden und abweichenden Auffassungen der Wissenschaftler und Wissenschaftlerinnen der verschiedenen Denkschulen zu Psi-Wahrnehmungen kurz beschrieben.

Schlüsselbegriffe: Indische erfolgreiche Frauen – indische Wissenssysteme – Kernkonzepte der indischen Psychologie – Psi in der indischen Psychologie

Introduction

Academic work on women's issues tends to focus on their oppression and drudgery in every aspect of life, presenting a depressing view of their lives. This is a complex issue greatly dependent on the culture, society, and economic status of both the family and the nation. Women play a pivotal role in nurturing the helpless human infant, the most dependent of all infants in the natural world, and provide stability for the family – the core unit of social organization in our species, greatly influenced by human nature in all its colors; women are also achievers in all walks of life, from the simplest to the most complex.

On evaluating my own work experience as a woman in several domains of activity – clinical, teaching, research – with a variety of groups of people, my biggest challenges came from dealing with a chronic health problem, and cross-cultural issues in addressing western vs Indian

2 Eine erweiterte deutsche Zusammenfassung befindet sich am Ende des Artikels.

points of view in psychology and parapsychology. As a psi researcher, the position of being “outside the gates of [mainstream] science” (Broderick, 2007), despite proposing a pan-human brain-based hypothesis for understanding the mechanism of informational psi (IΨ; i. e., extra-sensory perception, anomalous cognition, precognition), and for the very same reasons being outside the gates of “mainstream” parapsychology, is the most perplexing part of my experience in psi research, aside from the subject matter of course. After familiarizing myself with the discipline of parapsychology, fundamental concepts such as consciousness, theory of mind, and especially the survival hypothesis were conflicting with a mind encultured in a different culture and language, despite being educated in and proficient in English.

Cross-Cultural Psychology

Cross-cultural psychology is defined as “[...] the study: of similarities and differences in individual psychological functioning in various cultural and ethnocultural groups; of the relationships between psychological variables and socio-cultural, ecological and biological variables; and of ongoing changes in these variables” (Berry, Poortinga, et al., 2002: 3). However, psychology as taught in India has been “imported lock, stock, and barrel from the West, and was first implanted in 1916 at Calcutta University” (Dalal, 2014: 65), thus, its practice has followed the western approach in subject matter. Much of what we were taught from leading standard western textbooks was quite different from our lived experiences. Approaches such as that of behaviorism, Sigmund Freud, Carl Rogers, Fritz Perls, Eric Berne, were misfits in the Indian milieu, even in the urban cosmopolitan cities. Application of western psychotherapeutic models to a non-western culture have been substantially discussed (Chadda & Deb, 2013; Manickam, 2010; Misra & Gergen, 1993; Neki, 1975; Poortinga, Pandey, et al., 1997). In discussing cross-cultural issues Bhargava, Kumar, and Gupta (2017) state: “Culture impacts the expression and understanding of psychopathology and also determines the acceptability of treatment. Recent literature underscores the efficacy of the western models in Indian context when embedded in Indian concepts like ‘Bhagvad Gita’ and ‘guru–chela’ [teacher–student] relationship.”

One of the key issues in cross-cultural psychology is the classification of societies into collectivist and individualistic societies, a dimension that can be found in many kinds of analyses. Individualistic societies emphasize autonomy and self-independence, whereas collectivist societies lay emphasis on networks of relationships and interdependence of groups (family, social, peer, village, nation) (Darwish & Huber, 2003; Misra, 2001, Triandis, Brislin, & Hui, 1988). India is an example of a collectivist society. Interestingly, while at the social and personal level India is collectivist, at the spiritual level it follows an individualistic path in that the goal is self-realization at a metaphysical level.

Areas of daily living have different cultural basis. For example, “bed sharing” of infants with parents, which continues to be “controversial for nighttime caregiving in the U.S. today, as in most of the West. ...” (Barry & McKenna, 2022; McKenna & McDade, 2005). New mothers in India will be severely chastised by their mother and grandmothers if they opted for isolating the child. As Barry (2022) states, “A vast amount of scientific evidence points to the role of co-sleeping in the evolution of infant sleep regulation, as co-sleeping is part of an ancient behavioral complex (including breastfeeding) representing the biopsychosocial microenvironment in which human infants co-evolved with their mothers through millions of years of human history.”

An often-repeated psychology class room anecdote was that “psychology is the psychology of the American sophomore.” Henry (2006) states: “Twenty years have passed since Sears (1986) alerted social psychologists to the many possible dangers faced by relying on a database composed mostly of students, especially with respect to the generalizability of the theoretical conclusions we come to.” As Sears (1986: 515) wrote:

This article suggests that social psychology has risked such biases because of its heavy dependence during the past 25 years on a very narrow data base: college student subjects tested in the academic laboratory with academic like materials. My concern is that over-dependence on this one narrow data base may have unwittingly led us to a portrait of human nature that describes rather accurately the behavior of American college students in an academic context but distorts human social behavior more generally.

Recently Cooper, McCord, and Socha (2010) wrote: “In many cases, the so-called ‘college-sophomore problem’ is not a problem.” However, it may be a problem from the cross-cultural perspective, unless we are addressing species-specific aspects such as perception of sensory ranges.

Cross-cultural issues have also been raised in the context of psi research. As Maraldi and Krippner (2019: 306) state:

Research has begun to unveil the cognitive and personality correlates of anomalous experiences (AEs). Unfortunately, cultural differences have received markedly less attention. Questions exist regarding whether the Western description of AEs, as possibly nonordinary or exceptional, is valid across cultures. Scant research on AEs has been conducted in non-English-speaking countries, and few systematic cross-cultural comparisons have been carried out.

As a Hindu Indian, I am culturally embedded in the idea of ‘rebirth’ and narrations of precognitive dreams – they are considered as part of the realities of life. Introduced to psi investigation as an academic discipline, my interest grew after I looked at the data. Naturally, the next question is how does this happen. Several years down the line, I was faced with the cross-cultural

question. Thus, although this special issue is on women and parapsychology, I decided to present a view from India. Instead of providing comparative data between two cultural groups on various parameters, presenting an overview of Indian psychology and its implications for psi theory is appropriate. For the readership of this journal, in this paper I provide a glimpse of the Indian view.

In India, through the millennia, across regional cultural differences in dress, food habits, and language, there is a common thread that binds her people to a cultural ethos that is, paradoxically, both same and different. Thus, in Part I of this paper, in tune with the theme of this special issue, is a summary of the “feminine” in Hindu dharma, and contribution of women to the Indian Civilization and Nation. As a basis for understanding Indic perspectives of psi, in Part II an overview of Indian knowledge systems (IKS), core concepts of Indian psychology, the nature of time, saṃsāra (cycle of birth and death) and karma, and Indic explorations in informational psi are discussed. These are the core constructs of Hinduness or Hindutva; *tattva* is the essence or substance of anything. In the Yoga tradition the five *tattva* or elements are earth (*pṛthvī*), water (*āpas*), fire (*agni*), air (*vāyu*) and space (*ākāśa*). Each element is the manifestation of primal cosmic energy (*Śakti*).

Part I

The Feminine in Hindu Dharma

Ardhanārīśvara, the androgynous form of Śiva (puruṣa, primordial Self, Consciousness, the masculine) and Śakti (prakṛti, primordial matter, energy, the feminine) represents the regenerative power of the Universe (Figure 1). This duality of the masculine and the feminine is seen in “the popular religious beliefs of India, Śiva-Śakti of the Tantras, Puruṣa-Prakṛti of Sāṃkhya, Brahman-Māyā of Vedānta, and Viṣṇu-Lakṣhmī, Rāma-Sitā and Kṛiṣṇa-Rādhā of Vaiṣṇavism all mean the same” (Madhavananda & Majumdar, 1953: 68).

Śakti as the divine mother, divine feminine is reflected in the many goddesses (*devī*) that are at the center of daily life, each having specific attributes and rituals associated with them. The three principle feminine deities known since the earliest Ṛg Vedic period (~4500–5000 BCE) are worshipped with, and independent of their masculine forms: Pārvatī devī (goddess of wealth, fortune, power, beauty, fertility and prosperity), Lakṣmī devī (goddess of power, energy, nourishment, harmony, love, beauty, devotion, and motherhood), and Saraswati devī (goddess of arts, music, learning, knowledge, and wisdom); every seeker pays obeisance to them (Bansal, 2005; Kinsley, 1997).



Figure 1. A three-armed Ardhanārīśvara sculpture, 11th century, Gangaikonda Cholapuram temple, Tamil Nadu, India. Variations of this figure are seen across temples in India.

Image Credit: ASI monument number N-TN-C94.
https://commons.wikimedia.org/wiki/File:Gangaikonda_cholapuram_sculptures_04.jpg



Figure 2. Devī Durgā and her nine forms.

Images: Wikimedia Commons, <https://en.wikipedia.org/wiki/Durga>

Das, S. (2020, August 27). Navadurga and the 9 Forms of the Hindu Goddess Durga.

<https://www.learnreligions.com/nine-forms-of-goddess-durga-1770307>

Devī Durgā, a form of Pārvatī devī, is worshipped and celebrated through the year across the country. Particularly during the Navrātri (nine nights) festival in her honor, in September–October, she is celebrated in her various forms: Shailaputri (Daughter of Mountain), Bhramacharini (Mother of Devotion and Penance), Chandraghanta (Destroyer of Demons), Kushmanda (Goddess of the Cosmic Egg), Skandamata (Goddess of Motherhood and Children), Katyayani (Goddess of Power), Kalaratri (Goddess of Auspiciousness and Courage); Mahagauri (Goddess of Beauty and Women), and Siddhidhatri (Goddess of Supernatural Powers or Siddhis, that is perfection of yoga and attainments) (Figure 2).

The feminine is also revered as Maa Bhūmi (Mother Earth) and Maa Bhārati or Bhārata Mātā (Mother India – Bhārata is the civilizational name of India, stated as such even in the post-independence Constitution – “India, that is Bharat”). As Madhavananda and Majumdar (1953: 86) state, this also “explains the general Indian tendency towards the deification of the mother in the social, and even in the domestic life. Not only the mother, but women, as a class, are regarded as the incarnation of the Devi.” (This enduring principle forms an unbroken chain from the ~7000 BCE Sindhu-Saraswati Civilization (Bakshi, 2019; Mallam, 2022) to the on-going present in Hindu³ or Sanātan Dharma (the eternal and intrinsic nature of things).⁴ Based on the experiences and teachings of ordinary people, scientists, and scholars it is reflected in the beliefs, practices, philosophies, and wisdom of the Hindus.

Contribution of Women to the Indian Civilization and Nation

Based on textual evidence, Madhavananda and Majumdar (1953: 87–111) have traced the status of women’s education from the early Vedic age [~3000 BCE⁵], Brāhmaṇa-Upaniṣadic age (c. 1000 BCE to c. 500 BCE), Smṛiti-Purāṇa period (c. 500 BCE to 600 CE), to the modern era. In the pre-modern ages, Vedic studies began with *upanayana* [thread ceremony] or sacred initiation which was performed usually at the age of eight, for girls and boys. Women enjoyed equal opportunities for studentship and work in all branches of Vedic literature including the sciences, such as astronomy, physics, mathematics, medicine, equally with men. There is ample evidence to show women studied the Vedas as well as composed hymns that were later admitted to the sacred canon (Dwivedi & Malik, 2022). The earliest literature, the Ṛg Veda, contains hymns composed by as many as twenty-seven *Brahmavādinī*(s) or women seers. Women enjoyed the same religious privileges as men, participating as equals in religious rituals together or alone, depending on the ritual being performed – practices that continue to this day. They also participated in agricultural and industrial activity such as making arrows, and excelled in the fine arts, music and dance. Women students were divided into two classes, *Brahmavādinī* who were lifelong students of theology and philosophy, and *Sadyodvāhās* who studied till the

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- 3 The term Hindu comes from the Sanskrit word Sindhu referring to the Indus River, was initially used by foreigners to refer to those who lived near the river Indus. The term “Hinduism” is partly a Western construct, formulated by orientalist who represented a loosely knit religious tradition as a unified system of beliefs and practices (Sugirtharajah, 2002).
 - 4 Dharma defies an exact rendering into English or any other language; it does not refer to a system of abstract ideas or beliefs having no essential connection with life nor is it a set of rules to be blindly followed in daily life (Malhotra & Babaji, 2020: 184).
 - 5 Recent archaeological and DNA evidence is altering the dates that were hitherto applied (Price, 2019). Hence, the dates provided here are approximations as noted in the referenced texts.

age of 15–18, which was the age of marriage (Altekar, 1938: 13). Altekar (ibid.) analyzes that since about 300 BCE, various factors led to the decrease in the marriage age of women, from the earlier 15–18 age group, led to a steady decline in their education. “By the beginning of the Christian era pre-puberty marriages became the order of the day. Naturally, this meant a serious handicap to advanced studies, which could not be obviously finished before the age of 12 or 13, which was the new marriage age” (pp. 18–19).⁶ During the Muslim rule, beginning around 12th century CE, the percentage of literacy among Hindu women went further down with great rapidity (p. 27).

The noted American historian and philosopher William Durant (1930: 55) observed:

When the British came [early 17th century], there was, throughout India, a system of communal schools, managed by the village communities. The agents of the East India Company destroyed these village communities, and took no steps to replace the schools; even today [1930] ... they stand at only 66 per cent of their number a hundred years ago. There are now in India 730,000 villages, and only 162,015 primary schools. Only 7 per cent of the boys and 1 per cent of the girls receive schooling, i. e. 4 per cent of the whole.

While earlier in several provinces the literacy level was widespread, by the end of the 19th century, India saw 93% illiteracy (Durant, 1930: 45–47). As Tharoor (2016: 130) points out: “The British left India with a literacy rate of 16 per cent, and a female literacy rate of 8 per cent – only one of every twelve Indian women could read and write in 1947.”

In 1848 Savitribai Phule along with her husband Jyotirao Phule, founded India’s first girls’ school in Pune, Maharashtra. She also became the first Indian woman to become a teacher in this period. In 1916, social reformer Maharishi Dhondo Keshav Karve founded the Shreemati Nathibai Damodar Thackersey (SNDT) Women’s University in Mumbai, the first women’s university in India as well as in South-East Asia. The motto of the University is “An Enlightened Woman is a Source of Infinite Strength.” The first five women graduated in 1921 from this University – I am one of the millions of beneficiaries of the foresight of Maharishi Karve.

Physicist Rohini Godbole (2002: 108) states, “In India there are no social barriers to the science (particularly mathematics and physics) education of girl students. The fact that the majority of teachers are women, even for math and physics, definitely provides the girl student with confidence that she can study these subjects.” She further states that at the college level the 30–40% women students take up science subjects; biological and chemical sciences have a larger representation of women. Despite the many challenges across the country, the New Education Policy 2020 aims to increase the gross enrollment ratio (GER) to 100% in preschool to secondary level by 2030 whereas GER in Higher Education including vocational education from 26.3% (2018)

6 Presently the legal marriage age for men is 21 years and for women is 18 years. There are plans to amend the law and make it 21 years for both.



Figure 3. Women achievers from various fields receiving the Padma Shri award from the President of India. (1) *Prof. Veena Tandon* (Padma Shri [PS] 2016), pioneered research on parasites affecting livestock and also helped in understanding of parasite biodiversity on North-Eastern region. (2) *Lakshmikutty Amma* (PS 2018), tribal woman from Kerala who provides herbal treatments for poisoning from snake and insect bites, preparing over 500 Herbal Medicines from memory. (3) *Prof. Rohini Godbole* (PS 2019), Indian Institute of Science, Bangalore, known for her work on the design and implementation of two particle colliders, the Large Hadron Collider and the Next Linear Collider, at CERN, the European Organization for Nuclear Research. She is a part of the International Detector Advisory Group for the International Linear Collider (ILC) at CERN. (4) *Smt. Rahibai Soma Popere* (PS 2020), known as “seed mother”, she is a self-taught tribal woman farmer, famous globally for her work in agro bio-diversity conservation. (5) *Tulasi Gowda* (PS 2020), a Halakki tribal woman famous as the Encyclopedia of Forest due to her vast knowledge of diverse species of plants and herbs. (6) *Trinity Saioo* (PS 2020), tribal woman farmer who spearheaded the women-led turmeric farming movement in Meghalaya, enabling the women to triple their incomes. (7) *Air Marshal Dr. Smt. Padmavathy Bandopadhyay* (PS 2020), PVSM, AVSM, VSM (Retd.), Aviation Medicine Specialist, first woman Air Marshal of Indian Air Force. (8) *Dr. Leela Joshi* (PS 2020), gynaecologist and social worker known for her work with tribal women and teenage girls suffering from anaemia in Ratlam district. Images: (Government Open Data License - India [GODL]).

Source: All the images have been taken from <https://www.padmaawards.gov.in/Gallery2022.aspx>

to 50% by 2035 (PIB, 2022a), including other schemes for the welfare of the girl child (PIB, 2022b). With increasing number of educational facilities for higher education such as the Indian Institute for Technology, Indian Institute for Management, medical colleges across the country, and increased funding for this sector, the future holds promise for women and men in India. The results are slowly becoming visible with first generation students, including girls, from small villages and towns succeeding in medical entrance exams to various colleges (Kumari, 2020).

Contemporary Indian women have played stellar roles in all aspects of public life, arts, literature, social work, sports, science. As Gupte, Gyanchandani, et al. (2002: 171) state: “Indian women have held most political positions of importance, such as prime minister, chief ministers



Figure 4. Women achievers from various fields receiving the Padma Shri award from the President of India. (1) *Dr. Meenakshi Jain* (Padma Shri [PS] 2020) senior historian and political scientist, known for her scholarly contributions to Indian history. (2) *Manjamma Jogati* (PS 2021), transgender folk dancer of Jogamma heritage, first transwoman President of Karnataka Janapada Academy. (3) *Pappammal* (PS 2021), 105 year old organic farmer from Coimbatore, cultivating varieties of millets, pulses, and vegetables for over nine decades. (4) *Birubala Rabha* (PS 2021), decades-old crusader against witch-hunting from Goalpara, working across Northeast India, at risk to her own life. (5) *Smt. Bhuri Bai* (PS 2021), acclaimed painter from the Bhil tribal community transforming the art form from the traditional rock paintings to paper and canvas, recipient of several state awards. (6) *Basanti Devi* (PS 2022), environmentalist from Pithoragarh, known for her contribution towards revitalizing the Kosi River. (7) *Dr. Sosame Iype* (PS 2022), animal husbandry practitioner and academician from Thrissur, led conservation efforts to save and promote indigenous Vechur Cattle. (8) *Prof. Sanghamitra Bandyopadhyay* (PS 2022), eminent computer scientist and machine intelligence expert – first woman director of the Indian Statistical Institute. Images: (Government Open Data License - India [GODL]).

Source: All the images have been taken from <https://www.padmaawards.gov.in/Gallery2022.aspx>

of various states, and leaders of legislatures. Women have also held positions of prominence in the judiciary and in other professions.” Several are recognized each year for their contribution by receiving Government of India’s civilian awards. The Padma Awards are one of the highest civilian honors of India announced annually on the eve of Republic Day. Padma Shri, the fourth highest civilian award for distinguished service seeks to recognize achievements in all fields of activities or disciplines where an element of public service is involved; some notable examples from recent years are illustrated in Figures 3 and 4.

Despite the frailties of human nature, changing socio-political pressures and constraints, the difficulties of oppression and violence through successive centuries of invasions, the continuation of the reverence of the feminine through millennia old traditions are reflected in the changing roles and reemergence of achievements of women in Indian society. Throughout

its history, women have played a contributory role in society, from participating in attaining freedom for India from the British colonial powers, contributing to the formal and informal sectors of education, industry and science, and most importantly, being the foundation for a strong collectivist society. Women across the millennia have played, and continue to play, a vital role in providing leadership to this civilization and nation in all domains of life. Several early examples of their contributions can be found in Madhavanand and Majumdar (1953). The recently elected President of India Hon. Smt. Droupadi Murmu, who dedicated her life to the welfare of her tribal community is a reflection of the Hindu cultural ethos.

To conclude this section, it may be accurate to state that the long tradition of venerating the feminine provides a different framework for women in the present compared to other cultures where the feminine is not so regarded. When there are lapses and social strife, a reminder of the cultural ethos hopefully brings in a course correction. Indian society, as a whole, is in the midst of changes borne out of the recent increasing pace of development including in basic facilities that greatly benefit women. Considering the upheavals in the lives of women in several countries around the world, the uncertainties of life, and the treacheries of human nature, Indian women, by and large, are in a free and safe space.

Part II

Indian Knowledge Systems (IKS)

In his book *What Is This thing Called Science?* Alan Chalmers (2013) attempts to answer this question by examining all its complexities. After perusing its contents, I found the most concise definition of science on the NASA website for children: “Science consists of observing the world by watching, listening, observing, and recording. Science is curiosity in thoughtful action about the world and how it behaves” (SpacePlace, 2022). As Chalmers has adequately discussed, it is an evolving idea of our understanding of the world we live in; theories of the past are sometimes falsified with the data and theory from today, leaving the question open about errors that scientists in the future will find in the theories of today.

In the context of the stereotypical origins of science, Medin and Bang (2014: 3–4) have commented that:

Some people in this corner also are fond of the story of the development of science according to which it basically started in Greece, was nurtured in Europe during “the Enlightenment” and the associated triumph of reason, and eventually grew into modern science (a.k.a. “Western science”). Only in the West has science been cleanly severed from the irrationality of magic and superstition.

Elshakry (2010: 102) has commented that the “[...] debates over the nature of ‘Western science’ that had been initiated by missionaries, particularly British and American Protestants, who enlisted science in the service of their proselytizing efforts; they were also among the first to use the term ‘Western science’ itself.” However, the British historian Professor David Arnold (2000: 1) states:

Although the history of science, technology and medicine continues to be presented in general histories as a record of Western discovery and dissemination, it has become more widely acknowledged than a generation or two ago that *not* [emphasis added] all such histories can be conflated into a single story of European achievement or saga of European enterprise overseas.

A brief overview of Professor Joseph Needham’s monumental work *Science and Civilization in China*, started in 1954 and further work still being prepared by the Needham Research Institute, is a testimony to the scientific developments in ancient China. The 27 volumes, so far, include disciplines such as mathematics, physics, chemistry, physiology, agriculture, paper and printing, textiles, botany, military technology, fermentations and food science, medicine, ceramic technology (Needham Research Institute, 2022).

India has a vast history and records of scientific developments and technological advances, covering all disciplines of modern science. Intellectually vibrant, the philosophical and scientific work developed in the several ancient universities. For example, the Takshaśilā/Taxila University (estd. ~5th–6th c. BCE till about 6th c. CE) is amongst the oldest and well-known centers of higher learning in ancient India, located near present day Rawalpindi, Pakistan; Nalanda (3rd c. BCE to the 13th c. CE) in Bihar; Valabhi (c. 600 CE – 1200 CE) in Gujarat; Vikramshila (c. 800 CE – 1203 CE) in Bihar. Scholars from across India and outside (Babylonia-now Iraq, Persia-now Iran, Greece, Egypt, Syria, Asia Minor-now Turkey, Arabia, China, Korea, Japan, and Indonesia) attended these centers of learning, leaving behind accounts of their visits. Over the ages, these universities were destroyed by hordes of invaders (Apte, 1900; Barua, 2016; Jain, 2011; Puri, 2020).

The contemporary Indian ethos finds its roots in the ancient past, with a continuation of beliefs and practices. With a tradition of debate where the opponent’s view is first understood and presented (pūrvapakṣa), before stating one’s own view (uttarapakṣa), ensuring that a proponent was well-versed in the opponent’s view, the intellectual culture saw several points of views being extensively discussed; this tradition has, however, been on the decline in modern times. In the Indic view knowledge is sacred. An enormous corpus of literature is associated with Hindu, Buddhist, and Jain knowledge systems, to which one can refer for its beliefs, principles, philosophies, and scientific advances. As Feuerstein, Kak, and Frawley (2001: xv) state:

Clearly, there are a number of reasons why we should be interested in India. Some relate to the origins of science and religion, others concern our yearning for knowledge of self and humanity's future destiny. The Indic culture area provides us with extensive material, across a very broad time span, that can help us understand the earliest history of ideas. The ancient Indic texts are layered in such a fashion that we can see the gradual development of mathematical, physical, linguistic, and psychological concepts. We find that their authors were deeply interested in cognitive science, in which they were so advanced that their insights may yet prove useful to modern science.

Tracing the roots of the Indus-Saraswati civilization Feuerstein, Kak, and Frawley (2001: xv-xviii) state:

According to the archaeological record, there is an unbroken tradition going back to about 8000 B. C. The earliest textual source is the Rig-Veda, which is a compilation of very ancient material. Astronomical references in this and other Vedic works recall events in the third to fifth millennium and earlier. The recent geological discovery that the Sarasvati, the preeminent river of Rig-Vedic times, went dry around 1900 B. C. as a result of tectonic upheavals implies that the Rig-Veda must be dated prior to this date. According to tradition, which scholars are finally beginning to take more seriously, the R̥g Veda is the creation of a period preceding 3100 B. C.

The Sanskrit word "Veda" literally means "knowledge" or "wisdom." The oldest of the four Veda(s) is the Rig-Veda. It is a compendium of poetry, legend, mythology, ritual, ancient science and culture, and, above all, ancient religion, yoga and spirituality. The Rig-Veda contains the same profound myths and archetypal images of man and nature that many of us are exploring today in psychology, anthropology, shamanism and in yoga practices such as Tantra (Frawley, 1992: 23). The Sama Veda is the liturgical manual or the chanting or singing of the Vedic hymns. The Yajur Veda consists of hymns that are in the form of sacrificial formulas or prayers like the other Vedic collections, and can be understood as promoting an inward, spiritual attitude within the framework of the Vedic sacrificial religion. The Athārva Veda is a late edition to the corpus of literature in continuation of the others (Feuerstein, Kak, & Frawley, 2001: 16–36).

The twelve major schools of Indian philosophy can be broadly divided into Vedic and non-Vedic schools. The six Vedic traditions can be arranged in three sets that are akin to each other: Nyāya and Vaiśeṣika, Sāṃkhya and Yoga, and Mīmāṃsā and Vedānta (a. k. a. Upaniṣad). The Upaniṣads (~800–500 BCE) speak of two kinds of science: knowledge of the Paramātman, the one and only supreme principle and the ultimate reality (*parā vidyā*) and knowledge of the empirical world (*aparā vidyā*) (Kak, 2022: 23; Chakrabarti, 1996: 135). The six non-Vedic traditions come under the following three heads: Cārvāka or Lokāyatā (materialism), Jainism, Buddhism, which has four sub-divisions: Vaibhāṣika (direct realism), Sautāntrika (indirect realism), Yogācāra (idealism), and Madhyamika (nihilism) (Misra, 2013: 249–250).

The Sanātana Dharma [Eternal Tradition] Literature	
The vast collection of literature includes additional texts and subtexts, evolution of ideas, commentaries by scholars within and between knowledge systems, translations from the original Sanskrit, Pāli and Prakrit into multiple languages, from the past to the present.	
<p>Vedic Texts (~No. of subtexts)</p> <ul style="list-style-type: none"> • <i>Veda</i>: Rg Veda (~17), Yajur Veda (~54), Sama Veda (~19), Atharva Veda (~11) <ul style="list-style-type: none"> • <i>Subdivisions</i>: Samhitas, Brāhmaṇa, Aranyakas, Upanishads • <i>Vedāṅga</i> (Limbs of Veda) (~6x16) • <i>Upa Veda</i> (applied knowledge) (~6) <ul style="list-style-type: none"> • Ayurveda (Medicine) (3 principal texts) • <i>Brāhmaṇa</i> (~20) • <i>Darśana</i>: Nyāya, Vaiśeṣika, Sāṃkhya, Yoga, Mīmāṃsā, Vedānta/Upaniṣads (~108) • <i>Tertiary Texts</i>: Maha-Purāṇa (~19), Upa-Purāṇa (~18) • <i>Dharma Śāstra</i> (Law Books) (~21), Additional Texts (~7) • <i>Kāvya</i> (Poetics) (~14) • <i>Bhakti Śāstra</i>: <ul style="list-style-type: none"> • <i>Itihās (History)</i>: Rāmāyana, Mahabharata • <i>Supplementary</i>: Bhagavad Gītā, Harivamsa, Yoga Vasīṣṭha • <i>Vaiṣṇava Texts</i>: Pāñcarātra āgama (~210) • <i>Śaiva Texts</i>: Śaiva Āgama (~28) • <i>Śakta Tantra</i>: (~35) 	<p>Jain:</p> <ul style="list-style-type: none"> • <i>Digambara Siddhānta</i>: Ādi purāṇa, Dravyasamgraha, Rātna Karanda Sravakachara, Pancastikayasara, Pravachanasara, Puruṣārthasiddhyupāya, Satkhandagama, Samayasara, Sarvārthasiddhi, Siribhoovalaya, Niyamasara, Jnanarava, Mahapurana, Mulachara, Tiloya Panatti • <i>Śvētāmbara Siddhānta</i>: Angās (12), Upāṅgas (12), Chedasūtras (6), Mūlasūtras (4), Cūlikasūtras (2) <p>Buddhist: Tripīṭaka</p> <ul style="list-style-type: none"> • <i>Vinaya-pīṭaka</i>: Sutta-vibhanga, Khandaka (2 subtexts), Parivāra, Mahā-vibhaṅga, Bhikkhuni-vibhaṅga • <i>Sutta-pīṭaka</i>: Dīgha-nikāya, Majjhima-nikāya, Samyutta- nikāya, Anguttara- nikāya, Khuddaka- nikāya (15 books) • <i>Abhidhamma-pīṭaka</i>: Vibhaṅga, Dhātu-kathā, Puggala-paññatti, Kathā-vatthu, Yamaka, Paṭṭhāna • Additional texts in Prakrit, Sanskrit, Chinese, Tibetan, Sinhalese in Mahāyāna tradition <p>Cārvāka/Lokāyatā (atheistic, materialism)</p> <p>Śramaṇa – Ājīvika (atheistic, materialism)</p>

Figure 5. The Sanātana Dharma collection of literature including Vedic and non-Vedic systems.

Figure 5 illustrates the collection of Indic literature, on the foundation of which commentaries, developments, translations, further analysis, and interpretation of core concepts, including contemporary work is written.⁷ Attempting to understand the Indian Knowledge Systems is like the Buddhist parable from the *Tittha sutta* (~500 BCE of the five blind men and the elephant) (Ireland, 2007).

In his Foreword to the *Introduction to Indian Knowledge System* Prof. S. Sadagopan (2022: 23) states:

IKS (Indian Knowledge System) have evolved over centuries, in fact, over millenniums. It has a wide range, and the well-known among them being Astronomy, including planetary

⁷ The British National Library holds a collection of about 10,800 Sanskrit and Pali manuscripts from pre-modern and modern periods and 1,700 Pali manuscripts, including over 3,500 Sanskrit and Gandhari manuscript fragments from North-Western India and Central Asia in Brahmi and Kharosthi scripts dating from the 1st to 11th centuries AD. Hindu manuscripts covering philosophy, theology, literature, law, science, astronomy, astrology, mathematics, and medicine date from the 10th century or earlier. Additionally, they hold a collection of about 600 Vedic manuscripts including accented versions and ritual texts, including some of the earliest known Buddhist manuscripts. This collection grew out of the activities of the first patrons of Indology studies who served in India as employees of the East India Company. <https://www.bl.uk/collection-guides/sanskrit>



Figure 6. Shree Padmanabhsamy Temple, Thiruvananthapuram, Kerala.

Image credits: Photograph by (1) Masha <https://pixahive.com/photo/temple-10/> (free to use); (2) These photographs were taken during September 23, 2017 equinox. Credits: Vijayan Madhavan (Narayanan & Simha, 2021).

movements, solar-centric world, shape and diameter of the Earth; Health and Well-being, including plants & herbs, surgical procedures; Mathematics and Computing, including the discovery of zero, decimal system of numerals, and approximation algorithms for computation of Pi; Languages and Linguistics, including Panini's Sanskrit grammar; Metallurgy, including steel-making and zinc-smelting; and Public Administration, including Good Governance and Taxation.

Other disciplines with a vast body of texts include: geometry, logic, physics, ontology, architecture and civil engineering, ship-building, chemistry, mechanics, acoustics, plants and plant life, classification of animals, consciousness studies and cognitive science, poetics, music, performing arts and sculpture, jurisprudence, economics, politics and statecraft (Bhattacharya & Naik, 2008; Chattopadhyaya, 1986; Ghosh, 2018; Kak, 1995/2005, 1999; Kaṇāda & Kak, 2016; Rao, 2011; Sarma, 2015; Seal, 1915; Swaminathan, 2020).

A translation of some of the original Sanskrit texts is also available, for e.g., the three volume *Suśruta Saṃhitā* (6th c. BCE), the foundational text of Āyurveda which includes anatomy, physiology, disease/disorders, medicine, and surgery (Bhishagratna, 1907, 1911, 1916). Suśruta is recognized as a pioneer in surgery by contemporary practitioners. Recently Columbia University recognized the pioneering work of Maharishi Suśruta in plastic surgery (Banerjee, Ezer, & Nanda, 2011; Columbia University, 2015; Leffler, Klebanov, et al., 2020; Whitaker, Karoo, et al., 2007).

Considering the antiquity of IKS, questions regarding methodological issues may be raised to determine their scientific status. In addition to detailed reviews of methodology of IKS (Lele,

2006), scholars are examining the reliability of early conclusions. For example, in a preliminary attempt, Sriram and Venkatesh (2019) examined the accuracy of astronomical instruments mentioned in the *Kātyāyana Śulbasūtra* (~350 BCE) to the later *Siddhānta* (mathematical astronomy) texts from the fifth century CE onwards. Using a simple variant of the board-instrument of Bhāskara-II to measure the hour angle of the Sun, the maximum error was of the order of 5 degrees.

The integration of the scientific methods used – theoretical, experimental, technological, and applied – can be best exemplified in the tower of the ancient Padmanabhaswamy Temple in Kerala (see Figure 6). The unique tower is in that way designed, that on the exact two days of Equinox (March 21, September 23), one gets to see the setting of the sun aligned and passing exactly through these windows in roughly 5 minutes intervals (Sharma, 2021).

Indian Psychology: Core Concepts

Indian psychology grew out of the recognition that the subject matter of contemporary psychology is embedded in the IKS, which has much to offer to the historical and contemporary understanding of the nature of reality, consciousness, theory of mind, perception and cognition, emotion and will, and knowledge of the self from the Hindu, Buddhist and Jain perspectives. From their early developments, the concepts have been discussed by scholars within and between the knowledge systems. Several publications have systematized the philosophies for contemporary psychology students (e.g., Cornelissen, Misra, & Varma, 2011/2013; Kalupahana, 1987; Mehta, 2002/1957; Rao & Paranjpe, 2016; Rao, Paranjpe, & Dalal, 2008; Sinha, 1931/1999, 1934/1969, 1958/2008, 1961/2008). In the following, a brief description of the core concepts are presented (Figure 7).

Paramātman

The concept of Paramātman (a.k.a. Puruṣa, Ātman, Brahman, Parama Śīva) does not refer to a god-head as in the western sense; it refers to the Universal/Absolute Self, Cosmic or Ultimate Consciousness. This concept of “pure” Consciousness, Paramātman, is at the core of psychology in the Indian tradition since the time of the Upaniṣads (Rao & Paranjpe, 2016: viii). Consciousness (with an upper case ‘C’) is thought to be “the essence of Ātman [upper case Ā], a primal, immanent self that is ultimately identified with Brahman – a pure, transcendental, subject-object-less consciousness that underlies and provides the ground of being of both Man and Nature” (Sen, 2008; Velmans, 2009: 139). To be clear, the term “Consciousness” for Paramātman does not refer to brain-based consciousness and does not lend itself to a consciousness-based theory of psi phenomena.

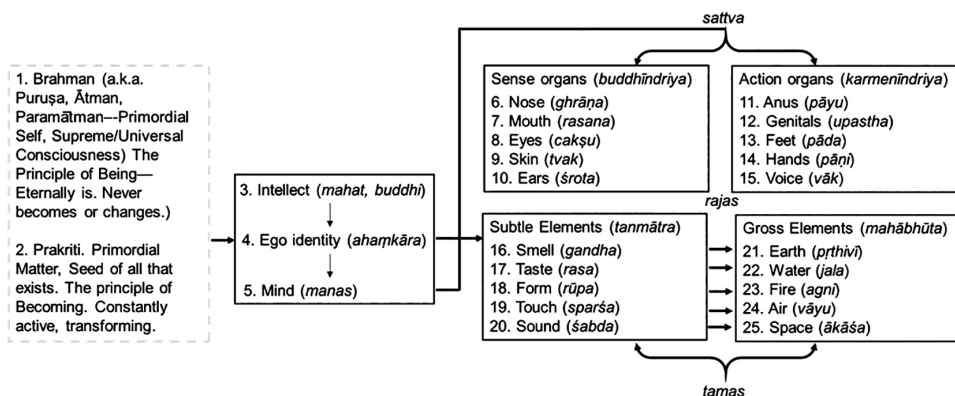


Figure 7. Twenty-five original or ultimate principles/elements (*tattva*) of the objective world according to Sāṃkhya IKS. Figure adapted from Miller, 2018.

Sense of Self/ “I”-ness/ātman

The ātman [lower case ā] is a part of Paramātman. It is the conscious and intelligent principle within the inert mind-body complex, and is a part of Paramātman; i. e., the individual (ātman) is a part of the cosmic universal. The *Bhagavad Gītā*⁸ (2.13–2.27) describes ātman as unbreakable and incombustible; it can neither be dampened nor dried. It is all-pervading, as it is found everywhere, within different forms of life, from the largest plants and animals to the smallest micro-organisms. It is unalterable, immutable, and primordial. It is without any origination or beginning, immortal and ageless. As a person sheds worn-out garments and wears new ones, likewise, at the time of death, the ātman casts off its worn-out body and enters a new one. The physical body, which is cremated on death, is only the receptacle for the ātman. In contrast, Christianity accepts the soul as created anew. (Malhotra & Babaji, 2020: 92–94; Yogananda, 1999).

Jīvātman (Person/ “me”-ness)

The Upaniṣad(s) contain the seeds that evolved into *jīvātman*, which literally means a living being – the individualized self (Yogananda, 1999); it is the closest to what is called a “person” or the “subjective self”, in contemporary psychology. It is the subjective self commonly conceived as a knower (*jñātā*), enjoyer/sufferer (*bhōktā*), and agent (*kartā*). The ātman is the transcendental subject “I” whereas *jīvātman* is the empirical subject “me.” It is also known as the embodied self

8 All *Bhagavad Gītā* verses (Chapter:verse) are quoted from *Śrīmad Bhagavadgītā* (Sanskrit Text with Hindi and English Translation, Gītā Press, Gorakhpur).

(*dehīn*). These terms are genderless. All phenomenal experiences are attributed to *jīva* [life] or *dehīn* [embodied], while *ātman* is ‘experience-less,’ as the term experience is understood with reference to an empirical subject. Based on the attributes of *jīvātman*, several other terms are also used, for instance: *sansārin* – involved in worldly enjoyment and activity; *prajñā* – self as cognizer; *śārīrin* – one who is embodied; *samprasāda* – the self-sense present in dream (Cornelissen, Misra, & Verma, 2013: 333–334; Rao & Paranjpe, 2016; Yogananda, 1999).

Jīvātman is an integral part of *Paramātman*. Every *jīvātman* reaps the fruits of its own karma (actions) and a sin committed by one person has nothing to do with another (Malhotra & Babaji, 2020: 94–101). The aim of the *jīvātman* is to seek *mokṣa* (*muktī*) or liberation from the cycle of birth and death and merging with the True Self, *Paramātman*. In principle, this is seen as the ultimate aim of life, and an ideal. To attain this goal, Hinduism speaks of four paths (*mārga*): *jñāna mārga* (the path of knowledge), *karma mārga* (the path of action), *bhakti mārga* (the path of devotion), and the *yoga mārga* (the path of meditation). An individual has the freedom of choice to adopt the most suitable path or take multiple paths depending on one’s innate nature, abilities, likes and dislikes.

Manas (Mind, Buddhi, Citta) – The Seat of Cognition, Volition, Feelings, and Actions

The Vedic model of the mind is best epitomized by the famous chariot metaphor found in the *Kaṭha Upaniṣad* and the *Bhagavad Gītā*. Here a person is compared to a chariot that is pulled in different directions by the horses yoked to it; the unruly horses represent the senses in their undisciplined state. The driver holding the reins is the mind, and next to the driver/mind stands the charioteer, representing the Self, which is pure awareness and perfect unity (Feuerstein, Kak, & Frawley, 2001: 221–222).

In the Nyāya-Vaiśeṣika systems (~600 BCE), “minds are not empty slates; the very constitution of the mind provides some knowledge of the nature of the world. The four means (*pramāṇas*) through which correct knowledge is acquired are direct perception, inference, analogy, and verbal testimony” (Kak, 2016). Most of the schools of Indian philosophy consider that mind (*manas*) cannot be equated with self (*ātman*) who is the knower. It is considered as a substance and an instrument of knowledge. The materiality of mind has been very strongly emphasized by the Sāṃkhya system (Chennakesavan, 1980).

Rao and Paranjpe (2016: 100) have described the three levels of functioning of the mind: *manas* – the ‘central processor’ that assimilates the information acquired by the senses; *ahaṃkāra* the self-referencing, subjective function, and *buddhi* – the decision making faculty. These three functions of the mind are collectively referred to as the internal organ (*antaḥkaraṇa*), which is distinct from the senses regarded as external organs. Misra (2013:

254–255) has described the functions of the mind as stated in the Aitareya, Chândogya, and Bṛhadāraṇyaka Upaniṣad(s), and the Yoga system: awareness, perception, discrimination, intelligence and thought, wisdom, insight, concentrated reflection, steadfastness, steadiness and unsteadiness, wandering, restrained, meditation, one-pointed concentration, thoughtfulness, memory, remembrance, forgetfulness, distracted, conception, doubt, belief, disbelief, purpose, desire for a thing, desire for possession, shame, and fear.

Indriya(s) and the Sensory-Motor Apparatus

In the IKS, the mind is the main instrument in the cognitive process. In its function it makes use of the body, mostly the sensory-motor system (*indriya*). Consequently, the senses constitute a very important segment of the mind-body complex. As stated in the *Sāṃkhya Kārika* (XXXV), the senses are gateways to knowledge and the mind (*citta*) functions as the gatekeeper. As the internal organ, the mind is the interconnecting instrumentality that helps to interface the *jīvātman* (me-ness) with the unconscious objects (Rao & Paranjpe, 2016: 100).

The anatomical existence of the bodily organs – heart, stomach, brain-matter, intestines, liver, spleen, uterus, etc. – are mentioned in the Rig Veda. The Tantra school (~4000 BCE) discovered the human nervous system or rather the cerebrospinal system, which led to the identification of the brain as the seat of human consciousness (Chattopadhyaya, 1973/1959: 335). According to their description of neuroanatomy there are two nerve-cords (*nāḍī* or nerves) running parallel to the central cord (*suṣumṇā nāḍī*), which stretches from near the pelvic curve to the brain. Within the *suṣumṇā* is another nerve cord, called the *vajrakhya nāḍī*, within which is the innermost core of the central cord. They distinguished between the motor nerves (*ājñāvahā nāḍī*) and sensory nerves (*manovahā nāḍī*), further identifying the different sensory nerves: olfactory nerves (*gandhavahā nāḍī*), optic nerves (*rūpavahā nāḍī*), auditory nerves (*śabdavahā nāḍī*), gustatory nerves (*rasavahā nāḍī*) and tactile nerves (*sparśavahā nāḍī*) (Seal, 1915: 218–219; Sinha, 1986/1933: 1).

Maharishi Suśruta's medical and surgical treatise, the *Suśruta Saṃhitā* (about 1000 and 800 BCE), is a comprehensive compendium with 184 chapters, description of 1120 illnesses, 700 medicinal plants, 64 preparations from mineral sources and 57 preparations based on animal sources (Dwivedi & Dwivedi, 2007). Suśruta identified eleven sense organs – five organs of knowledge, five organs of action, and the mind – which in combination with the atomic essence of the material principles of sound, light, taste, smell, etc. produce the sense of touch, sight, hearing, etc. The process of perception occurs in little or no time by the mind (*manas*) through the senses; the self (*ātman*) goes where the mind goes. The sensory and motor functions have a nerve force (*vāyu*) which moves and spreads across the body. In addition to being a physical or

organic force, it also has a spiritual aspect (Bhishagratna, 1907: xii, xl). He regarded the heart as the seat of consciousness (Bhishagratna, 1911: xii-xl; Sinha, 1986/1933: 8).

Maharishi Suśruta described various kinds of sense disorders. For instance, in explaining the mechanism of the visual system he provides a physical description of the various parts of the eye: sclera (white of the eye), muscles, iris in which the pupil is located, the blood vessels, and the secretory ducts, and how they are held together. He was aware of the fact that external signals impinge on the senses. For the visual system he had determined that the angle of reflection is equal to the angle of incidence, and that the same ray which impinges upon the retina serves the double purpose of illumining the eye and the external world, and is in itself converted into the sensation of light (Sinha, 1986/1933: 326–327; Bhishagratna, 1907: xix).

The Bhagavad Gītā and the Sāṃkhya-Yoga System

Composed in Sanskrit, the *Mahābhārata* is the historical epic, of the events leading up to the great war between the cousins Kauravas and the Pandavas in Kurukshetra in present day Haryana State in India (dated about 3137 BCE, Kak, 2012). Faced with the prospect of engaging in battle with his elders, gurus (teachers), family, and clan, the great warrior Arjuna is consumed by guilt and becomes despondent on the battlefield. Shri Krishna, his charioteer, assuages his moral dilemma by narrating the *Bhagavad Gītā*.

The *Bhagavad Gītā* is a rendition of the Sāṃkhya-Yoga system; Sāṃkhya (enumeration) is one of the earliest Vedic philosophies that enumerates the body and the mind. It is a synthesis of Karma (action), Jñāna (knowledge) and Bhakti (devotion) yoga.

According to the Sāṃkhya tradition, everything exists in the present moment; nothing goes out of existence, and nothing comes into existence. The qualities of things are mass, energy and essence. Three sets of principles are identified: First are a set of twenty five basic principles, comprising the five basic principles, five sense capacities, five action capacities, five subtle elements, and five gross elements. In the early Sāṃkhya *prakṛti* (primordial matter) is primary and the *puruṣa* (primordial consciousness) is an evolute of *prakṛti*, i. e. an emergent property of matter. Second are the fundamental predispositions (*bhāva*) or instinctual tendencies that guide the human being. These include meritorious behavior (*dharma*), knowledge (*jñāna*), nonattachment (*vairāgya*), power (*aiśvarya*), demeritorious behavior (*adharma*), ignorance (*ajñāna*), attachment (*avairāgya*), and impotence (*aniśvarya*). Third relate to the phenomenal, empirical world of ordinary life, which are formed by the interaction of the twenty five basic principles and the eight predispositions. These generate fifty categories of 'phenomenal creation.' These are (i) five fundamental misconceptions and include ignorance, confusion or preoccupation with one's own identity, extreme confusion or passionate attachment, (ii)

twenty-eight categories of perceptual, motor, and mental dysfunctions, (iii) nine categories for a reasonably balanced and conventional mendicant life, and (iv) eight categories representing authentic attainments (Larson & Bhattacharya, 1987: 48–56).

Guṇa (Attributes, Quality)

The Sāṃkhya (enumeration, reasoning) system developed the notion of *guṇa* (cords, strands, threads) of *prakṛti* (primordial materiality), of which there are three (*triguṇa*) strands, *sattva*, *rajas*, *tamas*, which can be observed in physical states. When matter (*prakṛti*) is in a state of *sattva* (equilibrium), no creation or modification of matter occurs; it is when matter is in a state of *rajas* (activity or flux) or *tamas* (disequilibrium, chaos), that creation or modification of matter occurs. Thus, activity and disequilibrium are an essential part of existence. This tripartite process encompasses the entire range of objective and subjective reality, whether manifest or unmanifest. It becomes the ‘thread’ that runs through and ties together the essential core throughout the natural world and of all ordinary experiences.

From an objective perspective, the *triguṇa* process is a continuing flow of primal material energy that is capable of spontaneous activity (*rajas*), rational ordering (*sattva*), and determinate formulation or objectivation (*tamas*); all manifestations of primary material energy are purposeful, coherent, and objective. From a subjective perspective, it is a continuing flow of experience that is capable of pre-reflective spontaneous desiring or longing (*rajas*), reflective discerning or discriminating (*sattva*), and continuing awareness of an opaque, enveloping world (*tamas*). Thus, according to Sāṃkhya there is no polarity or bifurcation of subjective and objective within the tripartite process, no ontological distinction between “mind” and “matter” or “thought” and “extension.” The mind is thus a constituent of the primal material energy as are trees, stones, or other manifestations of gross matter. Ordinary awareness or thinking is but a “moment,” or constituent, of the continuous *triguṇa* process (Larson & Bhattacharya, 1987: 66–68). The *triguṇa* theory is being empirically investigated in the modern context of personality and its influences (e.g., Anuradha & Kumar, 2015; Murthy & Kumar, 2007; Rao & Harigopal, 1979; Singh & Gupta, 2021; Singh, Jain, et al., 2016).

The Nature of Time in the Indian Knowledge Systems

The perspectives on post-mortem survival or rebirth is also dependent on a culture’s understanding of the nature of time. Philosophers across cultures and over time have tried to understand the nature of time. According to C. K. Raju (2003: 36), to address the question ‘is there life after death?’ depends upon the nature of time – is time linear or cyclic?

The Indian knowledge systems (IKS) have long debated the multifaceted nature of time in its metaphysical, logical, and epistemological aspects and offer a wide spectrum of well-formulated views about time (*kāla*) (Duquette & Ramasubramanian, 2017: 43). In his translation of the nearly 2,500-year old Vaiśeṣika Sutra of Kaṇāda, Kak (Kaṇāda & Kak, 2016: 5–6) writes

Since the universe cannot arise out of nothing, it must be infinitely old. Since it must evolve, there are cycles of chaos and order or creation and destruction. The Ṛgveda speaks of the universe being infinite in size. A famous mantra speaks of how taking infinity out of infinity leaves it unchanged. This indicates that paradoxical properties of the notion of infinity were known. The world is also taken to be infinitely old. Beyond the solar system, other similar systems were postulated. An infinite size of the universe logically led to the acceptance of many worlds.

Thus, while the universe is beginningless (*anādi*), with no notion of an absolute first creation or beginning to time, there are cycles of creation (Coward, 1999: 22). In her extensive review of the nature of time in the IKS, Balslev (1999: 145–146) states:

The idea of world-cycle (*kalpa*) is a general feature of Indian mythology and philosophy. In the literature of the *Purāṇas*, one encounters a grandiose conception of the cosmological process in terms of repeated creation and dissolution. As an example of the gigantic scale of measurement for time one could refer to the *Vāyu Purāṇa* where a world-cycle is conceived as a day of Brahmā, the creator god, followed by his night, i. e. cosmic dissolution (*pralaya*). The timespan of a world-cycle is divided and sub-divided according to different scales as equivalent to so many manvantaras, mahāyugas, yugas etc. The whole process is calculated in terms of billions of human years. It is very likely that the idea is associated with Vedic astronomy. The world-cycles can be compared to one another in terms of generic similarity just as one day resembles another, but the idea of exact repetition involving the return of the particulars does not occur. The idea of world cycles occurs in the epics as well as in the *Upaniṣads*.

She further states:

[...] in a confrontation of the Greek, the Judeo-Christian and the Indian traditions regarding the problem of time, the most familiar observation that is made is centered on the idea of cyclic vs. linear time. It is held that the Greek and the Indian traditions have cherished a cyclic conception of time, whereas the Judeo-Christian traditions have maintained a linear conception. This common point of difference which is often focused upon has, evidently, important bearings on different problems connected with time. [...] The linear notion of time in the biblical context implies that time has a beginning and an end, the cyclic does not grant that. (1999: 141)

In the context of this brief discussion on time, in the following section the concept of *saṃsāra* (cycle of birth and death) and karma are discussed.

Saṃsāra (Cycle of Birth and Death) and Karma

Hinduism, Buddhism, and Jainism, in all their branches, accept the underlying doctrines of karma and saṃsāra (cycle of birth and death), and believe that man must be morally and spiritually perfected before he can attain mokṣa/nirvāṇa, i. e. liberation from the cycle of birth and death (Radhakrishnan & Moore, 2014: xxvii). Both these terms are part of our spoken language vocabulary.

There is a fundamental difference in the meaning of saṃsāra in the Indic view and western parapsychology on post-mortem survival, reincarnation, rebirth and the survival hypothesis. (To distinguish between the western and Indic views, I use the term saṃsāra in this paper.) In describing the western view Sudduth (2016: 25–26) states:

The majority of Western philosophers and religious thinkers who have affirmed life after death have meant by this that the human person, the individual self, or soul will persist after biological death [...] personal survival entails the postmortem persistence of a center of self-awareness, or a first person perspective, with powers of perception/knowledge and intentional causal agency, as these are essential properties of human persons.

To dispel the confusion between the various terminologies it may be appropriate to state that in the Indic view it is the ātman—the non-gendered “I-ness” – the core self which is a part of the Paramātman (universal, primordial Self) that survives, and not the “me” in a semi-physical form with an autobiographical memory; the body is cremated on death, thus there is no physical form that will manifest itself to interact with the environment. As stated in the *Bhagavad Gītā* (2.22): “As a person sheds worn-out garments and wears new ones, likewise, at the time of death, the ātman casts off its worn-out body and enters a new one.” In the western context, it is the jīvātman (me-ness) that survives. As Sudduth (2016: 105) states:

[...] the re-embodiment on earth of some formerly living person [with] ... living persons claiming alleged past-life memories as a particular formerly living person (herein after “previous personality”), describing with varying levels of detail alleged facts about the public and personal life of the previous personality, exhibiting behavioral patterns characteristic of the previous personality, and in some cases exhibiting birthmarks associated with the previous personality.

However, as Shri Krishna says in the *Bhagavad Gītā* (4.5), “Arjuna, you and I have passed through many births; I remember them all; you do not remember.” That is, the ātman does not have omnipresent memory; only a fully liberated soul can remember all births, deaths, and their interim periods that leaves the body on death (Yogananda, 1999: 689).

From the earliest times, skeptics have disbelieved life after death. Ajit Kesakambali, a contemporary of the Buddha, strongly disavowed life after death.

A human being is built up of the four elements. When he dies the earthly in him returns and relapses to the earth [...] The four bearers on the bier as a fifth take his dead body away; till they reach the burning-ground men utter forth eulogies, but there his bones are bleached, and his offerings end in ashes. (Raju, 2003: 28)

But the key insight which illuminates the mystery of life after death and connects early forms of the belief to current physics is this: the belief in the soul originally presumed the physical context of a quasi-cyclic cosmos or 'cyclic' time – not only individuals but the entire cosmos was believed to recur approximately. (Raju, 2003: 31)

The Indian materialists Cārvāka/Lokāyatā (~500 BCE) scholars have argued against the concept of rebirth on the grounds that there is no self other than the body which is endowed with consciousness. Moreover, it is not logically justifiable as the destruction of the body, or death, means the end of one's worldly existence for good. There is, thus, no need to assume that there is some eternal being, a distinct self, which may survive even after death and pass from births to births (Chattopadhyaya & Gangopadhyaya, 1990: 110–111).

Karma and saṃsāra are the instrumentalities by which the moral order of the universe is worked out in life (Radhakrishnan & Moore, 2014: xxvii). Traced to the earliest Vedic literature "karma" means action in all its forms. Explained in Chapter 3 of the *Bhagavad Gītā*, the karma construct is extensively examined in the literature within and between the knowledge systems, including the Buddhist and Jain literature. As stated in the *Bhagavad Gītā* (4.17) the intricacies of the deeper workings about karma (action) are unfathomable. For the lay person it is well explained in the *Bhagavad Gītā* how it plays out in life. It is an intrinsic part of the Indic ethos and embedded in its many spoken languages, passed across generations by the oral and literary tradition. To expand on its meaning I refer to a popular work on the "The Theory of Karma," originally written in Gujarati by Shri Hirabhai Thakkar (1991) and translated into several Indian languages.

The fundamental principle of this law is that every action creates a reaction, everyone earns the fruits of their actions, and one must perform ones duties without seeking a reward. Thus the 'Law of Karma' is the law of (1) action and reaction, (2) cause and effect, (3) effort and destiny, all of which are equal and opposite. The distinct features of the Law are: it is eternal and universal, it is applicable across all cycles of the universe in the past, present and future; the law is perfect without a single exception, and not amenable to changes. The application of this law is beyond manipulation, intervention or corruptibility. It governs all aspects of the infinite universe, its natural laws, the inception, maintenance and dissolution of all the animate bodies and inanimate objects. The most important feature is that everything is destined to bear the fruits of its actions, bitter or sweet, and there is no exception and escape from its consequences, even if one feigns ignorance of the law.

Bhattacharjee (2021: 153–154) has explained the various ways in which karma is classified:

Voluntary Action or Aichhika Karma is an action performed knowingly and willingly by self conscious and self-determining person with desire, pre-vision and free choice of means and ends, voluntary action is done by a spring of action and this action is also done by feeling of want. The bodily actions produce changes in the external world and these changes are called consequences [5].

Non-voluntary Action or Anaichhika Karma: nonvoluntary actions are those actions which are devoid of moral quality and cannot be judged as right or wrong. Nonvoluntary action is also considered as reflex actions or automatic actions which responses to sensory stimulation and these actions are not controlled by consciousness. By repetition non-voluntary actions are fixed as habits and become automatic.

Every karma or voluntary action is divided into three classes as (a) Sancita karma or reserved stock, (b) Prarabdha karma or fruit bearing action and (c) Kriyamana karma or current action.

Sancita Karma (Reserve Stock): Every action performed in the form of a potentially [potentiality] (ardsta0 [sic! – adrishta, unseen/unknown] which results [in] pleasurable or painful experience to the doer in a subsequent birth or in the present birth. Sancita karma or accumulated potentially [potentiality] is responsible for the good and evil impulse of our mind [6].

Kriyamana Karma (Current Action): A karma which is being performed with some interested motive as well as with attachment, sense of doer ship and which is being gathered in this life is called kriyaman karma.

Parabdha Karma (Fruit Bearing Action): Huge stock of accumulated action, consisting of virtuous as well as sinful deeds, an action is taken out to serve one life time and this action which has begun to bear fruit and which will be exhausted only on their fruit being enjoyed and not otherwise, is known as prarabdha karma.

According to Indian thinkers, further division of action is sakama karma, i. e. attached or desirous action and niskama karma, i. e. non-attached or selfless action.

Sakama Karma: Sakama karma, i. e. attached action is that action when one does not realize that real essence of the object of the world and which is performed with some desires. So actions which come under the influence of the law of karma are those which are performed with the conscious desire of achieving of worldly pleasure are known as attached action.

Niskama Karma: niskama karma, i. e. disinterested actions are those actions which are performed without any conscious intention, i. e. completely devoid of desire. The ideal of niskama karma may be taken as a synthesis between pravrtti and nivrtti in Indian's ethical system. Pravrtti is the path of active life with the object of attaining heaven. On the other hand, nivrtti is the path of total renunciation of works. [...] niskama karma is neither naiskarma (inaction) nor karma (action) with an eye upon the fruit thereof.

The meaning of *niṣkāma* karma is stated in a well-known verse from the *Bhagavad Gītā* (2.47): “Your right is to work only and never to the fruit thereof. Do not consider yourself to be the cause of the fruit of action; nor let your attachment be to inaction.”

Indic Explorations in Informational Psi (IΨ)

In this section, a glimpse of the Indic discussion on psi is presented. Since the core of “supernormal” perception is the apprehension of the past and future, I use the term informational psi (IΨ) in this discussion, as acquiring non-inferential information from the external world is the core of psi. IΨ is defined as *the transfer of information, which is based on entropic considerations, arising from a distant point in spacetime leading to the local acquisition of non-inferential information by an atypical perceptual ability* (Marwaha & May, 2019). As a theorist of psi phenomena, understanding the key concepts becomes vital. Striding between the Indian and western traditions in psi, at times there is confusion regarding the concepts under study. From a theoretical point of view, I am a proponent of the signal-based process-oriented model of IΨ that aims to understand the process from the information source and transmission (physics domain) and signal processing and experience (neuroscience domain) point of view (Marwaha & May, 2015, 2019). Following an extensive review of neuroscience-psi studies, Bryan Williams (2015: 106) states: “Rather than being ‘above and beyond’ the brain [...] psi is actually more on par with the known workings of the brain than one might initially think.” Theoretical models based on the quantum metaphor, non-local, transpersonal consciousness proves to be a point of conflict (Atmanspacher, Römer, & Walach, 2002; Houtkooper, 2002; Tart, 2002; Walker, 1984; Williams, 2021). The primary disagreement comes from the question of how to define consciousness. Defining ‘consciousness’ has been a vexatious issue; an entire issue of the *Journal of Consciousness Studies* (Vol. 16, No. 5, 2009) was devoted to the topic of defining consciousness, without agreeing to an acceptable definition.

The IKS examined various aspects of perception and cognition, recognizing their physical basis. Theories were developed, exploring topics such as recognition, memory and imagination, perception of space, time and movement, cognitions, self, illusions, dreams, abnormal perceptions, thought and language. Informational psi (IΨ) has been extensively discussed by all the Indic schools in acceptance and denial. Precognitive dreams were also recognized and discussed within the context of the specific knowledge system (Rao, 2011: 499–526; Sinha, 1986/1933, 1969). The implications are very clear: IΨ is a phenomenon that has been observed in humans cross-culturally, across different ages, lending support to the view that it is an innate ability and a valid phenomenon. It was not until the turn of the 20th century that laboratory-based research was conducted to examine the validity of the phenomenon. Empirical data has also led to the conclusion that IΨ is a valid phenomenon (Bem & Honorton, 1994; Cardeña,

2018; May & Marwaha, 2019; Mossbridge & Radin, 2018; Rhine, Pratt, et al., 1940/2018; Richet, 1923; Utts, 1996).

In the IKS, perception is of two kinds: ordinary perception of everyday life and super-normal perception (perception of past and future). “Super-normal” perception or IΨ, is accepted as a natural phenomenon by the Nyāya (system of logic), Vaiśeṣika (system of physical reality), Sāṃkhya (classification of existence), Yoga (self-realization), Vedānta (nature of reality), Jain (atheistic dualism), Buddhist (no-soul, logic) systems, whereas the Mīmāṃsā (nature of dharma and rituals) and Cārvāka/Lokāyatā (materialism) denied it. However, with the empirical evidence and a sensory-based model of IΨ, the present day Mīmāṃsaka and Cārvāka/Lokāyatā scholars can be persuaded to alter their position.

In this section we focus primarily on the discussions examining the validity of the psi and the process of psi as suggested by various scholars of IKS. Since the detailed arguments for and against the validity of the phenomenon are rather extensive within and between schools, I take the approach of addressing some key theoretical questions that are translatable to our present questions regarding the IΨ phenomenon: (1) What is yogic perception, i. e. IΨ ability? (2) Does everyone have IΨ ability? (3) How is the perception of the past and future possible? (4) Is IΨ perception the same as perceived in the past or more than that? (5) What if the IΨ perceptions are later contradicted? (6) Is psi sensory or produced by the mind? (7) Is telepathy possible? While there are specific Sanskrit terminologies used by various scholars with substantially more details than presented here, I have summarized the key arguments here. These serve to provide one more perspective on the validity of IΨ aside from the contemporary empirical data. Connecting the past with the present also provides a direction on the explanatory model that is suited to understand the process of IΨ.

Possibly contributing to the general acceptance of IΨ as a natural phenomenon in Indian culture is the incident from the widely known Sanskrit epic *Mahābhārata*. It narrates the Kurukshetra War between two families, the Kaurava(s) and the Pandav(s) for the throne of Hastinapura (North India). Maharishi Vyāsaḥ calls upon Sanjaya to narrate the events on the battlefield to the blind King Dhṛtarāṣṭra. Vyāsaḥ says:

“Sanjaya shall see all the events of the battle directly. He shall have such a divine inward eye.” Vyāsaḥ continued. “O king! Sanjaya has inward eyes. He will tell you everything about the battle. He will be knowing all. Whenever he thinks of it he will see everything that takes place in the day and in the night in open, and in secret. No weapon will cut him and no weariness will affect him” (Ganguli, 1883, Bhīṣma parva, section 2).

In discussing IΨ, i. e., “super-normal” perceptions, across the different schools, Jadunath Sinha states:

The Indian treatment of super-normal perceptions is more descriptive than explanatory. [...] Super-normal perceptions are above the general laws and conditions of normal perceptions. They transcend the categories of time, space, and causality, and apprehend the real nature of things divested of all their accidental associations of names, concepts, and so forth. So we cannot understand their nature by appealing to the facts of ordinary perceptions. We must have a conception of these higher grades of super-normal perception on the basis of speculation, unless we ourselves attain the stage of higher intuitions. (1933/1986: 334).

In his three volumes on cognitive psychology in the Indian knowledge systems (IKS) Jadunath Sinha (1933/1986, 1961, 1969) has organized the material under different topics, and laid out the views of scholars from different IKS as noted above; Sinha's work is my primary source of reference. In this paper I have not adhered to the Sanskrit terminology but have adapted it to current terminology to lay out the arguments, both in acceptance and denial of the validity of IΨ phenomenon, by early Indic scholars. While the finer nuances and details are beyond the scope of this paper, especially regarding inter-school and between-scholars discussions, three basic points can be identified: (1) IΨ of the past and future is a valid phenomenon. (2) IΨ is an innate ability, which is also obtained by long-term practice of meditation. (3) The sensory systems are involved in IΨ perceptions.

1. What is Yogic Perception, i. e. IΨ Ability?

Yogic perception is an extrasensory perception or intuition of a future event. It is described as a mental and extraordinary perception where the past and present are merged and are present in a physical substance in some condition. Yogic perception (IΨ) is the direct and immediate perception of distant, past, future, and subtle objects. The Sāṃkhya scholars describe IΨ as a mental and extraordinary perception as the past is present as merged in the material cause and the future also is present in the material cause in a potential condition. Of the Nyāya scholars, Bhāsarjūna (c. 900–950 CE) defines IΨ perception as the immediate knowledge of objects removed in space, time and nature; Jayanta Bhaṭṭa (c. 820–900 CE) describes it as the perception of subtle, hidden, remote, past, and future objects and considers it to be the highest excellence of human perception.

2. Does everyone have IΨ ability?

As stated in Patañjali's *Yoga Sūtra* (YS 4.1), IΨ proficiency may be present from birth, developed through long term yoga-meditation practice and discipline, and the use of certain herbs. On rare occasions ordinary persons may also have psi experiences, in which case it may be known as intuition. While no reason is given as to why the IΨ ability is developed or why particular powers are attained as the result of meditation, Sinha (1933/1986: 350) writes, these are the facts of actual experience, and they have been recorded as such.

There are five different kinds of IΨ proficiency: sages, yogin(s), innate ability, consumers of certain herbs, and ordinary people with rare IΨ experiences. The difference between these groups is primarily the degree of IΨ abilities.

Sages are those who have attained *samādhi*. The Śaṅkara Vedāntist Mahādeva Sarasvatī Muni divides *samādhi* into *samprajñāta* and *asamprajñāta* *samādhi*. He defines *samādhi* as

[...] an unbroken stream of mental functions having for their object the pure consciousness (Brahman) without the distinction of subject and object. In this stage the mental modes are not entirely destroyed; they have for their object Brahman or pure consciousness and are transformed into it. In it the consciousness of subject and object drops off all together, but the mental modes remain concentrated in and transformed into pure consciousness; it is the result of the utmost perfection of the practice of concentration. [...] *asamprajñāta samādhi* [is] the complete suppression of all mental functions (*sarvadhīnirodha*) on the suppression of the *samprajñāta samādhi*. He explains it as the transformation of the mind into the form of Brahman or pure consciousness without the medium of mental modes which are entirely destroyed. (Sinha, 1986/1933: 351–352)

The IΨ ability of Sages is perceptual in character, since it is not produced by inference and so forth; but it differs from ordinary perception in that it is not produced by the sense organs, but by the mind (*manas*) with the help of certain powers acquired. Some of these miraculous powers are clairvoyance, clairaudience, thought-reading, interpretation of veridical dreams, understanding the language of animals, memory of past lives, knowledge of the past and the future, the distant and the subtle, and knowledge of the self (*puruṣa*) (Sinha, 1933/1986: 350). Understanding Sagic IΨ is beyond the scope of current psi research, hence we keep this at a side for now.

It is important to state that the goal of yoga-meditation and the human endeavor is Self-realization and find one's liberation (*mokṣa*) from the cycle of birth and death, which takes several lifetimes to achieve. "Again, yoga practitioners are reminded repeatedly that they must ignore and not indulge in the paranormal phenomena. This again is an acknowledgment that the intuitive abilities like psi should not be seen as instrumental for ego gratification but considered as signposts in the process of personal transformation towards reaching the goal of perfection" (Rao, 2011: 773). The yogins are warned that "[...] they should not possess any attachment for these powers nor feel pride in their acquisition" (Larson & Bhattacharya, 2008: 530). While it may not be ethically appropriate to empirically examine Sages, a neuroscience based yogic theory of consciousness has been developed to understand the *samādhi* state (Tripathi & Bharadwaj, 2021).

Yogin(s), persons with innate IΨ ability, consumers of certain herbs, and ordinary people have been described as having IΨ ability. Common across these groups is the perception of the

past and future. In current times, these are the main groups that are participants – with atypical ability or psi gifted – in empirical investigations of IΨ.

A yogin is a long-term meditation practitioner who has achieved IΨ ability but has not reached the state of a Sage. Several studies have been done with long-term meditation practitioners and the development of psi abilities; however, the results are inconclusive (Cardeña, 2021; Sedlmeier, 2018). As Roney-Dougal and Solfvin (2011) report, “Overall, psi scores did not exceed chance expectation.” However, they also report that an advanced group of meditators performed better on psi tasks than did short time practitioners (Roney-Dougal & Solfvin, 2006). The question whether the yogin has an innate psi ability or not may be a critical factor in the development of IΨ ability even in long-term meditators (Marwaha, 2016). Recent studies in brain plasticity indicate that long-term meditation may result in the reorganization of the neural structure, connections or functions (Laukkonen & Slagter, 2021; Magan, Yadav, et al., 2019; Tang, Friston, & Tang, 2020), which may result in the development of IΨ ability (Marwaha & May, 2015). Further inquiry into this line of investigation may lead to results that do not contradict with Indic thinking on psi abilities, especially since sense-organs are its *modus operandi*.

Indic thought also states that the consumption of certain herbs, along with meditation and innate ability, may also result in IΨ ability. In his reviews of psychedelic use and varieties of psi experiences Luke (2020: 29) states that “altered states of consciousness, as opposed to psychedelic chemicals per se, seem to be key in the induction of such experiences, at least where they are not congenital.” As stated, IKS also states that on rare occasions ordinary persons may also have an IΨ experience.

3. How is the Perception of the Past and Future Possible?

The ancient Indic scholars consider perception of the past and future as a valid source of knowledge. They also ask: How can the past be perceived when it is non-existent? Is the past non-existent in relation to the past time, or is it non-existent in relation to the time when it was perceived? How can the past come into contact with the sense-organs to produce IΨ perception? These are questions to which we do not have answers even today; however, advances in science may enable us to address these questions.

The Indic proponents of IΨ perception state that it is possible to perceive the past and future as they are present in a physical substance in some condition. The present alone is real. Everything exists at the present moment; nothing goes out of existence, and nothing comes into existence. The past is present as merged in the material cause and the future also is present in the material cause in a potential condition. The various qualities of things are only modes of energy acting in different collocations of the original mass (*tamas*) energy (*rajas*) and essence

(sattva). Hence, future objects are present as latent or potential, and the so-called past objects are present as sublatent, and only those things which are present are actual. The temporal order of perceptions is a construction of the intellect; there can be no aggregate of moments in reality (Sinha, 1969: 138–139).

This explanation makes it easier to conceive of IΨ perception. In recent times attempts have been made to empirically examine these questions in the context of actual or probable futures (Marwaha & May, 2016; Radin 1988; Steinkamp, 1999).

4. Is IΨ Perception the Same as Perceived in the Past or More Than That?

If the object perceived by IΨ is the same as was cognized in the past, then intense meditation may have enhanced the memory and recall of past experiences, or it is illusory as it perceives that which is non-existent. *If the IΨ perception is regarded as perceptual in character, then it has to be produced by the general conditions under which sensory perceptions occur.* The Mīmāṃsaka, who reject IΨ, nevertheless admit that recognition, which is a kind of perception, can apprehend the past as well as the present, and that a flash of intuition in ordinary life (pratibhājñāna) can apprehend the future as future (Sinha, 1986/1933: 366). Analyzing remote viewing (RV) examples we sometimes find that the respondent is not familiar with the target and hence does not recognize it but provides an accurate description of the target. For example, an RV respondent accurately describes a static rocket motor test as steam locomotive with a “rain-making machine” (Marwaha & May, 2015: 5).

5. What if the IΨ Perceptions are Later Contradicted?

The simple answer to this is that if the precognized potential future becomes actualized and is verified, then it is a valid perception. An example is given to illustrate this: A young girl precognizes (pre-telephone days) that her brother will arrive the next day. *When the IΨ is actually verified with the arrival of the brother, her intuition cannot be regarded as invalid.* It may be argued that it is simply a case of chance coincidence, and that consequently, the intuition is invalid. The answer to this objection is that there is no evidence to prove that it is a case of chance coincidence. When an IΨ intuition of the future is actually verified by a subsequent event, it can never be regarded as invalid. Further, a verified precognition is neither doubtful nor illusory because it agrees with the real nature of its object, nor an oscillation of the mind between two alternatives. Moreover, since the response based on intuition is not generated by inference, it cannot be considered a valid inference, comparison, and testimony. If IΨ is rejected on the grounds that there is no physical representation of an IΨ perception, such as the “throbbing of the eyes”, *then inference also would have to be considered as doubtful as there is no physical evidence of it*, aside from the response that is generated by the mind. *Both inference*

and IY are not illusory in that they both correspond to verified facts, and hence valid knowledge. (Sinha, 1969: 125–130).

6. Is Psi Sensory or Produced by the Mind?

Since the psi percept is not produced by inference, *one view is that psi is acquired through the senses (external organs) made acute through innate ability or by the use of herbs, which is also dependent on an innate ability, i. e., herbs will enhance an innate propensity for IY perception.* The other view is that the perception is produced by the mind (internal organ) acquired through the practice of meditation or use of herbs. Praśastapāda (~ 6th c. CE) considers IY perception on par with normal senses and valid knowledge as it is produced by the sense-organs (Sinha, 1969: 132).

Objections against IY perception are based on the grounds that the sensory organs cannot have cognitions of the objects in the distant, past, and future, as they cannot directly perceive them. A sense-organ can never transcend its natural limitations, even when it attains the highest degree of perfection by intense meditation; however, *they can enable the percipient to perform to the natural capacities of the sense-organs that are limited by the specific domains in which they function and cannot transcend their natural limitations* (Sinha, 1986/1933). However, as Marwaha and May (2020) have stated: “[...] even within the ranges of what is termed ‘normal’ human perceptual limits, there are outliers on both sides of the curve, whereby those individuals may have the ability to perceive ranges that are beyond the normative ranges but within the species-specific limitations.”

7. Is Telepathy Possible?

According to the Jains, the universe consists of physical sub-atomic particles (karmic matter) everywhere. The destruction of certain types of karmic-matter that obscure knowledge enables a person to be telepathic and have direct or immediate knowledge or perception. Patañjali states that a person’s mental processes can be perceived, however, it is based on the concentration of the mind on their *external behavior*, but *not* objects (Sinha, 1986/1933: 366).

Jain scholars Jinabhadra, Maladhari Hemacandra, etc., hold the view “A person possessing the faculty of telepathy perceives the states of the mind-substance directly, but cognises the external objects thought by the mind *only through inference.*” Hemacandra, commenting upon the statement of Jinabhadra, says that a thinker may think about a material as well as a non-material object. It is a unanimous fact that for one who is not omniscient, it is impossible to perceive a non-material object directly. Hence, it must be admitted that one possessed of the power of telepathy knows the object thought by others *only by way of inference, and not directly.* In other words, only the mental states of a person can be directly perceived by the power of

telepathy. (Or, this could be the result of precognition, Marwaha & May, 2019.) As regards the external objects that form the contents of those states, it is not possible to cognize them in a direct manner. It is the function of inference to know them. *Telepathy is directly associated with the states of the mind, and not with the objects* (Mehta, 1955: 106–107). Hence, it is indirect and inferential.

Concluding Note

Representing a cultural ethos, rebirth of the ātman is a core principle in Hindu, Buddhist and Jain beliefs and society. While cross-cultural influences may show western perspectives in a survey on the survival hypothesis with the Indian population, the Indic perspective does not lend itself to the survival hypothesis or physical mediumship construct in the western sense. As quoted earlier: “As a person sheds worn-out garments and wears new ones, likewise, at the time of death, the ātman casts off its worn-out body and enters a new one.” (*Bhagavad Gītā* 2.22)

To summarize the Indic view on IΨ:

- IΨ appears to be a species-specific rather than a culture-specific ability. A better understanding of the underlying basis may enable us to expand the inquiry to other species.
- IΨ was a widely discussed phenomenon in the IKS, based on observations of the phenomenon. A key takeaway is that the extensive discussion on the perceptions of past and future have been observed across millennia, serving as one more data point to establish the validity of informational psi (IΨ).
- Since the definition of Consciousness (Ātman, Brahman, Paramātman), self (ātman) refers to a metaphysical reality, it may not form the process by which IΨ perception occurs. The process is through the jīvātman (me-ness) which functions through the body.
- In the Indic view time is cyclical, whereas in the western view time is linear. The implications of this, if any, for psi and particularly the survival hypothesis would be interesting requiring an in-depth analysis of the two views.
- In the IKS view, if IΨ is rejected on the grounds that there is no physical evidence for it, then inference also has to be rejected as there is no physical evidence for the process of inference.
- The sensory system was implicated as the basis for its mechanism.
- The innate ability of the individual permits IΨ ability, but within species-specific constraints.

- While telepathy is acknowledged, the telepathic communication is based on the inference from behavior and mental states.
- In the Indic perspective, the concept of guṇa “the continuing flow of primal material energy that is capable of spontaneous activity (rajas), rational ordering (sattva), and determinate formulation or objectivation (tamas)” is a dynamic changing concept even from the perspective of personality, and is a bio-physiological complex. While an undefined innate sensory-based ability and/or long-term meditation has been implicated in psi, the question of personality type as a contributing factor to psi may be questioned. However, for a person with an innate psi ability, a sattvic (calm) state may be more conducive to IΨ experience, rather than a rajasic (agitated) or tamasic (dull, low, lazy) state.

Extensive discussions on the implications of the remote viewing data led Edwin May and I to a signal-based process-oriented model for the understanding of IΨ. For psi researchers consciousness is the central idea for understanding psi phenomena. However, this exploration of the IKS view on IΨ also leads to a signal-based approach, as sensory systems are implicated. Thus, we find two different methods of investigation leading to the same conclusion. This conclusion merits exploration, which may lead to a better understanding of the process of psi.

To conclude, a cross-cultural view provides a different perspective on how to tackle the problem of psi. The curiosity of the human mind to find answers to difficult questions is an ongoing pursuit, and expanding our quest to all points of views opens us to ideas we have not previously considered.

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Ein Blick aus Indien auf erfolgreiche Frauen, Wissenssysteme, Psychologie und Psi

*Erweiterte Zusammenfassung*⁹

Eine kulturübergreifende Untersuchung des menschlichen Verhaltens erweitert unser Verständnis der Welt, in der wir leben, und zeigt uns Perspektiven auf, die uns nicht vertraut sind. Es gibt einen deutlichen Unterschied zwischen der indischen und der westlichen Perspektive, der alle Aspekte unseres Verständnisses der Welt, einschließlich der Psi-Phänomene, beeinflusst. In diesem Beitrag wird ein Überblick über die Kernkonstrukte des Sanātan Dharma gegeben, die ewigen Gesetze der indischen Zivilisation, die Hindutva (Tattva ist die Essenz oder Substanz von allem) darstellen. In Teil I werden eine Zusammenfassung des „Weiblichen“ im hinduistischen Dharma, ein kurzer historischer Hintergrund zum Status der Frauen und einige Beispiele indischer Frauen aus jüngerer Zeit erörtert. Als Grundlage für das Verständnis der indischen Perspektiven auf Psi werden in Teil II ein Überblick über indische Wissenssysteme (Indian knowledge systems) und Kernkonzepte der indischen Psychologie erörtert.

In den Jahrtausende alten kulturellen Verankerungen des indischen Subkontinents Ardhanārīśvara, repräsentiert die androgyne Form von Śiva (Puruṣa, Ur-Selbst, Bewusstsein, das Männliche) und Śakti (Prakṛti, Ur-Materie, Energie, das Weibliche) die regenerative Kraft des Universums und ist ein wesentlicher Aspekt der spirituell-kulturellen Landschaft. Śakti als göttliche Mutter spiegelt sich in den vielen *Devī(s)* wider, die im Mittelpunkt des täglichen Lebens stehen und mit denen jeweils spezifische Attribute und Rituale verbunden sind. Die

9 Aus dem Englischen von Gerhard Mayer.

drei wichtigsten weiblichen Gottheiten, die seit der frühesten R̥g-vedischen Zeit bekannt sind, werden von allen unabhängig von ihren männlichen Formen verehrt.

Trotz der Schwächen der menschlichen Natur, des gesellschaftspolitischen Drucks und der Zwänge, der Schwierigkeiten der Unterdrückung und der Gewalt durch aufeinander folgende Jahrhunderte von Invasionen spiegelt sich das Fortbestehen der Verehrung des Weiblichen durch Jahrtausende alte Traditionen in den sich wandelnden Rollen und Errungenschaften der Frauen in der indischen Gesellschaft wider. Frauen genossen gleiche Chancen bei der Ausbildung und nahmen als Gleichberechtigte an religiösen Ritualen teil. Indische Frauen haben im formellen und informellen Sektor zu den Wissenssystemen und dem wissenschaftlichen Betrieb beigetragen. Frauen spielen eine wichtige Rolle für das Überleben und den Fortschritt dieser alten Zivilisation.

Indien ist die Heimat einer Vielzahl philosophischer Schulen und einer umfangreiche Literatur, die sich mit dem Komplex Körper-Geist-Bewusstsein befasst. Auf der Grundlage der indischen Wissenssysteme kann die indische Psychologie viel zu den theoretischen Fragen von Psi(-Phänomenen) beitragen. Da eine Diskussion zwischen und innerhalb von Schulen den Rahmen dieses Aufsatzes sprengen würde, werde ich eine konsolidierte Sichtweise ohne Bindung an eine bestimmte Denkschule präsentieren. Nach einer kurzen Beschreibung der Kernkonzepte werden die indischen Ansichten über Psi-Wahrnehmungen sowohl im Hinblick auf Zustimmung als auch Ablehnung diskutiert. Zu den besprochenen Kernthemen gehören folgende:

1. Paramātman (auch Puruṣa, Ātman, Brahman, Parama Śiva) bezieht sich auf das universelle/absolute Selbst, das kosmische oder ultimative Bewusstsein; es bezieht sich nicht auf eine Gottheit wie im westlichen Sinne. Um das klarzustellen, der Begriff „Bewusstsein“ für Paramātman bezieht sich nicht auf das gehirn-basierte Bewusstsein und eignet sich nicht für eine bewusstein-basierte Theorie der Psi-Phänomene.
2. Selbstbewusstsein/„Ich“-heit („I“-ness)/Ātman ist ein Teil von Paramātman und das bewusste und intelligente Prinzip innerhalb des trägen Geist-Körper-Komplexes.
3. Jīvātman /„Ich“-heit („me“-ness), was wörtlich lebendes Wesen bedeutet, kommt dem am nächsten, was man eine „Person“ oder das „subjektive Selbst“ nennt, das allgemein als Wissender, Genießender/Leidender und Handelnder verstanden wird. Der Ātman ist das transzendente Subjekt-„Ich“ (subject „I“), während der Jīvātman das empirische Subjekt-„Ich“ (subject „me“) ist.
4. *Manas* (Geist) ist der Sitz der Erkenntnis, des Willens, der Gefühle und der Handlungen. Die meisten Schulen der indischen Philosophie sind der Ansicht, dass der Geist nicht mit dem Selbst (Ātman) gleichgesetzt werden kann. Die drei Funktionsebenen des Geistes sind: *Manas*, das die durch die Sinne aufgenommenen Informationen

aufnimmt; *Ahaṃkāra*, die selbstbezogene, subjektive Funktion und *Buddhi*, das Entscheidungsvermögen.

5. Indriya(s), der sensorisch-motorische Apparat, stellt ein sehr wichtiges Segment des Geist-Körper-Komplexes dar.
6. *Guṇa* (Attribute, Qualität). Das Sāṃkhya-System entwickelte die Vorstellung von *Guṇa* (Schnüre, Stränge, Fäden) von Prakṛti (Urmaterie), von denen es drei Stränge gibt: *Sattva*, *Rajas*, *Tamas*. Wenn sich die Materie (Prakṛti) in einem Zustand von *Sattva* (Gleichgewicht) befindet, findet keine Erschaffung oder Veränderung der Materie statt; erst wenn sich die Materie in einem Zustand von *Rajas* (Aktivität oder Fluss) oder *Tamas* (Ungleichgewicht, Chaos) befindet, findet die Erschaffung oder Veränderung der Materie statt. Somit sind Aktivität und Ungleichgewicht ein wesentlicher Bestandteil der Existenz.

Es gibt einen grundlegenden Unterschied zwischen der indischen Sichtweise und der westlichen Parapsychologie in Bezug auf das postmortale Überleben. Die Perspektiven auf das postmortale Überleben oder die Wiedergeburt hängen auch von einem kulturellen Verständnis der Natur der Zeit ab. Die griechische und die indische Tradition haben eine zyklische Vorstellung von Zeit, während die jüdisch-christliche Tradition eine lineare Vorstellung vertritt. Nach indischer Auffassung überlebt der Ātman – die geschlechtsneutrale „Ich“-heit („I“-ness) –, das Kernselbst, das ein Teil des Paramātman ist, und nicht das „Ich“ („me“), in einer halbphysischen Form mit einem autobiografischen Gedächtnis; der Körper wird beim Tod eingäschert, daher gibt es keine physische Form, die sich manifestiert und mit der Umwelt interagiert. Die zugrundeliegende Lehre ist die von Karma und Saṃsāra (Kreislauf von Geburt und Tod) sowie der Glaube, dass der Mensch moralisch und spirituell vervollkommen werden muss, bevor er Mokṣa/Nirvana, d. h. die Befreiung vom Kreislauf von Geburt und Tod, erreichen kann. Nach westlicher Auffassung wird die menschliche Person oder Seele nach dem biologischen Tod fortbestehen. Persönliches Überleben bedeutet, dass nach dem Tod ein Zentrum des Selbstbewusstseins mit Wahrnehmungs-/Wissensfähigkeiten und absichtsvollem kausalem Handeln fortbesteht, da dies wesentliche Eigenschaften der menschlichen Person sind.

Nach indischer Auffassung gibt es zwei Arten der Wahrnehmung: die gewöhnliche Wahrnehmung des täglichen Lebens und die übernormale Wahrnehmung (Wahrnehmung von Vergangenheit und Zukunft), die von allen Denkschulen außer der Mīmāṃsā und der Cārvāka/Lokāyatā als natürliches Phänomen akzeptiert wird. Während die Feinheiten und Details zu übernormalen Wahrnehmungen den Rahmen dieser Abhandlung sprengen würden, können drei grundlegende Punkte identifiziert werden: Die Wahrnehmung von Vergangenheit und Zukunft ist ein gültiges Phänomen, sie ist eine angeborene Fähigkeit, die auch durch langfristige Meditationspraxis erlangt wird, und die Sinnessysteme sind daran beteiligt.