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INDIAN KNOWLEDGE SYSTEMS: FROM POSSESSION TO ABSENCE — MEMORY, LOSS, AND THE QUESTION OF CONTINUITY

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Abstract

This paper critically examines the historical possessions of Indian Knowledge Systems (IKS) and explores the current perception to their absence. It acknowledges IKS's profound contributions to global knowledge in fields such as mathematics, medicine, logic, and linguistics. The study emphasises the importance of investigating the reasons behind this perceived decline, considering both external colonial impacts and internal factors like the restrictive education system and spiritual conservatism. By highlighting the pluralistic nature of Indian intellectual culture, the paper cautions against uncritical glorification or romanticisation of the past. It argues that such approaches hinder rigorous, evidence-based scholarship. The research aims to provide a more nuanced understanding of IKS's historical trajectory and the potential for its informed recovery by analysing the mechanisms of the shift from knowledge possession to absence.

The term 'Indian Knowledge System' (hereafter IKS) refers to a unique and interconnected body of knowledge developed in the Indian subcontinent, encompassing ethics, aesthetics, cosmology, and universal truths. While every civilisation has a history of a knowledge system, IKS is often distinguished by its philosophical depth, scientific innovations, cultural influence, and longevity. This is what attracts global interest and study. However, the debate surrounding the 'lost' status of Indian Knowledge System (IKS) can be broadly divided into two major strands - those who claim that its golden age has been lost, primarily due to colonial and other invasions, and those who criticise this notion. They often question the idea of a monolithic golden age or a single point of loss.

The knowledge that once belonged to India and then disappeared continues to have a long-lasting echo. Archival research by historians on British records has revealed the vitality of indigenous education, science, and technology in 18th-century India. They argued that India's knowledge systems were systematically destroyed by colonial intervention, rather than due to internal causes. Dharampal reframes this decline as a deliberate act of suppression of knowledge. He shows that rural schools, medical practices, and handicraft technologies were widespread and functional before British annexation.[1] This was not a first work but an extension of the ideas of contemporary social reformers and educationists on IKS. While colonial rule was the cause of disruption, it argues that philosophical and linguistic traditions particularly, Sanskrit, and regional languages, maintained epistemological continuity even under foreign rule.

Meera, on the other hand, critiques this 'had but lost' notion. She argues that colonialism cannot be solely blamed for the decline of scientific inquiry in India. Rather, she points to internal factors such as caste-based authority, spiritual conservatism, and the lack of a tradition of empirical methods as obstacles to the scientific approach. Kapoor suggests that its core values persisted despite institutional decline. Pollock, on the other hand, highlights the decline of Sanskrit as an intellectual language. He argues that by the 12th century, Sanskrit scholarship had become isolated and self-referential. It further prioritised commentary over creativity. This linguistic closure limited engagement with new topics and outside ideas, contributing to intellectual stagnation.[2]

The emergence and subsequent disappearance of the Saraswati River as its symbol not only fuelled this debate but also provided an interesting perspective on the existence and extinction of the IKS. In her other works, Meera Nanda

[1] Dharampal, *The Beautiful Tree: Indigenous Indian Education in the Eighteenth Century*, New Delhi, 1983, pp. 1-13.
[2] Meera Nanda, *Prophets Facing Backward: Postmodern Critiques of Science and Hindu Nationalism in India*, 2004, pp. 59-65; Kapil Kapoor, *Text and Interpretation: The Indian Tradition*, 2005, pp. 10-15; Sheldon Pollock, *The Language of the Gods in the World of Men*, 2006, pp. 13-18.

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analysed and highlighted the root causes of the IKS's "extinction."[3] By focusing on the Saraswati River, Danino's work directly addresses the concept of "extinction." This region is a key element of the ancient Vedic and Harappan civilisations, which are often considered mythical or lost. This perspective generally considers the pinnacle of ancient India's civilisational and scientific achievements, a golden age, to have been disrupted, suppressed, and largely lost due to later foreign invasions and, most importantly, the colonial education system. The core of this argument is that a vast, superior, and comprehensive knowledge system was systematically destroyed, resulting in a "civilisational amnesia" or a kind of "intellectual slavery" from which India must now recover.[4] On the other hand, in contrast, Meera Nanda sees the modern political and commercial exploitation of the sentiment of 'we had it, but we lost it' as an ideological agenda. Meera emphasises how the notion of a lost, glorious past, the golden age of the IKS, is not merely a historical lament. Rather, it is an ideological engine that promotes a secular and anti-modernist outlook by valorising an exaggerated and idealised ancient knowledge system. For Nanda, the phrase "lost glorious history" is being used to promote a conservative "revival" in today's globalised marketplace.[5]

Historians have long debated the nature, status, and achievements of India's past. No school of history has questioned the existence of the IKS. However, the reasons for its decline have long been debated in different and contradictory directions. This reflects a sense of cultural pride, but it also risks distorting historical understanding. India's intellectual traditions have been rich and profound, but they must be judged against evidence in contemporary contexts. The debate continues. Similarly, this paper critically examines this question between pride and historicity. Kosambi criticised the concept of a romantic "golden age," and attributed intellectual decline to internal contradictions such as caste and feudalism. Similarly, Romila argues that "romanticizing the past is not history-it is myth-making," and that historical inquiry should be based on evidence, not emotions.[6]

India's contribution to global knowledge is well known. From the geometric principles of the *Shulbasutras* to the astronomical insights of Aryabhata, Indian thinkers shaped disciplines such as mathematics, medicine, and philosophy. The concepts of zero and decimal originated in India, revolutionizing global computing. Understanding the historical significance of Indian knowledge systems (IKS) requires going beyond simply cataloguing and reiterating ancient texts. We must examine where these systems stood in the context of contemporary civilisations. How did they function? Was IKS merely a regional phenomenon, or part of a broader intellectual ecosystem that complemented, interacted with, and in many cases rivalled the knowledge traditions of Greece, China, Persia, and the Islamic world?

Beginning in the field of mathematics, Indian mathematicians such as Aryabhata (5th century AD) and Brahmagupta (7th century AD) developed concepts such as zero, negative numbers, and algebraic rules centuries before they reached Europe. As George Gheverghese Joseph puts it, "The Indian concept of zero was not merely an alternative, but a fully developed number, with rules for arithmetic operations, an innovation that revolutionised mathematics globally."[7] Similarly, Aryabhata's *Aryabhatiya* (c. 499 AD) introduced the sine function and planetary models that predated Copernicus' heliocentrism. Indian astronomy, described in the *Surya Siddhanta*, presented planetary models and trigonometric functions, which later reached the Islamic world and Europe through translations at the House of Wisdom in

[3] Meera Nanda, *The God Market: How Globalisation is Making India More Hindu*, New Delhi, 2009; Michel Danino, *The Lost River: On the Trail of the Sarasvati*, New Delhi, 2010 The divergent works of Meera Nanda and Michel Danino on the Indian Knowledge System offer a framework to investigate the reasons behind a pervasive sentiment of historical loss and the subsequent desire to reclaim a diminished heritage.

[4] Danino, *The Lost River*, pp. 15-20 In brief, he transforms the sentiment of loss into a challenge of historical recovery and re-narration.

[5] Nanda, *The God Market*, pp. 241-245 argues that the narrative of loss is used to to justify the substitution of secular institutions like public education and science with religious or faith-based ones.

[6] D.D. Kosambi, *Introduction to the Study of Indian History*, 1956, pp. 19-30; Romila Thapar, *The Past Before Us*, 2013, pp. 22-25.

[7] George Gheverghese Joseph, *The Crest of the Peacock: Non-European Roots of Mathematics*, 2011, pp. 204-209.

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Baghdad. David Pingree states that "Indian astronomical texts were among the most sophisticated of their time and formed the basis of the much-celebrated Islamic *Zij* tables."[8]

The *Charaka Samhita* explains how Ayurveda emphasised holistic health and preventive care. Its diagnostic methods and herbal medicine remain relevant today.[9] The *Sushruta Samhita* (c. 600 BCE) describes over 300 surgical procedures and 120 instruments. These include surgical techniques such as rhinoplasty and cataract surgery. These were not religious rituals, but the result of a long process of empirical practice based on observation and anatomical knowledge. As Dominik Wujastyk writes, "Sushruta's surgical methods were unique in the ancient world and remained so until the modern era."[10] Greek (*Unani*) medicine emphasised humoral theory more than Ayurvedic medicine, but surgical interventions had yet to be explored. Contemporary ancient China focused more on energy flow and herbal medicine. Thus, it appears that Indian medicine combined diagnosis, pharmacology, surgery, and preventive care into a coherent system.[11]

The Sumerians (3,200–3100 BCE) hold the distinction of being the world's earliest known written language. However, the world's first generative grammar was given by Panini in the form of the *Ashtadhyayi* (circa 500 BCE). Its use of meta-rules, recursion, and transformation foreshadows modern computational linguistics. Unlike other ancient civilisations that merely mapped their languages, Panini acted as a linguistic physicist and uncovered the fundamental rules governing Sanskrit. Modern linguists therefore recognise Panini's remarkable pre-modern achievement in defining the underlying rules of a language in their search for universal linguistic principles.[12] While the rules of grammar in the language were logical, such evidence of the primacy and mastery of logic is found in other areas. Matilal points out that Indian logic, while different in structure and emphasis, was equally valid and often more adept at handling uncertainty than Western logic. Nyaya philosophy developed sophisticated five-part syllogisms and theories of inference that were comparable to Aristotle's logic.[13]

Undoubtedly, the intellectual thought of other ancient civilisations has contributed greatly to world civilisation and knowledge. However, when compared qualitatively with the Indian intellectual tradition and its various streams, interesting facts emerge. India developed a remarkably pluralistic and interactive knowledge culture. As evidenced by the Vedic literature, Indian thought not only acknowledged the internal diversity of ritualists and metaphysicians but also, at times, integrated such perspectives within a single collection of texts. Later, when Buddhism, Jainism, and heterodox sects like the Charvakas openly challenged Vedic orthodoxy, these debates were not suppressed but were institutionalised in institutions like Nalanda and Vikramashila. In contrast, a look at ancient China, especially during the Han and Tang dynasties, reveals how Confucianism was promoted through state-sponsored examinations and heterodox views like Taoism and Mohism were banned.[14] Similarly, the dominance of the Church in medieval Europe often suppressed dissent. Galileo and Giordano Bruno faced persecution for challenging religious dogma.[15] In contrast to medieval Europe, in ancient and medieval India, Indian thinkers such as Nagarjuna, Udayana, and Gangesha engaged in sophisticated debates on logic, causality, and

[8] David Pingree, *History of Mathematical Astronomy in India*, Harvard Oriental Series, 1971, pp. 45-50.
[9] Debiprasad Chattopadhyaya, *History of Science and Technology in Ancient India*, p. 12.
[10] Dominik Wujastyk, *The Roots of Ayurveda: Selections from Sanskrit Medical Writings*, 2nd edition, 2003, pp. 88-93 notes that Sushruta's surgical methods were unparalleled in the ancient world.
[11] Ping-Chung Leung and Debashis Panda, *From Ayurveda to Chinese Medicine*, World Scientific, 2017, pp. 12-15 finds Ayurveda integrates diagnosis, pharmacology, surgery, and preventive care into a coherent system, unlike the compartmentalised approaches of other traditions; Helen King, *Greek Medicine from Hippocrates to Galen*, Routledge, 2001, pp. 44-48 finds Greek medicine, especially Hippocratic, was dominated by humoral theory and balance of bodily fluids. Surgical practice was limited; Joseph Needham, *Science and Civilisation in China*, Vol. VI, Cambridge University Press, 2000, pp. 112-118 records Chinese medicine emphasis on herbal remedies and acupuncture rather than surgical intervention.
[12] Noam Chomsky, *Reflections on Language*, 1975, pp. 132-135.
[13] Bimal Krishna Matilal, *The Character of Logic in India*, OUP, 1998, pp. 22-30.
[14] Joseph Needham, *Science and Civilisation in China*, Vol. VI., 2000, pp. 112-118.
[15] David C. Lindberg, "Galileo Goes to Jail: The Myth of Conflict" in *Galileo Goes to Jail and Other Myths about Science and Religion*, edited by Ronald L. Numbers, 2009, pp. 67-72.

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epistemology, as documented in texts such as the *Mulamadhyamakakarika* and the *Tattvachintamani*. [i]

These debates were not only philosophical but also methodological, with schools such as Nyaya developing rigorous systems of inference comparable to Aristotelian logic.[16] The philosophical contributions of Islamic scholars such as Avicenna and Al-Farabi were often limited by religious constraints. In contrast, Indian traditions allowed the coexistence and debate of atheistic, materialistic, and mystical ideologies, demonstrating a unique tolerance for diverse viewpoints and the institutionalisation of debate as a method of research.[17] Tolerance of differing viewpoints and the vitalisation of public debate as a method of research underline the historical distinctiveness of Indian knowledge systems in the global intellectual landscape.

The ancient Indian education system needs to be examined as a source of knowledge and a system for its dissemination. Dominated by the residential *guru-shishya* system, education was primarily oral and took place in ashrams, where a Vedic scriptures and other curriculum was transmitted through rigorous memorisation and recitation technique known as *Vikṛti i.e.* modifications.[18] The *varna* system was designed to ensure strict adherence to rights and responsibilities according to *varna*. There is no reason to believe that access to knowledge, like other pursuits, was not strictly regulated by the *varna* system. Teaching and education were reserved for the highest *varna*. Kshatriyas, who can only learn *Vedas* and Vaishyas had limited practical education available respectively for statecraft and commerce. Shudras and women were almost completely excluded from Vedic knowledge. This restriction was a classically accepted principle and, consequently, social practice. Thus, the rigidity of caste norms limited the spread of knowledge.[19] Thus, the utility of education was limited by caste-based rights and duties. This ensured that education was used for specific ceremonial, administrative, and professional functions rather than promoting intellectual or personal mobility. It was not designed for universal literacy or intellectual mobility.[20] This ideological rigidity was further codified over time in the *Manusmriti*, which prescribed severe punishments for unauthorised learning. This validated knowledge only to maintain ritual purity and social boundaries.[21] In this system, the caste of the disciple sitting before the guru could not be a secret. Nor was access to the knowledge deeply embedded in the guru's memory easy without the guru's permission. It is not difficult to understand that the knowledge accumulated in the oral tradition was far more secure than the legal copyright protection of modern printed literature. Consequently, while this period made possible the preservation of knowledge and philosophy through oral transmission for centuries,[22] it also limited the dissemination of accumulated and refined philosophical and scientific knowledge to a small segment of society over the following centuries. Most of the population was deprived of seeds and fruits of their own intellectual tradition of knowledge.

The highly caste-based, restricted access to education of the Vedic period was later transformed into a relatively open system operated by Buddhists and Jains. Buddhist *viharas* and Jain *upashrayas* served as centres of learning. While Brahmanical education remained largely restricted by caste and gender, Buddhist and Jain educational centres were more open to a wider range of social groups, including non-Brahmins and, in some cases, women. Institutions like Nalanda and Vikramashila were open to all castes and even foreigners and it should be noted that these were Buddhist institutions.

[16] Matilal, *Logic in India*, 1998, pp. 22-30. See also Wilhelm Halbfass, *India and Europe: An Essay in Understanding*, 1988, pp. 145-150.
[17] Amartya Sen, *The Argumentative Indian*, 2005, pp. 42-47.
[18] J.F. Staal, *Nambudiri Veda Recitation*, Mouton, 1961 see for oral tradition and techniques used to preserve text over centuries. It is recognised by UNESCO, "Tradition of Vedic chanting" in *Representative List of the Intangible Cultural Heritage of Humanity*, 2008
[19] R.S. Sharma, *India's Ancient Past*, 2005, pp. 248–250
[20] Romila Thapar, *Early India: From the Origins to AD 1300*, 2002, pp. 345-348 ancient education was more to fulfil their designated roles and stabilise the hierarchical structure.
[21] Thapar, *Early India*, pp. 345-348; R.S. Sharma, *Sudras in Ancient India*, 1990, pp. 55-58; Patrick Olivelle, *Manu's Code of Law*, 2005, pp. 198-202.
[22] Kapil Kapoor and Avadhesh Kumar Singh, eds., *Indian Knowledge Systems*, vol. 1, 2005 p. 14 *fn*. 6 The exaggeration of the Rigveda being "5,000 years old" aside, the author's basic argument is that Shakespeare's printed plays have developed textual problems in just 500 years.

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Admission was based on intellectual merit, not *varna* status. Jains also developed an educational tradition that was less bound by caste. Their monastic orders included women.[23] The curriculum at these institutions was broad. Logic (*hetuvidya*), grammar, medicine, and metaphysics were taught. Jain scholars developed sophisticated theories of non-possessive reasoning (*anekantavada*) and conditional logic (*syadvada*). "The Buddhist debate tradition and the Jain emphasis on multiple perspectives (*anekanta*) fostered a culture of intellectual pluralism that rivalled and often surpassed Brahmanical scholasticism."[24] Buddhist and Jain scholars often engaged in public debates with Brahmanical thinkers in royal courts. This culture of public debate was a distinctive feature of Indian intellectual life. Historical evidence suggests that kings "Harsha and Kumaragupta patronised such debates and often invited scholars from opposing traditions."[25] Significantly, the outcome of such debates could influence a scholar's royal patronage and the king's public policy.

While the caste system restricted access to Brahmanical education, Buddhist and Jain centres of learning offered a more open alternative. Oral tradition, while hindering widespread discussion and access to knowledge, served as a powerful medium for the preservation and transmission of knowledge across generations. This demonstrates that Indian intellectual life developed simultaneously through the dynamic interplay of diverse perspectives—ritualistic orthodoxy and empirical inquiry, spiritual contemplation, and logical rigor. This philosophical pluralism, often expressed through dialectical traditions of debate, fostered a culture where contradictions were not suppressed but confronted. Structured debates between Buddhist, Jain, and Brahmanical thinkers institutionalised critical inquiry and progressively developed the Indian knowledge system into a classical age of logic, epistemology, and philosophical synthesis. From the eyewitness accounts of the 11th century scholar al-Biruni to modern research in the 21st century, it has been proven time and again that the entire journey of the IKS was seen as an 'empire of ideas' that fundamentally transformed the world and laid the foundations of modern science. India's outward flow of knowledge, now called the "Indosphere" profoundly influenced both the East and the West.[26]

The examples above are not exhaustive, but they represent the intellectual brilliance of Indian knowledge systems. The contributions of Indian knowledge systems have been documented, disseminated and in many cases, they form the foundation of modern disciplines. Hardly any serious scholar in the world would dispute the authenticity or sophistication of these traditions. Yes, we had them all. And this 'was', this past, demands deep reflection. The transition from possession to absence of Indian knowledge systems is not a mere statement. A historical inquiry is needed to understand what happened to these systems. Did a civilisation so deeply immerse in exploration, debate, and empirical knowledge lost its intellectual continuity? Was this loss real, gradual, or sudden? Internal or imposed? Cultural or political?

Yet, the notion that 'we had the best' - can be both comforting and dangerous. Uncritically accepting the greatness of the past discourages wish to know, and an overreliance on inherited achievements can stifle future innovation and adaptation. As it is already cautioned above that the romanticizing the past is the enemy of historical method. Historical research is not about glorification or lamentation, but about understanding the causation. We must turn to the second part of this quest. The mechanisms, factors, and consequences of that loss must be discovered so that recovery, if possible, is based on clarity, not nostalgia.

[23] Sharma, *Ancient Past*, pp. 251–253; see also Thapar, *Early* India, pp. 356–358.
[24] Padmanabh Jaini, *The Jaina Path of Purification*, 1979, pp. 89–92.
[25] Romila Thapar, *Cultural Pasts: Essays in Early Indian History*, 2000, pp. 412–415.
[26] Alberuni, *Alberuni's India*, trans. Edward Sachau, 1910, Vol. I, p. 20. Visited India around 1017 CE testimonies that the Indians were very skilled in philosophy and mathematics… they have left nothing to be desired in the way of logical method. see also William Dalrymple, *The Golden Road: How Ancient India Transformed the World*, 2024 He says that the Indosphere has a greater influence on world civilisation through the "Golden Road" rather than the Silk Road.