

Timeless Insights: Ancient Indian Wisdom and Modern Scientific Breakthroughs

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Abstract

The study draws evidences from classical Indian texts such as the Vedas, Upanishads and the Mahabharata, depicting how these ancient scriptures provide a rich foundation that bridges traditional knowledge with modern scientific advancements. It discusses in depth the contributions of renowned scholars such as Aryabhata, Kanada, Bhaskara II, Charaka, Panini, Patanjali and Sushruta, whose novel concepts have shaped contemporary scientific understanding. The paper highlights the subtle interconnections between ancient knowledge and contemporary fields such as biotechnology and life sciences. For example, while stem cell research is often viewed as a modern innovation, the story of Queen Gandhari and the sage Vyasa from the MahaBhārata hints at early concepts of cell culture and development. Similarly, the myth of the replacement of Lord Ganesha's head with that of an elephant offers an ancient perspective on organ transplant practices that resonates with modern xenotransplantation techniques. In addition, this paper examines symbolic representations in Indian mythology, such as *Ardhanarishvara*, who symbolizes the unification of dualistic forces, similar to the genetic concept of non-disjunction. It also discusses *Garbha Sanskar*, an ancient practice that underlines the influence of parents' mental states on foetal development, which parallels modern epigenetic theories.

By combining historical and contemporary perspectives, this study underscores the enduring relevance of ancient Indian wisdom. It calls for a renewed appreciation of traditional knowledge and its potential contributions to current scientific research and technological advancements.

Keywords: *Ancient wisdom, Cell culture, Epigenetics, Genetic cloning, Indian knowledge system, Modern biotechnology, Non-disjunction, Organ transplantation, Present-day science, Stem cell culture.*

Introduction

The ageless knowledge of India reverberates like a cosmic symphony in the field of scientific study, where curiosity motivates the search for understanding. The Indian knowledge system weaves together the strands of old wisdom and scientific study, from the significant discoveries in mathematics and astronomy made by ancient thinkers like Aryabhata and Brahmagupta, to the comprehensive understanding of the cosmos contained in the Upanishads.

Even while India is renowned today for its accomplishments in yoga and other spiritual pursuits, it has also achieved significant strides in the practical world. The rich heritage of ancient Indian wisdom, as encapsulated in scriptures such as the Vedas, presents numerous opportunities to integrate this knowledge with modern scientific thought. The ancient Indian writings, including the Vedas, Upanishads, and other early texts, encompass a wide array of intricate subjects. These scriptures detail aspects of astronomy and positional astronomy, covering celestial bodies such as

the Sun, Moon, and planets, as well as coordinate systems. They also describe sophisticated calendar and timekeeping systems, which incorporate lunar and solar calendars, observational instruments, and mathematical treatises. Further, the texts outline various units of time, including months, tithis (lunar days), yugas (ages), and seasons. Besides, they provide insights into tools and techniques used in laboratory settings, including apparatus for chemical experiments, as well as materials and methods for building construction, such as cements, altar structures, and brick making. The scriptures also delve into metallurgy, scientific advancements, technology, and medicine ^[1].

In an effort to bridge the gap between traditional and modern scientific knowledge, this memoir examines the substantial contributions of Indian scholars across diverse fields, including life science, genetics, and modern biotechnology. The Indian knowledge system, where spirituality and science converge, offers profound insights that not only influenced global understanding but continue to illuminate the path towards intellectual and scientific enlightenment ^[2].

The Origin of ‘Bharata’ and Its Educational Legacy

The term ‘Bharata’ finds its origins in ancient Sanskrit texts, dating from the 5th century BCE to the 3rd century CE. It is widely believed that the Kurus, a prominent clan in the *Mahabharata*, were descendants of King Bharat. According to tradition, Emperor Bharat unified the Indian subcontinent, earning the title of ‘Chakravarti’ (universal monarch), and the land was named ‘Bharata’ after him. The *Vishnu Purana* supports this, stating: ‘The land which lies north of the ocean and south of the snowy mountains is called *Bharata*, for it was inhabited by the descendants of Bharat’. Further, the tenth chapter of the *Bhishma Parva* in the *Mahabharata* provides a detailed account of the peoples and kingdoms that made up *Bharatabarsha* (the Land of Bharata) ^[3].

The ancient wisdom of Bharata boasts a deep-rooted and varied history, stretching back thousands of years. This system evolved alongside the cultural, social, and religious fabric of ancient Indian civilization, creating a holistic and interconnected approach to learning. It emphasized a balance between self-knowledge and understanding of the universe. Though the methods of instruction have transformed over the centuries, the enduring influence of this educational system is still evident in contemporary cultural and academic practices.

Indian Scholars and their Contributions

India, historically known as Bharata, is the birthplace of one of the world’s earliest and most advanced civilizations. Once at the pinnacle of intellectual and cultural achievement, India’s influence began to decline due to repeated invasions and varying interpretations of its classical texts by later scholars. Irrespective of these challenges, the contributions of ancient Indian scholars to global knowledge remain a historic testament to the foundations of modern science and technology. Some of the key figures from this period include:

1. Maharishi Aryabhata

Maharishi Aryabhata, also known as Aryabhata I, was a pioneering Indian scholar who made radical contributions to mathematics and astronomy. Born in 476 CE in Kusumapura (modern-day Patna, Bihar), Aryabhata is best known for his seminal work, the *Aryabhatiya*

- a Sanskrit treatise that addresses a wide array of topics on arithmetic, algebra, trigonometry, and astronomy. The *Aryabhatiya* comprises 121 verses, organized into four chapters, and presents insights into mathematics and astronomy. Some key contributions of Maharishi Aryabhata include, Mathematics, Place Value System, Pi (π) Calculation, Trigonometry, Time, Astronomy, and Heliocentrism ^[4].

2. *Maharishi Kanad*

Maharishi Kanad, also known as Kashyapa Kanad, was an early Indian philosopher and scientist who lived around the 6th century BCE. He is renowned for formulating the atomic theory, laying the foundation for the concept of the nature of matter. His philosophical and scientific ideas are primarily found in the *Vaisheshika Sutra*, a key text outlining the Vaisheshika school of Indian philosophy, which explores the nature of reality and substances. His contributions include: Atomic Theory, Philosophical contributions, and Fundamental understanding of the nature and elements consisting it, gave the concept of *Pancha Mahabhutas* (Five Elements) ^[4].

3. *Bhaskaracharya II*

Bhaskaracharya II, also referred to as Bhaskara II, was a distinguished Indian mathematician and astronomer of the 12th century. Born in 1114 CE in Bijapur, Karnataka, Bhaskaracharya II made formative contributions across multiple domains of mathematics and astronomy. Some of his notable contributions include: Lilavati, Bijaganita, Siddhanta Siromani, and Contributions in Astronomy such as detailed discussions on the movements of celestial bodies, eclipses, and the calculation of planetary positions ^[4].

4. *Charaka*

Charaka, also known as Charaka Muni or Agnivesha, was a pre-eminent figure in ancient Indian medicine, believed to have lived around the 6th century BCE. He is most celebrated for his foundational text, the *Charaka Samhita* - a seminal Sanskrit treatise on Ayurveda. The *Charaka Samhita* is an all-inclusive compilation of medical knowledge, covering various aspects of health, diseases, diagnosis, and treatments. It is divided into eight sections, known as '*sthanas*', and provides detailed information on anatomy, physiology, pharmacology, and therapeutics. Other than *Charaka Samhita*, his major contributions include: Theory of Tridosha, Pulse Diagnosis, Herbal Medicine, Surgery and Surgical Instruments ^[4].

5. *Maharishi Panini*

Maharishi Pāṇini, a seminal figure in the history of linguistics, is renowned for his groundbreaking work in Sanskrit grammar. He authored the *Ashtadhyayi* - a highly systematic and comprehensive treatise that has had a lasting impact on the field of grammar. Although Pāṇini is believed to have lived around the 4th century BCE, precise details of his life remain uncertain. Maharishi Panini's significant contributions include: Panini Tradition, Sutra System, Phonetics and Linguistic Analysis, and Generative Grammar ^[4].

6. *Maharishi Patanjali*

Maharishi Patanjali, an esteemed ancient Indian sage, is renowned for his seminal work, the *Yoga Sutras*. Although the precise dates of Patanjali's life remain unclear, scholarly consensus suggests he lived around 200 BCE. Patanjali's primary contribution lies in his compilation of the *Yoga Sutras* – an inspiring text consisting of 196 concise verses organized into four chapters. This work offers a structured framework for the practice and philosophy of yoga, serving as a comprehensive guide for those pursuing spiritual growth and self-realization.

The *Yoga Sutras* encapsulate various dimensions of yoga practice, including ethical guidelines (yamas and niyamas), physical postures (asanas), breath control (pranayama), sensory withdrawal (pratyahara), concentration (dharana), meditation (dhyana), and ultimate liberation (samadhi). Patanjali's systematic approach integrates these elements to foster mental discipline, emotional equilibrium, and spiritual enlightenment. His teachings have significantly shaped the evolution of yoga, influencing both its physical practices and its ethical and spiritual aspects. Patanjali's work remains a cornerstone for those seeking a holistic path to personal transformation through yoga ^[4].

7. *Susruta*

Susruta, renowned as the 'Father of Surgery,' was an influential figure in ancient Indian medicine. Despite the mythological narratives suggesting he was the son of Saint Vishwamitra, concrete details about his lineage remain scarce. Historical accounts suggest that Susruta began his medical training under the tutelage of Divodasa Dhanvantari, the revered king of Benares. Divodasa, within his gurukul, imparted crucial medical knowledge to Susruta. This education encompassed an understanding of the 'purusa' (person) afflicted by disease, the nature of ailments causing pain, strategies for their eradication, dietary considerations, and the significance of timing in treatment.

Susruta is believed to have lived around the 6th century BCE. His influential work, the *Susruta Samhita*, is a comprehensive ancient Sanskrit text detailing various aspects of medicine and surgery. This inspiring text covers numerous topics, including anatomy, surgical procedures, classifications of surgeries, and the use of medical instruments. Notably, it also includes early contributions to plastic surgery, showcasing Susruta's pioneering role in the development of surgical techniques ^[4].

Ancient Wisdom and its Glimpses in Modern Biotechnology

1. *Ayurveda and Herbal Medicine*

India is a nation having remarkable biodiversity, shaped by its diverse landforms and climate patterns. This unique topography has given rise to a wide range of flora and fauna, many of which are endemic to the region and possess distinct characteristics. Early humans, often identified as hunter-gatherers, were intimately connected with their natural surroundings, living as forest dwellers. Their survival depended on a deep understanding of the environment, enabling them to distinguish between poisonous and edible plants. This intimate knowledge extended to the medicinal properties of certain plants, which were used

to treat a variety of ailments. Over millennia, this indigenous knowledge became region-specific and highly specialized, forming a vast repository of traditional wisdom.

India is home to one of the world's oldest medical systems, the Indian Traditional System of Medicine, which has significantly contributed to healthcare for thousands of years. This system is uniquely recognized through practices such as Ayurveda, Yoga, Unani, Siddha, and Homeopathy (AYUSH) ^[5].

Recent scientific research has progressively validated the health benefits of numerous plants long used in Indian traditional medicine. Studies have demonstrated the immune-boosting, antiviral, anti-allergic, and anti-asthmatic properties of various plant species, offering new perspectives on their therapeutic potential. Some notable examples include ^[6]:

Botanical Name	Hindi Name	English Name	Applications
<i>Abroma augustuma</i>	Ulatkambal	Devil's Cotton	Gynaecological problems, Irregularity in Periods
<i>Abrus precatorius</i>	Ratti	Rosary Pea	Joint Pains, Fungal skin infections, Alopecia
<i>Abutilon indicum</i>	Kanghi	Country Mallow	Nervine tonic, Joint disorders, Increases Strength
<i>Acacia arabica</i> Willd	Babool	Indian Gum	Oral Care, Bleeding Gums, Wounds
<i>Acacia catechu</i> Willd	Kadirkasth	Cutch Tree	Skin & Respiratory Problems, Oral hygiene, Astringent
<i>Achyranthes aspera</i>	Chirchita	Prickly chaff flower	Indigestion, Cough, Asthma, Liver health
<i>Aconitum ferox</i>	Meetha Vish	Monks hood	Fever, Diuretic Action, Arthritis
<i>Aconitum heterophyllum</i> Wall	Atees	Indian Ateech	Fever, Respiratory troubles
<i>Acorus calamus</i>	Bach	Sweet Flag	Flatulent Colic, Atonic Dyspepsia, Ulcers
<i>Adhatoda vasica</i> Nees	Adusa/Vasaka	Malabar Nut	Cough, Asthma, Bronchitis
<i>Aegle marmelos</i> Corr.	Bael	Bengal Quince	Dysentery And Diabetes, Coolant, Gut health
<i>Alangium salvifolium</i>	Ankol	Sage leaf alangium	Traditionally used in Snakebite, Scorpion bite, Dog bite
<i>Albizia lebbek</i> (Linn) Benth Pennel	Shirish	Siris Tree	Bronchial Asthma, Detoxification
<i>Alhagi camelorum</i>	Yavasa	Camel Thorn	Rheumatism, Vomiting, Stomach ache, Constipation
<i>Allium cepa</i> Linn	Pyaj	Onion	Prostate health, Digestion
<i>Allium sativum</i>	Lashun	Garlic	Ringworm, Dysentery, Wounds
<i>Aloe vera</i> Tourn ex. Linn	Ghee Kunwar	Aloes	Ulcers, Burn Injuries, Jaundice, Acne, Women's health
<i>Alpinia galanga</i>	Kulanjan	Greater Galangal	Flatulence, Dyspepsia, Vomiting, Motion sickness, Catarrh
<i>Alstonia scholaris</i>	Chitvan	Dita	Skin Ulcers, Fever, Lactation
<i>Amomum subulatum</i> Pennel	Badi Elaichi	Greater Cardamom	Bronchitis, Asthma, Appetizer, Digestant
<i>Amorphophallus campanulatus</i>	Jimikand	Elephant yam	Dysentery, Piles, Haemorrhoids
<i>Anacyclus pyrethrum</i>	Akarkara	Pellitory	Toothache, Dryness of Mouth, Throat, Catarrh, Loss of Libido
<i>Ananas comosus</i>	Ananas	Pineapple	Sore Throat, Diabetes, Heart disease, Obesity
<i>Andrographis paniculata</i>	Kalmegh	Kalmegh	Indigestion, Acne, Diarrhoea
<i>Aquilaria agallocha</i> Roxb	Agarkasth	Eagle Wood	Bed-Wetting, Incontinence of Urinary Bladder
<i>Areca catechu</i> Linn	Supari	Areca Nut/Betelnut	Obesity, Hyperlipidaemia, Diabetes, Irregular Menstruation

<i>Argyreia speciosa</i> Sweet	Vridhadaru	Elephant Creeper	Diabetes, Skin diseases, Wounds
<i>Asparagus racemosus</i> Willd	Shatavari	Asparagus	Infertility, Loss of Libido, Uterine health, Lactation
<i>Azadirachta Indica</i> A. Juss	Neem	Margosa Tree	Skin health, Eye disorders, Bloody Nose, Intestinal Worms
<i>Bacopa monniera</i> Pennel	Brahmi	Thyme leafed gratiola	Memory, Anxiety
<i>Barleria prionitis</i> Linn	Vajradanti	Barleria	Strengthens Teeth, Fever, Catarrh
<i>Betula utilis</i> D. Don	Bhojpatra	Himalayan Birch	Wounds, Obesity
<i>Boerhaavia diffusa</i> Linn	Punarnava	Spreading Hogweed	Anaemia, Liver diseases, Wounds, Kidney health
<i>Boswellia serrata</i> Roxb.	Shalai Guggal	Indian Olibanum	Joint Pains, Headache, Diabetes
<i>Butea monosperma</i> Kuntze	Palasha	Flame of forest	Skin complexion, Worm infestations, Roundworm
<i>Cassia angustifolia</i> Vahl	Senna	Indian Senna	Laxative, Constipation, Irritable bowel syndrome, Weight Loss
<i>Cassia fistula</i> Linn	Amaltas	Indian Laburnum	Mild laxative, Ulcers, Wounds
<i>Celastrus paniculatus</i> Willd	Malakangini	Staff Tree	Muscle cramps, Backache, Osteoarthritis, Hair care
<i>Centella asiatica</i> Urban	Mandukparni	Gotu Kola	Memory, Brain health, Hair care,
<i>Cinnamomum tamala</i> Nees	Tamalpatra	Cinnamon Leaf	Diabetes, Digestion, Cold
<i>Cinnamomum zeylanicum</i> Breyn	Dalchini	Bark Cinnamon	Antibacterial, Antiseptic
<i>Cissampelos pareira</i> Linn	Patha	Velvet Leaf Tree	Ulcers, Sinuses, Skin diseases, Poisonous bites
<i>Clerodendron serratum</i> Moon	Bharangi	Bharangi	Common Cold, Chronic Sinusitis, Allergic Rhinitis,
<i>Commiphora mukul</i> Engl	Guggulu	Indian Bdellium	Joint disorders, Heart diseases, Hypolipidaemic,
<i>Coriandrum sativum</i> Linn	Dhaniya	Coriander	Indigestion, Flatulence, Spasmodic pain
<i>Costus speciosus</i> (Koeing) Sm.	Ketaki	Crepe Ginger	Obesity, Hyperlipidaemia, Diabetes
<i>Crataeva nurvala</i> Buch-Ham	Varun	Three Leafed Caper	Kidney Stones, Bladder Stones, Prostate health
<i>Cyperus rotundus</i> Linn	Nagarmotha	Nut Grass	Fever, Diabetes, Solar Dermatitis
<i>Desmodium gangeticum</i> DC	Shalparni	Shal Leafed Bush	Analgesic, Anti-Inflammatory
<i>Elettaria cardamomum</i> Maton	Elaichi	Lesser Cardamom	Nausea, Vomiting, Dry Cough
<i>Emblica officinalis</i> Linn	Amla	Indian Gooseberry	Antioxidant, Antistress, Constipation, Fever
<i>Glycyrrhiza glabra</i> Linn	Mulethi	Liquorice	Digestive disorders, Ulcers, Bronchitis, Skin health
<i>Ocimum sactum</i> Linn	Tulsi	Holy Basil	Indigestion, Heart health, Respiratory-diseases
<i>Piper longum</i> Linn	Pippali	Long Pepper	Asthma, Cough, Indigestion
<i>Plumbago zeylanica</i> Linn	Chitrak	Leadwort	Arthritis, Skin diseases, Menstrual disorders, Obesity
<i>Saraca indica</i>	Ashok	Sorrowless tree	Menstrual irregularities, Uterine stimulant
<i>Withania somnifera</i> Dunal	Ashgandh	Winter Cherry	Stress tolerance, Immunity, Joint pains, Skin health

2. Stem Cell Culture

Stem cells are unique biological entities distinguished by their capacity for self-renewal and differentiation into various specialized cell types. Found primarily in embryos, these cells have the capability to develop into any cell type within the organism, eventually leading to the formation of a complete and functional body. Despite the perception of stem cell technology as a contemporary advancement, historical texts such as the MahaBhārata

suggest that similar concepts may have been explored in ancient times. The MahaBhārata, a renowned Indian epic, mentions at early practices related to embryonic stem cell culture through its narratives.

One notable story from the MahaBhārata involves the birth of the Kauravas, which according to an interpretation suggests could be analogous to modern cloning techniques. According to the epic, Queen Gandhari, the wife of King Dhritarashtra, was initially childless despite her deep desire for children. Dismayed, Gandhari was advised by the Rishi Vyasa - who is also credited with composing the MahaBhārata - that she would indeed bear 100 sons.

Vyasa then took an embryo and divided it into multiple pieces, placing each segment into separate jars filled with a mysterious substance, possibly oil or clarified butter. When Gandhari expressed a desire for a daughter, the embryo was divided into 101 pieces. After nine months, the jars were opened, and the results were extraordinary: one jar contained the first baby, Duryodhana, known for his strength and invincibility, while the remaining jars simultaneously produced 100 additional babies. This miraculous event resulted in Gandhari having 100 sons and a daughter named Duhsala, all of whom grew to become powerful figures.

This ancient narrative, while not explicitly describing cloning, bears a resemblance to contemporary scientific practices involving cell manipulation and replication. Such parallels invite intriguing considerations about the historical roots of stem cell research and its evolution into modern science ^[7].

3. *Xenotransplantation*

According to FDA, ‘Xenotransplantation is any procedure that involves the transplantation, implantation or infusion into a human recipient of either (a) live cells, tissues, or organs from a nonhuman animal source, or (b) human body fluids, cells, tissues or organs that have had ex vivo contact with live nonhuman animal cells, tissues or organs’ ^[8].

From the 17th to the 20th centuries, the practice of xenotransplantation, or transferring organs from one species to another, has been explored with various animal species. Initially, skin grafts were performed in the 1800s, and over time, kidney and other organ transplants followed ^[9]. Remarkably, the Indian legend of Lord Ganesha, the Elephant-headed God, represents one of the earliest known references to such a procedure.

According to the Shiv Puran, an ancient Indian text, the origin of Lord Ganesha is a story of both divine creation and transformation. The goddess Parvati fashioned a statue of a plump boy, brought it to life, and named him Vinayak. She instructed him to guard the entrance of Kailash while she bathed. Obediently, Vinayak did not allow anyone to enter, even blocking Lord Shiva. This incited Shiva's wrath, leading to a confrontation in which he beheaded the boy. In response, Parvati, overcome with grief and anger, transformed into the fierce form of Mahakali, causing turmoil in the universe. She demanded the restoration of her son. To remedy the situation, Shiva's disciples were tasked with retrieving the head of the first animal they encountered facing north. They returned with the head of an elephant, which was then affixed to Vinayak's body. Lord Brahma, the creator, infused life into him,

resulting in the birth of Ganesha, who is venerated as a prominent deity. This mythological account suggests that Ganesha was the first figure to undergo an organ transplant.

Although there is no concrete evidence linking this legend to historical medical practices, ancient Indian neurosurgery may have been inspired by such mythological accounts. Ayurvedic texts, such as those attributed to Jivaka (a renowned surgeon of the Buddha's time), document early surgical techniques, including trephination and the removal of intracranial masses^[7].

4. *Non-Disjunction*

Non-disjunction is a cellular anomaly observed during meiosis, where homologous chromosomes or sister chromatids fail to separate properly. This results in an abnormal distribution of chromosomes among daughter cells. Specifically, in the context of sex chromosomes, non-disjunction can lead to cells with atypical combinations of X chromosomes: some may have one X chromosome (typically leading to male development) while others may have two X chromosomes (which can lead to female development).

The concept of *Ardhnarishwar* - a deity embodying both male and female splits, can be analogously linked to the phenomenon of non-disjunction. *Ardhnarishwar*, meaning 'half-man and half-woman', represents the synthesis of both masculine (Shiva) and feminine (Parvati) genders within a single divine form. This deity symbolizes the integration and complementarity of these opposing forces. In a broader sense, *Ardhnarishwar* illustrates the idea that ultimate reality transcends binary gender distinctions and is a harmonious amalgamation of dualistic forces^[7].

5. *Epigenetics*

Epigenetics is the study of heritable changes in gene function that arise from environmental influences without altering the underlying DNA sequence^[10]. An ancient concept analogous to epigenetics can be found in the Indian tradition of '*Garbha Sanskar*,' which involves nurturing the child from conception onward. This practice, rooted in ancient texts and cultural customs, aimed to create a nurturing environment for the foetus, encompassing physical, mental, and spiritual well-being.

Historical records suggest that *Garbha Sanskar* emphasized the profound impact of a mother's mental and emotional state on foetal development. Pregnant women were encouraged to maintain a calm and positive demeanour, avoiding negative emotions such as anger, fear, and anxiety. This tradition was primarily transmitted orally through generations but gradually diminished as modern medical practices gained prominence.

Garbha Sanskar (Garbha Dhana), however, was not solely the responsibility of the mother. The role of the father and other family members was also crucial. Fathers, for instance, were expected to perform rituals and recite mantras to protect the embryo from harmful energies and attract beneficial influences^[11]. This implies that the father's actions and energy, in addition to the mother's, were believed to affect the foetus.

The story of Abhimanyu's learning while in his mother's womb, as described in the Indian epic Mahābhārata, provides a compelling illustration of epigenetics. Abhimanyu was the son of Arjuna - a prominent Pandava prince, and Subhadra - the sister of Lord Krishna.

The distinctive aspect of Abhimanyu's education is rooted in his prenatal exposure to strategic knowledge. During Subhadra's pregnancy, she overheard a conversation between Lord Krishna and Arjuna about the *Chakravyuha* - an intricate and formidable military formation. However, Subhadra fell asleep before Arjuna could explain the tactics for both penetrating and escaping the *Chakravyuha*. Abhimanyu, while still in the womb, absorbed the knowledge of how to enter this formation but did not learn how to exit it.

This unique prenatal learning became crucial during the Kurukshetra War, where the Pandavas faced the Kauravas. On the thirteenth day of the battle, the Kaurava forces deployed the *Chakravyuha*. Abhimanyu, equipped with the knowledge of how to breach the formation but lacking the exit strategy, bravely entered the *Chakravyuha* to disrupt it. Despite his exceptional combat skills and valor, Abhimanyu became trapped within the formation. Overwhelmed by the superior Kaurava forces, he fought valiantly but ultimately met a tragic end ^{[7][12]}.

Conclusion

Indian Knowledge System, carries a subtle potential to put forward novel insights that can radically change human mindset and bring about revolution in science and technology. There is an urgent need to 'decolonize the Indian mind' ^[13] by fostering attention and a constructive critical appreciation for the unparalleled legacy of Bharata. From the realms of philosophy, science, medicine, and mathematics to art, culture, and governance, this very system offers holistic approaches that integrate spiritual, ethical, and empirical knowledge.

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