

16. Scientific Foundation of Jain Darshan

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ABSTRACT

Correct worldview (Samyak Jñāna), which describes the laws of nature and the content of the universe, is the foundation of Jain philosophy. This paper demonstrates that several laws, doctrines, and principles of modern physics find close parallels in various concepts of Jain philosophy. Recent theoretical developments by distinguished scholars — including Bohm, Pribram, Sheldrake, Penrose, Hameroff, and Josephson — are discussed in the context of Jain philosophy, and the necessity of integrating these frameworks is emphasised for a logically coherent understanding of natural phenomena. A science-based reinterpretation of Jain concepts not only reinforces their validity but can generate new insights into various phenomena at the frontier of contemporary scientific inquiry.

Keywords: Jain darshan, Anekāntavād, Varganā, consciousness, dark matter, morphogenesis, Karma, Srishtivād, quantum coherence, holographic universe

1. INTRODUCTION

A common objective of scientific investigations, diverse philosophical traditions, and various faiths is to understand the true nature of the universe and the laws governing all the processes within it. Because of this shared goal, there are common ground between scientific inquiry and philosophical reflection. A comparative study reveals that the basic concepts underlying different faiths are often identical at their core, differing mainly in the aspects they emphasise, shaped by historical, geographical, and social contexts. While all faiths subscribe to an ultimate, formless motive 'cause', be it '*prakriti*' or '*purush*', without which not a leaf will turn, Christianity and Sikhism, lay emphasis on social service; Buddhism centres on *karuṇā* (compassion); Hinduism follows the path of *bhakti* (devotion) as the primary path to liberation; and Jainism identifies Jñāna (knowledge and *direct* perception, without the mediation of sensory organs) as the means to attain Moksha, equating omniscience with salvation. What is common across all traditions may broadly be termed spirituality in various forms.

Understanding our existence and leading a meaningful life requires a clear definition of the 'Truth' the nature of the self, the contents of the universe, and the laws governing it. This paper investigates that Truth by placing Jain philosophy in systematic dialogue with modern science.

1.1 The Nature of Truth

Scientific and philosophical approaches can grasp the Truth only partially, for at least four reasons. Firstly, all knowledge is acquired through the senses or the brain (mind), neither of which is perfect; the mind updates with every experience and science progresses as better instruments become available. Secondly, constraints imposed by the laws of nature limit the observable universe: the finite age of the universe (~13.8 billion years) and the speed of light ($c \approx 3 \times 10^8$ m/s) restrict physical observations to a sphere of radius of roughly 46.5 billion light-years — infinitesimally

small compared to the full extent of the cosmos. Thirdly, as Gödel's Incompleteness Theorems demonstrate, no formal system can completely describe itself from within; we cannot 'see' the universe from outside, and lastly and most importantly, much of reality is invisible: dark matter and dark energy — constituting approximately 95% of the total matter–energy content of the universe — can only be inferred from their perceivable effects and cannot be directly investigated, unlike luminous matter, which represents a mere ~5% of the total [Bhandari, 2022b; 2024].

A further, deeper problem is that the nature of everything in the universe is transient, changing its mode every instant (*Anantadharmitā*), and is perceived only subjectively, depending on the mental frame of reference of the observer (*Nayavāda*, or perspectivism). We can therefore know, through observations and philosophising, only an instantaneous, partial, and perspectival truth. To know the whole truth — valid through all times (*Traikālik*) — recourse to supra-sensory methods is necessary.

In the Indian philosophical tradition, such supra-sensory insight is termed Darshan (To see): what Seers can directly perceive after purification of their body, mind, and soul. This is 'direct' Jñāna (*Pratyaksha*), in contrast to the 'indirect' knowledge (*Paroksha*) mediated through the senses and mind. Even this direct Jñāna has gradations; only in the case of Kevalīs (omniscients, the Tirthankaras) does it attain perfection and completeness, encompassing all space and time.

1.2 Types of Knowledge

The terms Jñāna and Knowledge are often treated as synonymous, but they are not identical. All observations yield data and systematised data constitutes knowledge. Science does not distinguish between useful and harmful knowledge — all knowledge is treated on the same footing. Jñāna, by contrast, is that knowledge which is useful and promotes the improvement of the self; harmful knowledge is classified as Kujñāna. Knowledge that is useless may be termed as Ajñāna (ignorance). This classification has practical import: beneficial knowledge (Jñāna) and harmful knowledge (Kujñāna) both progress as more data are collected and systematised, whereas there also exists pure, complete knowledge — Atīndriya Jñāna — which is perfect, self-arising, and spontaneous when body, mind, and soul attain total purity. This is the state of omniscience: knowledge of everything without the barriers of space and time — past, present, and future.

1.3 Limits of Knowledge: The Visible Universe and Duality

Knowledge has a layered structure: what is apparent is only the manifested unfolded information, beneath which lies the enfolded, unmanifested, real, underlying cause. In Jain Darshan, what can be observed and conceived is only the manifested aspect of the universe — apparent, transient, and subject to origination and destruction. Beneath it lies the essence, the Sat, which is eternal and everlasting, neither originating nor ever destroyed. Three entities meet this criterion: Prakriti (nature, encompassing everything), Dharma (the nature of substances), and the laws governing the universe. They are eternal (*Traikālik*) and everlasting (*Shāshwat*), although they manifest in different ways at different times.

The Jain theory of non-absolutism — Anekāntavāda — propounds that, although eternal in essence, the modes of existence (*Paryāy*) of any entity may change from moment to moment, even while its fundamental nature persists. For example, the essential properties of water remain constant throughout the universe, while its mode may manifest as steam, ice, liquid, or plasma. Similarly, the laws governing the universe may not be universally valid under all conditions in all possible universes of a multiverse, yet some set of governing laws always exist. This is the doctrine of Non-absolutism, or Syādvāda.

Furthermore, all comprehension depends on the mental frame of reference of the observer — the principle of *Nayavāda* — directly analogous to the role of the inertial frame of reference in Einstein's Special Theory of Relativity, in which measurements of time, velocity, and acceleration depend on the observer's inertial frame. *Anekāntavāda* subsumes this: every substance may be described as possessing two components — an eternal, unchanging essence (E) and a transient mode $m(t)$, that is a function of time, t : such that the entity $y = E + m(t)$. This variability gives rise to the seven modes of description, or *Saptabhangi Naya*, one of which is *Avaktavyatā* — the inherent indescribability of the ultimate nature of any Real — illustrated by wave–particle duality in quantum mechanics, where the 'true' nature of a photon can never be fully captured by any single description.

1.4 The Importance of Knowing the Truth

What is apparent may not be real and is certainly not all. The physicist-philosopher David Bohm articulated a similar insight through his theory of implicate and explicate orders [Bohm, 1980]: what we observe is only the apparent, unfolded ('explicate') order; beneath it lies a latent, enfolded ('implicate') deeper reality in which separateness dissolves and all things appear as part of an unbroken whole. This insight gave rise to the concept of the holographic nature of the universe, discussed further in Section 6.2.

We construct our lives according to our concept of nature and the universe — but if that concept is superficial, our pursuit is limited to the apparent rather than the essence. It is therefore necessary to understand the truth of our existence, the nature and contents of the universe, and the laws governing all processes therein, so that humans may lead their lives meaningfully and correctly and not in falsehood (*mithyatva*).

2. CURRENT STATUS: PHILOSOPHICAL APPROACHES TO ULTIMATE REALITY

There is no consensus on the nature of the ultimate truth. Incomplete knowledge has given rise to multiple philosophical theories, each appearing to contain elements of truth while remaining partially correct. A comparative overview of the major positions is presented in Table 1.

2.1 Monism, Dualism, and Pluralism

Table 1. The nature of the Reals according to major philosophical and scientific frameworks

Philosophical School / Framework	Nature of the Reals
Modern Science	Matter is the only REAL (materialism). Life and consciousness are emergent properties of matter. Fluctuations in Quantum vacuum ('Shunya') results in all objects in the universe.
Buddhism (Nagarjuna)	Shunya (the Void) is the only Real. All phenomena arise from and return to the Void.
Vedānta (Shankara)	Brahmn is the sole Real; the phenomenal universe is illusion (Maya). The 'SELF' experiencing Brahmn is all there is.
Sāmkhya	Two Reals: Purusha (consciousness) and Prakriti (nature). Their interaction generates the universe's diversity.

Jain Darshan	Six eternal Reals (Shat Dravyas): Jīva (soul), Ajīva (matter/Pudgala), Ākāśh (space), Dharma (medium of motion), Adharma (medium of rest) and Kāl (time). None can be produced from any other, consistent with the Law of Conservation.
Other philosophies	Various combinations of Mind, Chitta, God, Soul, Karma, Moksha, Paramānu, Fohat (Besant and Leadbeater, 1919), and Consciousness as fundamental Reals.

The edifice of modern science rests on a monistic foundation: matter is all there is, and everything — including life and consciousness — arose from matter. Energy itself is another form of matter, as demonstrated by Einstein's formula $E = mc^2$. This leads to the hypothesis of the abiotic origin of life, proposing that living beings arose from chemical synthesis and evolved through environmental stress, as in the Darwinian framework. The Miller–Urey experiment showed that organic compounds — amino acids, fatty acids, and sugars — could be synthesised from simple inorganic precursors when energy is available [Miller and Urey, 1959]. Nevertheless, the synthesis of even the simplest living cell from chemicals, believed to be non-living, has not been achieved, leaving the abiotic hypothesis unproven. The alternative — biotic origin, in which life can only arise from life — requires a second fundamental reality, soul or consciousness, and is consistent with the foundational Jain position that life cannot be produced from matter, nor matter from life.

Vedānta proposes Brahmn as the sole essence; Sāmkhya posits two reals — Purusha and Prakriti — to account for the universe's diversity. Since Vedānta regards all phenomena as illusion (Maya), it need not explain diversity and is satisfied with one Real, the experiencing 'SELF' as part of Param-Brahmn. Jain Darshan, regarding everything in the universe as real and not illusory, proposes six eternal, independent, Dravyas — none of which can be produced from any other — a logical structure consistent with the general principle of Conservation.

Given this diversity of foundational positions, science provides the most reliable touchstone for verifying specific propositions about the nature of the universe.

2.2 The Need for a Scientific Approach to Jain Darshan

If one believes that the complete Truth has already been revealed by the Tirthankaras and documented in the scriptures, why should scientific justification be required? At least three reasons support a scientific approach.

1. The Āgamas were transmitted orally for several centuries before being documented, long after Mahāvīr, based on memory — and some erroneous concepts may have been introduced in the process, based on the then prevailing views.
2. The scriptures were subsequently re-compiled multiple times as some texts were lost; new compilations may have been influenced by local beliefs and later interpretations. The divergence between Digambara and Shvetāmbara traditions on certain basic concepts is evidence of subsequent modification. Importantly, the Dṛshtivāda — said to be the most comprehensive Āgama — is considered irretrievably lost.
3. Scientific investigations have advanced greatly in recent centuries. Where Jain and scientific frameworks share common ground, science can substantiate Jain concepts and provide logical and quantitative framework. More importantly, if omniscient Tirthankaras perceived the real nature of things and the laws governing the universe, some Jain concepts

may extend beyond current scientific knowledge and point directions for further investigation.

The story of Rābī'a al-'Adawiyya, the Sufi philosopher, is instructive here. An army general seeking the ultimate Truth found her searching for a lost needle outside her cottage in the light, even though the needle was lost inside her hut (wherein it was dark). Her lesson: the Truth lies within, accessible only through inner experience, not external logic which can act as the guiding light. Yet the path to the interior passes through the exterior. Science provides the light of logic, and in the modern age of reason — where faith is often conflated with blind belief — one cannot reach the world of inner experience without first traversing the path of reason. Science is not the destination; it is an indispensable path to it.

Scientific reinterpretation can resolve any discrepancies introduced during compilation of the Āgamas. A notable example concerns the shape of Jambu Dvīpa. When Gautam Swami asked Bhagavān Mahāvīr about Jambu Dvīpa, he offered several analogies to illustrate different aspects — shape, motion, aerial view — including its comparison with the wheel of a chariot [Tiloy Paṇṇatī, Shlokas 32–33; Bhandari, 2022a]. Some scholars interpreted this as describing a static, flat-disk shape, whereas Mahāvīr might have been referring to its motion — the rotation of Jambu Dvīpa around its axis as it advances in its orbit, analogous to the rotating Earth as it moves forward in its orbit around the Sun. This misinterpretation has generated a significant conflict with the modern scientific understanding of the Earth's shape and motion. Scientific reappraisal can restore credibility to the Jain texts by distinguishing their core insights from subsequent interpretive errors.

3. SCIENTIFIC VALIDATION OF JAIN CONCEPTS

The scientific approach to interpreting Jain concepts has already yielded substantial dividends, placing several of them on solid empirical foundations. A list of Jain concepts that have been substantially confirmed by modern science is given in Bhandari [2018]. Three particularly striking examples — involving Nobel Prize-winning discoveries — are described below.

3.1 Autophagy and Jain Fasting (Upavāsa)

Autophagy (from the Greek: 'self-eating') is the body's cellular cleansing mechanism. The body contains billions of cells, most of which die and are replaced continuously. Autophagy is the process by which cells create membranes that identify and engulf dead, diseased, or worn-out cellular components, stripping their molecular constituents and reusing them for energy or the synthesis of new proteins. Dr. Yoshinori Ohsumi discovered the genetic and molecular mechanisms arising from autophagy, for which he was awarded the Nobel Prize in Physiology and Medicine in 2016. Crucially, autophagy is significantly enhanced by prolonged fasting. Jain tradition, as many others, have prescribed regular, extended fasting (Upavāsa) as both a physical and spiritual discipline for millennia. Emerging research indicates that controlled fasting can also inhibit tumour growth and mitigate certain undesirable growths, validating the Jain emphasis on fasting as a health-promoting practice.

3.2 Circadian Rhythm and Chāuviḥar

Life on Earth is controlled by the solar rotation cycle. Hall, Rosbash, and Young, were awarded the Nobel Prize in Physiology or Medicine in 2017, for their discovery of the molecular mechanisms of the circadian biological clock — the internal system regulating sleep patterns, feeding behaviour, hormone release, blood pressure, and body temperature. Their research demonstrated that a protein encoded by a specific gene accumulates in cells during the night and degrades during the day, providing a self-sustaining cellular clock synchronised to the solar diurnal

cycle. The Jain dietary practice of Chāuviḥar — eating only during daylight hours and abstaining after sunset — is a direct practical embodiment of circadian rhythm. This practice, now gaining wide recognition under the popular term 'intermittent fasting', is being adopted globally for its documented health benefits, without general awareness of its Jain origins.

3.3 Bose–Einstein Statistics and Apratighāti nature of Paramanus

One of the most fundamental insights of modern physics concerns the collective behaviour of force-carrying particles (bosons): any number of bosons can simultaneously occupy the same quantum state without interference. This statistical behaviour was mathematically formulated by Satyendra Nath Bose and extended by Einstein in 1924–25. All four known fundamental force carriers — gravitons (gravity), photons (electromagnetism), gluons (strong nuclear force), and W/Z bosons (weak nuclear force) — follow Bose–Einstein statistics. The Jain description of Paramānu as Apratighāti — non-impeding, capable of co-existing in the same space without interference — anticipates precisely this property.

3.4 Dark Matter and the Jain Classification of Matter

Several additional Jain concepts about Dvi-Sparshiya (2-Touch) and Chatur-Sparshiya (4-Touch) Skandhas may be considered analogous to dark energy and dark matter respectively — recently established in physics as the dominant constituents of matter in the universe [Bhandari, 2024]. These correspondences, and the role of 4-Touch Pudgalas in psychological processes, are discussed in detail in Section 6.4.

4.1 The Evolution of the Universe

Current scientific consensus is in favour of a Big Bang origin of the universe approximately 13.8 billion years ago, supported by observations of the cosmic microwave background radiation (at $\sim 2.7^0$ K), the redshift of receding galaxies, and related evidence. However, science cannot describe conditions preceding the Big Bang. Cyclic, oscillatory, and multiverse models are actively debated. Most philosophical traditions advocate a steady-state universe grounded in Law of conservation, in which nothing can be created or destroyed, but can only change its form. The most productive convergence would be a steady-state universe with cyclic, repeating Big Bang episodes, consistent with Penrose's Conformal Cyclic Cosmology [Penrose, 2006].

The second law of thermodynamics predicts the universe is progressing toward increasing entropy — a state of equilibrium, in which all energy is uniformly distributed and all differentials vanish. Yet biological systems display the opposite trajectory: the fossil record on Earth shows that the order and complexity of biological systems has been increasing over geological time, i.e. their entropy is decreasing locally. This is explained by the fact that biological systems reduce their local entropy at the cost of a much greater increase in environmental entropy, with which they are in continuous energetic exchange. Prigogine, awarded the Nobel Prize in Chemistry in 1977, further demonstrated that order and harmony can spontaneously emerge from chaotic, far-from-equilibrium systems [Prigogine and Stengers, 1984]. The universe that originated from the Big Bang exhibits a trend toward increasing complexity and harmony — planets forming around stars, unicellular life evolving into complex multicellular organisms, culminating (on Earth at least) in the highly ordered human neural system. The fundamental question — whether the universe is moving from chaos to order, or from order toward equilibrium — remains open and is not resolvable by argument alone, but by continued observation. The most amazing aspects of the universe is that all the fundamental constants, like Gravitational constant (which defines the structure of the universe by its space-time curvature), fine structure constant (which holds the atoms and stars together), Planck's constant (which defines the quantum nature of the universe), velocity of light (which defines the relativistic nature of space and time) etc. are fine tuned to a

high degree of precision. If these constants were only slightly different, the universe and life would not exist. Spiritualists invoke soul or consciousness for creating increasingly ordered universe and finely tuned constants and this has given rise to the 'anthropic principle', besides the possibility of multiverses, our universe being only one of such possibilities, where conditions are right so that we can exist.

4.2 The Observation of One-ness in Nature

Whether one examines a single biological cell, the solar system, or a galaxy, a set of recurring phenomena characterise processes at every scale, pointing toward a deep unity underlying all components of nature (Fig. 1). Consider a single cell which synthesises thousands of proteins every second. Its components — nucleus, mitochondria, cytoplasm, centrosome, membrane — all work in deep coherence: each component's activity is synchronised with every other, not in a random manner but in coordinated, sequential steps. Every component is interdependent: what happens to one is instantly known to all. This coherence operates spontaneously, without external prompting, with cyclical self-regulation and remarkable self-correction capacity.



Fig.1: Phenomena governing universe and life at all scales, supporting One-ness and intimate connectedness of everything, leading to the concept of Gaia or *Parasparopagraho Jivānām-ajivānām*.

This cellular one-ness extends upward through tissues, organs, and the whole organism, and further into ecosystems and the cosmos. Alain Aspect's landmark 1982 experiment [Aspect, Grangier, and Roger, 1982] demonstrated quantum entanglement between photon pairs produced in any reaction: once paired, two photons remain correlated regardless of the distance separating them — even while a signal between them cannot communicate instantly because of the finite speed of light. This tendency toward coherent order across all scales — may be understood as evidence of a unifying consciousness or soul-principle. Without such a unifying factor, no mechanism is apparent by which such deep coherence could arise.

4.3 The Gaia Hypothesis and Parasparopagraho Jivānām-Ajivānām

The British scientist James Lovelock proposed the Gaia hypothesis [Lovelock, 1988], which holds that the Earth and its biological systems constitute a single macro-organism characterised by coherence, synchronicity, spontaneity, and self-regulation — all the properties of one-ness described above. Lynn Margulis, through development of the endosymbiotic theory of eukaryotic cell evolution, showed that the three fundamental organelles of the eukaryotic cell — mitochondria, plastids, and flagellar bodies — were once independent prokaryotic cells that now live symbiotically within a host cell. This progressive symbiosis is a biological model of the Jain

concept that the entire universe functions as a single organ in which everything is dependent on everything else.

This concept is precisely what the Jain aphorism '*Parasparopagraho Jīvānām*' articulates. The modern understanding of all physical objects in the universe being multiply-connected has led us to extend this dictum to Ajīva as well, reformulating it as *Parasparopagraho Jīvānām-Ajīvānām* [Bhandari, 2025].

5. JAIN DARSHAN AND MODERN SCIENCE: AGREEMENTS AND DIVERGENCES

Having reviewed some general features of natural processes, we now compare specific laws and doctrines. Many laws established by scientific inquiry during the past few centuries find close parallels in Jain philosophy, albeit with different terminology. A key difference is that the laws of physics are applicable only to the material domain, whereas the corresponding Jain laws apply equally to living beings (Jīvas) and to matter (Ajīvas). Table 2 summarises the principal correspondence.

Table 2. Principal correspondence between modern scientific laws and Jain philosophical laws

Modern Science (Physical World)	Jain Darshan (Living and Non-Living)
Causality: cause–effect relation	Karmavād: every action has a corresponding consequence and nothing can happen without an underlying cause.
Law of Conservation	Eternal, indestructible nature of the Six Dravyas (Reals).
Complementarity	Anekāntavād: every entity possesses infinite attributes; no single description is complete.
Determinism	<i>Krambaddha Paryāy</i> : the sequential unfolding of modes is pre-determined by the nature of the substance.
Quantum Entanglement	<i>Parasparopagraho Jīvānām</i> : all living beings are mutually entangled and interdependent.

Beyond these laws, certain doctrines unique to Jain Darshan have their conceptual counterparts in modern physics. These are compared in Table 3.

Table 3. Doctrinal parallels between modern science and Jain philosophy

Modern Science	Jain Darshan
Indescribability in quantum domain (wave–particle duality)	Avaktavyatā — the seventh mode of Saptabhangi: the true nature of a Real can never be fully described
Limits of knowledge (Gödel's Incompleteness Theorems)	Syādvād —no proposition is unconditionally true

Inertial frame of reference (Special Theory of Relativity)	Nayavād —all perceptions depend on instantaneous mental frame of reference and is dependent on context
Planck length and Planck time (quantum of space and time)	Quantised space and time units: Pradesha (space unit) and Kālānu (time unit)
Bose–Einstein statistics (bosons can co-occupy the same quantum state)	Apratighāti nature of Paramānu — the ultimate constituents of matter are non-interfering and can co-exist in the same space

In addition to these conceptual parallels, Jain Āgamas contain specific observations about natural phenomena — time cycles, planetary rings, microscopic life, and cosmological structures — that have been subsequently confirmed by modern scientific investigation. For example, the time spans of the fifth and sixth Ārās of the Jain Kālachakra (21,000 and 42,000 years respectively) agree with the periodicities of temperature cycles recorded in oxygen isotopic ratios from deep-sea sediment cores [Bhandari, 2017]. The existence of Valays (annular rings) around planets, mentioned in Tiloy Paṇṇatī, is confirmed by satellite observations. Krishnarājī and Tamaskāya, described by Ācārya Vijay Nandighosh Sūriji (2010), may correspond to Black Holes and dark (Bok) globules respectively. The presence of life in plants, accepted by western science only after J. C. Bose's early twentieth-century experiments, and the existence of microscopic life forms, recognised only after the invention of the microscope, were described in Jain scriptures long before these discoveries in modern times.

Equally important are the areas of genuine divergence: biological evolution, Earth's geography, and certain aspects of cosmology. Cosmological and geographical divergences have been addressed in the Loka issue of the Proceedings of Jain Academy of Scholars [2022]; the question of biological evolution is addressed in Section 6.6 below.

6. CURRENT ISSUES IN JAIN DARSHAN

We have seen above that Jain philosophy is notably scientific in its foundational orientation, and the common ground between modern science and Jain Darshan is substantial. Yet this is only one dimension of a vast philosophical and ethical system. Over the centuries, Jain followers have progressively shifted their emphasis toward Ahimsa, dietary practices, and lifestyle regulation — dimensions related to conduct (*charitra*) — rather than concentrate on Jñāna, which is the cardinal epistemological foundation of Jain Darshan. A correct perspective must integrate both Jain wisdom and modern science.

Despite its scientific rationality and its potential to address many of the world's most pressing challenges, Jainism is not growing in influence; its active following is contracting. One significant reason is that Jain philosophy is predominantly discussed in isolation within small Jain communities, without engagement with the wider intellectual world. The following sections discuss several modern developments and demonstrate how Jainism may be productively integrated with them — so that its insights can be appreciated more broadly and its life-style framework adopted more widely to resolve some of the modern pressing problems, like environmental degradation, intolerance and violence, leading to harmony, necessary for development of personal faculties.

7. INTEGRATION OF JAIN PHILOSOPHY WITH MODERN THOUGHT

Many modern philosophers, scientists, and thinkers have independently developed concepts that parallel ideas already present in Jain scriptures. This section identifies and discusses the most significant convergences, with the aim of showing that Jainism need not — and should not — be discussed and practiced in isolation.

7.1 Implicate and Explicate Orders: David Bohm

A central theme of Jain philosophy is that what is perceptible is not all there is — for every manifested form there is an underlying unmanifested layer. The Audārika Sharīra (gross physical body) is the manifested form; underlying it are the Tejas and Karman bodies, which are causal but invisible. This layered, unmanifested structure is lucidly articulated in the theoretical physics of David Bohm.

Bohm, influenced by his encounter with the Indian philosopher J. Krishnamurti in 1950, proposed in his book 'Wholeness and the Implicate Order [1980]', a theory of explicate and implicate orders. What one observes is only the apparent, unfolded ('explicate') order; beneath it lies an enfolded, latent ('implicate') deeper reality in which separateness vanishes and all things appear as parts of an unbroken whole [Bohm, 1980]. Our three-dimensional world is a projection of a higher-dimensional reality. If the universe is genuinely non-local at the sub-quantum level, then it is meaningless to speak of any group of sub-atomic particles without reference to all other particles in the universe — a proposition consistent with Jain Anekāntavāda.

Bohm further proposed that reality is dynamic and fluid, introducing the term 'holomovement' to describe this nature. The concept was extended to a 'super-hologram' in which past, present, and future are enfolded and coexist simultaneously — opening the theoretical possibility of retrieving the forgotten past of the universe from this super-hologram.

7.2 The Holographic Universe and Karl Pribram

Working independently, Stanford neurophysiologist Karl Pribram proposed that the brain functions as a holographic system, operating on the basis of frequencies rather than simple perceptual data. Physical reality, at the perceptual level, may be understood as a frequency domain, with the brain sorting and translating these frequencies into the conventional objects of experience [Pribram, in Bohm, 1980]. Even at the cellular level, animals and humans are sensitive to a broader range of frequencies than those normally translated into conscious perception.

The concept of the super-hologram — in which everything depends on, and affects, everything else — is the logical scientific elaboration of the Jain concept of Parasparopagraho Jīvānām. The analogy of a magnet usefully illustrates this: if a magnet is broken into pieces, each piece is itself a complete magnet, with both north and south poles. Every part contains the whole — a property characteristic of holograms and of the Jain concept of the infinite souls, each complete in itself and identical to each other [Pokharna, 2022].

7.3 Unique Theories of Jain Darshan

Based on the Tirthankaras' direct, *atindriya* perception of natural phenomena, Jain philosophy has formulated several theories of extraordinary scope and detail, listed in Table 4. Such systematic, unified treatment of physical, biological, psychological, and cosmological phenomena within a single philosophical framework is unique in the world's intellectual heritage.

Table 4. Unique theories of Jain Darshan and their scope

No.	Theory / Doctrine	Core Content
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1	Theory of Jñāna (Knowledge)	Encompasses Mati Jñāna (sensory), Shrut Jñāna (scriptural), Avadhi Jñāna (clairvoyance), Manaḥ Paryāya Jñāna (telepathy), and Kevala Jñāna (omniscience); also includes Bhed Vijñāna (theory of distinction).
2	Ātmavād and Theory of Consciousness	The individual soul is immortal, omniscient in its pure state, and evolves through fourteen stages (<i>Guṇasthānas</i>) of progressive karmic purification, culminating in omniscience (<i>Kevala Jñāna</i>). Posits infinite powers in the soul and leads to equality of all species.
3	Theory of Matter (Pudgala)	Matter classified into three fundamental types — 2-Touch (Bosonic, analogous to dark energy), 4-Touch (non-interactive, analogous to dark matter), progressively to 8-Touch (luminous, electromagnetically interactive matter), as more properties .
4	Theory of Varganā	A systematic theory of association and dissociation of Paramānus into aggregates (<i>Skandhas</i>), some being functional (<i>varganas</i>), useful in psychic phenomena (Mano Varganā) and speech (Bhāshā Varganā) while others resulting in building physical structures.
5	Theory of Karma	A rigorous law of causality: every action (mental, verbal, physical) attracts karmic particles that bind to the soul, governing its future embodiment and experience. No effect arises without a cause; no action is without consequence. Posits responsibility of one's future in the thoughts and acts of the self.
6	Theory of Purusharth	Gives utmost importance to personal efforts and posits responsibility of one's future in the self
7	Theory of Life, Death and Rebirth	The soul transmigrates through four realms (<i>gatis</i>): human, animal, celestial (<i>Deva</i>), and infernal (<i>Nārakī</i>), until karmic bondage is entirely exhausted and Moksha (liberation) is attained.
8	Anantadharmitā, Krambaddhaparyay and Anekāntavād	Every substance possesses infinite attributes; the vast diversity of physical objects and living species in the universe arises from this property of infinite-mode-ness, which change in a predetermined manner
9	Nayavād — Contextual Perception	Every statement is subjective and valid only within its specific context (<i>naya</i>). Knowledge is inherently partial and perspectival; no single statement captures the complete truth of any entity.
10	Syādvād	Non-Absolutism: Every concept is conditional, not valid under all conditions, at all times
11	Jain Cosmology	Eternal and finite, structured Lokā (universe) with well defined contents, which include the six Dravyas, time cycles (Kālachakra), immersed in the infinite Alokākāsha
12	Theories of personal development	Procedures for improving memory (<i>Avadhān</i>); psychic powers etc by cleansing the body, mind and soul based on dietary, meditation and other essential practices

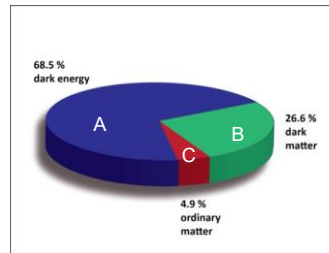
13	Jain Lifestyle	Based on <i>Ahimsa</i> (non-violence), <i>Aparigraha</i> (non-accumulation), <i>Samyak Jñāna</i> and <i>Anekāntavād</i> (Non-Absolutism), and minimum interference with nature — a comprehensive framework for sustainable and harmonious living.
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7.4 Jain Theory of Matter and its Correspondence with the Standard Model of Particle Physics

The Standard Model of Particle Physics (SMPP) identifies quark as the smallest known constituent of matter. Jain philosophy describes Paramānu as the most fundamental unit of Pudgala (matter), with a significant conceptual gap between Paramānu and quark yet to be bridged. Nevertheless, a systematic comparison — the Jain Model of Particle Physics (JMPP) — has been developed [Bhandari, 2024], which reveals importance of some aggregates, termed as vargas in psychic and spiritual phenomena, besides material phenomena.

Standard and Jain model of Particle Physics

Dark energy/Dark matter/Luminous matter



According to Jainism: Pudgal has three forms: 2- dviparshiya (paramanus, non- interactive, except between themselves), 4- chatursparshiya (mostly non-interactive except in specific ways, special properties, chargeless, Superconducting, frictionless, massless, with soul?), and 8- sparshiya (highly interactive, with charge, resistance, friction, viscosity, mass) our visible universe)
in decreasing order

Fig.2. Three types of matter identified by modern physics (Dark energy, Dark matter and luminous matter) and in Jain theory of pudgal (2Touch, 4Touch and 8Touch matter).

Jain Darshan classifies all material things in the universe into six grades defined by combinations of *Badar* (coarse) and *Sukshma* (subtle) qualities: from *Badar-Badar* (the manifest, explicate order) progressively through to *Sukshma-Sukshma* (subtle-subtle, visible only to the omniscient). In this classification, 'Sukshma' refers to both, size and to interaction coefficient — some Sukshma matter being absolutely non-interactive with luminous matter.

All Pudgala possesses qualities characterised by *Varṇa* (optical properties such as shape, form, size, and colour (five arbitrary major types, with infinite shades in between) etc., *Rasa* (taste; five major types), *Gandha* (smell; two major types), and *Sparsha* (touch; eight distinct types [Kachhara, 2011; 2014]). The most physically significant property is *Sparsha* (Touch), which, in modern terms, corresponds to the interaction coefficient of matter [Kachhara and Jain, 2017]. Based on modern physics, matter in the universe is classified into three categories — Dark Energy (~68.5%), Dark Matter (~26.6%), and Luminous Matter (~4.9%) with progressively increasing interaction coefficients and emerging properties. This tripartite classification corresponds to the Jain

categories of 2-Touch, 4-Touch, and 8-Touch matter respectively [Bhandari, 2024] and nothing much is described about intermediate touch matters:

Dark Energy (~68.5%) corresponds to 2-Touch (Dvi-Sparshiya) matter, which is Bosonic in character — consistent with the dominance of dark energy as a non-attractive, space-permeating field. Dark Matter (~26.6%) corresponds to 4-Touch (Chatur-Sparshiya) matter, which is non-interactive or only weakly interactive — consistent with emerging gravitational interaction without electromagnetic interaction. The Luminous Matter (~4.9%) corresponds to 8-Touch (Ashta-Sparshiya) matter, which is highly interactive — consistent with the electromagnetic and nuclear interactions of baryonic matter.

Among the 4-Touch Pudgalas, two classes are of particular significance for understanding psychological phenomena not covered by the SMPP. The first class consists of Karmānus — the particles forming the Karman Sharīra (karmic body), which are the carriers of karma and which, being massless, frictionless, and absolutely non-interactive, can travel with the soul to the edge of the universe in a few *Samay* (smallest unit of time, according to Jain classification). This property is essential if rebirth is determined by karma, which must remain attached to the soul, even upon death. The second class forms the Tejas Sharīra (radiant body). These properties of 4-Touch Pudgalas have been discussed in detail in Bhandari et al. [2024] and in the context of reincarnation studies in Anil Kumar Jain [2025].

7.5 Theory of Morphogenesis and Karmavāda

The theory of morphic causation proposed by Rupert Sheldrake [1981] offers a significant parallel to the Jain theory of Karma. Sheldrake's hypothesis holds that the universe is permeated by morphic fields — fields of form and habit — and that the behaviour of living organisms is partly determined by how effectively their brain can access and resonate with these fields [Sheldrake, 1981]. The form and natural intelligence of animals is shaped by these morphogenetic fields across space and time, governing both the structure of living organisms and their behaviour.

In Jain terms, morphic fields correspond to karmic fields (Karma Varganā fields), and the Karma theory extends this further: not only behaviour, but the very form of the body at birth — whether human, animal, celestial, or infernal (*Gati*) — is governed by accumulated karmas. Sheldrake's morphic resonance phenomenon, by which improvements in one population of a species appear in others with no physical contact, parallels the Jain concept of the universe as a collectively interconnected field in which consciousness states are not strictly localised.

The genetic theory, which attributes the development of the organism to DNA acting as a blueprint, faces the question of how a cell 'reads' the DNA, to know whether to become a cardiac cell or a neural cell. Morphogenesis — the organism's capacity to regulate and self-correct its developmental programme — provides an answer that genetic information alone cannot. An amoeba is divided into two complete amoebae, not two partial ones; identical twins are two complete humans, not two halves. This is reminiscent of the famous verse of the Ishāvāsyopanishad:

ॐ पूर्णमदः पूर्णमिदं पूर्णात्पूर्णमुदच्यते ।
पूर्णस्य पूर्णमादाय पूर्णमेवावशिष्यते ॥

Om! That is full; this is full. Fullness comes out of fullness; yet what remains is also fullness.

This is only possible if the fundamental entities are infinite. The verse may also be interpreted as: 'What is visible is the whole; what is invisible is also the whole. Out of the whole emerges the

whole; yet the whole, being infinite, remains whole.' This is illustrated by the famous carving in the Ranakpur Temple depicting the infinite, complete in itself in all respects, nature of the universe and soul (Fig. 3). This defies the law of conservation, applicable to physical domain, and is only possible in the biological domain.



Fig. 3. Carving in Ranakpur Temple depicting infinite nature of the universe and soul, which remains whole even as it divides in parts.

7.5 The Theory of Consciousness

Consciousness (Chetanā) is regarded in Jain philosophy as the defining manifestation of Ātmā (soul) and the cardinal distinction between living (Jīva) and non-living (Ajīva) entities. It is the ultimate cause of all life phenomena. In Hinduism, consciousness is associated with Brahmn and is considered the cause of everything — material and non-material. Three domains coexist everywhere in the universe: material (*Bhūtākāsha*), psychological (*Manokāsha*), and consciousness (*Chidākāsha*) fields. The laws governing these three domains are distinct: material fields are constrained by the theories of physics; the Manokāsha is unconstrained in speed, making panpsychism possible; and the consciousness field (Chidākāsha) maintains instantaneous connectivity everywhere, making omniscience possible.

Two fundamentally different concepts of consciousness compete in the modern intellectual debate. The Jain view holds that consciousness is the mode of activity (*Adhyavasāya*) of the soul: it cannot be generated by material entities. The opposing view holds that consciousness is an emergent property of the brain — an epiphenomenon that arises spontaneously when the neural network attains a certain level of complexity, as Huxley suggested.

7.5.1 The Binding Problem and the Hard Problem of Consciousness

David Chalmers drew a now-famous distinction between 'easy' and 'hard' problems of consciousness [Chalmers, 1995; 2010]. The 'easy problem', however technically demanding — concern the cognitive and neural processes underlying specific mental functions: memory, language, attention, sensory integration. The 'binding problem' is one of these: how does the brain identify inputs from different sensory modalities (visual, olfactory, auditory) into a unified, simultaneous, integrated, unique object? The 'hard problem', by contrast, is why any physical process gives rise to subjective experience at all — the question of qualia. The information-processing architecture of the brain, howsoever complex, cannot explain awareness, experience or the experiencer.

The mind–body problem may be approached through three frameworks: Functionalism (the body functions by virtue of consciousness; mind possesses only information), Materialism (all neural activity has physical causes; consciousness is produced by the brain), and Dualism (body and mind are distinct entities). Jain philosophy provides a particularly elegant framework: mind consists of two components — the physical mind (*Dravya Manah*) and the emotional-intentional mind (*Bhāva Manah*). The *Bhāva Manah* is the interface between the soul and the *Dravya Manah* and is governed by *Chetanā*. By recognising the informational aspect of consciousness, Functionalism achieves what neither pure Materialism nor simple Dualism can. The detailed treatment by Kachhara and Sanchetee [Kachhara and Sanchetee, 2024] addresses these problems systematically. Brian Josephson (Nobel Laureate, 1973) has proposed the Quantum Mind hypothesis, in which quantum processes within the brain, exhibiting coherent correlated behaviour among particles, may be relevant to understanding consciousness [Josephson, YouTube].

7.5.2 Premonition and the Supplementary Motor Area

The Supplementary Motor Area (SMA) of the human brain (Fig. 4) presents one of the most intriguing intersections between neuroscience and the Jain theory of *Bhāva Manah*. Neurophysiologists Robert Porter and Brinkman found that microelectrodes surgically implanted in the SMA of a monkey became active approximately 100 milliseconds before the monkey made a voluntary movement — and that SMA cells began to fire well before the motor cortex or any other brain area was activated. This led to the concept of the 'Readiness Potential' (RP): a gradual increase in negative electrical potential across the brain that initiates approximately one second before a simple voluntary movement, with the greatest amplitude in the SMA.

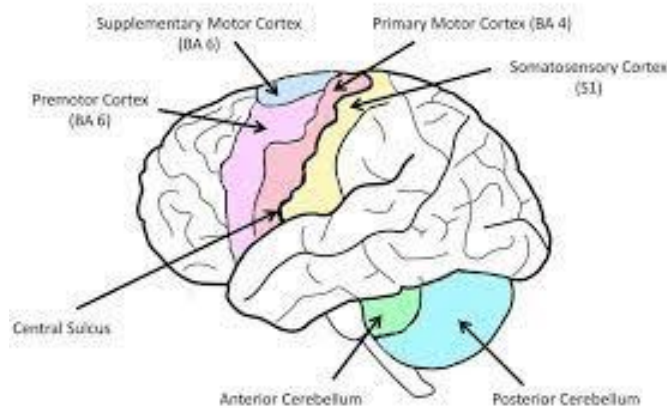


Fig.4. Sketch of the brain showing different areas. Supplementray motor cortex, responsible for premonition is shown (source: Wikipedia).

The experiments of Benjamin Libet at the University of California [Libet et al., 1983; Libet, 1985] extended this finding. Libet showed that the conscious experience of the intention to move arises only approximately 200 milliseconds before the act — yet the readiness potential (implying neural preparation for the movement) began approximately 550 milliseconds before the act. The brain was thus initiating the volitional process unconsciously at least 350 milliseconds before the person was consciously aware of the wish to act [Libet and Kosslyn, 2005].

7.5.3 *Bhāva Manah*, *Dravya Manah*, and *Bhāshā Varganā*

Jain Darshan holds that the mind is composed of two components: *Dravya Manah* (physical mind) and *Bhāva Manah* (psychological mind). The Libet and SMA experiments provide, in our view,

compelling evidence for the existence of the Bhāva Manah. The SMA region — with its pre-conscious initiation of action — behaves as though a non-physical agent is 'activating the instrument' before the conscious self takes or is aware of any decision. It is conceivable that such a non-physical self also survives the death of the material body, with Bhāva Manah serving as the interface with the soul.

This connects directly to the Jain concept of Bhāshā Varganā [Bhandari, 2015; 2024; Jain Dharmchand, 2024; Kumar P.K., 2023]. According to Jain particle physics, Paramānus combine to form aggregates (Skandhas) and further into functional aggregates termed Varganās. In the sequence of 23 Varganās [see, e.g. Bhandari, 2015; 2024], Mano Varganā — responsible for psychic functions including thought— and Bhāshā Varganā — responsible for oral communication and speech — form early in the sequence, long before the Mahāskandha Varganā responsible for large-scale material structures is formed [Kachhara, 2024]. The entire universe is permeated by all the 23 Varganās, a sequence gradually changing from the subtlest to the coarsest form. In fact, the Jain philosophy claims that the entire Loka is fully packed by all these varganās, and those which are subtle do not dissipate with time or distance.

The hypothesis is that the brain of any living being continuously receives Mano and Bhāshā Varganā from the cosmos filtered by its Jñānavarnīya Karma, and that these trigger the mind and give rise to thoughts — which are then transmitted to the vocal cords. On this account, the vocal cords merely convert the Bhāshā Varganā-derived thoughts into audible sound (audible sound i.e. *Dhvani*); the thoughts themselves are not originally 'ours' but are received from the cosmic field, shaped by our karmic disposition.

Thus, the Bhāshā Varganā is, in a profound sense, a universal language — a *Lingua Cosmica* — understood by all living beings in their own language. This is illustrated by the classical account of Mahāvīr Swami's Samosaran: upon attaining Kevala Jñāna, Mahāvīr did not compose or deliver a speech; rather, a divine sound (*Divya Dhvani*) spontaneously emanated from him and was simultaneously understood by all beings present —Devas, Narakis, animals, birds, and humans with different linguistic background — each in their own language.

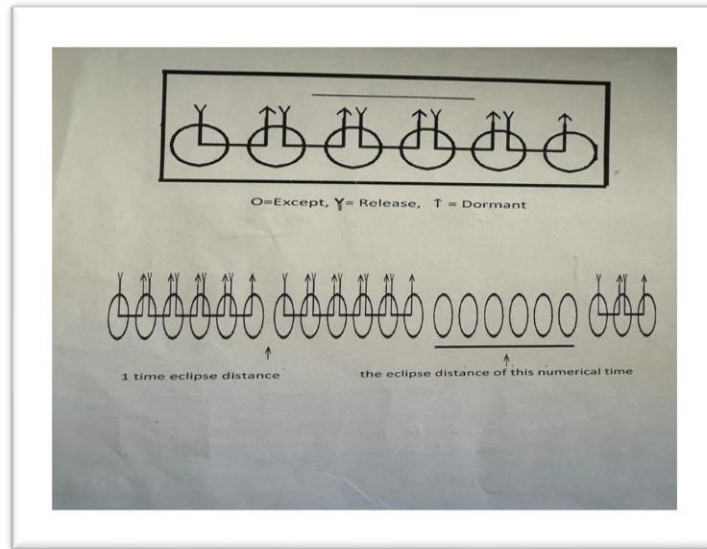


Fig. 5: Sequence of receiving digital signal of *Bhāshā varganā* from the cosmos (down arrow) and converting it into analogue signal of *Dhvani* (audible sound), up arrow which we can comprehend, based on description given in Pannāvana sutra.

From this model, two technical points emerge. First, the brain-to-vocal-cord pathway functions as a transducer that converts 4-Touch Bhāshā Varganā into 8-Touch audible sound. Second, this account is consistent with the Vedic classification of the four types of Dhvani described in the Aitareya Brāhmaṇa: Parā (the most subtle, primordial sound underlying the origin of the cosmos), Pashyanti (the visual, pre-linguistic level, the memory is made of), Madhyamā (the intermediate mental level, a kind of electromagnetic wave), and Vaikhārī (the articulate, audible sound perceptible to the ear). Vaikhārī, composed of 8-Touch, interactive Pudgalas, travels at approximately 343 m/s in air and cannot be transmitted through vacuum. The subtler varieties, composed of non-interacting Pudgalas, have no such limitations of medium or speed, do not dissipate, and possess subtle qualities that make them the appropriate medium for cosmic communication. This is a rich subject for further research. If an instrument can be developed that detects 4-Touch Pudgalas directly — perhaps by modelling the principle by which the brain transduces Bhāshā Varganā into Vaikhārī — it may open an entirely new domain of physical measurement.

7.5.4 The Orch-OR Model of Consciousness

Roger Penrose (Nobel Laureate, Physics, 2020) and Stuart Hameroff, a medical practitioner, have developed the Orchestrated Objective Reduction (Orch-OR) model [Hameroff and Penrose, 1989; Penrose and Hameroff, 2011; Hameroff et al., 2014], in which consciousness is understood as a decision-making process that selects one among the various quantum possibilities. Their model proposes that quantum superpositions in microtubules — nanometre-scale protein structures within neurons — undergo 'orchestrated' objective reduction, collapsing the quantum state to a definite outcome. This is the proposed physical basis of conscious experience.

From the Jain perspective, Hameroff's definition of consciousness as 'decision-making' is significantly narrower than the Jain concept, which holds that consciousness is the defining activity of the soul — encompassing self-awareness, awareness of the universe, and its own interactive nature. Furthermore, according to Jain Darshan, a person is not unconscious during coma or deep sleep; the soul remains alive and therefore conscious, however occluding the expression.

In the author's assessment, the causal relationship proposed by Orch-OR is inverted. It is not quantum mechanics that gives rise to consciousness; rather, it is consciousness — specifically, the free will inherent in the soul — that gives rise to quantum mechanical behaviour at the subatomic level. The probabilistic, quantum character of sub-molecular events, which transitions into deterministic classical behaviour at the macro level, may be understood through the following analogy. Consider a large number of boxes, each with a fixed number of pigeon-holes, the total number of holes equalling the total number of pigeons. Each pigeon has free choice of occupying any hole in any box. Yet at the aggregate level, all boxes end up identically and fully occupied. Individual free will (quantum probability) gives rise to collective determinism (classical behaviour). Consciousness generates quantum indeterminacy; material aggregation produces classical certainty.

Importantly, Max Planck, Erwin Schrödinger, and Brian Josephson, all have considered consciousness not as an emergent property of matter, but as an independent, singular, cosmic, and omnipresent entity — closer to the Jain position.

7.5.5 Collective Consciousness

Although consciousness is fundamentally individual in Jain philosophy, a case for collective consciousness can be made. Individual consciousness fields manifest through waves exhibiting

interference and resonance [Wilbur,1993]. Just as identical pendulum clocks in a room will begin to oscillate synchronously by themselves, only when one is started — due to physical resonance transmitted through the medium— analogous resonance can occur between persons in similar state of consciousnesses. This provides a rational basis for the efficacy of collective meditation, Japa, and community worshipping practices.

William McDougal [1927], in his experiments with rats demonstrated that improvements in task performance appeared in other members of the species without genetic inheritance — suggesting a non-genetic, field-based transmission mechanism. Sheldrake's morphic resonance offers a related explanation. The wave nature of consciousness fields thus plays an important role in collective and cross-generational learning.

7.6 Evolutionary Theories

The two areas of sharp disagreement between Jain philosophy and modern science are (i) certain geographical and orbital aspects of the Earth and (ii) the Darwinian evolution of species. Some discrepancies between Jain and modern astronomy have arisen mainly due to mixing of astrology and religious beliefs with astronomy as was concluded in the Loka issue of the Proceedings of JAS [2022], besides some wrong interpretations (see section 2.2, above) and is a matter of acceptance.

We now discuss the question of biological evolution here. Darwinian evolution is said to be driven by environmental stress, resulting in struggle for existence and the genetic mutation of species evolving through natural selection and survival of the fittest. Jain philosophy, in contrast, proposes that all species exist all the time in the universe, their number depending upon what is physically viable and sustainable and explains the terrestrial fossil sequence (Fig. 6), constrained by the physical and chemical environment, as local, ggradual evolutionof consciousness on the earth, as discussed below.

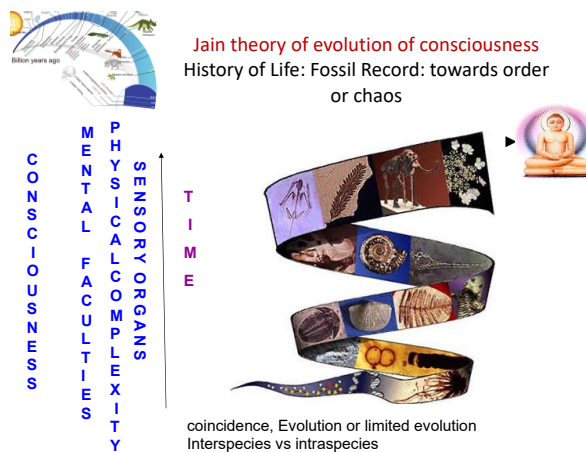


Fig. 6. Darwinian evolution and Jain proposition of gradual evolution of consciousness on Earth.

7.6.1 Revolutions and Extinction Events in Earth's History

Life first appeared on Earth approximately 3.8 billion years ago as unicellular fungi, and has since evolved progressively toward greater complexity, eventually producing the human neural system. Recent studies suggest the Last Universal Common Ancestor (LUCA) may have appeared as early as 4.2 billion years ago, while the Earth's crust was still being formed. This evolutionary journey has not been smooth; it has been punctuated by approximately five major mass-extinction events and four major evolutionary revolutions:

4. Appearance of unicellular life: ~3.5–4.2 billion years ago.
5. Appearance of multicellular species.
6. Transition from immobile (*Sthāvar*) to mobile (*Trasa*) species: ~550 million years ago, with the Precambrian Explosion.
7. Evolution of species with complex neural networks (*Sañjñī Jīva*).

The five major mass-extinction events — the Ordovician-Silurian (~440 Million years ago, Ma), Devonian (~365 Ma), Permian-Triassic (~252 Ma, when ~95% of species were lost), Triassic-Jurassic (~201 Ma), and Cretaceous-Paleogene (~66 Ma, removing over 70% of species, including non-avian dinosaurs) — punctuated this trajectory (Sepkoski., 1996). It is now widely proposed that humanity is precipitating a sixth mass extinction through anthropogenic activity. Two points are noteworthy: extinction is an essential component of evolution, as most species that have ever existed are now extinct; and after every major extinction event, new and more complex species have emerged.

7.7 Jain Theory of Srishtivāda

The Jain position on the origin and persistence of species is distinctive. Srishtivāda proposes that species do not evolve sequentially but that all viable species always exist all the time, somewhere in the universe. Given the 118 known chemical elements and the vast range of their possible combinations (culminating in compounds and minerals), along with the diversity of environmental conditions (chemical composition, gravity, temperature, pressure) across the universe, a maximum of 84 lakh (8.4 million) self-sustaining species are viable — each fulfilling the requirements for life: a suitable Yoni (structure), a mechanism for energy uptake (Prāṇa), reproduction, and at least the sense of touch, for survival.

Jain Srishtivāda does not subscribe to Darwinian inter-species evolution — the transformation of one species into another — but accommodates intra-species evolution (variation within a species) [Bhandari et al., 2022]. The gradual appearance of new species on Earth is attributed to changing environmental chemistry: as the Earth's environment evolved, it became congenial to species that had always existed somewhere in the universe, enabling them to manifest here. This is consistent with the Gaia hypothesis: the environment and the species co-evolve. Evolution, in the Jain sense, is the evolution of consciousness — driven by the Jīvatva Shakti of the Ātmā, manifested through Puruṣārtha (self-effort), and not by physical environmental stress alone.

8. CONCLUSIONS

This paper has demonstrated that Jain philosophy rests on conceptual foundations that are consistent with — and in many cases anticipates the principles on which modern science has independently arrived. The parallels span fundamental physics (the three types of matter and their correspondence with dark energy, dark matter, and luminous matter; Bose–Einstein statistics and Apratighāti Paramānu; quantum entanglement and Parasparopagraho Jīvānām), biology (fasting and autophagy; circadian rhythm and Chāuvihar; morphogenesis and Karmavāda), cosmology (cyclic universe; time cycles; planetary ring structures), and the science of consciousness (Bhāva Manah and the SMA's pre-conscious activation; Bhāshā Varganā as a model for Lingua Cosmica; Orch-OR and the limitations of materialism).

Several important questions emerge from this survey and require further research: the correct interpretation of Jain geographical and cosmological descriptions; the detailed mapping of the 23 Varganās onto the Standard Model and beyond; the development of instruments sensitive to 4-Touch Pudgalas; the relationship between consciousness, quantum mechanics, and free will; and

the theory of Srishtivāda and its relation to the fossil record. These are priority areas of research according to the Jain Academy of Scholars.

Most importantly, this paper argues that Jain philosophy should not be studied or practised in isolation within the Jain community but should be brought into active, rigorous dialogue with modern science and other philosophical traditions. Such integration is not a compromise of Jain principles; it is the fulfilment of the Jain commitment to Samyak Jñāna — correct, complete, and fearlessly reasoned understanding of the universe.

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