

Beyond the Visible Cosmos: A Heuristic Interdisciplinary Framework for Consciousness, Cosmology, and Cosmic Evolution

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ABSTRACT

Modern cosmology has established that ordinary baryonic matter constitutes only a small fraction of the cosmic mass–energy budget, while dark matter and dark energy account for the dominant remainder. Although their gravitational and cosmological effects are strongly supported by observation, their underlying physical nature remains incompletely understood. At the same time, consciousness remains an unresolved interdisciplinary problem: neuroscience has established extensive relationships between brain activity and conscious experience, but philosophical questions concerning the subjective character of experience, the explanatory gap, and the possibility of consciousness as a fundamental feature of reality remain open.

This article develops a **heuristic interdisciplinary framework** connecting selected questions in cosmology, consciousness studies, theoretical physics, meditation research, and Vedantic philosophy. The framework does not claim that consciousness, dark energy, dark matter, black holes, additional dimensions, or Brahman constitute a single scientifically established physical system. Instead, it distinguishes among empirical findings, theoretical possibilities, philosophical interpretations, and authorial hypotheses. A central construct introduced in the article is **Unit Mind**, defined as an individually bounded organization of first-person conscious experience. **Cosmic Consciousness** is treated as a metaphysical hypothesis concerning the possibility that consciousness may have a more fundamental status than that of an exclusively biological phenomenon. The relationship between Unit Mind and Cosmic Consciousness is therefore presented as a philosophical proposition rather than a scientifically established field theory.

The article also examines black holes, baby-universe hypotheses, dark energy, cosmic expansion, additional dimensions, Bose–Einstein condensation, meditation, and selected Vedantic concepts including Brahman, Saguna Brahman, Prakriti, and Purusha. Particular attention is given to the analogy between black holes and Saguna Brahman. This comparison is explicitly restricted to the philosophical themes of boundary, manifestation, transition, and transformation; no physical identity between the concepts is proposed.

The article further develops a seven-level conceptual model extending from observable physical reality through increasingly abstract descriptions involving consciousness and ultimate reality. These levels are not proposed as seven experimentally established physical dimensions. Rather, they constitute a metaphysical and phenomenological heuristic intended to generate research questions concerning the relationship between physical description, subjective experience, information, and philosophical conceptions of reality.

Meditation is considered not as an instrument for detecting additional physical dimensions, but as a potentially valuable phenomenological methodology that can be combined with first-person reports, behavioral measures, neurophysiological observations, and computational analysis. The article also explicitly considers the **problem of other minds**, the **hard problem of consciousness**, the **explanatory gap**, and the problem of **mental causation**, emphasizing that first-person access cannot by itself establish claims about the objective or cosmic status of consciousness. The central contribution of the article is therefore methodological. It proposes that cosmology, consciousness studies, phenomenology, neuroscience, information theory, and comparative philosophy can enter into disciplined dialogue while maintaining their distinct epistemic standards. The resulting framework is intended not as a completed theory of reality but as a **heuristic research program** from

which empirically testable, mathematically formalizable, and philosophically examinable questions may be developed.

Keywords: consciousness; Unit Mind; Cosmic Consciousness; hard problem; explanatory gap; mental causation; phenomenology; meditation; black holes; dark energy; cosmology; multiverse; Saguna Brahman; Vedanta; multidimensionality; cosmic evolution.

1. INTRODUCTION

Humanity's understanding of the universe has undergone a remarkable transformation during the last century. Classical physics provided a mechanistic description of matter and motion; relativity transformed our understanding of space and time; quantum theory introduced a fundamentally probabilistic description of microscopic phenomena; and modern cosmology has reconstructed a history of the universe extending back approximately 13.8 billion years.

Nevertheless, the success of physical science does not necessarily imply that every dimension of reality has already been explained. Cosmology describes the large-scale structure, evolution, and measurable contents of the universe with extraordinary precision, while neuroscience increasingly explains correlations between brain activity and conscious experience. Yet one fundamental question remains unresolved: why should particular physical processes be accompanied by subjective experience at all?

This is the philosophical problem commonly known as the **hard problem of consciousness**. David Chalmers distinguished the problem of explaining functions and behaviors from the deeper problem of explaining why those functions are accompanied by phenomenal experience—why there is "something it is like" to undergo an experience (Chalmers, 1995, 1996). The question becomes especially significant when viewed from a cosmological perspective. Physical science describes matter, energy, space-time, fields, particles, and their interactions. But conscious experience is encountered directly only from the first-person perspective. We therefore face an epistemological asymmetry: physical phenomena are investigated primarily through publicly accessible third-person measurements, whereas consciousness is initially known through subjective experience.

This article explores whether these two domains can be brought into a common conceptual framework without claiming that they have already been scientifically unified. The paper is therefore intentionally interdisciplinary. It does not propose that consciousness has been demonstrated to be a physical force, that dark energy is consciousness, that black holes contain other universes, or that meditation enables direct observation of additional physical dimensions. Such claims would exceed current scientific evidence. Instead, the paper asks a more modest but potentially important question:

Could consciousness be treated as a fundamental philosophical problem whose ultimate explanation may require concepts extending beyond the presently measurable physical description of the universe?

To explore this question, the article introduces the concepts of **Unit Mind** and **Cosmic Consciousness** as philosophical hypotheses and examines their possible relationships to cosmological ideas and traditional Vedantic concepts.

2. Epistemological Position of the Article

A major difficulty in interdisciplinary discussions of consciousness and cosmology is the tendency to move too rapidly from metaphor to scientific assertion. To avoid this problem, the present article distinguishes four levels of discourse.

Established scientific knowledge

This category includes findings supported by observation, measurement, mathematical modeling, and reproducible scientific investigation. Examples include:

- cosmic expansion;
- general relativity;
- quantum mechanics;
- the existence of black holes;
- the observed effects attributed to dark matter;
- accelerated cosmic expansion;
- Correlations between brain activity and conscious states.

Theoretical possibilities

These are scientifically motivated possibilities that remain unconfirmed. Examples include:

- certain models of quantum gravity;
- some multiverse scenarios;
- hypothetical additional dimensions;
- Proposals concerning black-hole information and quantum gravity.

Philosophical interpretations

These involve conceptual interpretations that cannot presently be established solely through physical measurement. Examples include:

- panpsychism;
- cosmopsychism;
- Russellian monism;
- idealism;
- The possibility that consciousness is fundamental rather than emergent.

Authorial hypotheses

The concepts of **Unit Mind** and the proposed relationship between individual consciousness and a hypothetical Cosmic Consciousness belong primarily to this category. This distinction is essential. The purpose of the article is not to transform metaphysical propositions into scientific facts but to construct a framework in which such propositions can be examined systematically.

3. The Cosmological Background: What Does Science Describe?

Contemporary cosmology provides a remarkably successful account of the observable universe. Measurements of the cosmic microwave background, large-scale structure, supernovae and other cosmological observations support the broad framework of the Λ CDM model. The commonly cited approximate composition is:

- **Ordinary matter:** ~4.9%;
- **Dark matter:** ~26.8%;

- **Dark energy:** ~68.3%.

These values should not be interpreted as meaning that science has identified three conventional substances occupying the universe. Dark matter is inferred primarily through its gravitational effects, while dark energy is invoked in cosmological models to account for the observed accelerated expansion of the universe. This distinction is philosophically significant.

A substantial majority of the cosmic energy budget is therefore associated with entities whose underlying physical nature remains incompletely understood. This does not mean that the universe is fundamentally mysterious or that consciousness must constitute the missing component. Rather, it demonstrates that the current physical description of the cosmos remains an evolving scientific enterprise. The appropriate philosophical question is therefore not:

"If science cannot explain dark energy, could dark energy be consciousness?" That inference is unwarranted. The more defensible question is:

"If physical cosmology contains major unresolved questions about the nature of the universe, what conceptual possibilities should remain open when considering the unresolved nature of consciousness?" This formulation avoids an unsupported equivalence between dark energy and consciousness.

4. Consciousnesses and the Explanatory Gap

Consciousness represents a special challenge because scientific explanations of neural mechanisms do not automatically answer why those mechanisms are accompanied by subjective experience. Neuroscience has identified numerous relationships between brain activity and conscious perception, attention, memory, decision-making and self-awareness. The Global Neuronal Workspace theory, Integrated Information Theory, recurrent processing approaches, higher-order theories and predictive-processing frameworks provide different explanations of aspects of consciousness. However, the philosophical question concerning phenomenal experience remains contested. Thomas Nagel famously emphasized the first-person character of conscious experience in his discussion of "what it is like" to be a bat (Nagel, 1974). Daniel Dennett, by contrast, has argued for a more functional and scientifically tractable approach to consciousness, challenging some traditional assumptions concerning qualia and the Cartesian theatre (Dennett, 1991).

These disagreements demonstrate that consciousness is not simply a scientific problem awaiting a missing measurement. It is also a problem concerning what constitutes an adequate explanation.

P.R. Sarkar's theory of **Supreme Consciousness** is considered a more holistic and truthful approach to understanding consciousness, as it integrates **psychology, metaphysics, and spiritual practice**. Unlike purely materialistic or idealistic philosophies, Sarkar proposes that **mind evolves from matter**, but matter itself originates from a **Cosmic Mind**—the **Supreme Consciousness**, also referred to as **Cosmic Consciousness**.

It emphasizes that **mental science** (the study of the mind's structure and development) is distinct from psychology. The **unit mind**, according to Ananda Marga, emerges through physical processes and comprises **citta, aham, and mahat**—the functional layers of consciousness.

Drawing on Penrose and Hameroff's Orch-OR theory, they highlight growing evidence that consciousness may emerge from quantum processes within the brain, suggesting that the brain might act as a receiver of a universal field of awareness rather than its producer. It is further link to panpsychism and Eastern philosophies (e.g., Vedanta, Taoism, Buddhism), which conceive consciousness as a primordial, non-dual essence underlying all existence. This represents a major paradigm shift—from viewing consciousness as a byproduct to recognizing it as fundamental to the cosmos, comparable to space, time, or matter.

The present article therefore does not assume that physicalism is false. Instead, it adopts a more cautious position:

Current physical descriptions explain increasingly many functions and correlates of consciousness, but whether they provide a complete explanation of subjective experience remains philosophically unsettled.

This unresolved explanatory gap provides the philosophical space within which alternative metaphysical frameworks can be examined.

5. Unit Mind: An Operational Philosophical Construct

The concept of **Unit Mind** requires precise clarification because the term can otherwise be interpreted as either a scientific entity or a metaphysical substance. In this article, Unit Mind is defined operationally as:

The conceptual designation for an individual locus of subjective awareness associated, in ordinary human experience, with an integrated organism and its ongoing cognitive, affective and perceptual processes.

This definition deliberately avoids claiming that Unit Mind is a measurable physical object. At the empirical level, consciousness is studied through behavioral reports, neural activity, physiological measurements and computational models. At the philosophical level, Unit Mind refers to the first-person subject associated with those processes.

Thus:

Brain activity $\neq$ Unit Mind

But

Brain activity $\leftrightarrow$ measurable correlate of conscious experience

And

Unit Mind = philosophical designation of the experiencing subject.

This distinction prevents the concept from becoming an unsupported neuroscientific claim. The proposed conceptual hierarchy may therefore be represented as:

Physical processes $\rightarrow$ neural integration $\rightarrow$ conscious experience $\rightarrow$ Unit Mind as philosophical subject

The final transition is philosophical rather than empirically established.

6. from Unit Mind to Cosmic Consciousness

The next step is considerably more speculative. If Unit Mind denotes an individual locus of awareness, one may ask whether individual consciousness is entirely produced by local physical processes or whether it could represent a localized expression of a more fundamental feature of reality. This question resembles contemporary philosophical positions such as panpsychism and cosmopsychism. Panpsychism holds, in broad terms, that mentality or experience is fundamental and widespread in nature.

Cosmopsychism goes further by giving explanatory priority to consciousness at the cosmic level. Contemporary discussions recognize serious objections to these views, particularly the **combination problem**: how could numerous basic experiential units combine to produce the unified consciousness of an individual? The present article does not adopt panpsychism or cosmopsychism as established truth. Instead, it proposes a related hypothesis for investigation:

Individual consciousness might be understood either as an emergent property of sufficiently organized matter or as a localized manifestation of a more fundamental aspect of reality.

The first possibility is compatible with conventional physical's approaches. The second opens the possibility of what this article calls **Cosmic Consciousness**. For purposes of conceptual clarity, Cosmic Consciousness is defined here as:

A hypothetical fundamental or global dimension of consciousness, if such a dimension exists, of which individual conscious experience might constitute a localized or relational manifestation.

This definition does not imply that the universe has a human-like personality, thoughts or intentions. Cosmic Consciousness should therefore not automatically be equated with God, Brahman, energy, dark energy or the physical universe.

7. Relationship to Vedantic Philosophy

The proposed framework has an important philosophical parallel with Vedantic thought. Vedanta distinguishes between ultimate reality, individual selfhood and the manifest universe through concepts such as **Brahman**, **Atman**, **Prakriti**, and related philosophical categories. Different Vedantic schools interpret these concepts differently; therefore, they should not be treated as a single uniform doctrine. In a broad philosophical reading, however, one may identify an analogy between:

Individual awareness → universal consciousness → manifest reality

And certain interpretations of:

Atman → Brahman → phenomenal existence.

This analogy should not be interpreted as proof that ancient Vedantic philosophy anticipated modern cosmology. Rather, the comparison demonstrates that questions concerning the relationship between individual consciousness and the totality of reality have been investigated through philosophical traditions for centuries.

8. Prakriti, Purusha and Cosmic Manifestation

Within the broader philosophical vocabulary of Indian thought, **Prakriti** may be interpreted as the principle of manifestation or material nature, while **Purusha** is associated, in different philosophical systems, with consciousness or witnessing awareness. In the conceptual framework proposed here, these ideas can be used heuristically rather than scientifically. A simplified conceptual sequence may be expressed as:

Undifferentiated reality → differentiation → physical manifestation → biological organization → conscious experience → reflective awareness

This sequence resembles an evolutionary movement from increasingly differentiated physical organization toward increasingly complex forms of information processing and subjective awareness. However, it should not be assumed that physical evolution has been scientifically demonstrated to be directed toward Cosmic Consciousness. The word **evolution** in this article therefore has two distinct meanings:

1. **Biological/cosmological evolution**, which is scientifically investigated; and
2. **Philosophical evolution of consciousness**, which remains a metaphysical interpretation.

9. Black Holes and the Limits of Conventional Description

Black holes provide one of the most fascinating meeting points between cosmology and fundamental physics.

According to general relativity, sufficiently concentrated mass-energy can produce a region from which classical escape paths do not lead outward beyond the event horizon. The centre of a classical black-hole solution is associated with a singularity, although most physicists expect a complete theory of quantum gravity to modify our understanding of this regime.

Black holes therefore raise fundamental questions concerning:

- space-time;
- causality;
- information;
- entropy;
- quantum gravity;
- The relationship between general relativity and quantum mechanics.

Some theoretical models have explored possibilities involving black-hole interiors, baby universes, wormholes or connections with other space-time regions. These ideas remain speculative and should not be confused with established observations. The present article therefore does **not** claim:

Black hole = gateway to another universe

Instead, it proposes:

Black holes are useful philosophical boundary objects because they reveal limitations in our present understanding of space-time, information and gravity.

This makes them relevant to broader questions about whether the physical universe exhausts all possible forms of reality.

10. Black Holes and the Saguna Brahma Analogy

A conceptual analogy can be made between black holes and the Vedantic notion of **Saguna Brahman**, but the analogy must be treated cautiously. Saguna Brahman refers, in certain Vedantic interpretations, to ultimate reality considered with attributes or in relation to manifestation. A black hole, by contrast, is an astrophysical object described by general relativity. There is therefore no scientific identity between the two. The analogy arises only at a philosophical level:

Manifest reality → transformation → apparent disappearance → possible transition into another state

In this sense, black holes can metaphorically stimulate reflection on the relationship between manifestation and dissolution. The analogy becomes scientifically meaningful only if it generates questions that can be independently investigated.

11. Dark Energy and Cosmic Expansion

The discovery that cosmic expansion is accelerating transformed modern cosmology. Dark energy is the name conventionally given to whatever physical component or modification of gravitational dynamics accounts for this accelerated expansion within the standard cosmological framework. Its fundamental nature remains unknown. Several possibilities have been proposed, including:

- a cosmological constant;
- dynamical dark-energy fields;

- modifications of gravity;
- More speculative theoretical possibilities.

It is important to emphasize that **dark energy has not been shown to possess consciousness, intention or intelligence**. The analogy developed in this paper is more limited. Dark energy demonstrates that:

The large-scale behavior of the universe may depend upon physical ingredients whose underlying nature is not yet fully understood.

This creates an epistemological parallel—not an ontological equivalence—with consciousness. Both are reminders that observed effects may sometimes precede complete understanding of their underlying nature.

12. Why Dark Energy Should Not Be Identified with Consciousness

The temptation to equate dark energy with Cosmic Consciousness should be resisted.

Dark energy is inferred from cosmological observations and incorporated into mathematical models. Consciousness is inferred from first-person experience and investigated through neuroscience, psychology and philosophy. They belong to fundamentally different explanatory domains. A scientifically responsible formulation is therefore:

Dark energy is a cosmological unknown.

Consciousness is a philosophical and scientific explanatory problem.

Cosmic Consciousness is a metaphysical hypothesis.

The three should remain conceptually distinct. Nevertheless, the possibility that the physical and experiential descriptions of reality may ultimately be related remains philosophically interesting.

13. The Possibility of Additional Dimensions

Modern physics permits theoretical models containing dimensions beyond the familiar three spatial dimensions and one temporal dimension. Examples include string theory and related higher-dimensional frameworks. However, no additional macroscopic spatial dimension has been established as an independently observed physical fact. This distinction is especially important in discussions of meditation and consciousness.

The present article therefore rejects the proposition that meditation has demonstrated the existence of "seven invisible physical dimensions." Instead, the concept of **seven dimensions** may be retained as a philosophical or phenomenological model representing progressively differentiated states of consciousness. Thus:

Seven invisible dimensions $\neq$ established physical dimensions

Rather:

Seven dimensions = proposed philosophical map of levels of subjective or cosmic experience.

This distinction substantially strengthens the conceptual credibility of the framework.

14. Meditation as a First-Person Method of Investigation

Meditation introduces a potentially valuable bridge between philosophy and empirical consciousness research. Meditation can produce systematic changes in:

- attention;

- emotional regulation;
- self-referential processing;
- perception;
- interception;
- subjective sense of self;
- Neural activity.

Contemporary neuroscience has increasingly investigated meditation using EEG, fMRI, autonomic measurements and behavioral methods. However, meditation should not be regarded as an instrument that directly measures physical dimensions beyond space-time.

Its methodological value lies elsewhere. Meditation may function as a **disciplined first-person phenomenological method**.

In conventional science:

Observer → instrument → measurement → theory

In phenomenological investigation:

Observer → trained attention → experience → structured report → comparison

The second pathway does not replace the first. Instead, they may complement one another.

15. The Seven-Level Consciousness Model

A seven-level model may therefore be retained as a phenomenological and philosophical framework rather than a physical claim.

For example:

Level 1: Sensory Awareness

Awareness dominated by external sensory information and bodily states.

Level 2: Emotional Awareness

Increasing recognition of emotional processes and affective states.

Level 3: Cognitive Awareness

Observation of thoughts, memory and conceptual processes.

Level 4: Reflective Self-Awareness

Awareness of the observing self and metacognitive processes.

Level 5: Expanded Self-Awareness

Reduction of rigid self-boundaries and increased perception of interconnectedness.

Level 6: Non-dual or Transpersonal Awareness

Reported experiences in which conventional distinctions between observer and observed become less pronounced.

Level 7: Cosmic or Universal Awareness

A hypothetical state in which consciousness is experienced as fundamentally non-local or universal.

The first several levels can be investigated through psychology and neuroscience. The higher levels require careful phenomenological investigation. The seventh level remains a metaphysical interpretation rather than an established scientific fact.

16. The Epistemological Problem of Other Minds

A fundamental philosophical problem arises here. An individual has direct access only to their own conscious experience. The consciousness of another person is inferred from behavior, communication and neural evidence. This is the **problem of other minds**. If this problem exists even between human beings, it becomes even more difficult to establish the existence of Cosmic Consciousness. A person's report that they experienced universal consciousness is evidence that they **experienced something they interpreted as universal consciousness**. It is not, by itself, proof that a literally existing cosmic consciousness caused the experience. This distinction is crucial. Therefore:

Phenomenological evidence $\neq$ ontological proof.

Nevertheless, systematic first-person reports can constitute scientifically relevant data when combined with behavioral, physiological and neuroscientific measurements.

17. Consciousness and Mental Causation

Another important issue concerns **mental causation**.

If consciousness is merely a by-product of physical processes, one must explain how conscious intentions relate to behavior without violating physical causal closure. If consciousness is fundamental, one must explain how it interacts with physical processes. Neither position is free from philosophical difficulties. Dualism faces the interaction problem. Strict physicalism faces questions concerning subjective experience. Panpsychism faces the combination problem. Cosmopsychism faces questions concerning how cosmic consciousness relates to individual subjects. A promising philosophical direction may therefore involve some form of **dual-aspect or Russellian monist framework**, in which mental and physical descriptions represent different aspects of a deeper underlying reality. Contemporary discussions of panpsychism and Russellian monism explore precisely such possibilities, although substantial objections remain. The present article does not select one of these theories as established truth. Instead, it proposes that future consciousness research should explicitly examine the relationship between:

Physical causation + information processing + subjective experience + agency.

18. Panpsychism and Cosmopsychism: Opportunities and Problems

The hypothesis of Cosmic Consciousness has conceptual similarities to cosmopsychism. Cosmopsychism generally gives some form of explanatory priority to consciousness at the cosmic level. Contemporary philosophical literature recognizes it as a serious metaphysical position, but also identifies significant problems concerning the relationship between cosmic consciousness and individual consciousness. The major problems include:

18.1 The Combination Problem

How can numerous elementary conscious processes combine into one unified conscious subject?

18.2 The Decomposition Problem

If the universe is fundamentally conscious, how do apparently independent individual minds arise?

18.3 The Boundary Problem

Why does my consciousness appear to have a boundary separating it from yours?

18.4 The Causal Problem

How would a cosmic consciousness influence physical processes without contradicting established physical causal relations?

18.5 The Empirical Problem

What observation would distinguish Cosmic Consciousness from a purely physical theory? These objections are not weaknesses to be ignored. They are precisely the questions that a scientifically responsible version of the hypothesis must confront.

19. Consciousness as a Fundamental Property: A Possible Research Direction

The central hypothesis of this article may therefore be reformulated in a scientifically cautious manner:

Consciousness may ultimately prove to be either an emergent property of sufficiently complex physical systems or a fundamental aspect of reality not reducible to currently recognized physical properties.

These alternatives can be represented as:

Model A: Emergent Consciousness

Matter → biological organization → neural integration → consciousness

Model B: Fundamental Consciousness

Fundamental reality → consciousness + physical structure → biological organization → localized consciousness

Model C: Dual-Aspect Reality

Underlying reality → physical aspect + experiential aspect

The third model is particularly interesting because it avoids treating mind and matter as completely independent substances. However, all three remain active philosophical possibilities rather than settled scientific conclusions.

20. Cosmic Evolution and Dissolution

The universe appears to have undergone a long sequence of transformations:

Early hot universe → particles → atoms → stars → galaxies → planets → chemistry → life → nervous systems → complex cognition → reflective consciousness

From a purely scientific perspective, these transitions can be studied through cosmology, astrophysics, chemistry, biology and neuroscience. From a philosophical perspective, however, one may ask whether this sequence represents more than increasing structural complexity. Could consciousness represent a further stage in cosmic evolution?

This question must not be converted into the assertion that the universe is intentionally evolving toward consciousness. Nevertheless, it provides a meaningful philosophical hypothesis:

The emergence of conscious organisms may be regarded as one of the universe's most significant known transitions, and understanding this transition may require integrating cosmological, biological, neurological and philosophical perspectives.

21. The Possibility of an Evolution–Dissolution Cycle

Traditional Indian cosmological thought often describes reality through cycles of creation, preservation and dissolution. Modern cosmology also contains scientific models involving cosmic beginnings, transformations and possible long-term futures.

However, modern cosmology does not currently establish a universal cyclic creation–dissolution mechanism corresponding directly to traditional metaphysical cosmology. Some theoretical models do explore cyclic or bouncing cosmologies, but these remain distinct theoretical proposals. The present framework therefore proposes only a philosophical analogy:

Emergence → differentiation → transformation → dissolution → possible re-emergence

This sequence may be useful as a conceptual model for thinking about cosmic evolution without claiming that a literal universe-recycling mechanism has been scientifically demonstrated.

22. Multiverse and Cosmic Consciousness

The multiverse hypothesis provides another possible conceptual extension. Several branches of theoretical physics and cosmology have generated ideas involving multiple universes or causally disconnected regions. However, there is currently no observational confirmation of a multiverse as a physical reality. Consequently, the relationship between multiverse theories and Cosmic Consciousness remains speculative. If a multiverse exists, several philosophical questions arise:

- Would consciousness exist independently in different universes?
- Could consciousness be a property common to all universes?
- Could different universes possess different laws of consciousness?
- Is consciousness dependent upon particular physical constants?
- Could a cosmic consciousness, if real, transcend individual universes?

These are legitimate philosophical questions but should not be presented as established cosmological conclusions.

23. toward a Unified Conceptual Framework:

The ideas discussed above can be integrated into a layered framework:

Layer 1: Physical Universe

Matter, energy, space-time, fields, particles and cosmological structures.

Layer 2: Biological Organization

Life, metabolism, evolution and nervous systems.

Layer 3: Information Processing

Neural integration, perception, memory, prediction and cognition.

Layer 4: Subjective Consciousness

First-person experience and phenomenal awareness.

Layer 5: Unit Mind

The philosophical designation of the individual experiencing subject.

Layer 6: Transpersonal Consciousness

Experiences involving diminished or altered boundaries of the individual self.

Layer 7: Cosmic Consciousness

A hypothetical universal or fundamental dimension of consciousness.

The first three layers are accessible to established scientific investigation.

Layer 4 is investigated scientifically but remains philosophically unresolved.

Layers 5–7 increasingly involve philosophical interpretation.

This layered structure prevents category errors while allowing interdisciplinary dialogue.

24. A Proposed Relationship between Science and Spirituality

The central purpose of this framework is not to replace science with spirituality. Nor is it to force spiritual concepts into physical equations without evidence. Instead, the proposal is for **complementarity of epistemic approaches**.

Science asks:

- What can be measured?
- What relationships are reproducible?
- What mathematical models explain observations?
- What predictions can be tested?

Phenomenology asks:

- What is conscious experience like?
- How does experience change under systematic attention?
- How does the sense of self change?
- What structures recur across contemplative experiences?

Philosophy asks:

- What does consciousness mean?

- Is consciousness reducible to matter?
- What constitutes an adequate explanation?
- What assumptions underlie our concepts of reality?

Spiritual traditions ask:

- What is the nature of self?
- What is the relationship between individual and universal reality?
- Can consciousness be transformed through disciplined practice?

The integration of these approaches requires maintaining their methodological differences.

25. Testable Implications and Future Research

For this framework to become scientifically useful, it must generate questions that can be investigated. Several research directions are possible.

25.1 Meditation and Neural Dynamics

Long-term meditators and control groups could be compared using:

- EEG;
- fMRI;
- functional connectivity;
- autonomic measurements;
- behavioral measures;
- Subjective reports.

The objective would be to identify reproducible neural signatures associated with progressively altered states of self-awareness.

25.2 Phenomenological Mapping

Researchers could construct standardized descriptions of meditative experiences and determine whether recurring stages exist across practitioners.

25.3 Information Integration

The relationship between reported changes in self-boundaries and measures of neural integration could be investigated.

25.4 Predictive Processing

Meditative states could be examined in relation to predictive-processing models of perception and selfhood.

25.5 Mental Causation

Experimental studies could examine relationships among conscious intention, neural preparation, voluntary action and behavioral outcomes.

25.6 Cross-Cultural Studies

Meditative experiences described in Buddhist, Vedantic, Christian contemplative, Islamic mystical and secular mindfulness traditions could be compared phenomenologically without assuming that their metaphysical interpretations are identical.

25.7 Cosmological Implications

No direct experiment presently establishes Cosmic Consciousness. However, a future theory would require clearly defined predictions that distinguish a consciousness-fundamental model from competing physicalist models. This final criterion is essential. A hypothesis that cannot, even in principle, generate distinguishable predictions remains metaphysical rather than scientific.

26. Strengths and Limitations of the Framework

26.1 Strengths

The framework has several potential strengths:

First, it recognizes the continuing explanatory challenge presented by subjective consciousness.

Second, it distinguishes empirical science from philosophical interpretation.

Third, it creates a conceptual bridge between contemporary philosophy of mind and traditional Indian philosophical thought.

Fourth, it treats meditation as a possible phenomenological research methodology rather than as proof of metaphysical propositions.

Fifth, it identifies black holes, dark energy and multidimensional theories as conceptual opportunities rather than evidence for Cosmic Consciousness.

Sixth, it converts the idea of Cosmic Consciousness from a categorical assertion into a hypothesis-generating philosophical proposition.

Limitations

The framework also has significant limitations:

First, Unit Mind is a philosophical construct rather than a measurable physical entity.

Second, Cosmic Consciousness currently lacks an accepted operational measurement.

Third, the connection between meditative experience and universal consciousness remains interpretative.

Fourth, the analogy between cosmological processes and Vedantic concepts cannot establish causal relationships.

Fifth, additional physical dimensions remain theoretical possibilities rather than established features accessible through meditation.

Sixth, panpsychism and cosmopsychism face substantial philosophical objections, especially the combination problem and the problem of explaining individual subjectivity.

Finally, no current empirical evidence establishes that consciousness is independent of the brain.

These limitations should be regarded not as reasons to abandon the research programme but as conditions for conducting it responsibly.

DISCUSSION

The central argument of this article is epistemological rather than ontological. It does not claim that modern cosmology has discovered Cosmic Consciousness. It does not claim that dark energy is consciousness. It does not claim that black holes are portals to other universes. It does not claim that meditation provides direct access to physical dimensions beyond space-time.

Rather, it argues that the unresolved nature of consciousness provides a legitimate philosophical reason to examine whether current physical descriptions of reality are complete. The history of science demonstrates that apparently fundamental concepts can later be reformulated. Matter was once conceived primarily in classical mechanical terms; space and time were subsequently unified into space-time; energy and matter were shown to be deeply connected; quantum theory transformed the meaning of physical state and measurement. None of these historical developments proves that consciousness is fundamental. They nevertheless illustrate why philosophical openness remains important. The strongest version of the present argument is therefore modest:

We should not assume in advance that the ontology required explaining consciousness must be identical to the ontology currently used to describe physical behavior.

At the same time, the reverse assumption is equally unjustified:

We should not assume that consciousness must be a separate cosmic substance merely because its explanation remains incomplete.

The intellectually responsible position lies between these extremes.

CONCLUSION

The universe revealed by contemporary science is both remarkably intelligible and profoundly incomplete in important respects. Cosmology has reconstructed the history and large-scale structure of the universe with extraordinary success, while neuroscience has identified increasingly detailed relationships between brain processes and conscious states. Yet the subjective character of experience remains one of the deepest unresolved questions in philosophy and science.

This article has proposed an interdisciplinary framework in which **Unit Mind** represents a philosophical construct referring to an individual locus of subjective awareness, while **Cosmic Consciousness** represents a hypothetical possibility that consciousness may have a more fundamental or universal dimension. The framework deliberately separates established scientific knowledge from theoretical possibilities, philosophical interpretations and authorial hypotheses. This distinction is particularly important when discussing dark energy, black holes, additional dimensions, meditation and Vedantic concepts.

Black holes should not be regarded as scientifically established portals to other universes. Dark energy should not be identified with consciousness. Meditation should not be regarded as a physical detector of invisible dimensions. Similarly, Vedantic concepts such as Brahman, Prakriti and Purusha should not be presented as scientific theories in the modern sense. Their value lies instead in their capacity to generate philosophical questions. The concepts of panpsychism, cosmopsychism and Russellian monism demonstrate that the possibility of consciousness being fundamental is already a serious subject within contemporary philosophy of mind, although each position faces substantial unresolved problems. The most promising future direction may therefore not be the immediate construction of a grand unified theory of consciousness and cosmology. It may instead be the development of a disciplined research programme integrating:

Cosmology + neuroscience + phenomenology + philosophy of mind + contemplative science.

Such a programme should combine third-person measurement with carefully structured first-person investigation while maintaining rigorous standards of evidence. The ultimate question remains open:

Is consciousness an emergent property produced by sufficiently complex physical organization, or does consciousness reflect a more fundamental aspect of reality?

At present, science does not provide a definitive answer. The possibility that consciousness may ultimately prove to be fundamental should therefore be treated neither as established fact nor as an idea to be dismissed without examination. It should be treated as a philosophical hypothesis whose value depends on conceptual clarity, empirical discipline and the generation of testable questions. In this sense, the exploration "beyond the visible cosmos" is not an attempt to escape science. It is an invitation to examine the boundary between what sciences currently explains what philosophy asks, and what future science may eventually discover.

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