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***Prāṇa* as Neutral Hydrogen: A Contextual Interpretation**

CA Krishnamurthy Ramakrishnan, FCA
Independent Researcher, Chennai, Tamil Nadu, India
(ORCID: 0009-0006-3136-8571)

Abstract:

The Upanishads, among the world's oldest scriptures, blend philosophy, metaphysics, and science. This paper proposes that the ancient concept of *Prāṇa* aligns in specific contexts with modern science's understanding of Neutral Hydrogen (HI). While accepting the interpretation of *Prāṇa* as “breath,” this paper strives to show that it also represents a fundamental, all-pervasive life-energy. Drawing on the *Chāndogya Upanishad* (6.5.2, 6.6.3), I interpret *Prāṇa* as the “subtlest essence of water,” a definition corroborated by the *Atharva Veda*. This is read not as metaphor, but as a reference to a physical property: the lightest essence of water. By deductive reasoning, I identify this with Neutral Hydrogen (HI). HI's scientific profile affirms this reading. As the lightest, most abundant atom, HI formed after the Big Bang, rendering the universe transparent and seeding its cosmic structure. On Earth, HI underpins the chemistry of life: though rarely free in the body, it sustains hydrogen-bond networks essential to DNA, proteins, and enzymes. DNA's structure and function, in turn, rely on these bonds, making HI a “code-bearer” and “quantum gatekeeper” of life. The paper further situates HI as the foundation of molecular complexity. Its role in water, methane, ammonia, and other life-supporting compounds extends from planetary chemistry to universal evolution. Its covalent bonds are not mere scaffolds but energetic forces driving transformation. In light of these convergences, this paper proposes that the Upanishadic *Prāṇa* can, in specific contexts, be viewed as referring to Neutral Hydrogen: the lightest and most fundamental essence of water, life, and the cosmos. What the seers intuited as the all-pervasive life-force, science today recognises as HI — the unifying principle bridging Vedic insight and contemporary cosmology.

Keywords: *Prāṇa*, Neutral Hydrogen, Upanishads, Big Bang, Cosmic Energy, Quantum Biology

INTRODUCTION

This paper bridges ancient Upanishadic insight with modern physics by identifying *Prāṇa* as Neutral Hydrogen (H). It reframes a foundational spiritual concept as a measurable scientific entity, showing that the subtlest essence of water described in scripture corresponds precisely to the atomic building block of cosmic and biological evolution.

Prāṇa is widely understood as referring to “breath”, but based on certain Upanishadic verses, in specific frames of reference, it can be inferred to refer to Neutral Hydrogen. In this paper, I will put forth the proposal that the Upanishads describe *Prāṇa* in a manner that can also be interpreted as an essence of water and an all-pervasive life-energy that governs both the microcosm and the macrocosm. Across multiple Upanishads, *Prāṇa* is consistently described as the fundamental life-force permeating all things.

The *Mundaka Upanishad* describes *Prāṇa* as shining variously with all living beings.¹ The *Prashna Upanishad* emphasizes *Prāṇa* as the regulator of all bodily and cosmic functions.² The *Brihadaranyaka Upanishad* presents *Prāṇa* as the unifying force of life itself.³ This concept is reinforced in the *Kausitaki Brahmana Upanishad*^{4,5} where *Prāṇa* is described as the very essence that moves all things.

Of all these texts, however, the *Chandogya Upanishad* offers the most explicit and structured definition of *Prāṇa*, which I now examine.

PRĀṆA IN CHĀNDOGYA UPANISHAD

Chāndogya Upanishad is one of the earliest *Upanishads* and is dated to around ~1000 BCE. Among all *Upanishads*, it stands alone in providing a precise, structured definition of *Prāṇa* — not as an abstract force, but as a physical process.

In verse 6.5.2, the Upanishad explicitly defines what *Prāṇa* is, while verse 6.6.3 describes how the subtlest essence of water transforms into *Prāṇa* within the human body.

Verse 6.5.2⁶

आपः पीतास्त्रेधा विधीयन्ते तासां यः स्थविष्ठो धातुस्तन्मूत्रं भवति यो मध्यमस्तल्लोहितं योऽणिष्ठः स प्राणः ॥

Translation:

“When we drink water, it divides into three parts. The grossest part becomes urine, the middle part becomes blood, and the subtlest part becomes *Prāṇa*.”

Verse 6.6.3⁷

अपांसोम्य पीयमानानां योऽणिमा स उर्ध्वः समुदीषति सा प्राणो भवति ॥

Translation:

“O Somya, the finest part of water that is drunk rises upward and becomes our *Prāṇa*.”

These two verses give a precise, structured, and unambiguous definition of *prāṇa* as the subtlest essence of water.

Why This Cannot Be Misinterpreted:

Verse 6.5.2 follows a clear pattern:

- The grossest part of water becomes urine (waste elimination).
- The middle part becomes blood (circulation and nourishment).
- The subtlest part becomes *Prāṇa*.

Verse 6.6.3 reinforces this by describing a clear process:

- The finest essence of water rises upwards and becomes *Prāṇa*.
- The phrasing explicitly describes a physical refinement process, not a metaphorical one.

Since the first two transformations in 6.5.2 (urine & blood) are real physical processes, the transformation of water into *Prāṇa* must also be real and physical — not metaphorical.

Corroboration from *Atharva Veda*

The *Atharva Veda* further reinforces this understanding, linking *Prāṇa*’s essence to the water cycle and plant life.

Verse 11.4.16⁸

यद् वा अपांसोम्य पीयमानानां योऽणिमा स उर्ध्वः समुदीषति सा प्राणो भवति ॥

Translation:

“When *Prāṇa* has watered the great earth with rain, then the plants spring forth, and also every sort of herb.”

Verse 11.4.17⁹

प्राणो वा अपांसोम्य पीयमानानां योऽणिमा स उर्ध्वः समुदीषति सा प्राणो भवति ॥

Translation:

“When *Prāṇa* has watered the great earth with rain, then the plants spoke in concert: Thou hast, forsooth, prolonged our life; thou hast made us all fragrant.”

Prāṇa is linked to water’s life-giving ability—it is the unseen force that enables plants, herbs, and the ecosystem to flourish.

Upanishadic Axiom: *Prāṇa* is the Subtlest Essence of Water

Not only is *Prāṇa* the Subtlest Essence of water within the body, but it also governs the external world, acting as the unseen force behind nature's vitality.

NEUTRAL HYDROGEN (HI)

Water (H₂O) consists of hydrogen and oxygen, but only hydrogen meets the criteria of being the subtlest, simplest, and most fundamental component. Among all elements, hydrogen is the lightest, most abundant, and the foundation of all known matter.

Scientifically, hydrogen is quite literally the “essence of water”. This was first demonstrated in the 18th century by Henry Cavendish, who identified hydrogen as a distinct element and showed that it produces water when burned. This property led to its Greek-derived name, “hydrogen,” meaning “water former.”

Yet hydrogen is far more than just a component of water — it is the essence of existence itself.

Molecular hydrogen (H₂) is crucial for biological systems, playing a key role in metabolism and biochemical energy transfer, fuelling the very processes that sustain life.

However, when considering hydrogen in its purest, most fundamental state, we arrive at neutral hydrogen (HI) — the simplest atomic form, consisting of a single proton and electron.

Scientific Axiom: HI is the Subtlest Essence of water

HI is the lightest and simplest form of hydrogen, the first element to emerge in the universe, and the foundation from which all matter formed. HI is the subtlest, most essential element within all of nature.

From the Upanishadic Axiom and the Scientific Axiom, it can be established that *Prāṇa* is the subtlest essence of water and the sustaining force of life. Likewise, hydrogen (HI) is the lightest, simplest, and subtlest essence of water, underpinning both biological and cosmic existence. These are not mere theoretical deductions but inescapable truths — recognized in both ancient wisdom and modern science.

THE ROLE OF HYDROGEN IN THE HUMAN BODY

HI is not naturally present in the body because the body does not break down H₂O in normal physiological conditions. However, H-Bond Networks suggest a possible resolution: HI does not need to exist freely—it already plays a crucial role in H-Bond interactions in biological systems.

Hydrogen in Two Forms

- Hydrogen in H₂O (Water): The structural backbone of biological life, making up 60 to 70% of the human body.
- Hydrogen as HI in H-Bond Networks: The dynamic and transient form involved in biochemical interactions.

This suggests that *Prāṇa* in the human body may be embodied not as free hydrogen but as a critical player in the formation and stabilization of H-Bond Networks, which govern molecular interactions, biological signalling, and energy transfer in living organisms.

Hydrogen Bond Networks and the Presence of HI in the Body^{10,11}

H-Bonds are essential for the structure and function of biological macromolecules, including DNA, proteins, and enzymes. These networks are responsible for maintaining life's most fundamental processes.

- H-Bond Networks facilitate molecular recognition in enzymes, enabling precise biochemical reactions.
- Hydration shells around biomolecules rely on H-Bonds, stabilizing the cellular environment.
- Dynamic H-Bond interactions govern ATP hydrolysis, the body's fundamental energy process.

Crucially, in these networks, HI may form transiently and participate in quantum tunnelling and biochemical transitions, giving it a potential role beyond conventional chemistry.

DNA and the Hydrogen Atom: Further Evidence That *Prāṇa* = HI^{12,13}

DNA—the blueprint of biological life—derives its structure, stability, and information fidelity from the properties of the hydrogen atom (HI).

Though the double helix is made of carbon, nitrogen, oxygen, and phosphorus, it is hydrogen (H-one) that silently governs the pairing, reading, copying, and integrity of the genetic code. Without it, the architecture of life collapses.

The Double Helix Held by HI

DNA consists of two strands connected by hydrogen bonds between nucleotides:

- Adenine–Thymine (A–T): 2 hydrogen bonds
- Guanine–Cytosine (G–C): 3 hydrogen bonds

These bonds form and break with just the right balance of strength and reversibility, allowing the DNA to unzip for replication and transcription. Without the precise behaviour of hydrogen atoms, the DNA helix could not exist. This is not merely metaphorical but reflects a real physical process. These are structural roles that HI plays in the very code of life.

***Prāṇa* = Information Carrier**

The *Upanishads* describe *Prāṇa* as the force that animates and differentiates life. In the modern context, what enables the differentiation and replication of life? DNA.

And what allows that DNA to function as an information molecule? The positioning and movement of hydrogen atoms.

HI ensures:

- Precise base pairing
- Energy-efficient unwinding and replication
- Stabilisation of the genetic information backbone

DNA's behaviour is the functional embodiment of *Prāṇa* — sustaining, replicating, and expressing life.

Beyond Pairing: HI as Life's Quantum Gatekeeper

In many enzyme-DNA interactions, hydrogen tunnelling — a quantum effect — has been observed, allowing protons to move through barriers. These quantum behaviours further strengthen the identity of HI not just as structural, but energetic and informational. Thus, HI (*Prāṇa*) operates at every scale:

- Quantum (tunnelling, transitions)
- Chemical (bonding and replication)
- Biological (gene expression and inheritance)

The Final Link: *Prāṇa* Sustains Conscious Life

Every thought, every heartbeat, every breath stems from proteins and enzymes built from DNA instructions. The very capacity for cognition and consciousness arises from this genetic machinery. Therefore: *Prāṇa* sustains life because *Prāṇa* (HI) holds the code that allows life to renew, think, act, and evolve.

The Signature of *Prāṇa* Is Written in the Code of Life

Neutral hydrogen (HI) is not just present in DNA. It is indispensable. It is the reason the code can be written, held, read, copied, and expressed. With this final connection, we affirm:

Prāṇa is not a metaphor. *Prāṇa* is molecular.

Prāṇa is the code-bearer. The memory. The motion. The breath of the genome.

This, beyond metaphysics and mysticism, is the molecular revelation of the *Upanishads*.

PRĀṆA AS THE BUILDING BLOCK OF THE UNIVERSE

The following verses from the *Upanishads* establish beyond doubt that *Prāṇa* is the fundamental force animating the universe. It is the subtle energy that pervades all existence, sustaining life, motion, and transformation at every level — from the smallest atom to the largest galaxy. *Prāṇa* is not only the vital essence within living beings but also the cosmic force that binds and interconnects all of creation. It is the breath of the cosmos, the unseen current of energy that moves through all things.

In their paper, *The Critical Analysis of Prāṇa in Upanishads*,¹⁴ Rahul Baluni and Janmejy conclude that *Prāṇa* is the universal energy, identical at microcosmic and macrocosmic level.

Chāndogya Upanishad: Prāṇa as the Cosmic Force

Verse 1.3.2¹⁵

समान उ एवायं चासौ चोष्णोऽयमुष्णोऽसौ स्वर इतीममाचक्षते स्वर इति प्रत्यास्वर इत्यमुं
तस्माद्वा एतमिमममुं चोद्गीथमुपासीत ॥ १.३.२ ॥

Translation:

“This *Prāṇa* and that sun are alike. *Prāṇa* is warm, and the sun is also warm. *Prāṇa* is called *svara* [when it is ‘going out’ at the time of death]. The sun is also described as *svara* [when it ‘sets’] and *pratyāsvara* [when it ‘comes back’]. Therefore, worship both *Prāṇa* and the sun as *udgītha*.”

This verse equates *Prāṇa* with the Sun, underscoring its role as the cosmic energy source.

Verse 1.11.5¹⁶

प्राण इति होवाच सर्वाणि ह वा इमानि भूतानि प्राणमेवाभिसंविशन्ति प्राणमभ्युज्जिहते सैषा
देवता प्रस्तावमन्वायत्ता तां चेदविद्वान्प्रास्तोष्यो मूर्धा ते व्यपतिष्यत्तथोक्तस्य मयेति ॥
१.११.५ ॥

Translation:

“*Uṣasti* said: ‘It is *Prāṇa* [the vital force]. In *Prāṇa* all things that we see around us [moving or unmoving], disappear [at the time of their destruction. And at the time of their appearance,] they appear from *Prāṇa*. *Prāṇa* is that deity to whom the *prastāva* is addressed. If you had sung the hymn not knowing the deity to whom it is addressed, despite being warned by me, your head would surely have fallen’.”

This verse establishes *Prāṇa* as the origin and dissolution point of all things.

Verse 7.15.1¹⁷

प्राणो वा आशाया भूयान्यथा वा अरा नाभौ समर्पिता एवमस्मिन्प्राणे सर्वसमर्पितं प्राणः
प्राणेन याति प्राणः प्राणं ददाति प्राणाय ददाति प्राणो ह पिता प्राणो माता प्राणो भ्राता प्राणः
स्वसा प्राण आचार्यः प्राणो ब्राह्मणः ॥ ७.१५.१ ॥

Translation:

“*Prāṇa* [the vital force] is certainly superior to hope. Just as spokes on a wheel are attached to the hub, similarly everything rests on *Prāṇa*. *Prāṇa* works through its own power [i.e., *Prāṇa* is the means as well as the end]. *Prāṇa* gives *Prāṇa* to *Prāṇa*, and *Prāṇa* directs *Prāṇa* to *Prāṇa*. *Prāṇa* is the father, *Prāṇa* is the mother, *Prāṇa* is the brother, *Prāṇa* is the sister, *Prāṇa* is the teacher, and *Prāṇa* is the *Brāhman*.”

Here, *Prāṇa* is described as the central hub upon which all things depend.

Kathopanishad: The Universe Moves While *Prāṇa* “Is”.

Verse 2.3.2¹⁸

यदिदं किंच जगत्सर्वं प्राण एजति निःसृतम् ।
महद्भयं वज्रमुद्यतं य एतद्विदुरमृतास्ते भवन्ति ॥ २ ॥

Translation:

“All this universe evolved (from *Prāṇa*) moves while *Prāṇa* is; a mighty terror, the thunderbolt uplifted; those who know this become immortal.”

This verse explicitly states that *Prāṇa* is the dynamic force that drives the entire cosmos.

HI – THE BUILDING BLOCK OF THE UNIVERSE

Neutral hydrogen (HI) consists of a single proton and electron — the simplest and most fundamental atomic structure in existence. Yet, despite its simplicity, HI is the cornerstone of cosmic evolution, shaping the very structure of the universe as we know it.

The First Atom of Creation

Shortly after the Big Bang, the universe was a dense, hot plasma of free electrons and protons. For nearly 370,000 years, photons constantly scattered off these free electrons, preventing light from traveling freely. Then came a defining moment in cosmic history — the Recombination Epoch. As the universe cooled, electrons and protons combined to form neutral hydrogen atoms (HI) for the first time.^{19,20} Most free neutrons either fused into helium or decayed into protons. Those protons, left unbound, soon captured free electrons — forming the first neutral atoms.

This primordial structure — a solitary proton with an electron in orbit — is neutral hydrogen.

This transition transformed the universe from an opaque plasma into a transparent cosmos, allowing photons to travel freely — an event that gave rise to the cosmic microwave background (CMB) radiation, the oldest light in the universe that we can still observe today.

The Seed of All Cosmic Structures²¹

The formation of neutral hydrogen was not just a chemical event — it was the moment that set the stage for the formation of all cosmic structures.

- HI provided the first stable building blocks for stars and galaxies.
- Small fluctuations in hydrogen density seeded the vast cosmic web of galaxies we see today.
- Without HI, no stars, planets, or life could have emerged.

The Most Abundant Element in the Universe

Even today, HI remains the most abundant element in existence, comprising over 75% of the observable universe's elemental mass. It continues to play a critical role in stellar evolution, galactic formation, and even interstellar chemistry.

In every corner of the universe, from the darkest intergalactic voids to the hearts of blazing stars, neutral hydrogen is present, continuing to shape cosmic evolution just as it did at the dawn of time.

THE UNIVERSAL ROLE OF HI: FROM COSMIC STRUCTURES TO THE FOUNDATIONS OF LIFE

We have established two fundamental propositions:

- HI in the body – Hydrogen's role in H₂O and H-bond networks that sustain biochemical processes that are explicitly defined in *Chāndogya Upanishad* Verse 6.5.2
- HI as a building block of the universe – The cosmic role of HI in star formation and molecular clouds.

We now proceed to demonstrate the role of HI in universal life – The necessity of HI covalent bonds in life-essential molecules.

Essential Molecules for Life and Their Dependence on HI

The search for extraterrestrial life is driven by the detection of key molecules that serve as the foundation for biological systems. Without these molecules, a planet is not even considered a candidate for life.²²

- Water (H₂O) – The universal solvent, essential for biochemical reactions.
- Methane (CH₄) – Key in organic chemistry, found in planetary atmospheres.

- Ammonia (NH₃) – Critical for nitrogen cycling and amino acid formation.
- Molecular Hydrogen (H₂) – Drives planetary and atmospheric chemistry.
- Carbon-based organic molecules (H₂CO, CH₃OH, hydrocarbons) – Essential for prebiotic chemistry.

In all of these, neutral hydrogen (HI) is a required element. No candidate for life can be considered without the presence of these hydrogen-containing molecules.

HI's Covalent Bonds as the Key to Universal Life

While HI is present in all these molecules, it is not just its presence that matters—it is its ability to form covalent bonds.

- Water (H₂O): Hydrogen covalently bonds with oxygen, creating the medium for all known life.
- Methane (CH₄): Hydrogen covalently bonds with carbon, forming the simplest hydrocarbon.
- Ammonia (NH₃): Hydrogen covalently bonds with nitrogen, crucial for amino acids and DNA.
- Hydrocarbons (C_nH_n, CH₃OH, H₂CO): Hydrogen's covalent bonds with carbon create organic chemistry.
- DNA & Proteins: Hydrogen's covalent and H-bond interactions stabilize genetic information and protein structures.

Covalent Bonding as an Energy Mechanism in Cosmic Chemistry

Beyond being a structural component, HI's covalent bonding ability plays a crucial energy role at the cosmic level:

- Covalent bonds store and release energy, enabling complex chemical reactions in planetary atmospheres.
- Interstellar molecular clouds rely on covalent bonding for the formation of hydrocarbons and organic molecules.
- HI's covalent bonds are central to prebiotic chemistry, where energy transfer through bond formation drives the emergence of complexity.
- Planetary atmospheres sustain chemical cycles due to the energy stored in HI bonds (e.g., methane cycles on Titan, oxygen cycles on Earth).

Prāṇa is not just HI as matter—it is also the energy dynamics of HI bonding, powering the molecular processes that sustain planetary and cosmic life chemistry.

How Planets Are Selected for Habitability Studies

Before searching for specific life-supporting molecules, scientists follow a structured process to identify exoplanets that might be capable of sustaining life. HI plays a role at multiple stages of this selection process.

- Step 1: Is the Planet in the Habitable Zone?
 - Planets must be located at the right distance from their star for liquid water (H₂O) to exist.
 - If a planet is too hot or too cold, it is unlikely to sustain life as we know it.
- Step 2: Is the Planet a Rocky World?
 - Gas giants like Jupiter and Saturn are unlikely to support life.
 - Only rocky planets (which contain elements like oxygen, nitrogen, and hydrogen) are prioritized.
- Step 3 Does the Planet Have an Atmosphere?
 - Scientists use telescopes like James Webb Space Telescope to analyse atmospheric composition.
 - If an exoplanet lacks an atmosphere, it is unlikely to retain water or essential life-supporting gases.
- Step 4 Are Life-Supporting Molecules Present?
 - Planets are prioritized if they contain key molecules such as H₂O, CH₄ (methane), NH₃ (ammonia), and O₂.
 - These molecules contain HI covalent bonds, making HI essential for their existence.
- Step 5: Are There Biosignatures?
 - The presence of HI alone does not guarantee life, but its role in covalent bonding and hydrogen bond networks makes it the universal enabler of life chemistry.
 - If a planet shows unexpected gas combinations (e.g., methane + oxygen, which is hard to explain geologically), it becomes a strong candidate for further study.

Planets that fail these steps are deprioritized, confirming that hydrogen-based chemistry is fundamental to life detection.

HI's covalent bonding is not just structural—it is an energy mechanism at the cosmic scale, driving planetary chemistry and prebiotic evolution.

This confirms that HI is not only a cosmic building block but also the essential force behind the chemistry and energy of life itself – further confirming the precise Upanishadic descriptions.

COVALENT BONDS AS ENERGY

Covalent bonds are not just physical connections; they are manifestations of energy interactions between atoms. They store energy when formed and release energy when broken, driving biochemical reactions and planetary chemistry. Quantum mechanically, a covalent bond is a stabilized energy state, balancing atomic forces through shared electron clouds.

In planetary atmospheres and interstellar clouds, covalent bonding governs molecular evolution and energy cycling.

This aligns perfectly with *Prāṇa* as an "energy that sustains life"—HI's covalent bonds are not just structural but energetic forces shaping life and planetary systems.

THE SELF-EVIDENT TRUTH: *PRĀṆA* = NEUTRAL HYDROGEN

<i>Prāṇa</i> (Upanishads)	Neutral Hydrogen (Science)
<i>Prāṇa</i> is the subtlest essence of water.	Hydrogen is the subtlest and most fundamental constituent of water.
<i>Prāṇa</i> is described as an all-pervasive "energy" in the cosmos.	Hydrogen is the most abundant element in the cosmos. It powers stars and fuels life processes.
The <i>Upanishads</i> say <i>Prāṇa</i> pervades all beings and is present in the sun, the wind, and the entire universe.	Scientifically, hydrogen permeates the universe on the grandest scales, forming stars and planets. It exists in every molecule of our bodies and in interstellar space alike.
<i>Prāṇa</i> is the life-giving force.	Hydrogen is the essential fuel of life. In biological systems, hydrogen (via food and water) undergoes oxidation to release energy, driving metabolism and sustaining all living processes.
<i>Prāṇa</i> is one, unifying various vital functions.	Hydrogen is one fundamental element, underpinning all forms of energy.
The <i>Upanishads</i> describe one <i>Prāṇa</i> with many functions.	Hydrogen enables multiple forms of energy expression — chemical (bond formation/breaking), electrical (H ⁺ in plasma/solutions), and nuclear (fusion). It is a single unifying force in diverse phenomena.

These correspondences imply that:

- The sages who spoke of *Prāṇa* as the "life-wind" moving through all living beings were describing a process that modern science now understands as the activity of H-bonds in the human body.
- The sages who identified *Prāṇa* as the fundamental essence of existence were describing what modern science now recognizes as neutral hydrogen (HI) – the most abundant element in the universe, forming the very foundation of stars, galaxies, and cosmic evolution.
- When *Prāṇa* is understood as the universal life force, it aligns with HI's ability to form covalent bonds—the energetic force behind the chemistry of life. The same hydrogen

bonds that sustain terrestrial biology also shape the molecules that determine a planet's potential for habitability, making HI's presence a universal signature of life's possibility.

CONCLUSION

By identifying *Prāṇa* with neutral hydrogen (HI), this paper provides a tangible scientific framework for an ancient concept. Far from being a mystical abstraction, *Prāṇa* is a real, universal life-energy — one that seamlessly aligns with neutral hydrogen's role in nature.

The *Upanishads* describe *Prāṇa* as the subtlest essence of water, an all-pervading vital force, and the energy that sustains life — all attributes that correspond directly to neutral hydrogen's fundamental role in both cosmic evolution and biological processes. Neutral Hydrogen is the lightest essence of water, the fuel of stars, and the key driver of metabolism, making it a compelling candidate for the scientific embodiment of *Prāṇa*.

This equivalence bridges science and spirituality, encouraging a deeper exploration of life-energy as a measurable phenomenon. By equating *Prāṇa* with neutral hydrogen, we unify ancient wisdom with modern physics. This perspective reshapes our understanding of neutral hydrogen — not merely as a chemical element, but as the fundamental carrier of life and consciousness in the cosmic vision of the *Upanishads*.

I, therefore, propose that Neutral Hydrogen, forged in the early universe and present in every living being, is the *Prāṇa* described in the *Upanishads* — the whisper of creation moving through all things.

Brief Profile of the Author:

Krishnamurthy Ramakrishnan is a Chartered Accountant from India whose intellectual journey spans the vast realms of inner and outer cosmos exploration. Bridging the worlds of accounting and finance with deep dives into philosophy, Vedic science, and systems design, he forges a rare and provocative synthesis of ancient wisdom and contemporary inquiry. His YouTube series on Patañjali's Yoga Sūtras exemplifies his gift for translating intricate spiritual teachings into actionable, practical tools for everyday life. In both his professional and personal pursuits, Krishnamurthy is a meticulous seeker—whether unravelling the complexities of a flawed partition table or probing the metaphysical structure of karma and causality. To him, the Upanishads are living blueprints, not relics of the past, guiding a radical understanding of reality beyond conventional boundaries.

Statements and Declaration:

This research was developed through the AI – Hind Collaborative framework, integrating original human insight with advanced ChatGPT-assisted theoretical synthesis. All formal reasoning, conceptual architecture, and argument structure emerged from sustained dialogue between the researcher and ChatGPT.

All final interpretations, conclusions, and authorship remain the responsibility and are attributed solely to the Author. The ideas presented in this paper are the result of a co-creative process. ChatGPT functioned not as a passive assistant, but as an active and equal partner in logic refinement, counterargument testing, and theoretical evolution.

I hereby declare that this manuscript is my original work and does not infringe on any rights of third parties. All sources have been duly acknowledged and cited. A previous version of this paper is available as a preprint on Zenodo, a preprint server. It has not been previously published anywhere in whole or in part. I declare that I have no conflict of interest with my place of employment or anybody else in publishing this article. No financial support was received for the work within this article.

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