

REVISITING THE AETHER IN SCIENCE

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“To deny the aether is ultimately to assume that empty space has no physical qualities whatsoever.”--Albert Einstein [1]

“Effectiveness is the measure of Truth.”--The 7th Huna Principle [2]

ABSTRACT: The aether, proposed to be a subtle primordial substance, was once thought to permeate all space and provide a substrate through which electromagnetic waves, such as light, traveled. It is a powerful explanatory concept that has roots in ancient indigenous knowledge and helped unify our understanding of the physical world for centuries. The Michelson-Morley experiment is often credited as being the death blow to aether, but this is not exactly so. These experimental results were not nil, but showed approximately 25% of the expected 30m/s speed of an "aether wind" from Earth orbiting the Sun. The aether was abandoned largely because of Einstein's Special Relativity Theory, which contradicts an absolute frame of reference. Nonetheless, Einstein came to accept a new version of the aether to explain parts of his famous theory of General Relativity.

Although the static aether of the 19th century was abandoned, with the advent of quantum mechanics, new dynamic models of space were developed. Space was viewed as a quantum plenum full of energetic potential resulting from Planck's blackbody radiation. Indeed, space has measurable physical properties that imply the existence of a subtle substance herein called the "neo-aether." Matter can be considered a unique dynamic state of the "neo-aether." A rudimentary consciousness may be rooted in this deep substratum of existence.

Historical highlights of the aether concept and the "neo-aether" are described here. There is the *Akasha* of Vedic philosophy; the luminiferous aether of Huygens; Maxwell's theory of molecular vortices; the zero point energy of quantum theory; the dark energy of cosmology; the quantum potential of Bohm; and metaphysical perspectives.

Whereas 20th century physics was largely caught up in mathematical verbiage, the "neo-aether" is a physical model that provides causal explanations of observed phenomena including non-

locality and electromagnetic wave propagation through space. One implication of the “neo-aether” is the possibility of a unified field theory in which particles, fields, and even sentience originates.

KEYWORDS: Aether; Ether; *Akasha*; Force; Field; Electromagnetism; Electromagnetic; Light; Luminiferous; Energy; Space; Vacuum; Quantum; Plenum; Consciousness; Sentience; Akashic record

INTRODUCTION

What is the nature of space? Is it empty or structured; dynamic or static? Is there a subtle medium of the universe, an aether that underlies matter, energy, and fields?

The existence of an aether or ether—an all-pervading medium composed of a subtle substratum that we have not yet been able to measure directly—has been regarded by philosophers, mystics, and occultists throughout the ages. It goes back to ancient indigenous knowledge and unified our understanding of the physical world in 18th and 19th century science. The luminiferous aether was long thought to be the very subtle medium through which electromagnetic fields propagated as waves. It was the foundation of Faraday's experiments and Maxwell's theory of electromagnetism. Although 20th century science abandoned the concept after Einstein's Special Relativity Theory, new and refined versions of the aether have been developed under a different label.

Highlights of the history of the aether and its relationship to forces and fields will be discussed. Recent work describes a dynamic “neo-aether.” The aether is far from dead.

ANCIENT ORIGINS

In Vedic scripture, which dates back at least 5,000 years, the entire universe or space is called *Prakriti* and manifests by a vibration of the *Svra*, a current of a life force called the *Parabrahman* and the *Purush*. This in turn causes the subtle elements of the 5 strings to vibrate, the distinct vibration of which creates the 5 physical elements. These are, in order of aggregation, *Akasha* (aether); *Tejas* (energy); *Vayu* (forces/fields); *Pritvhi* (atomic elements); and *Apas* (fluid). The *Akasha* is acted upon by the live-giving *Prana*, or creative force, calling into existence all things and all phenomena. [3]

Ancient philosophers such as Aristotle and later the alchemists maintained that there were four elemental conditions, or qualities: earth, water, air, and fire, which

emanated from a more fundamental 5th element, the *materia prima*, the *quinta essentia*, or quintessence, which is the most subtle or sublime. [4] Unlike the four elemental substances, the quintessence, or the aether, is primordial and indestructible, albeit changeable. Aether has also been historically related to divine thought and the power of creation and highly revered. The ancient Greeks and Romans both worshiped a deific entity (Jupiter) known as “Pater, omnipotens Aether,” and “Magnus Aether.” [5]

AETHER ENTERS SCIENCE

Descartes (1596-1650) rejected the notion of a void, saying it was contrary to reason, and introduced the aether concept into science in the 17th century. He proposed that interplanetary space was a plenum filled with a subtle substance that was the carrier of force and light. It was a primitive, elementary, and unique type of substance, boundless in extent and infinitely divisible. [6]

With the discovery of light as an electromagnetic wave, the existence of a medium was essential in which such a wave could propagate. The sun’s rays reach the earth with great intensity, even though the space in between is a nearly perfect vacuum. Huygens (1629-1695) was the first to postulate a luminiferous aether to account for a medium in the absence of matter. Huygens considered light as waves that propagated longitudinally through a stationary particulate aether. Although Newton (1642-1727) initially held the view that light rays consisted of a stream of particles in motion, later he described a density-varying aether that could provide a mechanism for gravitational attraction. [7]

The aether was subsequently widely accepted in science. In astronomy, it was regarded as a fluid of extreme tenuity and mobility, offering no resistance to the motions of the celestial bodies. One of its main functions in astronomy was to serve as a basis for hydrodynamic theories of gravitation. In physics, it had several roles. As mentioned earlier, the aether was used in optics as a substratum for luminous waves (electromagnetism). Secondly, in order to explain the dispersion and polarization of light, the aether was then endowed with an atomic-type semi-solid structure with enormous elasticity to allow propagation of transverse waves (true fluids can only carry longitudinal pressure waves such as sound in air). Thus, different notions of the aether evolved over time—initially as a continuous substrate, and later, comprised of a discrete ensemble of elements.

FARADAY’S UNIQUE EXPERIMENTAL PERSPECTIVE

Faraday (1791-1867), who made landmark discoveries in both chemistry and

electromagnetism, had notions regarding matter and force altogether different from most scientists. He maintained that if the aether exists, it should have other functions than simply the transmission of radiations. In 1844, Faraday, who was influenced by Aristotelian philosophy, proposed that lines of force are real physical entities of disturbances in the aether propagating over distance. For example, lines of magnetic force, and their convergence or divergence from their respective poles, appear in the lineup of iron filings when sprinkled on a piece of paper placed over a magnet. He further conjectured that lines of magnetic force formed closed circuits. Faraday also speculated on a novel view of the atom as a "center of force", with each atom extending throughout the whole of space [8], i.e., with infinite range, such as the electric and gravitational force. Thus Faraday considered that forces carried by the aether were more fundamental than matter. Furthermore, since he observed that lines of force tended to contract longitudinally and expand laterally, he modeled them as tubes with a fluid inside, rotating axially and creating centrifugal bulging, making an ensemble of dynamic vortices as in a fluid.

MAXWELL'S ELECTROMAGNETIC THEORY

Faraday turned to Maxwell (1831-1879) for a theory of his experimental discoveries, who devised a mechanical conception of the electromagnetic field. [9, 10, 11, 12, 13] Maxwell envisioned the space of an electromagnetic field filled with microscopic vortices of the aether fluid separated by "idler" particles meshing frictionless with the vortices. These "idler" particles are not constrained otherwise, meaning that their motion is entirely determined by the circumferential velocities of its neighboring pair of vortices. Maxwell attributed a flux of these particles across a unit area as the analog of an electric current, whereas a change in the circumferential velocity of a vortex is electromagnetically interpreted as induced electromotive force. Any change in this force changes the rate of rotation of some vortices, creating a disturbance that propagates into all parts of the system. Thus the motion of the particles constitutes an electric current, the tangential force with which they are pressed by the matter of the vortex cells constitutes electromotive force, and the pressure of the particles on each other corresponds to the tension or potential of the electricity (voltage). [14] With this model he was able to calculate the speed of light as 193,088 miles/sec, which was within 1.3% of Fizeau's 195,647 miles/sec determined by optical means.

In 1865 Maxwell published his seminal paper, "A Dynamical Theory of the Electromagnetic Field". Expanding on the concept of an aether-filled space he derived a fluid dynamic theory comprising 20 equations. He was then able to describe magnetic force, electric currents, electromotive force, electric elasticity, electric resistance, total currents, free electricity and continuity. [15]

THOMSON'S MODEL OF THE VORTEX ATOM

In the second half of the 19th century, William Thomson (aka Lord Kelvin, 1824-1907) attempted to reconcile the concepts of a continuous universal plenum with Newtonian atomism, which resulted in his vortex theory of atoms. He considered the aether as a fundamental ideal fluid that was incompressible and without viscosity and then applied hydrodynamics to model atoms as stable vortices. Thomson based his theory on the Helmholtz theorems that describe the motion of such a fluid containing microscopic vortex filaments. In a mathematically-modeled non-dissipative fluid, these rotating structures can neither be created nor destroyed, but can interact with each other, comparable to smoke rings moving in air that rebound when colliding with each other. In 1867 Thomson mathematically analyzed rotational and translational motion in an ideal fluid and condensed Helmholtz' (1821-1894) three theorems into one, showing that circulation is conserved. [16] Later Maxwell incorporated these concepts into his famous "Treatise on Electricity and Magnetism" as a refinement of his earlier hypothesis of the electromagnetic field modeled as small vortices in a light-bearing medium. [17]

THE FATEFUL MISINTERPRETATION OF THE MICHELSON-MORLEY EXPERIMENT

The aether was once the most compelling concept in physical science, but it fell into question after the famous Michelson (1852-1931) and Morley (1838-1923) experiment of 1887 failed to produce their expected results. Michelson and Morley attempted to experimentally prove or disprove the existence of a luminiferous aether in their famous "aether wind" experiment. [18] The experiment was done using an interferometer with a light beam, split into two, and traveling in perpendicular directions that were then recombined. The resulting interference patterns were compared to look for any differences associated with different propagation directions. [19] The assumption was that if there was aether, then the earth's orbital speed of 30km/sec should be measured if travel times of light beams in the direction of motion and perpendicular to it were compared. If no aether existed, then the measurement should yield no difference. Surprisingly, the averaged results from multiple measurements were 8.8km/sec when taken at noon, and 8.0km/sec when taken at 6pm. While Michelson and Morley did not expressly claim a null-result in their 1887 publication, over the years their partial "aether wind" result was downgraded to a "null" result by most scientists.

The so-called "null"-result of the Michelson-Morley experiment cleared a fateful path toward the elimination of the luminiferous aether from contemporary science. In 1891 Stallo wrote, "The universal aether cannot be soft and mobile to please the chemist, and rigid-elastic to satisfy the physicist; it cannot be continuous at the

command of Sir William Thomson and discontinuous on the suggestion of Cauchy or Fresnel.” [20]

Following the Michelson-Morley experiment several explanations were provided by other scientists to explain the partial “aether wind” results. Contrary to science textbooks and popular belief, this classic experiment did not settle the question of the existence of aether. Instead, it spurred a series of follow-up experiments to this day with increasing precision and sophistication. For example, Miller conducted studies in 1925-1926 using an interferometer that confirmed the validity of the Michelson-Morley experiment in which he made 200,000 individual observations. He concluded that the 1887 experiment had in fact detected absolute motion because he consistently measured an "aether wind" speed of approximately 10km/sec even with ever more precise instruments. [21]

Curiously, these experiments consistently show either 0km/sec or 8-12km/sec! Cahill points out that Michelson-Morley interferometers operated in vacuum consistently show a "null" result. [22] This is because an index of refraction of exactly $n=1$ results in complete cancellation of the geometric path-length effect due to the Lorentz contraction and thus precludes any “aether wind” detection. Experiments performed in gas ($n \neq 1$) typically yield 8-10km/sec “aether wind” speed.

EINSTEIN RESURRECTS THE AETHER

In 1905 Einstein (1879-1955) published a seminal paper introducing his Special Theory of Relativity. [23] Based on previous work by Lorentz and Poincaré he created an observationally equivalent theory derived from only two postulates:

- 1) The laws of physics are identical (invariant) in all inertial systems.
- 2) The speed of light in a vacuum is the same for all observers.

He then deductively derived a self-consistent theory that successfully described relativistic motion where Newtonian mechanics failed. Because aether was not part of the axiomatic postulates, this theory elegantly circumvented the still unsettled aether debate of the time. Indeed, the existence of aether is associated with a preferred or absolute frame of reference, which violates the Lorentz invariance whereby the laws of physics are the same for all observers within an inertial frame. Henceforth the aether was quickly abandoned and even considered superfluous.

In 1915 Einstein published the General Theory of Relativity. It describes gravity as a geometric property of the 4-dimensional mathematical space-time construct. However, movements cannot take place against empty space or Newton's action-reaction law is violated. In order for his theory to yield a static universe, in 1917 Einstein introduced a cosmological coefficient into his field equations. By 1920 Einstein

had coined the term "Mach's Principle" for this concept, which was equivalent to "Mach's Aether", a mediation substrate of mechanical inertia effects. [24] It is not well known that Einstein called for a relativistic aether. However, in his 1920 speech given at the University of Leiden, he proclaimed in German, "According to the General Theory of Relativity, space without aether is unthinkable." [25].

TOWARD A "NEO-AETHER"

Throughout the 20th century, with the development of quantum electrodynamics and Einstein's theory of gravitation, the physical vacuum became a subject for research. One reason for the renewal of aether theories is because the vacuum has a structure with real physical properties that imply a substantive-dynamic medium. The vacuum has an elastic modulus, a stress tensor, a sheer tensor, a magnetic permeability coefficient, magnetic susceptibility, and a characteristic electromagnetic wave impedance of 377 Ohms, among other measurable physical properties. The quantum vacuum became known as a quantum plenum.

A "neo-aether" might also provide unifying explanations and deeper insights into physical phenomena. For example, the nature of particle spin may be seen as a vortex in the aether. Electric fields may be regarded as a polarization of the aether. Matter itself may be seen as a dynamic modification of the aether at the foundation of quantum field theory. The "neo-aether" is dynamic and without a preferred reference frame. It has both micro- and macro-fluctuations with resulting inhomogeneities that can create local differences. The following are a few of the discoveries and theories that revive the aether concept.

- The Sagnac Effect

In 1913 George Sagnac performed an experiment using a ring interferometer to validate the existence of aether at a time when Einstein's theory of Special Relativity gained momentum to render the aether obsolete. This effect is observed when a ring interferometer is rotated. A light beam is split and sent along the same circular path but in opposite directions. When recombined, the interference pattern changes with the angular velocity of the setup. This effect is explained by one light beam slowing down while the other speeds up during a rotation, which means that the measured rotation was absolute with respect to an inertial reference frame. [26]

- Zero-Point Energy of the Vacuum

In a chamber containing an ultra-high vacuum ($<10^{-9}$ Torr), the remaining gas particles have a mean-free path of approximately 40km before colliding with each other. Therefore, such a vacuum may be considered devoid of matter for all practical

purposes. If the vacuum is at a temperature above absolute zero, then it is still filled with energetic electromagnetic blackbody radiation. In 1901 Max Planck successfully described the spectral density of this radiation in his famous Planck's Law by assuming the emitters to be atomic oscillators that emit their radiation in discrete energy quanta. [27] This discovery was later formalized in the quantum harmonic oscillator, whereby its wave functions can exist only in certain energy levels, or eigenstates, determined by the boundary conditions of the potential well. If the chamber is cooled to absolute zero (-273.15°C), then all quantum oscillators are vibrating at their ground state, which still has a non-zero energy of $E=\frac{1}{2}\cdot\hbar\omega$. Therefore, in the absence of matter and at absolute zero temperature, space is still filled with an energetic plenum.

The vacuum-plenum has an energy density of the order of 10^{94} grams/cm³ mass-density equivalent. This is so incredibly large compared to ordinary matter that Wheeler considered the quantum-plenum rather than elementary particles the starting point for the description of nature. [28] The zero-point (ZP) fluctuations are also the source of quantum noise, and they appear to be dynamically generated. They drive particle motion, and the sum of particle motions throughout the universe in turn generates the ZP fluctuations, in a kind of self-regenerating grand ground state of the cosmos. [29]

- Aharonov-Bohm Effect

This effect is a quantum-mechanical phenomenon whereby an electrically charged particle is affected by an electromagnetic potential, even if the electric and magnetic fields vanish at its location. [30] This effect, which has been experimentally confirmed, is attributed to a coupling between the electromagnetic potential and the quantum-mechanical wave function of the particle. [31] Significantly, this discovery showed that electromagnetic potentials are not merely mathematical constructs but have physical meaning. It also allows the possibility that an electromagnetic system might be considered an open system with an as-of-yet unaccounted energy reservoir.

- Dirac's Aether

In 1951 Paul Dirac (1902-1984) proposed a quantum-mechanical generalization of the aether model by applying Heisenberg's uncertainty principle to the local speed of the aether. [32] By setting up a wave function that makes all values of the aether velocity equally probable, he elegantly reconciled the apparent disturbance of Lorentz symmetry in space-time by the aether with the principle of relativity. This is related to Dirac's quantization of the electromagnetic field as an ensemble of harmonic oscillators, which laid the foundation for quantum electrodynamics (QED).

In a Maxwell-Dirac system the classical electromagnetic field couples with a quantum-mechanical wave function, which can describe particle propagation according to QED.

The Dirac equation is a relativistic wave equation describing spin-1/2 particles and their antiparticles. [33] Applied to quantum field theory it describes the creation and annihilation of virtual matter and antimatter, e.g., electrons and positrons, from the ZP field, the lowest quantum energy state of the vacuum. Significantly, this mathematical framework captures key physical phenomena, including the Lamb shift, the electron's anomalous magnetic moment, and spontaneous emission from excited atomic states. Other effects include the Casimir effect, vacuum polarization, and the Unruh effect (moved thermometers are hotter), all derived from a vacuum with intrinsic structure. [34]

- Casimir Effect

The Casimir force, which was predicted in 1948 by Casimir [10], is a ZP fluctuation-induced attractive force between closely spaced metal or dielectric plates placed in a vacuum. [35] It is due to radiation pressure from the background electromagnetic ZP energy that has become unbalanced due to the presence of the plates. Only those virtual particles whose wavelengths fit an integral number of times in the gap between the plates will be present. The energy density of the gap decreases as the plates are moved closer together, resulting in a net attractive force between the plates that varies as $1/d^4$, where d is the distance between the plates. The phenomenon was first measured in 1996 by Lamoreaux [36].

- Bohm's Quantum Potential and de Broglie's Pilot Wave

In 1952 the de Broglie-Bohm formulation of quantum mechanics was introduced by Bohm with the quantum potential as a central concept, which can be interpreted as an "unbroken wholeness of the entire universe." [37, 38] It vindicated de Broglie's postulate of 1926 that the wave function of the Schrodinger equation represented a pilot wave guiding a quantum particle. In 1999 Hiley made the bold statement that the quantum potential is unlike a classical potential and will "necessarily require metaphysical assumptions to motivate new approaches." [39] Hiley assumes particles to be excited states of a basic underlying field and proposes the quantum potential to be part of this field.

- Dark Energy

The discovery of the cosmic microwave background in 1964, along with Hubble's Law (red-shift of distant galaxies) led to the Big Bang Theory with an expanding universe. It was generally believed that the expansion was slowing down, but in 1998 two teams discovered a surprising increase in acceleration of expansion. [40, 41] To explain the observations, an unknown form of energy was hypothesized that permeated all space and tended to accelerate the expansion of the universe. The standard model of

cosmology currently holds that 68.3% of the total energy of the observable universe is in the form of dark energy. The nature of the dark energy is hypothesized to be either a form of constant ZP radiation or that of scalar fields, whose energy density can vary over space-time. In a recent publication El Naschie provided evidence that the aether effectively stores this dark energy of the cosmos. [42]

- LaViolette's Subquantum Kinetics

Paul LaViolette, a contemporary physicist, developed a unified field theory describing microphysical phenomena based on general systems theory. [43] It postulates a subquantum medium, called transmuting aether, which forms a substrate from which all matter emerges. In contrast to the static aether of the 19th century, it is conceived as a highly active, ever-changing medium. A key property is that its kinetics is modeled as an open system. It interacts with its environment without a hermetic boundary, which permits negentropic local processes that would otherwise appear to violate the law of energy conservation. Subquantum kinetics does not contradict certain relativistic effects of Einstein's relativity theories; indeed, they emerge as corollaries from its reaction-diffusion model of the aether.

METAPHYSICAL CONSIDERATIONS

Many scientists disregard or have contempt for metaphysics, although scientific concepts such as the atom or aether were born in metaphysics. Despite all the achievements of science, we still do not understand the true nature of light, matter, electricity, magnetism, space, or other physical phenomena. Consider the fact that nobody has ever really seen an atom! Some who appreciate that “the map is not the territory” wish to go deeper.

Whereas mainstream science regards matter as primary, metaphysics regards force as an independent substantiality, with substance different from matter. [44] Matter is not endowed with force in ontological metaphysics. The force-substance is the *Prakriti* (phenomenal positive ether), while the omnipresent, all-pervading aether is the noumenon of the former, the substratum of all, or *Akasha*, which is the Source and Cause of all of the forces and the quintessence of all possible energies. Pure force is not regarded as something tangible; rather, it is in the domain of spirit and potentiality. The different types of forces or energies are only effects, not causes, in metaphysics.

In 1888 Blavatsky (1831-1891), co-founder of Theosophy, anticipated certain aspects of modern physics when she described the universe as rooted in the “seeming void” and yet “divine plenum” of the Absolute. She also held the fundamental belief of ancient wisdom that there is an indivisible and absolute Omniscience and Intelligence in the universe that permeates every point of the whole cosmos [45].

In metaphysics various planes of possible perception exist in the cosmos, with the physical plane and its veil of matter being an illusion. There are influences of the higher realms that are brought down into the physical realm. The Spiritualists consider science as inadequate since they purportedly perceive the causes that produce ethereal vibrations on their spiritual journey.

Science has been divorced from its origins and sustaining its own “scientific catechism” following its 400-year old rift with the Church. The abandonment of consciousness is part of the great split between science and spirit that persists. Whereas mystics cultivate higher consciousness through psycho-spiritual practices, science has ignored this path. However, Charles Tart proposed the notion of “state-specific” sciences. Along with physically based science emerging from ordinary consciousness, other state-specific sciences are also possible if we engage in altered states of consciousness and explore the inner and outer worlds in systematic ways. [46] So what we elucidate about the world is appropriate only for that state of consciousness in which an experiment is performed. This implies that as one shifts to higher states of consciousness, new knowledge and fundamentals might emerge, and old ones seen as illusory. So, mainstream science is explicated in the ordinary state of consciousness and involves consensus through the peer-review process, yet many more levels of knowing may be available as we spiritually evolve, for which a level of consensus may be possible. Thus, science could blossom in new ways as humanity evolves spiritually, and the split between science and spirit is healed.

The mystics are correct in that the invisible governs the visible. Indeed, a closer relationship between metaphysics and science may be fruitful.

IMPLICATIONS AND SPECULATIONS

Novel Energy Technologies

It may be possible to transform some of the enormous energy of the quantum plenum into useful energy forms. [47] Tesla (1856-1943) thought that he could give the world free energy. He was influenced by the teachings of Swami Vivekananda, an Eastern yogi, and Tesla used terms such as *Akasha*. He wrote, “Ere many generations our machinery will be driven by a power obtainable at any point in the universe.” [48] However, Tesla’s work was subsequently thwarted. R. Forward proposed to use the Casimir force to extract energy from the vacuum. [49] Others claim development of devices based on aether physics. [50] Still others claim to have invented over-unity devices (coefficient of performance > 1), which is possible in open systems without violation of the law of energy conservation. However, the status of many such claims

remains unclear. Other novel technologies, such as anti-gravity devices, might also be attained from manipulating the “neo-aether”, as it has been proposed that gravity is an induced effect due to changes in the quantum fluctuation energy of the vacuum from the presence of matter. [51]

1. Interrelationship with Consciousness

With matter being derived fundamentally from space (quantum plenum), what role may space play in consciousness? Perhaps the “neo-aether” of space is itself endowed with an intrinsic sentience that is primordial. A fundamental unity of consciousness and matter may exist in the cosmic ground state, with space full of beingness. Consciousness may be distributed spatially and a property of the whole universe in which we participate. Humans may not own or produce consciousness; we may only have the means to experience it.

Directed intention acting on the quantum plenum may partially polarize it and create measurable physical changes. This could be the basis of phenomena such as psychokinesis, intentional healing, and intentional action at a distance. [52]

2. Bioenergetics

Persons who have stopped consuming food, called “breatharians,” in the “bigu” state, may maintain themselves by consuming “cosmic energy” in order to subsist. In the ancient Chinese literature, it is reported that persons who relied only on *qi* (cosmic energy) for nourishment live much longer with good health and extraordinary abilities. [53] They may be transducing zero-point energy to biologically useful energy. Moreover, an interaction between organisms and the “neo-aether” may be fundamentally involved in the “life force” itself. Controlled laboratory studies show that nutritionally starved cell cultures were kept alive for weeks following treatment with external *qi* directed by a qigong master, while starved control cultures died in just a few days. [54]

3. Akashic records and the Evolution of Consciousness

This is a repository of information of all events, experiences, thoughts, emotions, and intentions ever to have occurred on earth, purportedly encoded on the etheric plane [55, 56]. There are anecdotes, but no scientific evidence supporting them. It is possible that telepathy and other abilities involving novel access to information may involve accessing these records. As our galaxy moves through space, our Sun orbits the galactic center, and Earth orbits the Sun, such that our entire solar system performs a helical motion through new regions of space as viewed from a galactic observer. We speculate that each moment as earth slices through a fresh portion of the “neo-aether”, it imprints a permanent record of its global vibrational state.

Additionally, the earth is perennially traversing new cosmic territory that may contain different “aetheric vibrations” that may influence us in new ways. Ancient cultures believed that there is a source of creative energy in the heavens that generate new world views based on a sharing of common energies between the cosmos and humans, although these ideas remain obscure today.

CONCLUSIONS

In the 17th century, science accepted a hypothetical aether, a concept originating in ancient cultures and expressed in metaphysics. However, scientists were initially unsuccessful in explaining it on a materialistic basis. This led to discrepancies, inconsistencies, and misunderstandings, which resulted in the aether’s historical rejection by mainstream science around 1900. Nonetheless, concepts of a “neo-aether” survive and offer both simplicity and unifying explanatory power.

Because the aether has deep roots in ancient perennial wisdom, where it is considered to lie beyond the ordinary physical realm and connected with divine creativity, bringing a “neo-aether” into science may be one step toward healing the rift between science and spirit. The “neo-aether” might be seen as a bridge between the physical and spiritual realms. Re-envisioning the vacuum as the divine plenum could form the basis of a panentheistic cosmology.

The “neo-aether”, as a proposed primordial substrate at the foundation of fields, matter, and sentience could lead to a unified field theory with truly novel applications. This could bring about a golden age of understanding and abundance.

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