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# From History's Dustbin: A Semiotics of Evolvability Discovered within Man and his Mountain of Transformation

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*Abstract: Grounded in the semiotics of Charles S. Peirce, T.A. Sebeok and new biosemiotic theory, this research is a preliminary investigation of the psychic meaning of Man and his Mountain, transformative signs which are often found in religion, myth and literature. Recently, biologists discovered horizontal gene transfer (HGT), the exchange of DNA between different species (aka evolvability or the evolution of evolution), is a common process occurring not only in Bacteria and Archaea, but also in Eukarya—plants, fungi and human cells. Since many of Nature's laws are still veiled, it is clearly illogical to argue absolutely that HGT for human DNA is not possible after death based on the absence of hard evidence. For that reason and historical evidence pointing to a comparative biosemiotic use of Man and his Mountain, this paper aligns a semiotics of evolvability with the confusing biophysical survival messages preserved in Pierre Teilhard de Chardin's evolutionary philosophy, Mesoamerican myth, and the Book of Revelation.*

Keywords: Evolutionary Biophysics, Semiotics of Evolvability, Horizontal Gene Transfer, Teilhard de Chardin, Book of Revelation, Mesoamerican Myth, Religion and Science, Ancient Egypt

**S**CIENCE TELLS US that our universe is a large black hole with a holographic mode of operation. This means the world is a hologram, an illusion, and our brains are also holograms or receivers of messages from the holograph, which is the quantum domain. Both worlds operate by physical laws. The quantum world ruled by quantum mechanics orders our classical universe ruled by general relativity. What we perceive as real are signs pointing to the quantum holograph, the whole writing, what the Aztecs called *Nelttiliztli* or the 'root and foundation of all things.' Part of the problem is our material world of habits persuades us to see signs as real things and undervalue the sign's potential for original meaning. Accordingly, the earth is only a planet, a mountain is just a rock heap, and modern Man is a misinterpretant. History's dustbin<sup>1</sup> is full of long-lost signs waiting to rise again with their quantum message for human survival.

Of special significance to Man's survival is the sign of the mountain or the idea in the mind that the sign excites. To some, it connotes loftiness of spirit, communion of the blessed, awareness of totality. To many traditions, the mountain is the creative center of the world. As Eliade states, "the peak of the cosmic mountain is not only the highest point on earth, it is also the earth's navel, the point where creation had its beginning" (1952). There is the polar mountain, white mountain, double mountain, as well as the mountain of stone, where the living exist on the

exterior with the dead within the hollow interior. Egyptian pharaohs had their crystal mountain of Bakku, Teilhard de Chardin had his evolutionary Omega peak, the Aztecs had their curved, twisted mountain, and Christ had Mount Zion, where he saved only 144,000 and reaped the earth's left over human vintage in his bloody wine press. Even today, physicists visualize mountains, for String Theory predicts that our bubble-universe occupies one valley in a multidimensional mountain range of infinite valleys (Bousso and Polchinski 2004). Could this entire conceptual matrix point to a biosemiotics<sup>2</sup> of creative transformation for humans to the root of all things?

What kind of transformation could accommodate the intentionality of biological Man, who is embedded in physical spacetime within a holographic universe? Recent studies on ancient Egyptian texts (*Isis Thesis*) support Man's potential for horizontal gene transfer (HGT) and lytic transformation at human death (King 2004, 2005; 2006). (Table 1) This *semiotics of evolvability* is a dual biophysical process revealing a biology of viral and bacterial proteins, binding and folding in protein folding funnel landscapes along the DNA magnetic field wormhole in a process equivalent to microscopic black hole/white hole formation/evaporation physics, technically known as a micro Einstein-Rosen bridge. (Table 2) This may seem surprising, yet physicists calculate that a 'gas' of wormholes is a possible ground state

<sup>1</sup> The term is from *The Illusion of the End* by Jean Baudrillard.

<sup>2</sup> Semiotics as established by Charles S. Peirce (1839-1914) is the study of signs, meaning and sign systems. T. A. Sebeok (1920-2001) built biosemiotics, which encompasses all biological levels of sign-processes (humans, animals, plants, bacteria).



of quantum gravity (Preparata et al. 2000), and they also know that *quantum mechanical equations resemble those of the kinetic theory of molecules* (Musser 2004).

If Egyptian knowledge endorses HGT mediated by a virus, then humans may have a viral origin, as well as viral traits and behavior, supporting that HGT may be possible at death. This argument (King 2007) expands on biosemiotic theory by including the virus as a living system in the natural history of the human lineage. Supporting ‘evolutionary intentionality’ based on code-duality,<sup>3</sup> the research shows that human behavior (sexuality, religion, science, sports warfare) is a biological message flow related to microbial genetics, viz., quantum HGT and transformation in a bacterial cell.<sup>4</sup> The microbial history of life’s evolution, human genome research proving humans have viral and bacterial genes, recent scientific studies on HGT, and viral human behavior support this argument.

It is known today that genetic material released from dead and living cells persists in all environments, and that DNA can be transferred from dead to living cells (Avery et al. 1944). Put simply, HGT could be a selectable mechanism at human death for species survival because it may be encoded in the noncoding elements of the human genotype due to our microbial history. As Earl and Deem (2004) explain, base substitution, recombination, and HGT drive evolution and determine *evolvability* (the propensity to evolve), for “these mechanisms that define the rates of change are encoded in the genotype, and so they are selectable.” Since many of Nature’s laws are still veiled, it is clearly illogical to argue absolutely that HGT and lytic viral transformation for human DNA is not possible after death based on the absence of hard evidence, for death may eliminate genetic barriers preventing HGT.

In any case, Peirce notes that reasoning involves sign interpretation (EP 2.4), and this transformative biology embedded in physics is connoted by a dialectics of conical forms (mountains, volcanoes, hills; peaks, pyramids, triangles; valleys, pits, caves, holes; mouths, jaws; cones, horns, funnels, whirlwinds, vortices; spheres, circles, wheels, spirals, coils) and bridging mechanisms (ladder, tunnel, spindle, rain-

bow, mirror, wormhole, double mountains, double-headed serpents, bull horns), hereinafter referred to as the mountain sign. Although the full meaning of the mountain sign is contextualized with multiple signs (light, fire, sacrifice, love, water, and so on), this paper only focuses on the sign’s basic transformative function, which supports human self-reflective intentionality directed toward the experience of climbing to the mountaintop, the content or meaning of this act pointing to a quantum biophysical transformation.

Because the Egyptian studies rest on a semiotic phenomenology of mystical, mythological and religious revelations pointing to human potential for adaptation and survival within the universe, this paper explores Teilhard de Chardin’s evolutionary biophysics, Mesoamerican myth and the Book of Revelation to discover evidence of the Egyptian biophysical survival message in these random cases. One can then infer inductively as to the truth of the Egyptian hypothesis. As Peirce said, “the work of reason consists in finding connections between facts” (EP 2.91).

## 1) Teilhard’s Biophysics

... for, from the mountain peak, I have seen  
the *Promised Land*.

Teilhard de Chardin. *The Heart of Matter*

The ideas in the writings of the Jesuit paleontologist Pierre Teilhard de Chardin (1881-1955) have been called remarkable by Julian Huxley, anti-scientific, unintelligible and a ‘bag of tricks’ by Nobel Prize laureate Peter Medawar, and ambiguous, flawed and dangerous by a Catholic Church monitum. Anthropologist H. James Birx sums up Teilhard’s ideas in a 1972 book review:

The Teilhardian system is evolutive and monistic, but closed, scientifically unwarranted in part, philosophically unconvincing, and grounded in idealism, theology and mysticism. In short, it is neither a rigorous phenomenology of evolution nor a sound philosophical anthropology.<sup>5</sup>

<sup>3</sup> In Jesper Hoffmeyer’s and Claus Emmeche’s extension of biosemiotics, the behavior of natural systems is based on code-duality or the continuous message flow between DNA and organisms, assuring semiotic survival through sexual reproduction (1987; 1991). Linked to this process is the view that mental states have content or intentionality, which organisms of all types experience in some capacity. Hoffmeyer claims all biological systems have ‘evolutionary intentionality’ based on code-duality, viz., gene expression patterns result in lineage behavior representing its natural history (1996). The ecological niche or *Umwelt* is the sign determining the lineage’s actual pattern of life and reproduction. (1996; Hoffmeyer and Emmeche 1991)

<sup>4</sup> Today biologists claim HGT, the exchange of DNA between two different species, is “Biology’s Next Revolution” (Goldenfeld and Woese 2007) because it is a common biospheric process occurring not only in Bacteria and Archaea, but also in Eukarya—plants, fungi and human cells (Sorensen et al. 2005). In 2001, the International Human Genome Sequencing Consortium reported the existence of 223 bacterial proteins, the likely result of HGT. Even genetic engineering can be broadly defined as the activity of horizontal gene transfer.

<sup>5</sup> Later in a 1997 presentation, Birx qualified his earlier assessment of Teilhard’s ideas by stating that Teilhard was a visionary and “futurist who foresaw the collective consciousness of our global species increasing in terms of information and technology.” Similarly, in 1996, Pope John Paul II finally endorsed evolution as Teilhard had decades earlier.

On the contrary, Teilhard may have been aware of biology's current revolution, HGT. Teilhard describes his psychic-organic-physical experience as an activation of energy and 'glorious vision' still retained 'when I come down from the mountain.' Teilhard explains that he climbed up to the point where the universe appeared as a 'great rising surge' that creatively 'converged ahead into a single dazzling spear-head.' He calls the universe "a sort of biological 'vortex,'" constructing his biophysical model on a converging universe in the process of cosmogenesis (Table 3). More than once Teilhard draws a conical, peaked diagram in his texts to define his biophysics.

Teilhard refers to his system as 'creative transformation' in a 'biological vortex' with a 'temporo-spatial peak,' explaining that the 'Human-million, with its psychic temperature and its internal energy, became for me a magnitude as evolutively, and therefore as biologically, real as a giant molecule of protein.'

Proteins are multi-tasking molecular machines that act after folding into their native state, and biologists generally accept that this process involves multiple pathways in a funnel-shaped energy surface. According to Leeson et al. (2000), "the folded protein could be visualized as a point high on the slopes of a slippery landscape. This state-space point would then rapidly slide 'down' to a lower energy state that corresponds to the unfolded configuration." Teilhard's psychic use of the mountain sign may point to a quantum experience of protein folding.

Biologists describe the protein folding-funnel landscape using the same words Teilhard uses, such as *convergent*, *consistency*, *barrier*, *bounce-back*, *surface tension*, *temperature*, *nucleation*, *activation free energy*, *collapse*, and *Omega* states, describing expansion/contraction dynamics within a time evolution.

In *The Vision of the Past*, Teilhard asserts that evolution is 'an operation planned from within' and that '*Since man and in man, simple evolution tends gradually to mutate into auto- (or self-) evolution.*' Teilhard describes mutational HGT clearly as an 'evolutionary leap' or alternative to the 'morphological dead end.'

... we must interpret the *present-day* structure and deportment of the human group in a very different way, as an extraordinary evolutionary leap. An entire phylum (no less!) all of whose fibres (the old as well as the new-born) instead of being isolated as a result of divergent speciation, converge and rapidly furl in on them-

selves, as I have so often written, under pressure, at once geometrical and psychic, as a result of thought reflecting on itself in a confined space.

Kristof (1969) writes: "Consequently, man in 'omega' cannot be quite thought of as still belonging to the zoological *homo sapiens*. This is clearly evident from Teilhard's definition of 'hominization' as a 'leap.'"

Biologists today also refer to convergent HGT as an 'evolutionary leap' (Raymond and Blankenship 2003) that shares genes between organisms to accommodate a new niche, what Teilhard describes as Man 'corresponds, in reality to an original rebound of evolution on itself—one that by the *crossing* of a characteristic *threshold* introduces a complete *transformation*.' To Teilhard, consciousness is advancing toward the 'Ultra-Human' or '*second species of Spirit*.' He supported orthogenesis and actually described it as 'transformation acting horizontally by pure crossing of characters,'<sup>6</sup> a good description of genetic recombination.

## Biology as Physics

To Teilhard, the universe '*converges upon itself*' and the 'universal Flux' unifies and 'transfigures the World it illuminates,' sweeping Man along in the 'Flux.' Teilhard compares this 'psychic convergence' to the world inverting upon itself like a cone that has reached its apex. At the "'paroxysmal' peak" or Omega Point, 'hominization', which is the result of 'a mutation *unique* of its sort,' ends in a paroxysm and escapes from classical spacetime. (Table 4) On this 'favoured axis of evolution,' this 'ultimate pole of consciousness,' evolution converges at the peak, and survival exists for the human race. Teilhard uses signs such as the mountain, cyclone, whirlwind, tornado, hurricane, vortex, pyramid, spiral, cone and spindle to point to micro Kerr (spinning) black hole dynamics. He explains, 'The faster the whirlpool the less danger there was that the grain of sand I represented might be lost in the universe,' and the 'hurricane was within himself.'

Teilhard clearly defines his physics as an Einstein-Rosen bridge in *Man's Place in Nature*: 'A remarkable picture indeed—a spindle-shaped universe, closed at each end (to the rear and in front) by two peaks of diametrically opposite character.' He explains that the noosphere's 'rhythm' is similar to a wave advancing in a 'converging medium,' expanding from the South Pole to our terrestrial globe

<sup>6</sup> Once criticized as teleological or vitalistic, orthogenetic theories were discredited; however, with recent research on HGT, some biologists believe these theories should be re-evaluated by scientists, a process paleontologists are already pursuing (Syvanen 1994). In fact, Jeppsson (1986) concluded that HGT is a possible mechanism of convergent evolution, while Erwin and Valentine attribute the sudden appearance of novel morphologies in the fossil record to HGT (1984). At the end of the Tertiary, Teilhard observed the first appearance of Man as an "individual threshold of reflection," what suggests HGT.

equator, where it ‘begins to contract upon itself’ toward the North Pole. Teilhard clearly *sees* the ‘organic bridge from one species to another,’ observing that the ‘inevitable reaction’ changes the ‘Corporeal into an incredible Energy of Radiation,’ what points to outgoing Hawking radiation in a micro Kerr black hole, gateway to an Einstein-Rosen bridge.

To Teilhard, biology is ‘a complement to the physics of matter,’ and the entire process is imbued with consciousness that is ‘swept along in that Flux.’ Teilhard compares his biophysical process to change of states and crossing thresholds of reflection. He talks of ‘tangential dissipation’ and ‘radial gravitation’ against ‘a tide of probability.’ For Man, this process is an escape from entropy ‘by turning back to Omega: the hominisation of death itself.’ Teilhard’s ‘rebound’ to the Omega point in a ‘biological vortex’ not only suggests Kerr black hole reflection, but also the protein folding funnel landscape, and what biologists call the bounce-back point near the protein’s native state (Wang et al. 2005).

Physicists explain the process of micro black hole formation and evaporation by Hawking Radiation, using terminology identical to Teilhard’s, such as *radial* and *tangential pressure*, *activation free energy*, *collapse*, *reflection*, *unitarity*, *axis* or *pole*, *horizon*, and *radiation* within a vortex. For example, the term ‘*reflection*,’ used by Teilhard to describe a ‘rebound of evolution,’ denotes a process related to Hawking radiation. A *finite probability* exists for any particle that approaches the black hole event horizon to bounce back (Kuchiev 2003). This probability depends on the energy of the incoming particle, its charge, and its projection of the orbital momentum on the axis of rotation of the black hole, the same conditions in Egyptian texts (King 2004). Kuchiev explains, “For low energy particles this process is efficient, black holes behave not as holes, but as mirrors.” Further, Juan Maldacena (2004) has shown black holes operate according to the holographic principle. All the information about the black hole is stored on the horizon, the two-dimensional surface or boundary encoding the information about the three-dimensional shape of a black hole. In black hole reflection, the holographic horizon operates as a mirror and particles bounce back or rebound as Teilhard explains.

### The Strange Metamorphosis

In Teilhard’s descriptions, the world is transformed or converges under ‘the irresistible pressure of a planet that is contracting upon itself.’ The cosmos grows into ‘final completeness, as it loses those boundaries which to our eyes seem so immense.’ Gravity is the ‘force that acts on mankind to superinvolute and super-centre it on itself.’ In this descrip-

tion of gravitational collapse, Teilhard explains his psychic experience as ‘a strange metamorphosis: the earth was simultaneously vanishing away yet growing in size,’ claiming that because of this ‘*scale of new dimension*,’ an ‘entirely renewed universe, without any change of line or feature’ is born. Similarly, Michael Duff (2003) explains String theory mathematics: “What T-Duality suggests, however, is that at these scales, the universe looks just the same as it does at large scales. One may even imagine that if the universe were to shrink to less than the Planck length, it would transform into a dual universe that grows bigger as the original one collapses.”

Teilhard is confusing because he is describing quantum Kerr black hole dynamics, while attesting that ‘some sort of psyche’ exists in all organisms, including ‘megamolecules and below.’ Operating within this context as a quantum observer, he identifies the physical process as organic in *The Future of Man*:

What is really going on, under cover and in the form of human collectivization, is the superorganization of Matter upon itself, which as it continues to advance produces its habitual, specific effect, the further liberation of consciousness. It is all one and the same process. And, by very reason of the elements involved, the process cannot achieve stability until, over the entire globe, the human *quantum* has not merely closed the circle upon itself (as it is doing at this moment, in a penultimate phase) but has become organically *totalized*.

Quantum entanglement (phenomenon in which spatially distant particles have correlated properties) is also evident in Teilhard’s convergent process, for the reversing current or Noogenesis (noosphere) to Omega is a ‘harmonized collectivity of consciousness’ or ‘super consciousness’ that encompasses the ‘vital union of all the particles endowed with reflective consciousness,’ where ‘each element individually sees, feels, desires and suffers the same things as all the rest.’ This ‘reflective consciousness’ results from the ‘central phenomenon, *reflection*’ or the ‘power acquired by a consciousness to turn in upon itself, to take possession of itself *as of an object* endowed with its own particular consistence and value.’

### The Beauty of Biophysics and the Beast

Physical phenomena at quantum scales can be defined by a time evolution on a two-dimensional lattice (’t Hooft 1993). In *The Phenomenon of Man*, Teilhard compares the whole of the universe to a crystal, a systematic, symmetrical lattice of atoms arranged in space. He also defines Omega as a structure that ‘can only be a *distinct Centre radiating*

at the core of a system of centres,' suggesting a lattice of atoms found in crystal structures such as viruses or in the kinetics of protein folding, where center-to-center defines the precise atomic positions in a protein's native structure, the point to which it folds. Teilhard explains that Omega has an ego distinct from ours and acts as a source of light, characteristics similar to the Egyptian Sun-god, sign for the virus Lambda.

Teilhard understands the universe's holographic mode of operation, for to imagine the cosmos as a 'series of planetary systems' is an 'illusion,' as the 'order and design' only appears 'in the whole.' Also, he claims psychic life begins with the appearance of the first cell, which he designates on textual diagrams at the marker 'Virus,' and life propagates itself on earth as a 'pulsation,' a 'unique wave' up to man and beyond. Teilhard urges us to *see* the world as it is—an illusion, a crystalline structure, a pulse of 'consciousness,' a 'quantum,' for he perceives a 'Being of a higher order,' stating that humans 'must coalesce into physical relationships and groupings that belong to a higher order.' These descriptions support his 'extraordinary evolutionary leap' to what modern biologists call a lower life-form with higher order, the virus, which they consider a crystal. It is a well-known fact that viruses transfer eukaryotic genes (our cell-type) across species boundaries, while having the ability to install their genes into their hosts. Teilhard's system defines this 'evolutionary leap' and "creative transformation' in a crystal lattice, accurately describing HGT mediated by a virus for lytic transformation.<sup>7</sup>

This brief overview supports that Teilhard, like the Egyptian pharaonic priesthood, had a prescient knowledge of evolutionary drivers such as HGT and lytic transformation, using the mountain sign to point to one biophysical process involving the molecular dynamics of proteins folding in funneled energy landscapes that mirror micro Kerr black hole physics. Teilhard called this the "great bio-physical principle of 'maximum arrangement' in Matter," and Man's 'self-evolving mechanism.' However, it can also be described as a demonstration of Einstein's beautiful

formula ( $E = mc^2$ ), representing not only the potential for energy to become matter, but also the potential for matter to become energy.

## 2) The Aztecs

Noble night-god, thou art seen upon the mountains . . .

Hymn of High Priest of Xipe Totec

The term Aztec references the pre-Columbian people, who controlled most of Mesoamerica before the Spanish Conquest (Boone 1989). To the Aztecs, the world, an illusion (Elzey 1976), was a large disc surrounded by water, extending outward horizontally and vertically in five directions (north, west, south, east plus central axis). At the central summit of the world were the 'Lord and Lady of Duality,' who had four sons known as the Tezcatlipocas ("Smoking Mirrors"), identified by red, blue, black and white colors.<sup>8</sup> The Red Tezcatlipoca represented Xipe Totec ("Our Lord the Flayed One"); the Blue Tezcatlipoca represented Huitzilopochtli ("Hummingbird of the South"); the Black Tezcatlipoca ("black smoking mirror") retained its name; the White Tezcatlipoca represented Quetzalcoatl ("Feathered Serpent").<sup>9</sup> (Baquedano 1984) The Black Tezcatlipoca is often shown in Mesoamerican codices with his left foot replaced with a "smoking mirror" and jaguar head (Saunders 2001).

One interpretation for the "smoking mirror," an idea that reified as a polished circular plate of black obsidian, is that the mirror represents water with the smoke representing mist (Brinton 1882), yet obsidian was associated with bloodletting and human sacrifice and linked to the Black Tezcatlipoca (Saunders 2001). However, the circular mirror may represent the physical process of black hole reflection, where the black hole behaves as a mirror (Kuchiev 2003) or black hole mirror imaging due to ingoing and outgoing states (Burinskii 2006). In support of this idea, the four "smoking mirrors" suggest a spinning Kerr black hole with its two horizons connected to its white hole time reverse with its two horizons, that

<sup>7</sup> In the Egyptian hypothesis (King 2004), the core myth (dying/rising god Osiris, the cross, and so on) can be interpreted as signs pointing to Lambda lifestyles: the dormant Lambda genome on the host cell (dying god) and its excision from the host cell in lysis (rising god) are two activities which require Lambda entry and exit through a DNA-cross called a Holliday junction. This DNA-cross is formed by ruvA protein binding and folding the DNA. The Teilhardian system is infused with Christianity, a syncretistic symbolic model paralleling Ancient Egyptian deities and their activities, which are biological signs for human, viral and bacterial proteins undergoing HGT and lytic transformation.

<sup>8</sup> In Egyptian texts, these colors are decoded as references to spinning Kerr black hole physics: blue or turquoise represents blueshift; red represents redshift; black represents the black hole; white represents the white hole. The sign of the reflective mirror or horizon suggests the four Aztec gods represent four holographic horizons of an Einstein-Rosen bridge.

<sup>9</sup> Brinton states that Quetzalcoatl was referred to as Nanihe-hecatli, Lord of the four Winds, with the winds pictured as a circle or wheel, and he was honored by the construction of "completely circular temples." In earlier myths, states Brinton, the god is also called Yahualli ehecatl, meaning "the Wheel of the Winds." In a footnote, Brinton writes: "'Quezalcoatl y por otro nombre yagualiecatl.' Ramirez de Fuen-leal, *Historia*, cap. i. *Yahualli* is from the root *yaua* or *youal*, circular, rounding, and was applied to various objects of a circular form." (1882) The circular temples, circles, wheels and circular portrayal of wind related to Quetzalcoatl ('white smoking mirror') suggests conical forms related to white hole dynamics.

is, an Einstein-Rosen bridge with four horizons (mirrors) and escaping radiation (smoke).

According to Spence, the Black Tezcatlipoca could see reflected the actions and deeds of Man (1913), suggesting the holographic dynamics identified by Juan Maldacena (2004) that all the information about the black hole is stored on the horizon. Particles living on the boundary describe objects in the interior, which could be very complex, according to Maldacena, who explains that spacetime (the interior) and everything in it emerges dynamically out of the interaction of particles living on the boundary.

In central Mexico, mountains and dormant volcanoes were the dwelling places of ancestors. In light of this landscape, Saunders supports that earthly elements, such as turquoise, believed to emit smoke,

were the property of gods, and obsidian, a dark volcanic glass, was the “bridge between symbolic and physical realities,” while the Black Tezcatlipoca’s shrine was known as the “House of Mirrors” (2001). Theoretically, when closest to the axis of a Kerr black hole, the central ring singularity, an engine of infinitely strong spacetime curvature and tidal gravity, is a round window showing an infinite number of mirrored locations. Whereas the singularity is the heart of the black hole, *Tepeyolloitl* means “heart of the mountain.” Also, the Great Temple at Tenochtitlán, the Aztec capital, signifies the cosmic water mountain (Saunders 2001) and *axis mundi* (Moctezuma 1985; Carrasco 1995), often associated with mountains, caves, and bodies of water (Boyd 1996).

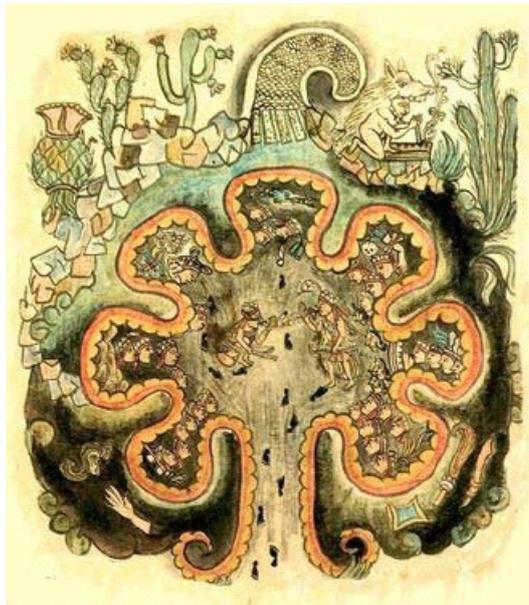


Figure 1: The Seven Caves of Chicomoztoc from *Historia Tolteca-Chichimeca* The Depiction of a 'Curved Mountain' at the top of this Public Domain Painting refers to *Culhuacan* or *Colhuacan*, Derived from 'col' Meaning 'bent' or 'Twisted' and *huacan* meaning mountain or hill, [ Brinton (1882) states *Colhuacan* means bent or curved mountain and is the Hill of Heaven curving down to the horizon where the gods dwell. The toponymic glyph in the codices takes the form of a 'bent' or 'twisted' hill. In a footnote, Brinton writes: "Colhuacan, is a locative form. It is usually derived from *coloa*, to curve, to round." The root ('col') means both "ancestor" and "bent, twisted" as in old age, resulting in a second translation of "place of those with ancestors." (Townsend 2000).] a gravitational shape Characteristic of a Black hole that bends and Twists Spacetime

The cave under the Pyramid of the Sun at Teotihuacan is a 'symbol of creation, of life itself,' while being 'the womb of the earth, especially if there is a spring within it' (Heyden 1975). This cave-spring suggests the time-reversing current in Kerr black hole physics. Heyden notes that discs found in the cave appear to have mirror backs, while Xiuhtecuhtli, the god of fire, existed in earth's center in the 'turquoise enclosure,' possible signs pointing to black hole horizons, the singularity and blueshift. Also, the design of Teotihuacan (Nahuatl, "Where men become gods") flows outward like a crystal from its center, where the Pyramid of the Sun and smaller

Pyramid of the Moon at the "Street of the Dead" embody the active-passive principle of the mountain sign as expressed in Egyptian texts, suggestive of black hole (sun) and white hole (moon) dynamics. Today pilgrimages to the top of the stepped Pyramid of the Sun are common.

The sixteenth century Franciscan missionary Sahagún describes the place of the dead as follows: 'It is wide-mouthed; it is narrow-mouthed. It has mouths which pass through to the other side' (Boyd 1996), suggesting the mouth to a black hole or

wormhole.<sup>10</sup> Also, one level of the nine-leveled Aztec underworld was an obsidian mountain where the dead had to walk over sharp glass, and a shrine was dedicated to the Black Tezcatlipoca called *Popocatepetl* the “smoking mountain.” Sahagún collected a native description of the Black Tezcatlipoca as the god who “makes the black mirror shine.” (Saunders 2001) Also, Brinton (1882) reports a Sahagún myth from the third book of *Historia de las Cosas de Nueva España* from the original Nahuatl, where the Black Tezcatlipoca leads the Toltecs to destruction at ‘The Rock upon the Water,’ a location at the lofty summit of the rock, below which flowed a river called ‘By the Rock of Light.’ Tezcatlipoca leads the people to a stone bridge he had destroyed and the crowd perishes in the water below, signs suggesting destruction at a black hole singularity without access to an Einstein-Rosen bridge.

As Elzey (1976) explains, time and space are strongly associated in Mexican cosmology, where life’s objective is ‘to ascend to *omeyocan* at the top of the world.’ Elzey recounts an Aztec legend recorded by the Dominican missionary Deigo Durán’s *History*. The setting of the story is the reign of Aztec

King Moctezuma Ilhuicamina (1440-69 ce), and Huitzilopochtli (Blue “Smoking Mirror”) returns to his mother Coatlicue in the mythical land of Aztlan (“whiteness”)<sup>11</sup> on *Colhuacan* (Figure 1), the sacred hill surrounded by water, where Coatlicue awaits the return of her miraculously conceived son (1991). Sorcerers with an old priest travel up the hill, bringing gifts for Coatlicue, who shows why people in Aztlan never die. To the astonishment of the sorcerers, the old priest descends the magical hill, becoming younger. Then he ascends the hill becoming older (1991).<sup>12</sup> Pointing to an evolution against the arrow of time, the transformation suggests white hole time-reverse.

Boone notes the Blue Tezcatlipoca represents Huitzilopochtli, an embodiment of the sun worshiped at Tenochtitlán (1989). Regarding the word *Teotl* translated “deity” (Brinton 1882), Boone states that Arild Hvidfelt demonstrated its actual meaning is a sacred and impersonal force. In Codex Boturini, the deity Huitzilopochtli is enshrined at the city Culhuacan (identified by twisted hill), suggesting the spinning black hole force of gravitational waves or energy.<sup>13</sup>

<sup>10</sup> Carrasco’s article on “Cosmic Jaws” (1995) discusses cannibalism and human transformation related to the Aztec focus on jaws, orifices, and mouths, as well as reminding the reader that the Aztecs conceived of the sky as a devouring mouth and the earth as a gaping jaw. Related to this is the earth deity Tlaltecuhli on a sixteenth century stone sculpture with an obsidian knife protruding from the mouth. Carrasco reports the sun is a demanding mouth as shown by Tonatiuh, the Fifth Sun with a jeweled sacrificial knife for a tongue. At the festival of Tlacaxipeualiztli during the feast of the Flaying of Men, the Aztecs performed rituals to transform captured warriors into “receptacles of divine fire” so they could be sacrificed and eaten. The ritual assured “eagle man is taken upward” into the realm of the sun as an honor and not to the “place of the dead.” (1995) a surprisingly humanitarian objective in light of the resulting cannibalism. Most interestingly, Carrasco mentions a magic circle that pivots, dashes and circumambulates, giving new meaning to the *axis mundi*. This may describe black hole dynamics, whereas the devouring mouth suggests a black-hole mouth.

<sup>11</sup> Brinton writes in a footnote: “The derivation of Aztlan from *aztatl*, a heron, has been rejected by Buschmann and the best Aztec scholars. It is from the same root as *izlac*, white, with the local ending *ilan*, and means the White or Bright Land. See the subject discussed in Buschmann, *Ueber die Atzekischen Ortsnamen*. p. 612, and recently by Señor Orozco y Berra, in *Anales del Museo Nacional*, Tom. ii, p. 56.”

<sup>12</sup> Brinton’s account (1882) differs from Elezy, suggesting different sources:

“If it did, the other myths which surround the mystic mountain would seem to clear up doubt. Colhuacan, we are informed, continued to be the residence of the great Mother of the Gods. On it she dwelt, awaiting their return from earth. No one can entirely climb the mountain, for from its middle distance to the summit it is of fine and slippery sand; but it has this magical virtue, that whoever ascends it, however old he is, grows young again, in proportion as he mounts, and is thus restored to pristine vigor. The happy dwellers around it have, however, no need of its youth restoring power; for in that land no one grows old, nor knows the outrage of years.”

<sup>13</sup> The Blue Tezcatlipoca (“smoking mirror”) represented as Huitzilopochtli points not only to the reflective horizon, but also to infalling radiation at the inner horizon that is blueshifted as it accumulates (Visser 1996). Comparable Egyptian references to Field of Turquoise (Pyramid Text 473) and the Blue One, Lake of Turquoise, traveling with turquoise, Lord of Turquoise (Pyramid Text 473) and open door of the blue sky (Coffin Texts 147, 220, 467, 468, 1003) indicate blueshift or the high frequency light associated with approaching radiation. In contrast, radiation moving away from the observer appears redshifted. In the Edifice of Pharaoh Taharqa (690-664 BCE) at Karnak, the text references the reentrance of Osiris or “he who illuminates, the perfect of turquoise,” the color being an aspect of the whole Eye of Horus, comprised of the black eye (hole) and white eye (hole). Blueshift, then, is a sign pointing to passage through the Einstein-Rosen bridge. Also, iconographic representations of Huitzilopochtli show him holding four arrows. Similarly, in the Edifice (Room E), the Wife of God is shown aiming a fourth arrow, having already shot three arrows at three targets, what Goyon states are the four cardinal points (Parker et al. 1979).

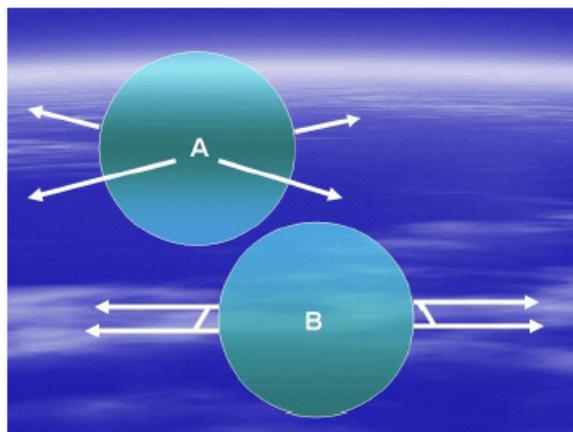


Figure 2: Simplified Schematic of Huitzilopochtli's Blue Globe Recreated from Solís's History (A) and Picart's Engraving (B)

Of special interest relative to mountain bridging mechanisms, Boone (1989) presents three European views of Huitzilopochtli sitting on a blue globe. The first image is from Antonio de Solís's history of the *Conquest of Mexico* published in a 1691 French translation. Boone reports, "Solís's text explains that the statue of Huitzilopochtli is seated on a chair, like a throne, which is sustained by a blue globe, which they called Heaven, and that from the globe extend four rods ending in serpent heads." (1989, 63) The second image from Solís's history (1733) shows Huitzilopochtli with a serpent in his right hand, shield or smoking mirror in his left with four upward-pointing arrows, sitting feet crossed on the blue globe in which two serpent-headed linear rods intersect (Figure 2A), suggesting Kerr black hole dynamics of crossing space and time axes. Boone explains the blue globe 'was said to denote the extensive power of Huitzilopochtli.' The third image in Bernard Picart's engraving (1735) shows Huitzilopochtli with similar accoutrements sitting on the blue sphere (Figure 2B) with two linear serpent-headed rods forming a ladder-type structure looped with a bead chain, a psychic representation very similar to the Egyptian idea of a 'sky-ladder' (Coffin Text 297), viz., an Einstein-Rosen bridge.

To conclude, mountain sign biophysics is present in Aztec myth, architecture, art, mythical landscape, and cosmology, reinforced by the etymological meaning of words.

### 3) Revelation

Get you up to a high mountain, O Zion.

Isaiah 40:9

In John's Book of Revelation (81-96 ce), he describes the terrifying majesty of Christ as whiteness and fire, 'one like a son of man' (1:12-15). Yet, Christ is more like Tlaltecuhltli or the Fifth Sun Tonatiuh, for from his mouth 'issued a sharp two-edge sword, and his face was like the sun shining in full strength.' (1:16) John sees the Lamb on Mt. Zion and 144,000 redeemed at judgment (14:1-8), as angels sickle down the 'vintage of the earth,' casting it into 'the great wine press of the wrath of God' (14:19-20), a possible reference to the crushing singularity.

The transformation mountain sign resonates in conical forms such as 'bottomless pit' or Abaddon ("place of destruction"), suggestive of the singularity.<sup>14</sup> Also, the reference 'earth opened its mouth' (12:16) mirrors the Aztec idea of earth as a gaping jaw, both of which suggest gravitational collapse. 'I will spew you out of my mouth' (3:16) references a mouth, what astrophysicists define as an entrance to a wormhole, as well as its related function, for a white hole spews out matter.

Similar to Teilhard's gravitational T-Duality experience, John sees 'earth and sky fled away' (20:11), witnessing 'a new heaven and a new earth; for the first heaven and the first earth had passed away' (21:1). The dead are judged and many suffer 'the second death, the lake of fire' (20:14). John witnesses the 'wife of the Lamb' on a second 'great, high mountain,' which is Jerusalem (21:9-12), the 'foundation of peace' with a radiance 'clear as crystal,' as well as the redeemed new genesis ('Noogenesis') or 'river of the water of life, bright as crystal, flowing from the throne of God' (22:1).<sup>15</sup>

<sup>14</sup> In Egyptian texts, the Kerr black hole ring singularity is described as a "wine-press, circle of fire, and place of destruction" (Coffin Texts 205, 1032, 712). The terminology "second death" and "Lake of Flames" (Theban Recension 63B) and boiling "Lake of Criminals" is decoded as ingoing states of matter (energy) destroyed at the singularity.

<sup>15</sup> Jerusalem (Greek, *hierousalem*; Hebrew, *yerushalayim*) means literally "foundation of peace" (*yarah*, "he threw, cast" plus *shalom*, "peace"). 'Casting peace' points to the white hole function of 'spewing matter.' Crystal is often present in mystical revelations, and, as a biological sign, suggests crystallized proteins or DNA. Whereas to Teilhard, crystal represents the quantum universe and ultimate trans-

Often, to understand Revelation, scholars refer to the book Ezekiel (c. 593-563 bce), where comparative Old Testament signs are present. Ezekiel's vision includes whirling wheels within wheels, four winds, four horns, a horn springing forth (Ezek. 29:21), crystal, Pit and temple-mountain references, suggestive of energy landscapes related to protein and black hole dynamics. (Table 5)

Finally, in both Ezekial (1:28) and Revelation (4:3; 10:1), the visionary experience includes whiteness (holograph of white light) and its reflection hologram of a rainbow. This phenomenon, a sign of reflection at the ring singularity, is present in the Kerr black hole due to angular momentum associated with axial tunnelling.<sup>16</sup>

### Classical Conclusions with Quantum Questions

A preliminary investigation of the mountain sign in Teilhardian biophysics, Mesoamerica, and Revelation provides different degrees of evidence for a *semiotics of evolvability*, supporting the ancient Egyptian biophysical survival message. This inductive argument comprised of three random patterns is not absolute verification of the Egyptian hypothesis, but offers support for its truth.

What is interesting is that modern scientists are discovering quantum knowledge already present (in various degrees) in history's dustbin. This 'anomaly' can be explained in three ways. First, in human history, self-reflection may sometimes result in similar knowledge that modern scientists gather through measurement, technology and math equations because mystical, revelatory phenomena may be real-time observations of quantum dynamics.

Second, in myth, art, science and so on, Man models quantum dynamics because he is a sign of a DNA codification system within himself based on quantum laws, which seed his behavior, religious

experience and scientific reason because the codification system is the origin of signs. This suggests that a quantum semiotic *algorithm* of viral proteomics is historically present in Man, prompting him to activate his afterlife potential for HGT under *certain lawful conditions having a finite probability of success*.

Third, history seems to be entangled, and quantum mechanics (which orders our classical universe) actually predicts entanglement (Gröblacher et al. 2007). This means correlations between measurements on five systems (Egypt, Teilhard, Aztecs, Revelation, Modern Science) all point to a *semiotics of evolvability*. Put simply, five dice are cast, and each rolls a seven. Man entangled in history, although separated over spacetime, may be part of one physical system ordered by a quantum connection that directs Man to evolve by HGT and viral transformation in a black-hole protein folding funnel.

All of this means human survival in our complex holographic universe is anchored to a semiotic phenomenology obeying biophysical laws in both our classical spacetime universe and the magico-mystical quantum domain of protein folding funnels and micro Kerr black holes with their escape paths to infinity.

Understanding the sign of Man—who is obsessed with machines, technology and automata—and his afterlife potential to evolve into a *crystal clone* with collective agency as energy or a protein in a viral DNA machine, and/or whatever is beyond that transformation, demands a 'transdisciplinary based dialogue'<sup>17</sup> addressing semiotic phenomenology, science and the humanities, while using a systems approach for knowledge acquisition.

Perhaps Einstein was right. God does not play dice with our universe, and the description given by random quantum mechanics is incomplete (1935), for an order 'most Plantagenet' seems to exist—no Time, no dice, just a creator virus beyond a biophysical holograph of Einstein-Rosen bridges back to it.

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formation to Omega by the reversing current of Noogenesis, the rock itself was sacred to the Aztecs, who carved magnificent human skulls in rock-crystal (Baquedano 1984). In Egyptian texts, the sky rests on the cosmic crystal mountain of Bakku (Coffin Text 160).

<sup>16</sup> See Adam's mathematical review (A Bridge over Colored Water) of Lee and Fraser's *The Rainbow Bridge: Rainbows in Art, Myth and Literature* for a complete definition of a rainbow at <http://cl.fisica.unile.it/~anni/Rainbow/Adam/RaiBriPD.pdf> Also, Soskin et al. (2004) actually introduced an on-axis computer-synthesized hologram-based technique to create long-distance stable white-light 'rainbow' optical vortices.

<sup>17</sup> From a systems approach emphasizing semiotics, Hellmut K. Löeickenhoff (2006) proposes a practical Five Base Model for transdisciplinary inquiry and integration. Also, the final quotation of 'most Plantagenet' is from Wallace Stevens' poem entitled "Connoisseur of Chaos."

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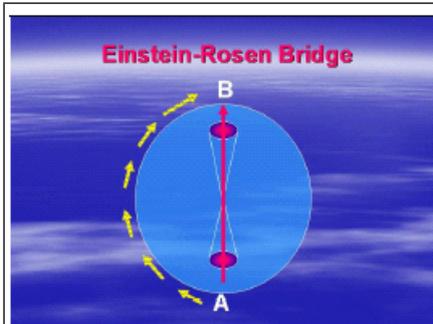
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## Appendix

**Table 1: Brief Summary of the *Isis Thesis***

1. The research spanning 2000 years of Ancient Egyptian texts supports a biological basis for pharaonic literature, art, sexuality, architecture, and so on, embedded in a complex physics that includes reproduction in our universe as well as the quantum domain.
2. In this consistent model, the value or meaning of each sign emerged, not by choice, but rather from an analysis of each sign's interaction within a matrix of 870 interlinked thematic signs.
3. Mirroring a complex knowledge of modern sciences, the Egyptian code explains a human's potential for horizontal gene transfer (HGT), viz., the exchange of DNA between the human cell-type and a lambdoid virus. The texts support this afterlife option for evolvability, or the evolution of evolution, is mediated by an ancient virus called bacteriophage Lambda (phage for short) that operates as the world-heart of the universe, generating two DNA-texts producing matter and energy.
4. Within Nature, Lambda exhibits two lifestyles: in lysogeny controlled by cI protein, the adsorbed DNA goes dormant on the host cell chromosome as a prophage, replicating inactively with the bacterial DNA in successive cell generations in Time. In lysis controlled by cro protein, the dormant genome becomes active, rising from the dead to self-assemble clones via rolling circle replication in the quantum domain.
5. At human death, biosemiotics in Ancient Egyptian texts explains that the Deceased must merge with the Sun-god or virus that acts as a vector, ferrying the recombinant DNA into a host cell for lytic transformation resulting in the production of clones that lyse the cell and escape. The texts explain that this biological process is related to specific viral protein funnel landscapes, folding and binding along the DNA wormhole, while mirroring the formation/evaporation physics of a micro Kerr black hole connected to a white hole, that is, a micro Einstein-Rosen bridge.

**Table 2: Micro Einstein-Rosen Bridge and DNA Wormhole**



Imagine our universe as the surface of a blue sphere with no edges. An entity can travel from A to B along the yellow path, but it can also take a shortcut through a spacetime Kerr black hole (red path) via an Einstein-Rosen bridge or what Teilhard refers to as a 'spindle-shaped universe.'

In astrophysics, a white hole is a body that spews out matter or a black hole running backward in spacetime. If a black hole connects to a white hole, a wormhole or Einstein-Rosen bridge is generated. Visser et al. (2003) actually demonstrated the existence of spacetime geometries containing traversable wormholes that are supported by arbitrarily small quantities of exotic matter. As one example, Egyptian texts (King 2004) depict and describe this mathematically-valid process when deities and the Deceased (signs for proteins/molecules) tunnel through a serpent (wormhole). Textual language and extensive iconography describe this process using correct modern physics terminology (white hole, horizons, spheres, mouths and so on), as well as modern biological terminology (transformation, upstream, downstream, arms, efflux, and so on). More specifically, during lytic transformation the Lambda genome becomes a negatively-supercoiled structure or a left-handed form of the DNA molecule called Z-DNA (Rich and Zhang 2003). Negative supercoils arise behind a transcribing RNA polymerase, which plows straight through the DNA double helix instead of rotating around the DNA (Liu and Wang 1987). The biosemiotic study of Ancient Egyptian texts provides detailed evidence that the topology of this quantum DNA magnetic field wormhole is reciprocal to the formation/evaporation processes of a tiny black hole connected

to a white hole (a micro Einstein-Rosen bridge or wormhole), with the lysing recombinant clones equivalent to escaping radiation (King 2004; 2006).

**Table 3: Teilhard's Conceptual Model**

<p><b>Hominisation:</b> a 'convergent phenomenon' with an 'upper limit or internal point of maturity'; 'a mutation unique.'</p> <p><b>Threshold of Reflection:</b> 'threshold of reflection is . . . a critical transformation, a mutation'; 'reflective psychic centre, once turned in upon itself, can only subsist' by centering itself and the world, not in 'an immutably fixed focus but with a vortex which grows deeper as it sucks up the fluid at the heart of which it was born'; Life crossed the first threshold of reflection when earth enveloped itself with life; Man can cross a second 'superior and collective' threshold of reflection at death.</p> <p><b>Reflection:</b> 'power acquired by a consciousness to turn in upon itself'; continuing evolution 'forward towards some new critical point that lies ahead'; 'ultra-evolution, operating henceforth in <i>a reflective medium</i>'; 'reflective rebound of evolution'; '<i>collective Reflection</i>, moving in step with an increasingly unitary organization.'</p> <p><b>Noosphere:</b> 'harmonized collectivity of consciousnesses equivalent to a sort of super-consciousness'; 'totalized Mankind'; 'particles endowed with reflective consciousness'; 'The Noosphere, when in process of concentration towards the pole, behaves like a body that gives off radiation—the radiation being produced by a free energy'; 'the outflowing flood of Entropy equaled and offset by the rising tide of a Noogenesis!'; There are two currents, but Noogenesis is the reversing current.</p> <p><b>Omega:</b> final state; 'a distinct Centre radiating at the core of a system of centres' and 'a focus of union'; 'higher Pole of completion and consolidation'; 'birth of some single centre from the convergent beams of millions of elementary centres' or a 'point' which 'fuses and consumes them integrally in itself.'</p> <p><b>Divine Milieu:</b> 'evolutive' 'reflected elements of the World' in 'new psychic dimension' 'without duration or space.'</p>
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**Table 4: Teilhard's 'Biological Vortex'**

<p>1. Teilhard's description of cosmogenesis parallels the dynamics of an eternal micro Kerr (spinning) black hole that results in an Einstein-Rosen bridge. The bridge only occurs for ingoing matter (energy) closest to the axis within the inner horizon, what Teilhard describes as 'axial energy.' In <i>The Activation of Energy</i>, Teilhard writes:</p> <p style="padding-left: 2em;">"In other words, there is no longer just one type of energy in the world. There are two different energies—one axial, increasing, and irreversible, and the other peripheral or tangential, constant, and reversible: and these two energies are linked together in 'arrangement,' but without nevertheless being able either to form a compound or directly to be transformed into one another, because they operate at different levels."</p>
<p>2. Due to gravitational effects, a Kerr black hole drags spacetime or what Teilhard terms the 'universal Flux' or 'organic flux of space-time.' It becomes an Einstein-Rosen bridge when ingoing matter at the inner horizon (closest to axis) bounces backward in a time-reverse evolution to become outgoing matter via an exploding white hole, what Teilhard describes as the reversing current of Noogenesis where "Hominization ends in a paroxysm" via "a point of escape from space and time." Separate from this outgoing energy (Noogenesis) are ingoing states of energy on the outer horizon that rotate around the periphery to be crushed at the ring singularity.</p>
<p>3. With a specific axial or polar entry into the spinning black hole, in-going states collapse to the singularity and bounce ("explode"), becoming an outgoing state with no information loss at the ring singularity. Gravitational collapse takes place as a unitary evolution described as a white hole with an efflux of matter or Hawking radiation. (Stephens et al. 1994)</p>
<p>4. Hawking argued that if no quantum information is destroyed in the process of black hole evaporation, then the quantum state of the collapsing body must be "cloned" in the outgoing radiation (Gottesman and Preskill 2004). Not only does the product of clones from biological lytic transformation involving proteins folding in funnel energy landscapes match the product of "cloned" radiation from black hole evaporation, but Teilhard's</p>

*Divine Milieu* also describes this cloned product, while his concept of *Noosphere* matches the outgoing radiation, the reversing current in the 'reflective medium.'

**Table 5: Ezekial**

Related to the psychic experience of being set on a "very high mountain," a temple exists (Ezek. 40:1-5) having a "law of the temple" that "the whole territory round about upon the top of the mountain shall be most holy" (43:12). The temple-mountain houses an altar of burnt offering (43:13-26), described in a textual footnote (May and Metzger 1973) as "resting on a foundation platform, 'the bosom of the earth,' with steps on the east leading to the *altar hearth*, 'the mountain of God,' like the Mesopotamian ziggurats." The fiery sacrificial altar of earth's bosom suggests 'the second death, the lake of fire' (Rev. 20:14) or death-by-singularity, while the 'mountain of God' is the place of Man's original creation, where he walked on fiery stones until cast down from God's mountain to be consumed by fire (Ezek. 28:13-19), another reference to Sheol, the bottomless Pit or netherworld (31:16) black hole.

In Ezekial's vision of the valley of dry bones (37:1-14), the bones self-assemble due to the transforming four winds' breath, restoring life to the 'whole house of Israel,' also referred to as the 'mountains of Israel' (34:14; 36:1). Afterlife creation by the four winds (four horizons and vortices), suggest Einstein-Rosen dynamics, while the multiplication of men (36:8-10) suggests 'cloned' outgoing radiation.

**About the Author**

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My work centers on biosemiotics in cultural activities (mythology, literature, religion, science, art and so on) to determine human meaning, expand intentionality, and share knowledge about our potential for evolutionary survival and adaptation within the universe. My background includes an education grounded in semiotics, a ten-year career in college instruction related to writing, literature, mythology and business communication courses, academic positions in project management and staff development, self-employment as a competitive grant writer for educational goals, and experience as an author and publisher. I am interested in the enlightenment and preservation of humanity.

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