

# The Emergence of Neurocosmology

## Realizing the true nature of the 0-D point/twist in both the evolution of consciousness and physics

**James Beichler**

**Abstract:** Many scientists have come to believe that any true unification theory in physics must include a concept of consciousness as well as a model for the mind that interprets the external physical/material world. And, that number is growing. This physical model goes even further. The single field theory includes a physical model of the neural net and explains how mind and consciousness can emerge from the physics of living organisms. Yet it is general enough to assimilate more intuitive models such as Andrews' 0-D point Void which witnesses and co-creates higher-dimensional Riemannian geometrical realities as well as other more generalized physical models of consciousness to form a truly synergistic model of reality. In other words, physical reality and the consciousness that perceives and interprets that reality both come from the same source, they are co-created at the very beginning of the universe. A singular discrete 0-D point/twist Void emerged within the absolute spaceless-timeless Void of nothingness that preceded everything and through a logical sequence of events produced everything that now exists as our universe. This synergistic model goes well beyond the simple notion of mind and consciousness as mere human bound perceivers and interpreters of the external material/physical world by placing the physical origin of consciousness within every geometrical point in the universe itself. Although consciousness itself is not everywhere in the universe—it is not a property of every bit of matter we observe or event that we detect—the universal will of consciousness to emerge in all forms of life is everywhere in the universe. This physical model clearly demonstrates that the precursors to our experience of consciousness are fundamental elements and active participants in creating the physical world that we perceive and scientifically interpret through the application of physics.

### Introduction

Intuitives are often the very people who have intimately and directly experienced consciousness, giving them the power to access consciousness directly at later times. They are typically NDErs, people who have reached mystical enlightenment and other higher states of consciousness through other means, although a greater number of people have had similar experiences that changed them mentally (rewired their neural nets in a beneficial manner) without ever consciously realizing it. They generally believe that consciousness is an active participant in creating or world rather than just deciding between choices our world offers to us. Their views of the role of consciousness with regard to the inner workings of the world in general greatly differ from those of ordinary people and especially scientists. Even the word 'intuition' has been looked down upon in science as recently as a few decades ago. Scientists consider their own strictly logical worldview above reproach, believing their insights have been and are presently based upon strict and accurate observations of the external world around them. In general, scientists have even looked down upon all types of intuitive knowledge and have

obstinately refused to consider intuitive knowledge of consciousness and how it works in relation to the world as a whole. They view intuitive data with suspicion as no more than anecdotal evidence, without any scientific validity. Yet intuitive knowledge of the world, anecdotal or not, can provide valid observations of consciousness and how consciousness interacts with the world at large. So to those few scientists willing to seriously consider information from intuitives, knowledge of the world that did not come from direct observation of the world, it can seem as though conservative scientists are missing a large part of the world in their theoretical models. Conservative scientists also seem overly biased if not acting completely in an unscientific manner within the broader meaning of science itself by neglecting all intuitive knowledge out-of-hand

The intuitive Sperry Andrews has proposed a speculative theory of how everything in the world originated from nothing and how such theories as general relativity and quantum mechanics might account for a consciousness space or universe. Andrews has suggested that the solution to the consciousness question can be found in Bernhard Riemann's original conception of space curvature, since an  $n$ -dimensional space is embedded in an  $n+1$  dimensional manifold all three-dimensional points are united at one point in the four-dimensional embedding space or manifold. His suggested geometrical model corresponds to the Riemannian geometry of a three-dimensional double-polar spherical space embedded in a four-dimensional single-polar spherical space as utilized in the single field theory. In the case where  $n = 0$ , the 0-D point (or twist in single field theory), which still represents a dimensionless Void, could be embedded in all higher dimensional embedding spaces. So all point-centered events (such as quantum events) would share a dynamic relationship with each other corresponding to the relationship that every discrete point/twist in three-dimensional space shares with every other such point via their connectedness at the single-polar point in the single field model. Andrew's also believes that consciousness is "a re-creative witness of what is shared inter-subjectively, coalesces with the structure of the universe as a whole by acting on physical space-time through a 0-D point-centered Void". In this and other respects, his intuitive insights fit and add to the Riemannian geometric structure of the physical space-time continuum as expressed by the single field theory quite well.

The single field model unites general relativity, electromagnetic theory, quantum theory and consciousness by utilizing an interpretation of points in space as 'twists'. Each point in three-dimensional space-time is a 'twist' (Clifford, 1873; also Penrose's 'twistors') due to its natural tendency or innate potential to act as a center of rotation or circular motion. Every 0-D point/twist in three-dimensional space acts as the beginning point of a vector (virtual torque) that stretches into the fourth dimension (Riemannian embedding manifold) of space in a five-dimensional space-time framework. This point-centered vector can be identified in common physics with magnetic vector potential (whereby special patterns in three-dimensional space constitute an individual organism's consciousness) and gravnetic vector potential (DE in free space and inertial mass inside material particles). In all cases the vector potential at discrete point/twists can also be associated with the state vector  $\Psi$  (Schrödinger's wave function) which is represented by a similar or analogous dualism in the

form of the quantum probabilities  $\psi$  (analogous to metric or 3-D extension space) and  $\psi^*$  (analogous to anti-symmetric or 3-D point space) in quantum (matrix) mechanics. According to this interpretation of the quantum, probabilities (and indeterminism) only enter nature after the dualistic split, which means that the state vector  $\Psi$  in its role as the Schrödinger wave function is not necessarily indeterministic in itself.

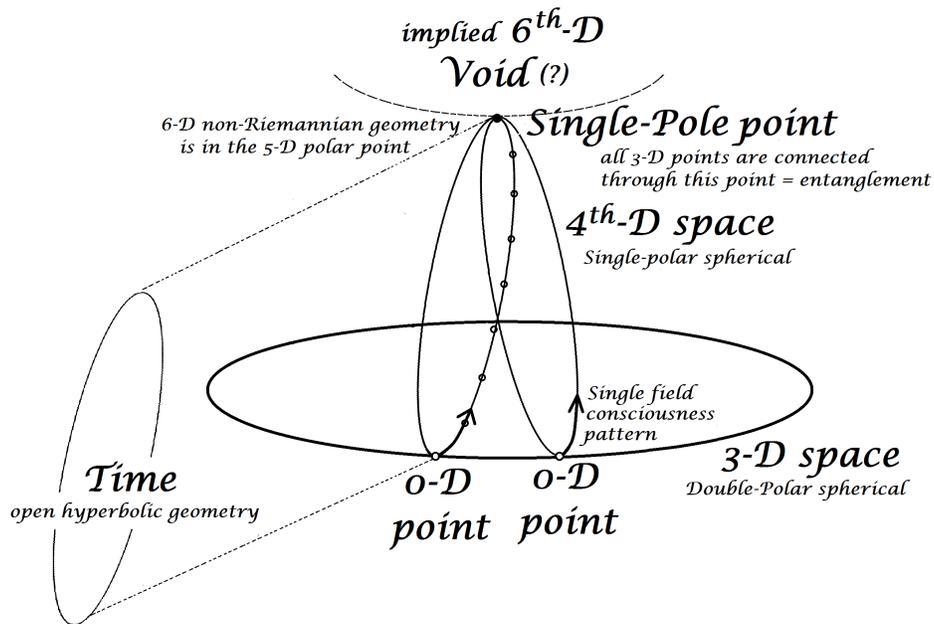
In so far as the Schrödinger wave equation (simultaneously) describes physical reality of an individual observation and the superposition of all wave functions representing every possible interaction and observation in the universe simultaneously (what David Bohm called the quantum potential field), this function can easily be equated to the quantized curvature (a curved sheaf or 'sheet' of parallel three-dimensional surfaces stacked in the fourth dimension of space) in Beichler's single field theory. Since consciousness can collapse the wave function to determine physical reality as well as play a pivotal role in the emergence/evolution of the material universe, consciousness and the single field theory together form a branch of science that should henceforth be called Neurocosmology.

In the single field theoretical structure, the role of consciousness has fundamental importance as it should in any unifying theory of physics. Twists manifest electromagnetically in the space-time continuum as the fundamental components of the magnetic vector potential field, but special multileveled magnetic (domain) structures of varying single field density patterns (complexities of memories) form individual consciousnesses such that they play out in the overall single field as separate holomovements in time. These magnetic vector field potential patterns (four-dimensional imprints of our three-dimensional living bodies) emerge in the overall single field from the originally chaotic structures of new memories to form the complexity of consciousness that we perceive in our 'selves'. These memory structures (multi-leveled magnetic vector potential patterns) are formed through the interaction of microtubules (bio-magnetic induction coils) and surrounding water molecules (whose spins are quantized by interference patterns from electromagnetic pulses emitted by the microtubules) in our neurons. In fact, the whole neural net, including plasticity, can be explained on this basis.

The single field theory itself is an extended, and thus completed, version of Einstein's unified field theory. It completely incorporates the Standard Model of point particles and quantum fields, although the philosophical interpretation of the quantum theory differs from the normally accepted Copenhagen Interpretation and similar interpretations. Within this context, the point/twists also manifest gravitationally in the space-time continuum as gravnetic (normal gravity's counterpart analogous to the electric/magnetic relationship) vector potential fields which accounts for what are mistakenly called Dark Matter and Dark Energy in modern physics. In other words, Dark Matter is just an additional (non-local curvature) effect of the same normal baryonic matter that causes normal (local) gravity effects. This non-local gravnetic effect can be expressed by the Heaviside equation (gravitational equivalent of the Lorentz equation in electromagnetic theory) in classical Newtonian physics or the anti-symmetric tensor (Einstein-Cartan-Schrödinger) in relativity theory. The fourth

spatial dimension, which acts as the embedding dimension of our normally perceived three-dimensional reality, can be geometrically modified (to account for point-elements or twists) and defined to allow the unification of gravity and electromagnetism in a five-dimensional space-time framework (Kaluza-Einstein-Bergmann).

The resulting macro-extended embedding spatial dimension can then be quantized into parallel three-dimensional ‘sheets’ (a quantum sheaf of three-dimensional Riemann surfaces) with an ‘effective width’ along the fourth spatial direction, literally quantizing the space-time curvature of the continuum. Our three-dimensional material reality corresponds to the  $n=1$  or lowest energy quantum ground state ‘sheet’. Higher quantum energy or possible ‘excited’ state ‘sheets’ ( $n = 2, 3 \dots$ ) are stacked in the fourth direction of space like pages in a book. The real existence of the fifth dimension of space as an embedding dimension for our four-dimensional space-time of experience and the single field density variations that constitute other fields, material bodies and life, mind, and consciousness implies a further sixth embedding dimension whose geometry and physical characteristics are yet to be ‘specified’.



This sixth embedding dimension could possibly be the ‘place’ where a cosmic consciousness, universal collective consciousness or a consciousness space exists that could directly affect and influence all of space-time in the manner suggested by Andrews. (Andrews, 2014)

The 1938 research of Einstein and Peter Bergmann implied that utilizing a higher-dimensional embedding space should be the proper course for unifying gravity and electromagnetism if the physical characteristics of the embedding space could be completely specified, but they did not completely specify the geometry of the higher embedding dimension and thus failed in this attempted unification. Einstein eventually gave up on the five-dimensional approach because he could not justify using a hyperspace without any observational or detectable evidence that the higher dimension actually existed. Unfortunately, he never suspected that consciousness and intuition interacted with the

universe as a whole through the higher dimension in what we normally call intuition or paranormally refer to as our sixth sense or he may have taken this approach more seriously

Our material bodies can be represented in relativity theory as a complex matter/energy pattern (a three-dimensional curved surface that undulates over time) equivalent to a complex quantized curvature pattern (four-dimensional) that varies internally over time. Within this relativistic context, our mind can be modeled as a corresponding three-dimensional complex electric field pattern within the quantized curvature pattern. Individual consciousness becomes the multi-leveled magnetic (domain structure) pattern made up of vector potential points in three-dimensional space that extend into the fourth dimension of space. So every living organism has a consciousness, not just humans and other highly evolved animals, that extends into the higher embedding dimension of our commonly experienced four-dimensional space-time and represents each living organism's experiential existence. The scientific theories that we use to explain the external physical/material three-dimensional world and how it varies over time are constructed within the mental context provided by this mind and consciousness, which are themselves products of the physical structure of the world which is being perceived. Only consciousness differs from that physical/material structure of the world in that it is a physical-only (non-material) extension in the higher-dimensional embedding space.

Within this context, the philosophical debate between quantum discreteness and relativity's continuity, which has poisoned real advances in physics for the last century, is actually a misstatement and misrepresentation of the geometrical problem of simultaneously accounting for a point-space (Riemann's point-element) and an extension-space (Riemann's metric-element). Placing this problem within its correct context and recognizing the problem in its true form as just the simple geometric dualism of physical space (point as quantum versus extension as metric curvature) resolves the physical problems between quantum and relativity that have previously plagued physics. Both of these problems, geometrical and physical, reduce to our conscious interpretation of space and time as perceived by the brain/mind. In the end, space is one, not point or extension based, but neither and/or both simultaneously, which is hard to envision and thus harder to understand at the level of theoretical physics. This duality is a product of our brain/mind that only a pure reference to consciousness can ultimately solve. We perceive three-dimensional space as a unitary or holistic conceptual 'thing', not as the dualistic reducible 'thing' that geometry tells us it is.

So the unresolved problems of unifying physics comes back to consciousness and its interpretative relationship to the natural world of perception and how the natural world is represented by a particular geometrical model of space and time. When this is realized, the determinism/indeterminism debate reduces to no more than "much ado about nothing" since neither viewpoint represents physical reality, just human vanity with regard to physical reality. Nature tells us how nature acts in any given physical situation through our observations of nature, we do not tell nature how to act based upon our philosophical and mathematical interpretations of how we think nature 'should' act. In other words, we should not project our mental and philosophical biases on the world in our attempts to

understand how nature works. This means that the quantum and relativity are not incompatible as has long been thought, but are in fact totally and completely compatible.

Completing the Einstein unified field theory by combining the anti-symmetric approach of Erwin Schrödinger and Einstein (to account for DM and DE) with the higher embedding dimension approach of Theodor Kaluza (to account for a unified EM and GR), and accepting the consequences of doing so by accounting for points given this this new geometrical structure, leads to a full unification of quantum and relativity in the form of a quantized space-time curvature. The curvature is quantized by utilizing Oscar Klein's suggestion that quantizing the embedding dimension (in this case the fourth spatial dimension), even though it is now macroscopically extended and closed, quantizes three-dimensional space (the embedded dimensions). Each three-dimensional 'sheet' (stacked like pages in a book in the fourth direction of space) is actually a quantized group of parallel three-dimensional (infinitesimally thin) Riemannian surfaces intersecting and perpendicular to four-dimensional extensions of three-space points as described by Einstein and Bergmann. In other words, it is our three-dimensionally moderated conscious geometrical interpretation, or rather misinterpretation, of space and time that is delaying the progress of physics, which is exactly why an intuitive approach to the problem has now become necessary to overcome the deadlock and advance science.

### **0-D point/twist Void as the original singularity**

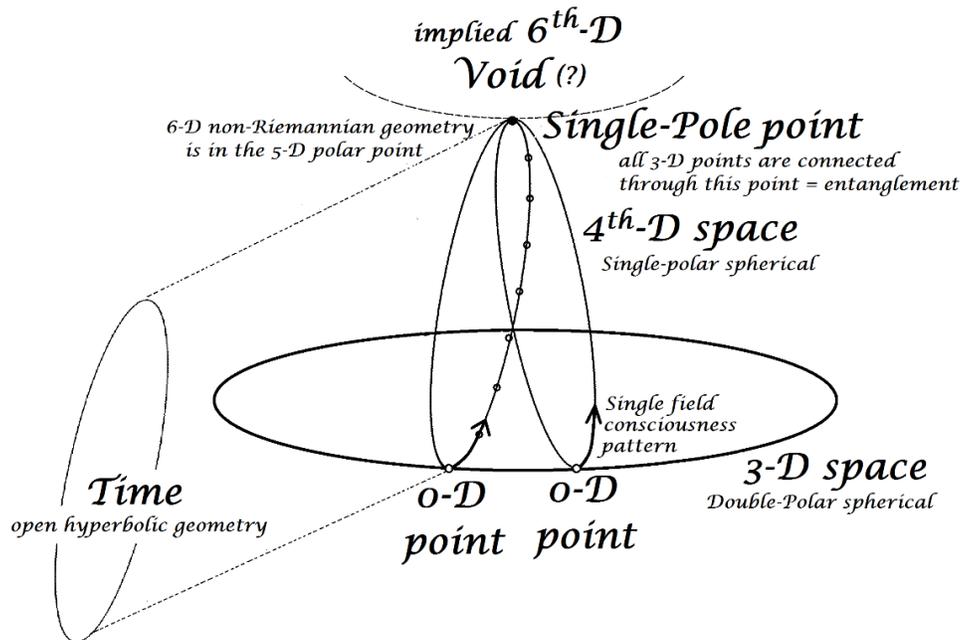
Adopting the 0-D point/twist Void as the original Riemannian point-element from which our more advanced real Riemannian space structure evolved changes everything. For example, the original singularity in the form of a dimensionless point-centered process from which everything (or every 'something') in our universe evolved (according to the Big Bang or other theories) has specific qualities that separate it from the absolute Void of 'no-thing-ness' from which it emerged. Establishing how these 'differ' defines how the evolution of our experienced material/physical universe has proceeded over the 'life' of our universe, including the evolution of life, mind and consciousness, within the originally 'no-living-thing' or normally inanimate nature of matter and energy.

The Riemannian geometry that expresses this unification starts with the discrete 0-D point/twist Void which creates our commonly experienced three-dimensional physical space, embedded in a fourth dimension of space. From this nothing, (with 0-D and the single field as precursors) our three-dimensional matter/field/energy reality emerges from the potential of the single field in in the four-dimensional embedding space. While this geometry accounts for and describes the creation of the four-dimensional space-time continuum, it also accounts for the dynamical substantiality of our world that is solely a product of the single field potential. The twist portion of the three-dimensional discrete 0-D point/twist maintains and guarantees the integrity of this fundamental unit of re-creation as it creates the 'virtual torques' (pre-force) in both directions of the fourth dimension, which are collectively the precursors for the potential and anti-potential of the single field.

The 'virtual torques' above the three-dimensional surface and the negative 'virtual torques' below that surface in the fourth direction of space form the potential and anti-potential, respectively, that

collectively yields the pure potential of the single field. In the new post-Riemannian geometry, which is based upon both Riemann’s original metric- and the added point-elements, the higher embedding fourth dimension must be single-polar spherical and this geometric pre-requisite is fulfilled by the simple fact that the virtual torques and negative virtual torques (having oppositely directed twists) come together at the polar point. Their oppositely directed twists meet at the central single-pole point to give a full twist over the full extension of a closed-loop line drawn from a point in the three-dimensional surface into the fourth dimension as required by the Riemannian geometrical structure.

However, these differences imply the existence of a further sixth embedding dimension whose geometry is completely unspecified except possibly at the single-polar point where the next embedding space comes into contact with the lower embedded dimensions of space.



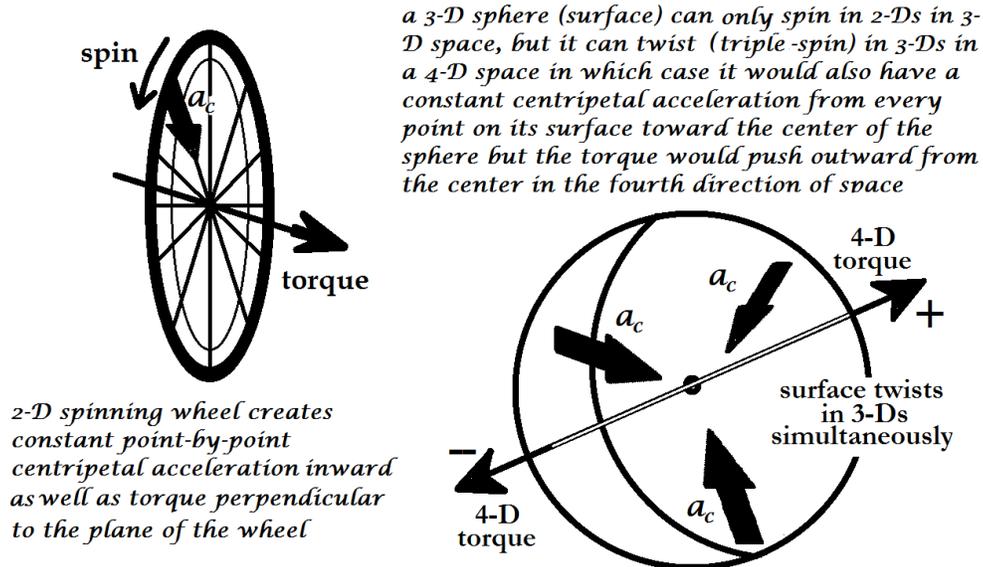
The discrete nature of the 0-D point/twist Void also allows for the quantization of the single field and formation of quantum fields to be rendered in terms of Riemannian geometry, further allowing quantum (matrix) mechanics and wave mechanics to be adequately explained as physical characteristics of the geometrical point/twists (discrete quantum field centers) within the context of the single field (which is equivalent to Bohm’s quantum potential field). The single field can also be interpreted as the superposition of all possible Schrödinger wave functions for all possible quantum events while the ‘collapsed’ wave function corresponds to the four-dimensional extension of any particle from its three-dimensional center of mass.

The single field also serves as the precursor to classical three-dimensional fields, such as gravity, electricity and magnetism as well as matter/energy, life, mind and consciousness, which can be explained (Beichler 2014, 2015) as a spectrum of single field density patterns in five-dimensional space. These structures form our complete external reality (external to mind/consciousness) which is essentially reduced to extrinsic four-dimensional space-time curvature in an overall five-dimensional

continuum. The inanimate matter/energy that we perceive in our three-dimensional brain/minds (through three-dimensional sensations) is no more, nor less, than temporal and spatial variations of curvature of the three-dimensional surface ('sheet') as it is extrinsically extended into the higher embedding fourth dimension of space. These are accompanied by the normal electric and magnetic fields associated with inanimate matter as perceived by us, while the emergence of life, mind and consciousness through the evolutionary process proceeds from the development over time of specific complexities of matter/energy, electric and magnetic fields.

The evolution of life and consciousness itself has been influenced by and proceeded from a primordial or primal awareness based on the reciprocal relationship between the absolute Void of nothingness that preceded the Big Bang (or other event that created or began the clock ticking for our present universe) and the 0-D discrete point/twist Void that emerged from that absolute Void as the original singularity. The 0-D discrete point/twist Void thus implies the possibility of something coming from nothing which introduces a way to explain how the 'some-thingness' of our perceived physical/material universe emerged and evolved from the 'no-thingness' of the assumed Void that existed before the Big Bang within the Riemann geometric context of the single field theory.

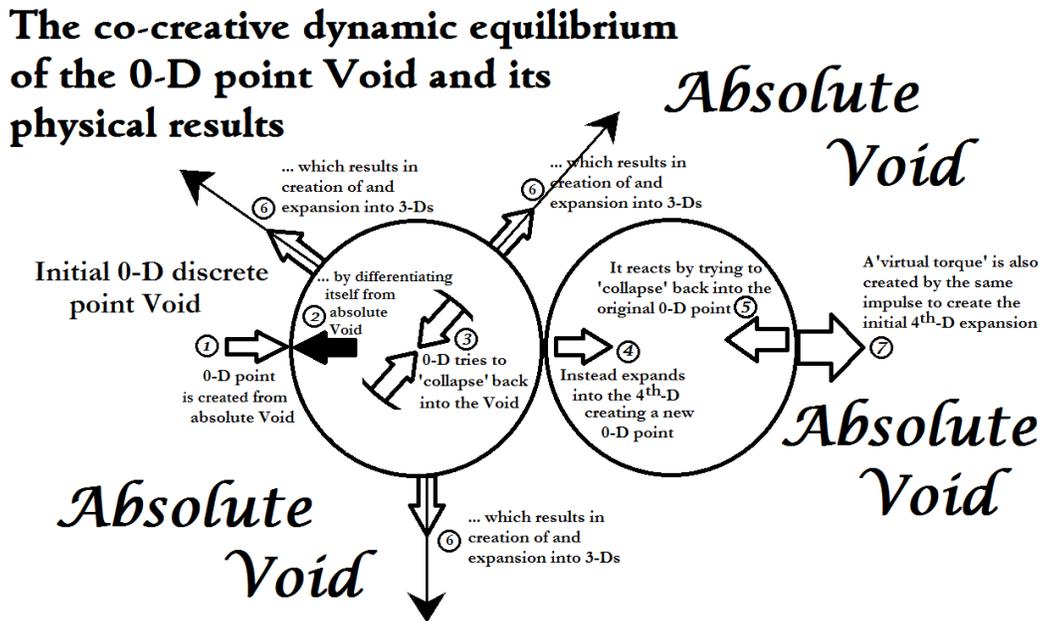
The higher embedding dimensions would literally be within every discrete geometrical point (a 0-D point/twist Void in a physical sense) in or three-dimensional space of experience. In other words, the only way that a higher embedding dimension could be envisioned or imagined by our three-dimensional mind/brain is if each and every discrete geometrical point or 0-D point/twist Void that is constantly trying to enfold into itself and thus back into the Void from which it originally emerged instead pushed itself by duplication into the fourth dimension of space before unfolding back into itself to again duplicate itself and thus expand and create the three-dimensions of normal space. However, physical reality (and logic) would dictate that such a 0-D point/twist could only (or must) be stable since our space, which is made of such point/twists, does not 'collapse' into itself (by enfolding), but remains constant.



Therefore the 0-D discrete point/twist Void must be a dynamical object—a stable object whose stability depends upon a dynamic equilibrium—in that it would constantly and continuously be trying to enfold into itself, more-or-less like an object spinning three-dimensionally toward its center point in three-dimensional space, while an equal and opposite unfolding outward ‘virtual force’ occurred to stabilize it. An enfolding of this type could be abstractly described as a three-dimensional ‘virtual spinning’, or ‘twist’, of a three-dimensional object into itself in four-dimensional space.

A 0-D discrete point/twist can thus be approximated, or pictured, as a three-dimensional surface in three-dimensional space ‘spinning’ three-dimensionally inward, toward its center, in so far as a discrete point can be imagined as a dimensionless point-centered spherical surface in three-dimensional space of (or approaching) zero radius ( $\Delta r \rightarrow 0$  analogously to the case of  $\Delta S \rightarrow 0$  in Riemannian metric geometry). In other words, we can imagine the property of this spherical point by decreasing the radius (measure of its extension  $\Delta s$  in the three-dimensions of space) to zero (a dimensionless point), whereby doing so gets rid of the extension in space but not the enfolding spin endowing each dimensionless point with a ‘twist’.

So, a 0-D point/twist is a sphere-like structure whose radius has been reduced to, or approaches, its infinitesimal limits of zero (simultaneously) in each of the sphere’s three dimensions, yet its three-dimensional spin, or twist, would still result in it enfolding into itself, creating a ‘virtual torque, as well as expanding by duplication of new 0-D point/twists (in each direction) into the fourth dimension of space. These new 0-D point/twists in both directions of four-dimensional space would form as an equal but opposite reaction to any action implied by the ‘desire’ or ‘need’ of the original 0-D point/twist Void to completely ‘collapse’, or ‘implode’, back into the absolute Void as this would be prevented by the ‘twist’.



This virtual torque in the fourth embedding direction (#7 above) of our real physical space is thus a product of the 'twist' of every 0-D point/twist Void, which also creates a 'virtual torsion' in the three-dimensional space surrounding each and every 0-D point/twist Void. So all the discrete geometrical points that constitute our 'real' perceived four-dimensional space-time continuum are actually physically real 0-D discrete point/twists attempting to collapse back into an absolute Void, but they are prevented from doing so since they are maintained (or stabilized) in a dynamic equilibrium by the 'twist'.

The resulting 'torsion' in the expansion direction of the surrounding three-dimensions of space results in the creation of new discrete 0-D point/twists and the subsequent expansion of three-dimensional space that is made up of all such 0-D point/twist Voids. This point-centered 'virtual torsion' in three-dimensional space also accounts for the point-centered nature of magnetism and gravnetism, its gravity equivalent, in the material universe. This (action/reaction) co-creative process takes place, and repeats itself, during every infinitesimal moment-to-moment of time, which leads to an explosive expansion (commonly called cosmic inflation) of three-dimensional space coupled to an equivalent expansion into the fourth direction of space that continues until an infinite number of moments have passed, such that (true) measurable extensions of space (length, area and volume), and time (duration), come into being.

The first  $10^{-36}$  seconds after the Big Bang which cosmologists speak of as the shortest amount of time after the event would just amount to the duration of time equal to an infinite number of moments (points of time) during which an infinite number of discrete 0-D point/twists were created to allow the first measurable extension (volume) of three-dimensional space. The expansion was just as 'explosively' rapid during that period as after, but after that period each moment's expansion 'trebled' the extent of each of the four-dimensions of space in what has become called 'cosmic inflation'. During this period the larger part (volume) of our universe was created at more than the speed of light, which is ridiculous since there was not yet any speed of light nor anything else but what was virtual, semi-physical or potential, until approximately  $10^{-32}$  seconds had passed and cosmic inflation ended abruptly, or so we are told.

The various 'virtual torques' in the fourth dimension correspond collectively to a pure 'potential' and thus form the beginning of the single field that corresponds to a geometrically structured four-dimensional space with varying internal density within a five-dimensional space-time continuum. These virtual torques collectively form pure potential as the single field, not energy or matter themselves, but the potential to later form matter and energy, given both the quantum and geometric restrictions of the space-time continuum and single field, by which matter/energy and other physical fields are defined. No energy existed, just pure potential, before the period of cosmic inflation ended since there were no real material particles to carry the energy, just as there was no speed of light since the electromagnetic and gravito-gravnetic fields had not yet formed in and around material particles as stresses and strains in the curvature of the space-time continuum. A large part of the story that modern cosmology, especially quantum cosmology, tells about this period of time are just false

speculations fed by a misinterpretation of what constitutes material particles and energy. The expansion continued until an undefined moment in the process when either quantum anomalies, some form of anomalous single field fluctuations, or geometric conditions caused a 'blow-out' at some points in the balloon-like three-dimensional surface of our universe. These 'blow-out' points formed the first protons after the surface ('sheet') counteracted and closed (or capped) them off.

The 'problem' of too rapid an expansion was still not fixed with the initial 'blow-out' forming protons and a new series of 'blow-outs' began, but this time the counteracting surface tension (of the 'sheet') was enough to stop the local point-centered curvature from blowing-out thus creating electrons with the equal and opposite electrical charge of protons. Any other excess (virtual) 'momentum' of the inflationary expansion outward only resulted in small (the minimum local amount of point-centered curvature distinguishable and thus measurable to the surface or 'sheet') puckers, or bumps, that science now detects as free neutrinos.

This process ended the inflationary period and slowed down the runaway expansion, locking the more slowly expanding 'three-dimensional surface' of the universe into what we detect today with only small variations. No anti-particles were created at this time (which is why they have not been observed or detected by science) since the 'blow-outs' were all directed in the favored direction (outward for positively curved surfaces) of the fourth dimension instead of inward. From this moment onward, our present day universe has continued to evolve according to thermodynamical principles and the other theories of physics into the universe that we now perceive.

The physical/material universe that thus evolved is presently characterized by discrete geometrical points that appear physically as discrete 0-D point/twists of Void in all four dimensions of space. From the very beginning singularity and onward, there have existed certain immeasurable and vaguely defined 'qualities' that eventually led to (or even 'forced' or 'pushed' although 'influenced' might be a better term) the emergence and evolution of life, mind and consciousness. In other words, the potential for life, mind and consciousness already existed in every geometric point in space, whether it was inhabited by matter or not. The original 0-D point/twist Void (some-thing) was differentiated into existence (and thus began time) from the absolute Void of 'no-thing-ness'. The very fact of 'differentiation' implied some form of primal awareness between the absolute Void that was before creation and the initial singularity or 0-D point/twist Void that was first created. differentiation process, whatever it was, created the 0-D point-twist 'tendency', 'desire', 'need', 'instinct', 'memory', or whatever it can be called, for a primal awareness that differentiated it from the absolute Void, as a primary quality (or 'qualia') of the 0-D point/twist Void.

Every time that the discrete 0-D point/twist Void duplicated itself during the expansion process, the newly created discrete 0-D point/twists carried with them the same primal awareness and thus its very own distinction of its 'self'. Each geometric point in space thus 'senses' its 'self' as not being another such geometrical point or they would all collapse and become a single dimensionless spaceless-timeless nothingness of the Void. Physically the twist keeps them from such a 'collapse' as well as reabsorbing each other, guaranteeing the discrete nature of the geometrical points of space as

well as the physical 0-D point/twists themselves. So the 'sense' of a primal awareness is related to the physical property of the 'twist' that is associated with each geometrical point. It allows them to remain contiguous but separate so that they can form a continuous extension while remaining discrete within their dimensionless selves. Just as all of the 'virtual torques' of each point in four-dimensional space collectively yield the potential of the single field, the collective nature of this primal awareness lends or imparts space as a whole with a pre-consciousness potential in the form of a semi-physical field.

The single field potential is the precursor for all matter, fields and energy in the universe while the corresponding pre-consciousness potential is the precursor for the later emergence, evolution and further development of life, mind and consciousness that is associated with or coupled to inanimate matter.

*Just as the collective effect of the 0-D point/twist Void's 'virtual torque' in 4-D space is the establishment of a single field potential that is the precursor to matter/energy, the collective effect of the 0-D point/twist Void's inherent quality of 'primal awareness' is the establishment of a corresponding pre-consciousness field potential in physical space that is the precursor to the emergence of life and evolution of consciousness*

In other words, the universe itself is imbued with the potential for the emergence of consciousness in every infinitesimal geometrical point from which it is constructed. This structural property or quality can be called a consciousness space, universal collective consciousness, cosmic consciousness, or even an absolute space which is the "sensorium of God" as Isaac Newton called it. Technically, all of these descriptive words work with the concept to one extent or another and only a better and more advanced physical theory can distinguish between them or offer a better alternative or offer a better alternative.

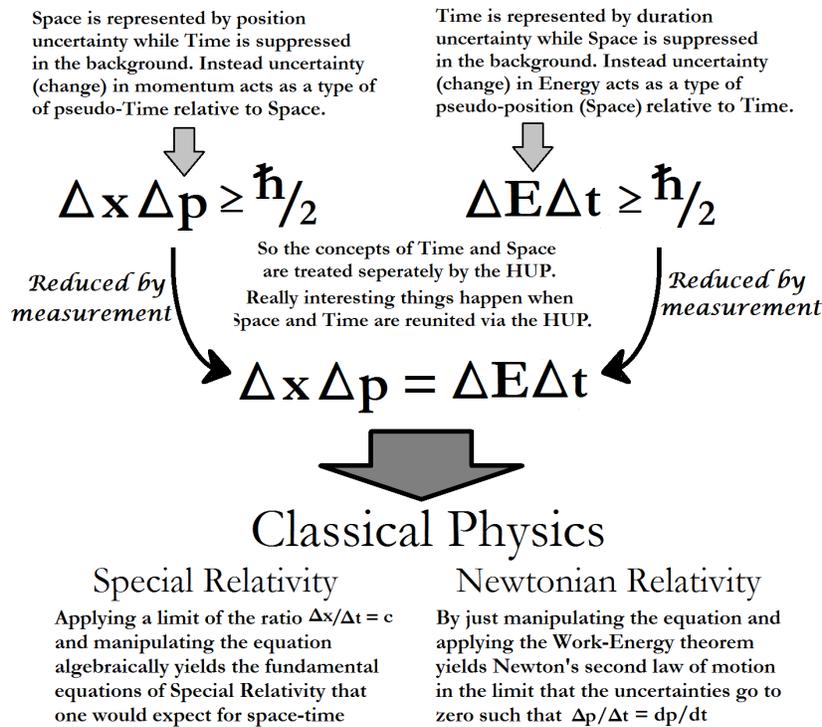
### **The point of unification**

The worldview of physics has just changed, so the physics of the world must change to compensate and remain relevant. The long neglected geometrical point, which has barely had a place in physics at all except to cause problems (at singularities), has now claimed a new relevance and champion in the discrete 0-D point/twist Void and corresponding Riemannian point-element. So, while its contribution to physics has been largely dismissed in the past, it can no longer be ignored. The concept of a point-element has allowed mathematics a chance to define and characterize the higher embedding manifold/space of a three-dimensional surface, which has, in turn redefined relativity theory. (Beichler, 2012) How it changes quantum theory relative to unification must also be explored and the best place to start is with the Heisenberg uncertainty principle (HUP) since it enunciates and interprets the basic formulas of quantum mechanics.

Given the different formulations of the HUP, which basically defines everything that follows in the quantum theory, there are several ways to proceed that allow other physical models of reality to be included or unified with the quantum. By setting these two equations equal, as they are equal to the same quantity ( $\hbar$  over two), we get for a simple case of a material interaction at the quantum level of reality, which localizes an event in space and time, the equation

$$\Delta x \Delta p = \Delta E \Delta t$$

From this equation, it would seem from HUP's expression of uncertainty that bringing space and time together, as represented by the different uncertainties, suppresses the quantum effect as exemplified by the disappearance of Planck's constant, rendering the event real for consideration by classical physics.



For example, when the condition that the ratio of the uncertainties in position to time is less than or equal to the speed of light ( $\Delta x/\Delta t \leq c$ ), Einstein's equations for special relativity can be easily (algebraically) derived. On the other hand, when that condition is relaxed such that the speed of light is not considered at all in applying the uncertainty principle, Newton's second law of motion ( $F = dp/dt$ ) can also be derived.

In other words, suppressing Planck's constant by combining the different quantum expressions for space and time results in a reality described by Newtonian physics and general relativity, or rather classical physics. When quantum restrictions are suppressed in this manner, quantum theory becomes closed with respect to classical physics, meaning that quantum theory can never be derived from relativity theory, just as Planck's constant could never just pop up out of any normal relativistic

considerations of material reality in either Newtonian three-dimensional space or Einsteinian four-dimensional space-time as Einstein hoped.

### Conclusions

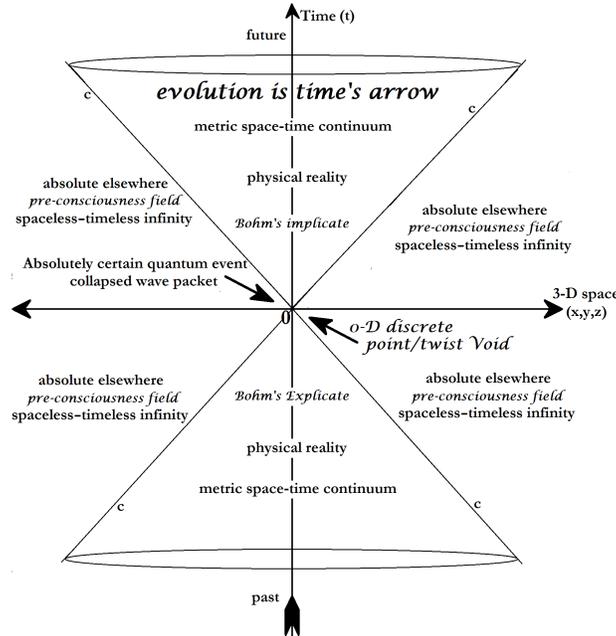
- a. The differences between classical and quantum physics are simply due to our logical misinterpretation and not inherent in external material/physical reality
- b. Since Planck's constant is suppressed when space and time are reunited to form space-time, it cannot be derived from the relativistic physics
- c. Planck's constant can therefore be identified as the binding constant between position in space and time or discrete point and moment such that it is inherent in the discrete 0-D point/twist Void in a Riemannian geometric structure

The false belief that the relativity and quantum theories will always be mutually incompatible has dominated theoretical physics for the past century, when in fact they are only mutually incompatible with regard to three-dimensional space. So they cannot be unified intact, as they now exist in physics, while retaining the major characteristics and concepts of each theory. It is true that quantum indeterminism has no place in a continuous world, just as a discrete point cannot exist along a continuous line (it would form a discontinuity) or surface, yet an infinite number of discrete 0-D point/twists of Void still make up a continuous space-time manifold.

The quantum theory and relativity, in reality as well as in geometry, are in truth mutually compatible. When each is fully understood they can be easily unified. Moreover, the continuous world of relativity can remain deterministic while the quantum world of the discrete point remains indeterministic. Under these circumstances, it is safe to conclude that Heisenberg's uncertainty principle (HUP) is merely a limiting condition that applies when circumstances (specific physical conditions) are established to artificially separate changes in time and three-dimensional space by experimental means. Doing so invokes Planck's constant, which vastly limits the physical possibilities of what might occur or transpire in any material interaction under consideration. This means that it makes the most sense for the Planck constant to be interpreted as the binding constant for space and time, to yield space-time. (Beichler 1992, 1996, 2015)

So, given this interpretation of the HUP, a specific quantum event, as specified by the collapse of its wave function, can be localized at a specific known point in space-time as opposed to all other non-localized quantum point-events. This means that another path can be followed that leads to a complementary interpretation of the quantum and this path implies the physical reality of a higher embedding dimension of space. In the original equations of the HUP, when  $\Delta x$  and  $\Delta t$  are simultaneously forced to go to zero (by measurement or observation), an exact discrete point location in space and time results. This point could then be considered (equivalent to) the point of origin in a space-time diagram that represents a specific quantum event in space-time, wherein both  $\Delta p$  and  $\Delta E$  become infinite (undefined). This may seem a trivial concept, but it is instead full of useful information since the localized point in space-time corresponds to Andrews' concept of a 0-D point Void (or a discrete 0-D point/twist) and the event can be interpreted as a point-element with respect to a three-dimensional Riemannian surface curved in a four-dimensional manifold or space.

This shared point of view between an intuitive and scientists can be better illustrated using a common (Herman) Minkowski space-time diagram. The origin of the space and time axes coincides with Andrews’ 0-D point in a Riemannian geometry as well as with a localized discrete point that marks a specific event in the quantum theory.



The ‘absolute elsewhere’, which appeared in Minkowski’s original development of the space-time continuum, has never been considered viable or even meaningful in modern relativity physics, it is considered a useless archaic concept. Yet, it still implies that something can exist beyond the purview of relativity (underneath or in the background of our physical space reality). So, it really should be of interest in fundamental physics now that the origin of the space-time diagram, literally the zero-point of a space-time event, has been related to the quantum theory and point location of the collapse of the wave function.

Minkowski’s ‘absolute elsewhere’ can now be interpreted as relevant in a combined quantum/relativistic five-dimensional space-time framework with respect to the discrete 0-D point/twist Void, not just the point location in space-time at its origin, which completely alters its traditional non-role in relativity physics. Quite simply the ‘absolute elsewhere’ can be identified with a higher embedding dimension of space-time that is physically real even though beyond direct observation and detection, yet necessary to unify the different theories (modern paradigms) of physics. The concept also unites all four dimensions of space-time as a whole by providing a role for the formation of “qualia” in our experience as three-dimensional beings due to the fact that it can also be identified with the semi-physical pre-consciousness field. In other words, it can be related to consciousness even though we cannot directly perceive an event occurring outside the light cone, implying that we can know of the event indirectly without directly observing it. Since single field theory utilizes a five-dimensional space-time model with a single polar point through which all points in three-

dimensional space are directly connected to each other and a sixth dimension is implied by the physics, the single polar point could be equated to a point in a further sixth embedding dimension of space that could thus take the form of Andrews' all-encompassing witnessing consciousness, acting or co-creating physical reality through the individual discrete 0-D point/twist Voids in space-time.

If we localize the quantum event to a discrete point (a point particle or a simple 0-D Void point/twist in terms of Riemannian geometry), then what's left of space-time outside of or beyond the light cone (the so-called normally irrelevant 'absolute elsewhere') can be interpreted as physically equivalent to a region (or a volume in three-dimensional space) of infinite uncertainty. At least the fact that mathematically  $\Delta E = \Delta p = \text{infinity}$  that results from an absolutely certain measurement of a discrete geometrical point in time and/or space can thus be equated to the 'absolute elsewhere' as an indeterministic infinite region of reality. Or rather  $\Delta E/\Delta p = \text{infinity}/\text{infinity} = \mathbb{1}$  (some form of unity or oneness), a reality of an infinite number of discrete points, according to Andrews that corresponds to the region of the space-time diagram beyond the physically possible limits set by the speed of light  $c$ , where  $\Delta x/\Delta t > c$ . (Andrews, 2016) His unity could be a 'whole' space in itself constructed from the infinitely uncertain number of discrete points. This region is thus complementary and even necessary to fully understand the region inside the light cone that is classically deterministic with regard to both Newtonian and relativistic worldviews. The 'absolute elsewhere' thus represents the part of the diagram where infinity means 'undefined' rather than 'a number too large to count'. So on a space-time diagram, the infinite, or indefinite, nature of  $\Delta p$  and  $\Delta E$  would clearly correspond to the region outside of the light cone as the range of physical possibilities for any particular discrete quantum point event potentially occurring in the 'absolute elsewhere.'

This region of the space-time diagram could correspond to a higher embedding ( $n+1$ ) dimension of our  $n$ -dimensional Riemannian surface, since the speed of light only applies in our normal three-dimensional space. Since the spread of light outward from a point-source is only a limit in three-dimensional space, it has no significance along the fourth direction of space, so a virtual photon, which corresponds to a discrete point in three-dimensional space as a classical spherical electromagnetic wave front moves through that point, would follow or move along a straight line instantaneously in the corresponding fourth direction of space and back into itself along a closed loop (path) in four-dimensional space. A virtual photon, and even a real photon that emerges when the virtual photon becomes real during some quantum event, could thus carry information between distant locations in three-dimensional space instantaneously via the higher embedding dimension of our three-dimensional space in a process that is otherwise called quantum entanglement. (Beichler, 2013, 2014, 2015)

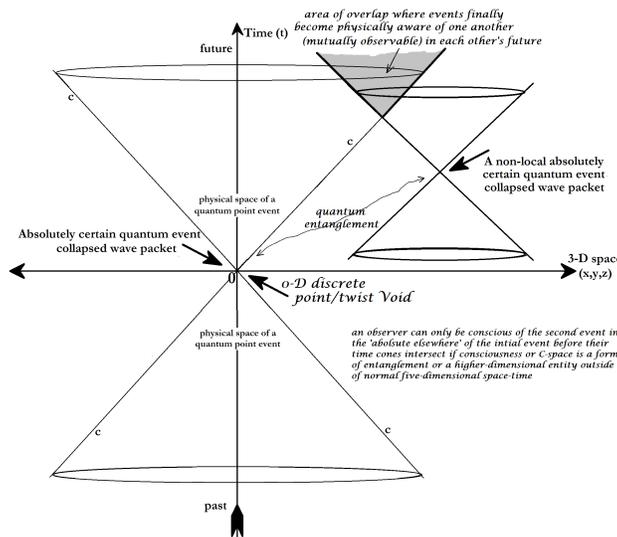
We could therefore actually learn about and possibly observe events outside of our personal light cone along this four-dimensional closed loop or path by means other than our normal senses, for example via some form of collective consciousness in the higher space. Consciousness could easily utilize the hyper-dimensional connections between discrete 0-D point/twists in our common three-dimensional space and those that are non-local (outside our light cone) in the 'absolute elsewhere'.

When this explanation is considered within the context of a background collective ‘absolute elsewhere’ that is associated with consciousness in some physical manner, all events in the universe are simultaneously known to consciousness and fully capable of being known by a higher enough level individual consciousness even if the individual’s brain is not consciously aware of that knowledge.

**The absolute nature of Q-space**

Yet the above space-time diagram is still incomplete and misleading since it only refers to the reference frame of one particular quantum point event as consciously collapsed or localized by the HUP equations to the origin of a standard space-time diagram. In reality, the real universe consists of an infinite number of other quantum point-centered events (that are just as real) which lay outside of any one point particle’s light cone (*i.e.* within its own ‘absolute elsewhere’), wherein all point particle events (taken together) constitute the whole of our experienced physical universe. This collective background of all individual discrete quantum point events, including the quantum point events both inside and outside of any one quantum point events unique ‘absolute elsewhere’, could just as well be related to Bohm’s quantum potential field or even his implicate order. However, it is actually a discrete point-generated absolute Quantum-space or Q-space, hiding or suppressed in the indeterministic background by the determinism of relativistic classical space.

All real quantum field points in physical space (points that exist after the collapse of the wave function into an apparent classical reality) are entangled by the geometric restrictions of the five-dimensional space-time continuum, even though they may be unobservable and (materially) non-interactive within any given 0-D point/twist’s ‘absolute elsewhere’ (outside of its light cone) until a future time when their light cones overlap. Only then could any information be gained about events in the ‘absolute elsewhere’ relative to our light cone by normal means and only then can the occurrence of events outside the range of our normal senses and scientific instruments be confirmed as real (having actually occurred) or not.



So the complete collective 'absolute elsewhere' of all real events is a point-by-point background four-dimensional space-time continuum that is simultaneously relative as a whole to the whole material universe of extrinsically curved relative four-dimensional space-time continuum. It is the collective effect of all the infinite number of differently located discrete 0-D point/twists that constitute our commonly experienced physical reality and thus constitutes an absolute relative space-time that can only lie somewhere behind (in the background) of the whole of normal relative physical space. It would be a commonly shared virtual 'absolute elsewhere' that is reduced by each and every discrete quantum 0-D point/twist event to suit that event and that event only when the psi function describing the possibility of that event collapses. Therefore, the complete 'absolute elsewhere' is not simply beyond the light-cone of any one particular quantum event, it is 'absolutely everywhere' beyond all possible events that occur in the four-dimensional space-time continuum all the time.

Since a specific 'absolute elsewhere' is isolated, and thus defined by each and every discrete quantum point event in relative space, out of the whole virtual and infinite collection of discrete points that constitutes all of relative space, a specific 'absolute elsewhere' must require a collection of corresponding 'absolute elsewhere's' that constitutes a virtual background 'space' of its own. This absolute background space structure is absolutely necessary to complete the relativity of experiential material/physical three-dimensional space to even exist. This virtual 'absolute elsewhere' space must exist somewhere that is not the relative four-dimensional space-time constituted by discrete quantum points. This then implies a higher-dimensional co-space that maps point-by-point onto our normal four-dimensional space-time of experience. Even a 'Newtonian-like' absolute space, which was associated by Descartes with mind, consciousness and God and Newton as the "sensorium of God", could be used to represent this virtual background 'absolute elsewhere'. But this new single field model implies that it is a semi-physical pre-consciousness space-time—it is filled with a semi-physical pre-consciousness potential field—or embedding manifold that both co-creates and witnesses events in the physical world of matter/energy fields through individual 0-D point/twists. As such, it would both influence and define the evolution of life, mind and consciousness, as natural processes in the material/physical universe. Since it is a complete space-time model in itself, it could not be equated to the fourth dimension of space or with five-dimensional space-time, but could be equated to a complete six-dimensional manifold in which the whole of five-dimensional space-time is embedded.

In Faggin's model as well as other more speculative models, C-space or some form of super consciousness (rather than P-space) is the actual reality that generates P-space through I-space (Information-space). Faggin's model at least forms some mechanism to account for this action in that his C-space acts through I-space to create P-space utilizing the quantum theory of point-particles on a point-by-point basis, but it could be viewed as, at most, a final evolutionary state of our real perceived material/physical universe with respect to the Beichler-Andrews model. Faggin's and all such models more-or-less offer the final state of the universe toward which the universe as a whole is presently evolving: A final state of pure being relative to our present state of becoming.

Still other models that claim reality is just information, a hologram, a computer program, quantum bits or some other such device are more metaphysical speculation than science. So they offer little if anything to science other than a form of escapism and an excuse not to do real physics and develop a new and better theoretical paradigm to replace modern physics. This category is filled with non-sensed realities (literally non-sensed since our sensations of the material world are themselves material), that are being mistakenly interpreted by our consciousnesses as material reality, thus rendering our sensed material reality as not real. These speculative models claim that the material reality we experience is nothing but an illusion.

Within this context, questions regarding God, a Supreme Being or Consciousness are often raised, since they take advantage of a logical loophole of sorts in the scientific arguments, i.e., it is philosophically impossible in science to even prove that what we sense really exists. The best science can do, according to its own doctrine, is develop theories that explain what we sense as existing and verify those theories. Under these conditions, the reality of God or a Supreme Being is not within the realm of science to either confirm or deny even though almost everyone senses that there is far more to our world than we sense or even can sense. God is neither definable and thus measurable nor verifiable by any possible scientific standards. The concept is simply not falsifiable and therefore not scientific.

There always exists the possibility that things beyond science do really exist and they can still be validly discussed and debated, just not within a scientific context. For example we sense some type of a non-material force at work in evolution. Being non-material and even non-physical, it is not normally considered good science, but according to the single field theory such a semi-physical pre-consciousness potential field is necessary as is the implied point-by-point 'virtual torque' that collectively yields the single field potential from which matter and energy are derived. Being semi-physical, the pre-consciousness potential field interacts with matter to create a 'virtual force' that does not move matter (like a real material force), but instead influences matter to evolve into more complex systems. This "virtual force" manifests in other ways in physics, but it is also directly sensed by consciousness and given many other names, not just that of a 'force of evolution'. There are many things that we sense that are not completely scientific, but still exist at some undefined level of reality and existence. Concepts such as this are related to our sensing the presence of some form of God or Supreme Being, but they say nothing about the actual reality of that Being, which is still open to non-scientific belief.

So as real as these things may well be, depending on any given person's personal definition or specific knowledge of reality, their reality is a matter of opinion and belief, not verifiable science. Having said that, scientists and other academics are not automatically atheists as many non-scientists claim, they just separate their belief systems from their scientific endeavors. Newton was faced with this same problem through criticism of his new physics, which did not mention God. He was a very religious man and replied to those criticisms by describing his concept of absolute space as the

“sensorium of God” and that statement is still a wise position for scientists to take. Even if they do not believe in an absolute space as did Newton, there is still the ‘absolute elsewhere’.

However, concepts of consciousness are still important in this respect since consciousness is a physical construct, although in all likelihood not a material construct or thing. Consciousness must be physical at some level of reality since it interacts with and within the physical world. So consciousness must be a physical construct, as it is when it is explained as a complex multi-leveled magnetic vector potential field pattern within the single field. Many people question whether the universe itself is conscious, but since the universe is comprised of the whole single potential field with internal variations in density and density patterns any one consciousness pattern of any living organism within the single field would render the whole single field conscious. But the universe is filled with a seemingly infinite number of individual consciousness patterns and that number is growing all the time, both in complexity and quality (qualia), so it would also seem that the universe as a whole is evolving toward a point in time when it will become aware of itself, if that moment has not already arrived, given the simple fact that both life and consciousness continually evolve by moving toward greater complexity within the universe. So it is safe to conceive that a universal or cosmic consciousness is an evolutionary endpoint, either individually or collectively, and probably both, without our direct experiential or observable knowledge of that possibility. Hence, idealistic models such as Faggin’s are not just metaphysical and/or speculative, but at least scientifically legitimate to one degree or another depending on their own inherent scientific practicality as descriptions of a future state of the universe.

In Andrew’s original model, the point-centered dimensions of our (commonly experienced) three-dimensional physical space are emergent properties of a spaceless-timeless Void. Every point-centered process would emerge from a 0-D embedding dimension corresponding to the quantum point at the origin of the space-time diagram. (Andrews, 2015) This notion of a six-dimensional embedding manifold could also be related to a cosmic consciousness, collective consciousness, super consciousness or even more specific models such as Faggin’s concept of C-space as well as other more speculative theoretical models. It could even be related to metaphysical models and those that deal with spiritual matters such as the Tao, Great Spirit, Demiurge, Brahman and/or Ein Sof. A universal collective consciousness of this type that acts through each and every point in our three-dimensional space of experienced reality could easily correspond to the implied sixth embedding dimension.

The age old paradox of the duality between transcendence and immanence, highly debated in the Middle Ages of European history when there was little difference between religious philosophy and real science within the study of Natural Philosophy, can now find its resolution in physics of the single field. The duality breaks down to nothing more than a misunderstanding of how consciousness manifests itself in our real material world within the context of the extended Riemannian structure of the universe utilized by the single field theory. The debate over transcendence and/or immanence breaks down to another facet of the relationship between extension- and point-geometries (metric-element/point-element, relativity/quantum or continuous/discrete) that has served no less than to de-

unify (derail attempted unification) and mystify physics over the last century. Any duality of nature can be resolved in that it must have a solution because nature is a unitary and not a multiple thing. The duality is relay in our interpretation of nature, but can always be resolved at a higher level of nature and consciousness. Just as consciousness can be both transcendent and immanent, it can manifest itself in two different ways through the 0-D point/twists from which our physical reality emerged.

In common physics the interaction of a potential field (gravity, electric or magnetic) and a piece of matter can be interpreted in two different ways: in terms of a force or an energy, which are themselves intimately related through the work-energy theorem. The action or influence of the pre-consciousness potential field (which is the precursor of consciousness) on matter can also be interpreted with respect to both of these physical concepts. It can only influence matter because it is a semi-physical field, but it cannot move or accelerate matter as can a fully physical field. When animate matter interacts with the pre-consciousness potential, it can be interpreted as a 'force' such as the 'evolutionary force' that causes an organism to seek higher and higher levels of consciousness (a transcendent or holistic interaction) through biological evolution. However, when the pre-consciousness potential interacts with animate matter it can also develop a form of internal 'energy' (the immanent or point-by-point interaction) that many people have sensed in themselves and talked about over the centuries, but that science does not normally recognize as existing. It is usually named Chi, Ki, Qi, Prāna, Mana, Orenda, or Od depending on the local culture.

These potential 'energies' are normally described as a 'cosmic energy' that exists everywhere, an all pervasive 'organic energy', a 'life force' or 'life energy'. In any case, the concept seems universal to all cultures independent of their early development and the concept predates historical records in many cases. The concept is related to consciousness, or at least spoken of in the same way as consciousness, in many cases. Enlightened beings, those who have experienced the higher dimensions of space and/or Consciousness itself, have the ability to manipulate this 'energy' for material purposes. In other words, at high enough levels of consciousness, the pre-consciousness potential can be utilized much as physical fields are utilized to move and/or change matter. Although there are many tales of people utilizing these energies throughout history, changing these potential energies to kinetic energies, but science has only become interested in them in the last few decades. Measurements have been made of the effects of these energies in some individuals, but science lacks and underestimating of where the energies come from or how they are produced and utilized by individuals, at least until now. Yet the knowledge of these energies and how they relate to our common material universe has completed the emergence of the new science of Neurocosmology.

On the purely theoretical physics side of the matter, the relationship to Faggin's P-space, whereby C-space (transcendent) creates the reality of P-space through the individual discrete points (immanent) described by the Standard Model of quantum theory, is not as different from the Beichler or the Beichler-Andrews models as one might expect. Both Andrews and Faggin suggest three-dimensional point-by-point quantum processes are mediated or made real geometrically by the Amplituhedron, which greatly simplifies standard model calculations using Feynman diagrams. But if the

Amplituhedron is interpreted a real geometrical object, it could merely represent a non-Riemannian geometry that acts physically in lower spaces through the single-polar point via its capacity as a link to the otherwise undefined, yet implied, six-dimensional embedding manifold, which in turn acts through the individual 0-D point/twists in the embedded three-dimensional space. More weight can be offered for this interpretation since the Amplituhedron can be connected to the twistor/gauge theory of the quantum, implying that it has much broader meaning within the quantum theory and should be interpreted as a possible geometrical reality.

When the volume of the amplituhedron is calculated in the planar limit of  $N = 4$   $D = 4$  supersymmetric Yang–Mills theory, it describes the scattering amplitudes of subatomic particles. The amplituhedron thus provides a more intuitive geometric model for calculations whose underlying principles were until then highly abstract. The twistor-based representation provides a recipe for constructing specific cells in the Grassmannian which assemble to form a positive Grassmannian, i.e. the representation describes a specific cell decomposition of the positive Grassmannian. (Wikipedia)

In fact, any geometrical device that gives the physically proper answers for the quantum theory could be used as a non-Riemannian geometry within the single-polar point as an expression of the physical geometry of the discrete 0-D point-twist Void structure of three-dimensional space.

In any case, whether the Amplituhedron defines that reality or not, the reality of the quantum event emerges from the quantum collapse to a distinguishable discrete point-event according to the HUP and did not exist before the event. The ‘collapse of the wave packet’ makes the reality of the event. Reality emerges, at least for the singular event, at the origin of the space-time axes, from the time of the event to make reality from this time forward excluding other quantum events that alter the future of this event. This is essentially the point made by Einstein and his colleagues in EPR. So each point quantum event has a future that is part deterministic and part indeterministic as defined by the light cone and the corresponding ‘absolute elsewhere’, respectively. But it is indeterministic materially, which means that the determinism is materialistic, but also materially limited to the curvature of three-dimensional space as limited by the speed of light. Indeterminism, as a characteristic of the ‘absolute elsewhere’, allows consciousness to abstract ideas and concepts whether they are historically real (follow along the events time-line) or not. So consciousness allows us to think beyond the limits on the brain/mind and associated sensations that are restricted by our experiences which are material reality oriented within what we perceive and have perceived in our personal light cones. This is an important feature of consciousness often associated with imagination, abstraction, thought, intuition and other ‘qualia’ which are all important facets of consciousness.

The 0-D point/twist at the origin is also instantaneously connected to the single-pole in the embedding dimension and thus mirrors its many physical aspects, as are all the discrete 0-D point/twists that constitute our three-dimensional world of experience at any moment in time. In this respect, all 0-D point/twists are intimately connected to each other through-out the universe, even the

ones that constitute our consciousness. So, in a sense, the primal awareness associated with the original singularity point still plays out through each 0-D point/twist in the universe and the universe itself must be aware of itself at some level of consciousness derived from the pre-consciousness on a moment-to-moment basis. Collectively, the primal awareness inherent in each and every 0-D point/twist creates the semi-physical pre-consciousness field that permeates all of space-time and is associated with the whole of the 'absolute elsewhere', which forms the background to our commonly experienced relative space (inside all possible light cones of all events in the universe) that directly influences real physical events inside the light cone.

In reality, our experienced universe is now developing toward that evolutionary end according to the Beichler-Andrews model, which is still a work in progress. As such, any speculation about the reality of an Information-space could only refer to a partially filled vessel that is presently being constructed, and filled, by all sentient beings that have evolved past the inanimate matter stage of a universal physical system of evolution. This would include all living beings and perhaps someday, at a much higher level of evolution, we will have evolved into non-material beings that are part of and contributors to a fully functional Consciousness-space that is creating Physical-space through an Information-space that we each helped to create by individually evolving.

#### **The absolute necessity of universal evolution so the universe can know itself**

The concept of a pre-consciousness potential field completely changes the way that science should regard our physical reality. This semi-physical (virtual) field would fully complement the single field but acts through individual discrete 0-D point/twists by way of the geometrical point-by-point three-dimensional field patterns of magnetic vector potential to form complex internal surface patterns in the four-dimensional single field that are the individual consciousnesses of living beings. Yet this semi-physical field would also act collectively as a non-material but still semi-physical 'force' for order and increasing complexity in the universe. This 'force' affects or influences the action of matter but it is not able to move matter in the manner of a true fully physical force.

Physics has always been confronted with the problem of something as simple and fundamental as 'order in the universe' let alone the complex order required for the existence of life, mind and consciousness. But no one has ever been able to make any logical sense of how they emerged (i.e., were they created?) after the Big Bang (or the creation of the universe). So the question was formerly relegated to the domain of the supernatural by default, or otherwise ignored altogether. Physics only came close to even considering this problem in the branch of science called thermodynamics, but even this failed, or was at least inadequate, to finally answer the problem. However, a radical change in the laws of thermodynamics, that balance disorder (entropy) and order (evolution), would now seem to be in order to fix the physics and allow science to explain order in the universe other than calling order a chance process.

The four normal laws of thermodynamics still hold true (and do not change) for the idealized situation of closed systems, even though a truly closed physical system is only an ideal that

technologists use to design human-made machines which are only approximations of processes in nature, *i.e.*, diesel engines, air conditioners and refrigerators. Entropy is still favored over order by the universe in the large, but only because the volume, or total size, of the universe is expanding, while the number of material particles remains roughly constant. The combination of increasing size filled by a constant amount of matter/energy yields a net increase in randomness over time. So the underlying order of the universe implied by the potential of the pre-consciousness field yields the need for the addition of new thermodynamical 'laws' to balance the current theoretical model upon which the existing laws depend rather than replacement of the old laws.

Over the past century and a half of its existence, ways have been developed to overcome the shortcomings of thermodynamics, which only enforces the validity of retaining thermodynamics as is in spite of its shortcomings. Prigogine's Principle is already used quite extensively in conjunction with the second law because it clears up many problems associated with a closed system, which is suggested by the second law. In reality, there is no such thing as a closed system, which is the thermodynamical ideal used for computation, since a closed system is impossible. This makes it necessary to invoke Prigogine's principle or various mathematical methods to actually describe real situations. In general, Prigogine's Principle states that a dissipative energy system, whose equilibrium destabilizes through a loss of energy, moves toward a maximum chaotic state before falling into another more stable equilibrium state at lower internal energy. It is so commonly used in thermodynamics that Prigogine's Principle should be elevated to the status of the fourth law of thermodynamics.

The mathematical system of chaos theory (non-linear dynamics in physics) has also been used to supplement thermodynamics because chaos is similar to entropy. So the fifth law should introduce the concepts of chaos and the emergence of complexity. It could be stated in such a way that 'under the proper environmental conditions (such as a system's interaction with external natural forces) complexities would naturally emerge to form new orderly systems'. These newly emerged complex physical systems would have characteristics that could not have been predicted from the characteristics of the chaotic (entropic) system before the complexity emerged, one being the principle of organization. So to improve efficiency of the system as well as improve internal function, once formed, complexities reorganize the chaotic systems from which they emerged for their own benefit and continuity.

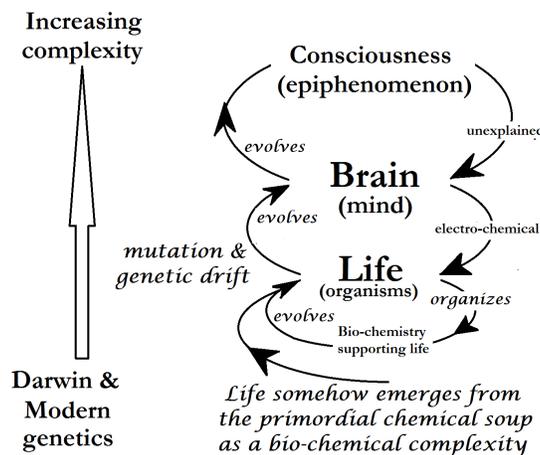
The sixth law would combine the previous two laws—Prigogine's Principle and the emergence of complexity—yielding a physical law of material system evolution. System evolution occurs when chaotic (entropic) mixes of complex emergent material systems move toward higher and higher levels of complexity over the course of as time. In other words, system evolution is universal, open-ended and continuous throughout the universe. Animate matter, or rather biological systems, are just specialized material systems within the overall category of material systems that experience biological evolution as presently described by Darwinian evolution and modern genetics.

The next and final law of thermodynamics, Murphy's Law that 'anything that can go wrong will go wrong', would always be the next and final law because something new, unexpected and completely

unsuspected could always pop up. Murphy's Law could also be described as the 'law of unintended consequences' in that it would introduce some of the fundamental uncertainty of quantum theory into thermodynamics, since it is impossible to know absolutely everything about an event, or system, according to the quantum theory. It also seems a good balance for the Zeroth law (in its vague generality), while the other new laws balance the three classical laws of thermodynamics.

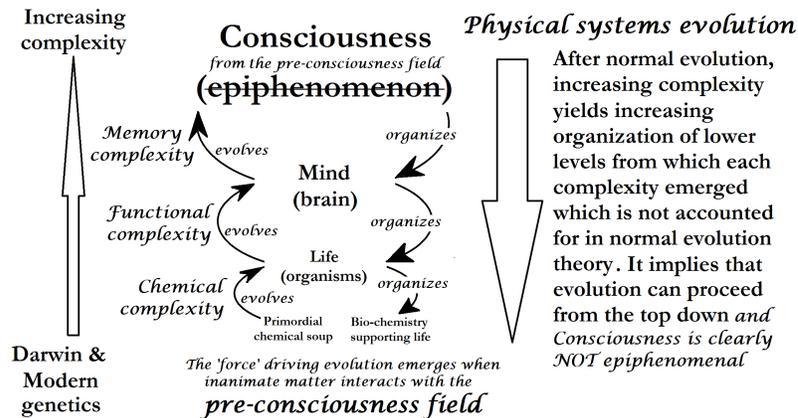
And finally, since evolution is occurring in all material things, everywhere and all the time, it would be more accurate to say that evolution, rather than entropy, is time's arrow. Only evolution is every bit as ubiquitous as time in our universe. So it certainly makes far more sense to think and perceive the world around us, and even interpret nature as a whole, within the context of evolution rather than within any entropic principle, especially since the observed order presented to us by evolution seems to be the end product of an entropic (chaotic) material system. Evolution itself is just the manifestation of the pre-consciousness potential field on matter.

The presently accepted scientific theory of evolution is completely biological in nature and thus very straightforward, although it seems to depend on some undefined and/or non-specific form of 'force' in nature that pushes, or favors, evolution—against constancy and a non-changing world—except for simple motion as explained by physics.



It is generally thought that biological evolution depends solely on the agencies of natural selection (Darwin), genetic mutation and genetic drift (modern genetic evolution), but these agencies always proceed from the bottom up, from the genome to the organism as a whole. Biological evolution thus ignores any contribution of organisms as a whole, or in part, to organize or reorganize themselves internally in an evolutionary manner, so it would seem that evolution can only come from chance outside interaction of the organism (Darwinian natural selection) with its environment. Yet people sense an organizational principle at work in evolution within themselves and within the world in general and thus question the scientific theory of biological evolution. People sense this 'force' of evolution at play in the world, but the present theory of evolution provides no answers or clarification about the character or identity of this 'force', which forces people (non-scientists) to invent such alternatives as Creationism or Intelligent Design to fill the perceived logical gaps in modern evolution theory even though these inventions are not necessary.

That 'force' which people 'sense' is merely the action of a pre-consciousness potential field within themselves and our physical world of experience. That non-material but still semi-physical 'force' acts, or interacts, with specific material bodies to create order in the inanimate world as well as top-down (from consciousness to mind and then to life) evolution within animate matter through the exigency of the emergence of complexities.



However, the principle of physical evolution that emerges from the new thermodynamics can now be considered to supplement normal bottom-up evolution (Darwinian and genetic) by including top-down evolution from consciousness to mind to the living organism. This fact of top-down evolution answers many of the difficulties facing the older versions of evolution theory.

This form of top-down evolution also explains some of the problems faced by ordinary biological evolution such as the Cambrian Explosion two-hundred million years ago, during which simple single-celled organisms very rapidly evolved into extremely complex multi-celled organisms over a vastly shortened evolutionary period of a million years or so. The Cambrian Explosion was caused by the top-down evolution from mind to body. This leap was soon followed by the split between animals and vegetables, which reflected the natural dualism of form and function. The vegetable kingdom followed form which allows the outward appearance of its members to be outwardly modeled by chaotic complexities (iterated function systems such as the Mandelbrot and Julia sets), while animals followed function which allowed them to evolve brains and complex nervous systems.

In nature, animate and inanimate organisms can only be distinguished by their internal levels of complexity. Both groups follow the same basic physical principles and laws, as described by the physical theories that are interpretative explanations created by the human mind. Within this context, life, mind and consciousness can only be defined in physics within the larger sense and context of the universe. Life, the proverbial 'life force' or biofield as some call it, is the complex matter/energy field pattern that corresponds to a living organism. It is essentially an independent and individualized pattern of quantized space-time curvature in the physical worldview that corresponds to physiology (bio- and electro-chemical interactions in the organism) and the anatomy studied by biologists and biochemists. Mind is the complex electrical scalar potential field pattern associated with the living organism, literally the three-dimensional complex electrical pattern of the living organism which would

include all bio-chemical interactions, as well as purely electrical interactions, that maintain life in the organism. This includes all of the specialized electrical activity in the brain as well as those between every cell in the body and different organs.

And finally, as already stated, consciousness is the complex magnetic vector potential field pattern associated with the mind of the living organism. The body of any organism has a larger collective magnetic field that amounts to the combined effect of all of the many levels and types of individual magnetic domain structures in the body. The brain has the most complex and complicated domain structure due to the existence of vast complexes of neural nets while the heart has the strongest magnetic field of all the internal organs. Magnetic fields commonly direct electrical flow in the same manner that consciousness directs mind and only magnetic fields form structural levels called domains to form permanent field structures, which compares well with the concept of levels of consciousness.

Within this context, living organisms originally evolved as Darwin and modern genetic biologists have claimed, internally from the bottom up, but with reservations because current evolution theory is inadequate and incomplete. The action of a pre-consciousness potential field on matter is necessary to explain the initial origin of life in the chemical soup from which it emerged. As animate organisms became more and more complex over time, bottom up evolution (from within) has become more and more difficult, while top-down evolution (from within) has slowly come to dominate the most complex organisms, simply because mind and consciousness represent the whole context of a living being and not just one internal aspect of its being. Every living organism is thus a product of the interaction of both top-down and bottom-up evolutionary processes with the ultimate goal of developing higher levels of consciousness as well as a more diverse group of consciousnesses.

The evolution of physical systems, which now supplements earlier theories of biological evolution, is a natural part of our physical universe, an expression of the pre-consciousness potential field, rather than just a biological process. In fact, extremely complex physical systems that are presently considered inanimate, such as stars and planets, may ultimately prove to be animate at some level or another due to their own vast complexity. Life is only differentiated from inanimate (non-life) matter by its level of complexity, yet everything beyond individual material particles is complex to one degree or another. So such objects may ultimately be found to have their own unique forms of mind and consciousness. So 'life' is not matter and energy, mind is not electricity and consciousness is not magnetism. Life, mind and consciousness are the complex multi-leveled matter/energy, electric and magnetic field patterns that have emerged and developed into ever more complex patterns over the course of history. Once living organisms emerged, they began to reorganize their own internal matter/energy interactions (field structures) by modifying electric/chemical and magnetic interactions to run more efficiently, thus enhancing further development and evolution.

All material objects are constructed from these same three different physical fields—matter/energy, electric and magnetic—imprinted upon one another. In all cases, these three fields must act, or react, in concert with one another as specified by our scientific theories. Yet the animate matter of living organisms is defined by a much higher-level of complexity within the field components that

renders these particular field patterns in living organisms different from their inanimate material counterparts so it is more difficult for the different fields to interact with each other the more complex the living organism. This difficulty requires a continuing evolution of higher and higher complexities of mind and consciousness to organize the more complicated internal systems of organisms. So the complexity complexity of these three field patterns act like a positive feedback system toward greater consciousness. All of these patterns must work together to create a living organism, which means that all living organisms have the same complex mix of patterns. But different living organisms have evolved both higher level patterns (paramecia versus humans) and different types of complexities (plants versus animals) than others. In other words, all life is conscious to one degree or another, but only in more highly evolved organisms has awareness of consciousness emerged as a chaotic complexity of memories within mind.

Within this much greater universal context, the brain/mind system stores memories whose pattern complexities form individual consciousness, or at least conform to the context already present in consciousness (already existing inherited patterns) as preordained by the influence of the pre-consciousness field that acts through every 0-D point/twist in space. As the new multi-leveled (domain structures of) complex magnetic vector potential patterns stored in mind change, the context established by existing consciousness for perceiving and interpreting new data input from the external physical world (through the five senses) also changes. But when changes in the complexity patterns are great enough (possibly during spiritual enlightenment or NDEs) they directly affect genomes. If plasticity changes are intense enough (they are important for preservation and enhancement of the species), they are passed on to offspring and become part of the overall genetic pool of the species.

It is through such processes that the human species might soon be reaching a tipping-point in its own evolution, catalyzing a new leap in evolution that ends with the emergence of a new Hominid species. Since the magnetic vector potential acts through individual discrete points in three-dimensional space, or rather the 0-D point/twists that constitute the three-dimensionally curved surface (or 'sheet') that is our experiential material space (affecting the whole single field), the memories and thought patterns of individuals become permanent density pattern subgroups stored at the 0-D point/twist level (in the single field) due to the activation of the pre-consciousness potential field as a whole. In other words, the single field acts as an infinite permanent storage bin for memories, thoughts and experiences, as well as countless consciousnesses, all of which are semi-independent of the living organism and mind to which they are originally connected.

The most complex memories that we easily recall and remember are stored and recalled by that part of the mind that correlates to the brain, because only the brain has the density of neurons and more important the complexity of neural nets that have the ability to render storage and allow for recall. This is why we mistakenly believe our mind and consciousness exist in the brain alone. Our memories are both stored and recalled through the interactions between and among microtubules (nano-sized bio-magnetic induction coils) and the electromagnetic interference patterns they create in the surrounding water medium. These interference patterns quantize the nuclear magnetic spins of

the water molecules in specific patterns to match incoming sensations from the external world, imprinting those as memories composed of various magnetic vector potential patterns on a 0-D point-to-point basis within the single field.

Recent developments in neuroscience indicate that the neural net patterns in the brain rewrite themselves (an alteration called brain plasticity) according to new learning and experiences. These newer and more complicated complexities slowly, but sometimes radically, alter the context of the overall consciousness pattern. Since human knowledge is increasing so rapidly, far more rapidly than ever before, and we are experiencing new phenomena (a greater breadth and variety of phenomena) at ever increasing rates due to technological and scientific advances, the (basic) complexity structure of human consciousness (that we all inherit) is currently under a great deal of stress which leads to mental chaos against the background mental context of previously stored memories in which new memories are interpreted as relevant or even meaningful. Such mental chaos could be a prelude to the formation and emergence of new higher level complexities and thus consciousness.

Add to this the present-day social, cultural, political and economic stress that we are forced to deal with mentally, all of which were non-existent just a few decades ago, and we are forced to conclude that the human species is forging a path whereby the overall nature of our pre-consciousness potential field and its proclivity for advancing the consciousness of the universe as a whole will soon initiate a new evolutionary leap for the human species that overcomes, or rather integrates, these mental stresses, giving us greater access to, and knowledge of, the single field and the higher dimension of space where the single field exists in its pure form. Since spiritual and/or mystical enlightenment (the ultimate intuitive processes of consciousness) results from the direct interaction of consciousness with the higher-dimensional single field potential and the conscious waking awareness of this interaction, it is highly probable that the human race is presently standing on the verge of becoming spiritually enlightened as a whole with our next evolutionary leap.

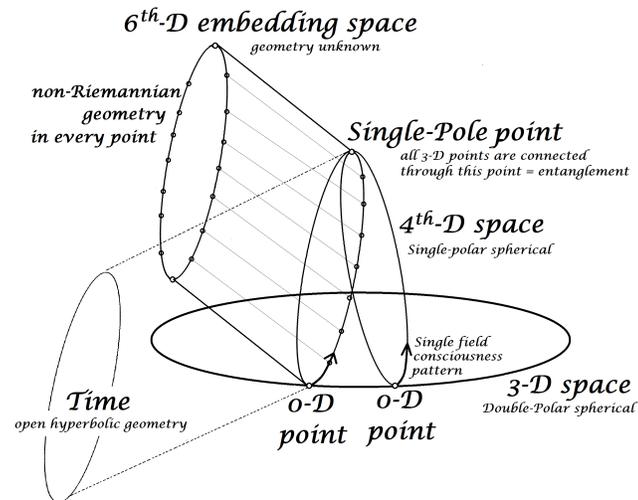
### **The new synergy emerges**

The only 'place' that can be described geometrically (and thus scientifically describable) that can fulfill the basic requirements for storing memories in multi-layered domains to form an individual's consciousness is a higher dimension that is not specifically an embedding dimension (in the strict sense that an embedding space is represented by an extrinsic Riemannian metric- or extension-geometry), but is instead inseparable from our normal three-dimensional space of experience through individual discrete 0-D point/twist Voids in five-dimensional space as are analyzed by a non-Riemannian geometry. Non-Riemannian geometry in the surface points whose extension is represented by a Riemannian geometry is intrinsic to the  $n$ -dimensional surface (or space) and thus does not require an  $n+1$ -dimensional embedding space. Any higher-dimensional Riemannian metric geometry, whose existence is required by the associated higher-dimensional non-Riemannian (or tangent) point geometry, could easily be considered spaceless and timeless since it technically lies outside of both our normal four-dimensional space-time continuum, or rather inside the discrete points that are not

'contained' within the continuum, but are tangent (Wolfgang Pauli first used this descriptive term in 1921) to the three-dimensional manifold 'surface' at any given point under consideration and also the embedded physical fifth dimension. In other words, these would be the discrete points in a six-dimensional non-embedding space where such points are 'tangent' at every point in the surface to each and every point in our five-dimensional (extended) metric surface (manifold or space). This higher dimension could be thought of as a consciousness space, providing for collective consciousness or cosmic consciousness that is generated by the four-dimensional pre-consciousness potential field, just as four-dimensional space is filled by a single field that yields a material reality in physical three-dimensional space.

Such a consciousness space could represent all quantum possibilities for three-dimensional physical space (our commonly experienced material and physical reality) represented by wave functions before their collapse (not just those realities resulting from the collapse which create our classically experienced relativistic world), except for those wave functions that are collapsed by the conscious choice of conscious beings in three-dimensional space. This would guarantee the continued existence of three-dimensional space and all of its material inhabitants even when conscious three-dimensional beings are not witnessing it. In other words, this invokes Andrews' concept of 0-D point Voids as witnessing the unfolding of physical reality without the intervention of human or similar consciousnesses. In this way, a higher-dimensional consciousness space could be thought of as creating our four-dimensional space-time reality, or physical space, through a corresponding discrete quantum 0-D point/twist Void space, generating our perceived four-dimensional (metric extended) reality from the whole 'absolute elsewhere' background (a spaceless and timeless nothingness which would correspond to a Newtonian-like absolute space) by way of some non-Riemannian point-geometry, such as the Amplituhedron suggested by Andrews and others.

Faggin's consciousness units (CUs) would then correspond to the multi-leveled consciousness complexity patterns (within the single field) in five-dimensional space-time, which manifest in the brain/mind of an individual as the awareness of human consciousness via (magnetic) vector potential patterns (domains) throughout the whole three-dimensional material living (animate) body.



A consciousness space of this type, known by this or any other name, need not (specifically) be a sixth embedding dimension for our five-dimensional space-time continuum when just a sixth tangent, or perpendicular manifold, that manifests physical reality would suffice. It could act in our four-dimensional space-time continuum and either create or just be aware of our already existing material reality through each and every one of the individual discrete points, throughout the embedded dimensions of physical space within it. It need not be a full embedding metric space itself that would require either mathematical identification or physical justification, if not both.

This would mean that the geometrical physicalness of our experienced world emanates from and is causally present every moment in the individual points that constitute an embedding space (similar to Newtonian concepts of absolute space). This would correspond to the background collective 'absolute elsewhere' framework (or space) described above. It would be causally ever-present if for no other reason than because each of the 0-D point/twist Voids (that constitute space) are constantly re-creating four-dimensional space through the discrete quantum points as explained by modern quantum theory, but still expressed relativistically by the field concept. So the material objects that define the three-dimensionality of our commonly experienced space can themselves be identified as extended field density patterns in the four-dimensional single field that appear as quantized curvature relative to the whole of the three-dimensional surface which is our world. This whole physical system finds its origins in 0-D point/twist Voids which can be geometrically identified as Riemannian point-elements that constitute all of physical reality. The 0-D point/twist Voids are themselves individual physical 'things' simply because space, time and the single field only emerged as the collective nature of these individual 'things'. Since this single field coexists with a pre-consciousness potential field, also associated with the collective nature of the 0-D point/twists, all phenomena remain indivisible, which supplies a rationale for how an all-embracing 'Consciousness' could have arisen spontaneously from the absolute Void. This also explains why an all-embracing 'Consciousness' can be represented mathematically and scientifically as a higher dimension whether or not as a non-Riemannian point geometry or an all-embracing Riemannian metric geometry, or perhaps even both.

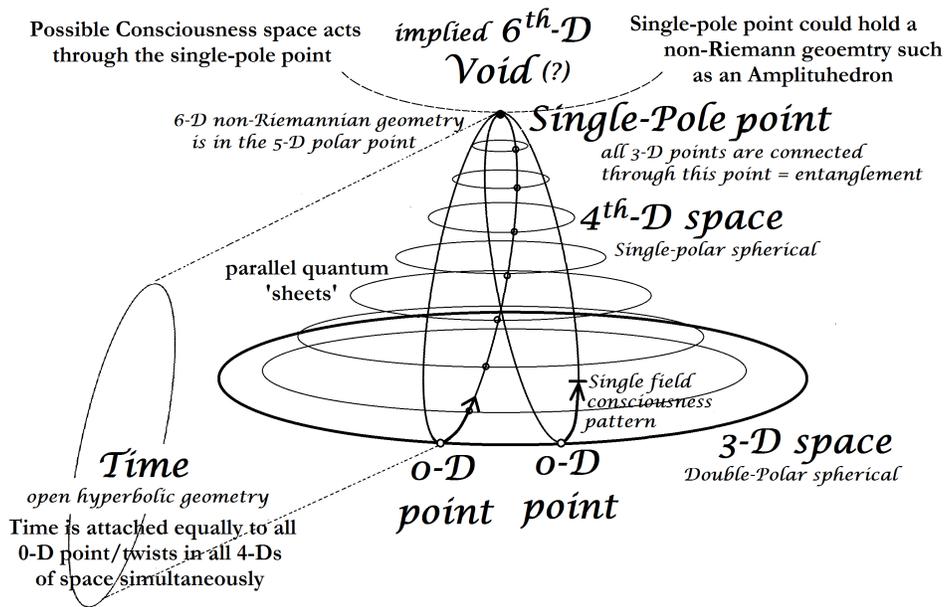
This model works well (as far as it goes) with respect to special relativity and the corresponding space-time diagram system with its concept of an 'absolute elsewhere'. But what about the unification of general relativity and electromagnetism as well as their expression in quantum theory in the single field theory? The single field (of potential) occupies four-dimensional space and varies over time, or rather its internal patterns of varying density occupies five-dimensional space-time. The consciousness associated with living organisms in three-dimensional space appears as a complex of multi-layered magnetic domain structures that are physically tied to both an organism's electric field structure (mind) and matter/energy field structure (life force or the biofield corresponding to the body/brain). So consciousness, mind and life (biofield) are whole body field structures (complex patterns), but only consciousness has a specific domain (the ability to form internal interacting variational levels) structure since gravity/matter and electric fields do not form domain structures. We commonly, and falsely, believe that mind and consciousness 'exist' only within the brain because the complexity of neural nets that form our fundamental logical networks, by which we become consciously or mentally aware—our waking awareness—of consciousness and mind, only exist in the brain.

Given the complete single field structure of individual consciousnesses, Andrews' theoretical models fit quite well. Andrews' model is a near perfect Riemannian match for the single field model developed by Beichler, while any consciousness models other than Faggin's that posit other forms of consciousness spaces could also be assimilated into the combined Beichler-Andrews model. The single field is based upon a four-dimensional Riemannian geometry, as is general relativity, but with extrinsic and thus real curvature (of a three-dimensional 'sheet' or 'effective width' of infinitesimally thin parallel three-dimensional surfaces) bent or warped into the fourth embedding dimension of space. So both the fourth dimension of space and curvature are physically real, even though we do not normally observe or detect them. They are not just mathematical gimmicks or artifacts that happen to describe gravity fields in three-dimensional space better than Newton's theory, as in Einstein's original version of general relativity. Our perceived world lies within the curved three-dimensional 'sheet' that is perpendicular to the fourth direction of an overall four-dimensional embedding manifold/space, which is, in itself, a surface in a still higher embedding manifold/space. Our 'sheet' is the  $n=1$  quantized portion of the single field in the fourth direction of space ( $n$  is a quantum number in this case, not to be confused with  $n$  when it denotes the number of dimensions when referring to Riemannian spaces and manifolds). All subsequent 'sheets' ( $n = 2$  and higher) are stacked like pages of a book into, and throughout, the fourth dimension of space.

From the perspective of another position in the four-dimensional space, outside of our surface or 'sheet', our three-dimensional world is just the densest portion of the single field and thus forms our matter/energy world of experience, while the three-dimensional gravity, electric and magnetic fields, as well as life, mind and consciousness, are all just specific single field density patterns (with varying levels of internal complexity defined by varying single field density that distinguish them) within the overall single field that occupies five-dimensional space-time. Our three-dimensional ( $n=1$ ) 'sheet' could also be perceived and interpreted as the quantum mechanical superposition of all possible

Schrödinger  $\Psi$ -wave functions or, alternately, as David Bohm's quantum potential field. The density of the single field is greatest (maximized) in our three-dimensional 'sheet' (or rather from the infinitesimally thin primary three-dimensional surface at the center of the 'sheet'), as 'viewed from the higher-dimensional perspective. Single field density decreases exponentially as the distance from our 'sheet' in the fourth direction of space increases, which means that an even higher and fully specified embedding sixth dimension is once again implied if only to account for the changing single field density in five-dimensional space-time. (Beichler, 2015)

This six-dimensional embedding manifold/space for our own five-dimensional space-time surface is completely undefined beyond its mere suggested existence given the five-dimensional single field theory. In fact the implied sixth dimension could be a fully embedding Riemannian but undefined manifold or space (as shown above) or it could be an empty Void (which is Euclidean flat by default as was Newton's absolute space) with only a non-Riemannian geometry at the polar point where the fifth and sixth dimensions coincide as shown below.



In either case, some form of overriding consciousness space that is equated to the sixth dimension can be physically justified. It would influence all lesser embedded physical dimensions through the single pole in five-dimensional space-time and its direct connection to the individual discrete 0-D point/twists. In effect, the individual 0-D point/twists in three-dimensional space would mirror the single-pole point and its conscious influence on material/physical reality as a witnessing co-creator as explained by Andrews.

Only a few basic physical characteristics of the sixth dimension, and little more, can be inferred from the single field inhabiting the lower embedded dimensions. In a sense, the overall sixth dimension (in that it could be extended and thus Riemannian) is 'transcendent' over all of the embedded five dimensions (four of space and one of time) yet it is also immanent through the 0-D point/twists Voids through which it acts in the lower embedded dimensions to either physically influence the material

world or possibly even create it. The concepts of transcendence and immanence are usually only invoked or spoken of with regard to some form of Supreme Being or another, so it is unusual that they are here used to describe how whatever inhabits the sixth dimension could act on and/or react to events in our normal three-dimensional space of experience, yet the twin concepts are fully and physically justified. However, they are open to interpretation and speculation unless further physical characteristics of the dimension can be found and scientifically verified.

Otherwise, the sixth dimension would have a dualistic point/extension structure as do the other lower embedded dimensions of space and time. Beyond that, little is known within modern science about higher dimensions so any physical characteristics of higher embedding dimensions are up for debate within normal science. However, that fact still leaves the higher embedding dimension open to serve as the witness of qualia in the fifth dimension of space which is inseparable from all lower dimensions of normally experienced space. (Andrews and Beichler, 2016) The geometry itself is ambivalent to the manner in which it is interpreted, so the higher dimension could also be equated to a cosmic consciousness, universal collective consciousness, Faggin's C-space or similar concept, or even the Tao or Great Spirit. One model does not yet favor another and they cannot be chosen between by the geometry alone without any other new information that would be deemed scientifically acceptable. The extension or metric view of the theoretically implied sixth dimension could also have any geometrical structure since its structure (even whether it is geometrically open or closed) cannot be inferred from either the five-dimensional embedded geometry or the physical characteristics of the single field that fills that geometrical framework.

### **More to the point**

So the point structure of the sixth dimension offers a different case altogether in the form of action/reaction within our normal perceived three-dimensional reality. The six-dimensional discrete point geometry structure would necessitate direct connection with all discrete points in the lower four dimensions of space as they vary over time in a form of physical immanence. So any geometrical property inherent in the discrete points in the sixth dimension would be non-Riemannian and directly affect, influence or emanate through the discrete points in all embedded dimensions of physical space even though they need not be physical in the normal sense of the word in the sixth dimension. Since we know that all discrete six-dimensional points must have some kind of an internal or tangent geometry and we know that the Standard Model of the quantum is based on point-particles suspended in quantum fields, it would seem quite natural to postulate that the non-Riemannian geometry in the 0-D point/twists must be able to generate our quantum reality and is related to quantum mechanics, wave mechanics and the Standard model at some level.

Both Faggin's concept of a spaceless, timeless and non-physical C-space as well as Andrews' infinite spaceless-timeless concept of ever present consciousness manifesting through all 0-D point Voids in higher-dimensional space rely on a strictly point-centered geometry, rather than an extension or metric geometry, to generate and/or co-create our material world. Many of the speculative models

such as information spaces or just quantum Information, computer programs, bits of information and various holographic models are no different except they do not offer any explanation how their models play out in the real world. In the view of these other scientists, the extended relative space described by metric geometry (our three-dimensional material world of experience) is generated quantum mechanically through the discrete quantum points and may or may not be physically accurate in spite of the many overwhelming successes of relativity theory. They base their assumptions on the simple fact that the proposed unification of general relativity and electromagnetism as well as with the quantum has failed miserably, so new and sometimes completely radical ideas are required.

On the other hand, Faggin and Andrews have both suggested the Amplituhedron as the quantum mechanical generator of our extended world. This interpretation of physical/material reality could be well represented by the unification of physics afforded by the five-dimensional single field theory given that the Amplituhedron is verified as the internal geometrical (non-Riemannian) structure of the discrete points in six-dimensional space that manifests through three-dimensional discrete point space over time. In fact, an important historical precedent already exists that links the non-Riemannian geometry of the discrete point to a possible unified field theory based on the metric geometry of relativity. Within a short time after Einstein first enunciated his general theory of relativity (1915/16), several others (Gerhard Hessenberg, Tullio Levi-Civita and Hermann Weyl) independently began to develop non-Riemannian geometries to fill a gap (the discrete point) left by Riemann himself in his metric geometry, *i.e.* Riemann purposely left out the concept of a point-element and constructed his geometry of surfaces on the metric-element alone.

Weyl developed his concept of a 'gauge geometry' to unify gravity and electromagnetism in a unified field theory, but Einstein and others demonstrated that Weyl's geometry led to inconsistencies with known physics and observed reality. So Weyl withdrew his gauge theory from contention for developing a unified field theory but continued to develop his gauge theory as a strictly mathematical venture. Sometime later, Weyl and other scientists succeeded in applying Weyl's gauge theory to the quantum field, where it remains an important contribution to overall quantum theory even today. This adventure, or perhaps misadventure, of Weyl's clearly demonstrates that there should be an intimate connection between the non-Riemannian geometry of point-elements in relativity theory and discrete points in the quantum theory. In other words, quantum theory represents a point generated absolute space with time that resides in the background behind Einstein's relative space-time.

Quantum theory itself has a similar and related dual structure in the matrix mechanics used to apply the Heisenberg uncertainty principle and the wave mechanics of Schrödinger. Matrix mechanics deals with discrete discontinuous objects or events at discrete points in space while wave mechanics deals with the continuity associated with individual events and observations. Thus quantum matrix and wave mechanics represent essentially the same point/extension duality as is found in geometry, even though quantum mechanics is supposedly a non-geometrical form of physics. This also means that the indeterminism that quantum theory is associated with is internal to the discrete points and does not directly affect the extended space-time that results after the collapse of the wave packet (at a specific

discrete point in space-time) such that related events in the past and future can be classically determined after the initial  $\Psi$  wave has been collapsed to the certainty of the event occurring in space-time.

This argument also confirms that Planck's constant  $h$  is a binding constant for space and time resulting in a space-time continuum at each and every point. But more importantly for a generalized theory of consciousness, this means that the non-Riemannian geometry of a discrete point in six-dimensional space can take any form that generates quantum or quantum-like physics within our normally experienced three-dimensional space or four-dimensional space-time, including the geometry of the Amplituhedron. This occurs without any relativistic restrictions on the non-Riemannian geometry since a point geometry or geometry tangent to a point in the surface does not constitute an embedding criterion for a metric geometry. This revelation fits quite well with both Faggin's and Andrews' theoretical models since both use the Amplituhedron to determine the effects of consciousness on our commonly experienced world. The Amplituhedron is also related to the twistor/gauge theory, which lends more support to this argument.

### **Experiential consequences of the synergy**

An intuitive experienter, a person who has directly touched or has somehow become consciously aware of having come into contact of a higher-level consciousness, if not Consciousness itself (the higher-dimensional embedding space or manifold), may readily recognize this theoretical physical model, but describe his or her experience in a completely different manner. For example, many Near Death Experiencers have said that they cannot find the words or language to describe their experience, or what they sensed about their location, because the geometry that they sensed (experienced) is different from the geometry of our three-dimensional material world. That is primarily why science has only been able to access the higher-dimensional world mathematically or by logical inference and finds it necessary to speculate, to some extent, on its physical nature.

Those who have attained some level of spiritual awakening, whether spontaneous, due to some (usually tragic) event, or through deep meditation and religious practices, also find it difficult (if not impossible) though absolutely necessary, to describe their feelings about the experience because the terminology does not exist within our normal language structures or communicative skills. The concepts needed to describe a higher dimensional reality do not fit the logical (neural net) structure of the brain. This makes attaining higher levels of consciousness both difficult and rare, as it is considered normal to only align with three-dimensional experiences and interactions within a commonly-sensed physical reality in an external material world. So the person who has experienced an NDE, that is strong enough to break into conscious awareness afterwards, will absorb the experience mentally by internally rewiring some basic neural nets in a manner that changes the personality of the ND experienter, sometimes quite radically.

Others who intentionally choose to awaken their individual consciousnesses through philosophical enlightenment and/or spiritual practices, but cannot do so until their neural net wiring has sufficiently

advanced to bring the experience into their awareness, have just failed to recognize the higher dimension of Consciousness by not truly experiencing that higher dimension of reality. Everyone is always in contact with that higher dimension, but directly experiencing it and becoming aware of that experience is another matter altogether. Philosophically and scientifically understanding the process may or may not be of help in attaining the goal of direct experience and enlightenment, but it is definitely of help in understanding the event after it occurs.

With the notion that Consciousness acts through the individual discrete quantum points (Andrews' 0-D point Voids) to co-create our three-dimensional experience of space, a new interpretation and relationship between quantum theory and relativity is at hand. Single field theory has already accomplished this unification, yet it has not previously taken Consciousness into account as a universal 'thing', although it is implied by the existence of the semi-physical pre-consciousness field potential. The extended metric space of matter, in which we exist, corresponds to the superposition of all possible  $\Psi$ -waves (wave functions) prior to consciousness collapsing an individual wave function that creates the apparent certainty of discrete (0-D) quantum points. This superposition of all possible waves is reminiscent of Bohm's concept of a quantum potential field. Henry Stapp has also stated that he is leaning toward such a philosophical conclusion (private conversation in 2008). This notion would also include the background 'absolute elsewhere' as described above.

In the case of an experiencer, rather than that of a scientist, this theory can be seen and interpreted in the mind's eye a bit differently. In the words of one of Andrews' co-authors, Steven Salka, *"an effective way to view consciousness would be as a 'superposition' of existence and nonexistence, producing an indivisible experience of 'nonlocal being', plus who and what we perceive ourselves to be (local observers)."* This relationship between an observer-based localization and the nonlocal whole has been examined and expressed in Andrews' theoretical model. Using ideas from general relativity and quantum mechanics, he suggests how a space-time continuum can also include quantum mechanical potentials and probabilities, arising as complementarities, as properties of consciousness. He investigates opportunities to contemplate the origins of existence, offering falsifiable experiments. But it can also be interpreted subjectively with some form of deity or Supreme Being, ranging from Yahweh, to Allah, the Great Spirit or Brahman, or even Plato's Demiurge, characterized by its Cosmic Consciousness and acting immanently and/or transcendentally in our real world of experience. This particular interpretation is made possible by the fact that immanence and transcendence are properties usually associated with a God or Deity rather than physics. In any case, the possibility of a higher-dimensional space or manifold in which our five-dimensional space-time continuum is embedded is purely scientific and could have nothing whatever to do with religious beliefs. It is only a matter of personal interpretation and choice, with choice representing the concept of free will as a characteristic of individual consciousness.

### Conclusion

The idea or scientific concept of evolution can be expanded to include all material objects, not just living organisms, by balancing the laws of thermodynamics to include not only disorder and entropy, but emergence (formation) and order. Doing so is implied by the simple observation that order is found everywhere in the universe and therefore must be a fundamental characteristic of physical reality within the universe, but also by the logical process of explaining the origin of the universe from a single (singularity) 0-D point/twist Void from which both the single potential field that eventually leads to the emergence of matter and energy as well as a semi-physical pre-consciousness potential field the 'forces' the evolution of life, mind and consciousness from matter and energy.

Within this context, both Prigogine's principle and chaos theory (the emergence of complexities from chaos) are commonly used as a counterpoint and correction to the second law of thermodynamics because the second law is based on thermodynamically closed systems, even though such closed systems appear nowhere in nature. Therefore, Prigogine's principle and the concept of complexities emerging from chaos should be made the fourth and fifth laws of thermodynamics, respectively. Yet when they are put together, they imply the sixth law of thermodynamics which could be described as the natural evolution of more and more complex physical systems. Under these circumstances, biological evolution becomes a special case, and a universal necessity, within physical science, rather than a standalone philosophically ridden anomaly in biology. Evolution, rather than entropy, is the real 'arrow of time'.

Moreover, the evolution of life in general and the continuing progressive evolution of mind and consciousness in all living organisms after life first evolved from some undefined primordial soup—whatever that initial evolutionary mechanism may ultimately prove to be—seems to have become the primary purpose of the universe. We Homo sapiens are just part of the greater universe realizing and becoming aware of itself from within itself because there is nothing of itself outside of itself to differentiate between itself and something else, which fits in quite well with Beichler's single field theory and both his and Andrews' model of Consciousness evolving from a spaceless-timeless Void.

On the other hand, the single field model of a neural net and brain plasticity not only implies that mind and consciousness can drive evolution (top down) as opposed to the modern Darwinian and genetic models which points to a bottom-up driven (evolution) mechanism, acting through genetic mutation and genetic drift. The notion that evolution can be consciousness driven (from the top-down) further implies—given the social, economic, cultural, technological, educational and scientific conditions of a chaotic and rapidly expanding information/rote knowledge base—that the human race is nearing, if it has not already reached, a tipping point for a vast evolutionary leap that will result in the emergence of a new human subspecies at a much higher level of consciousness than now exists. This new level of human Consciousness will allow humans to actually think in terms, and directly experience the effects, of a four-dimensional space. This new subspecies of the Homo genus will even emerge fully enlightened at birth, or so we can hope. A large and growing number of scientists already believe that

a new scientific revolution, which will be as much about the Mind and Consciousness (that perceive and interpret our common material/physical reality), as it is about the physics we will develop to better describe nature. Still, few even suspect that the next scientific revolution will be part of a much wider and far more comprehensive human-wide evolutionary leap in consciousness.

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