

INTEGRAL RELATIVITY OF AWARENESS AND ENERGY

- The Continuum Of Consciousness, Energy, Mind And Matter

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ABSTRACT

Integral Relativity, as an extension of General Relativity, Special Relativity and Advanced Relativity, has four proposed Tenets: (1) The Equation of Energy with Awareness; (2) The Conservation of Awareness; (3) The Continuum of Energy, Consciousness, Mind and Matter via the Kosmic Constant; (4) The Integral Relativity between Observers and Observed in Hilbert Spaces as specified Frequency Domains. It is corroborated by the Observer Effect in all the related double slit and interferometer experiments, most notably those of Dean Radin's Sigma 7 rated results; by the "Unified Spacememory Network", modeled by Nassim Haramein and William Brown; by Dirk Meijer's 4D quantum modeling of "Consciousness in the Universe"; by Bernardo Kastrup's idealist cosmopsychism proposed in his "Universe in Consciousness"; by Elizabeth Rauscher's "Complex Eight Dimensional Model of Minkowsky Space"; by Lex Neale's octo-dynamic extension of Ken Wilber's All Quadrants, All Levels "AQAL Integral model" called the "AQAL Cube", which correlates non-physical existence with physical existence as an octo-dynamic fractal continuum; and Garret Lisi's E8 Geometry underlying the unfolding of physical existence.

Integral Relativity predicts that the Observer and observed are a mutually inclusive Consciousness/Mind/Energy/Matter continuum through 2D, 3D, 4D, 5D and nD Hilbert Spaces as full-spectrum Domains of correlated existence. We propose that the terms Consciousness and Mind be no longer used synonymously in the scientific community, but differentiated as an integral Awareness/Energy continuum between 4D and 5D Hilbert Spaces, where 5D Consciousness is Subtle intentional awareness, and 4D Mind is its correlated local or Concrete awareness and means of en-action, as per Meijer.

KEYWORDS:

Observer Effect, Observer/Witness, Consciousness, Mind, Energy, Matter, Quantum Vacuum, Zero Point Field, Quantum Field, Unified Spacememory Network, Hilbert Spaces, Subtle Energy, Integral Theory, AQAL Cube, E8 Geometry, Holographic Fractals.

INTRODUCTION

Integral Relativity was originally presented as a paper "AQAL Square to AQAL Cube – the Integral Relativity of Consciousness, Mind and Energy" at the Integral European Conference in Budapest (Neale, 2014). The paper was then commissioned by Integral Publishers as the book "Knowing the Knower – the Integral Science of Self" (Neale,

2015). “Integral Relativity of Consciousness, Mind and Energy” was presented at The Science of Consciousness Symposium, Tucson (Neale, 2016).

By definition, an Integral Metatheory is inclusive of *all* Awareness and Energy states, structures and phenomena. Therefore, by definition, Integral Relativity correlates Energy in all states with Awareness in all states. The proposal of Integral Relativity as an Integral Metatheory is therefore by definition a true TOE integrating self-awareness, organism energetics, cultural awareness and social systems, as well as various partial energy TOE’s proposed by the hard sciences. To establish a foundation for this, in this paper it has been necessary lay down the initial groundwork of the Integral model and its Eight Fundamental Perspectives, and the resulting fractal model of an octo-dynamic Kosmos.

Integral Relativity is an extension of General and Special Relativity, where the equation of Energy and Mass can be further correlated, via the Observer Effect and its extensions, with the equation of Energy and Awareness.

Integral Relativity proposes Four Tenets that by definition are integral with those of General Relativity: (1.) *The Equation of Awareness with Energy*: where Energy in all states is the action potential and kinesis of Awareness in all states, in that Energy in all states is Awareness in all states made existent. (2.) *The Conservation of Awareness*: where the Law of Conservation of Energy in all states, via the First Tenet, is extended to the Conservation of Awareness in all states. (3.) *The Continuum of Consciousness, Energy, Mind and Matter via the Kosmic Constant*: whereby Awareness and Energy are two sides of the same coin, where the coin itself is information. Just as Planck’s Constant embraces the proportionality of information to frequency, so the Kosmic Constant as the “infinite frequency” of the Kosmic Primordial Vibration embraces “infinite information”, as the nD Primordial Ground of undifferentiated Being. (4.) *The Integral Relativity between Observers and the Observed*: whereby Awareness and Energy operate in Hilbert Spaces defined as specified Frequency Domains, as correlated Spectrums of information; where one Observer’s experience of Energy and information is relative to another Observer’s experience of Energy and information, according to their relative frequencies as Hilbert Spaces.

Integral Relativity differentiates Awareness, as Mind operating in the Concrete Spectrum of information from Consciousness operating in the Subtle Spectrum of information, in the same way that lower (4D) and higher (5D) Hilbert Spaces and String Theory differentiate universes other than this physical universe. In this paper we provide a mathematical basis for a continuum of correlated Awareness and Energy information between the Concrete and Subtle Spectrums as Hilbert Spaces; and also formulations of the Four Tenets.

Through the combined Tenets of **GR** and **IR**, it is possible to explain such active potentials as levitation, mind-reading, remote viewing, intentional teleportation, astral travel, after-death awareness, past lives memory, Akashic Wisdom awareness and ultimately Mind/Consciousness Enlightenment; and further predict these will become the norm of human experience in our imminent future. The **IR** model provides a solid basis for understanding how and why this is so, and can therefore provide solid guidance in accelerating our understanding of Mind and Consciousness, just as Einstein’s **GR** accelerated our understanding of Energy and Matter.

Corroborating these validity claims are The Global Consciousness Project, in distributing

random number generators (RNG's) to every locale on the planet, and proving time and again a global interconnectivity of awareness as events occur locally; Dean Radin's double-slit experiments at I.O.N.S. with meditators worldwide, showing Sigma 7 levels of validity in correlating the meditator's awareness with the behavior of photons; Radin's further collaboration with the GCP, correlating observer awareness with events; Nassim Hameiri's and William Brown's Unified Spacememory Network, whereby the free exchange of entangled information between non-locality and locality exacerbates the evolution of sentience in individual organisms via sentience as a unified field; and the rigorous empirical research of after-death Subtle spectrum existence by Gary Schwartz U AZ, Ian Stevenson U V, and Pim Van Lommel U Amsterdam; all of which has created the need of a *unified Integral model* that can not only categorize this research, but also explain its results.

"Indra's Net", as described in the ancient Avatamska Sutra of the Mahayanas, is basically an affirmation of the holographic subquantum information field:

"Far away in the heavenly abode of the great god Indra, there is a wonderful net which has been hung by some cunning artificer in such a manner that it stretches out infinitely in all directions. In accordance with the extravagant tastes of deities, the artificer has hung a single glittering jewel in each "eye" of the net, and since the net itself is infinite in dimension, the jewels are infinite in number. There hang the jewels, glittering "like" stars in the first magnitude, a wonderful sight to behold. If we now arbitrarily select one of these jewels for inspection and look closely at it, we will discover that in its polished surface there are reflected all the other jewels in the net, infinite in number. Not only that, but each of the jewels reflected in this one jewel is also reflecting all the other jewels, so that there is an infinite reflecting process occurring."

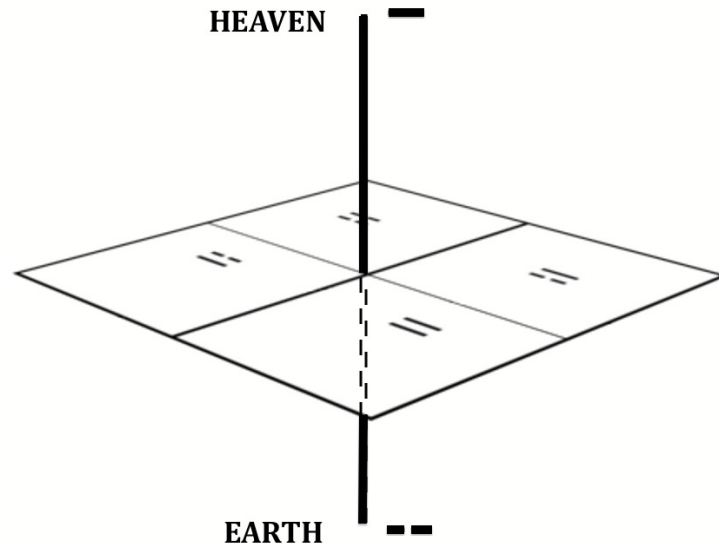
INTRODUCING THE INTEGRAL MODEL

The differentiation of Consciousness, Mind, Energy and Matter is made via a new octo-dynamic fractal model that combines with three similar prominent models: Firstly, with Elizabeth Rauscher's (2008) development of the Complex Eight-Dimensional Model of Minkowsky Space (CEDMS), where Minkowsky differentiated the four dimensions of Physical Space from four dimensions of "Super- space". Secondly, with aspects of Wilber's Integral Model (1995), which differentiates four interactive categories of Kosmic existence as Four Quadrants. The added dimension of a third axis differentiates the Four Quadrants of physical existence (Wilber's model) from Four correlated Quadrants of non-physical existence. But rather than being merely Minkowsky's 4D Hilbert "Super-space", or the "Non-locality" as defined by Quantum Field Theory, we propose that non-physical existence as a correlated 5D Hilbert Space Spectrum of information is also synonymous with the "Subtle existence" of the Ancient Traditions, in the true etymological sense of Meta-Physical, or "beyond physical" - the Domain of our Soul, as a Subtle Consciousness monad, with its Subtle Bodies and Subtle Realms of existence. In proposing a true TOE, the 5D Meta-Physical Domain must be included. And thirdly, with Garret Lisi's E8 Geometry, which provides the cosmological template of octo-dynamic fractalization, to be discussed later.

The octo-dynamic holographic fractal Integral model fittingly had its origin in the most ancient cosmological model known, devised by Fu Hsi around 5000 BC: In Fig 1, the vertical axis differentiates the Concrete (Earth) from the Subtle (Heaven) Domains. The horizontal axes form their first generation recombinants as four bigrams. In Fig 2, the three axes form their second-generation recombinants as a cosmological template of

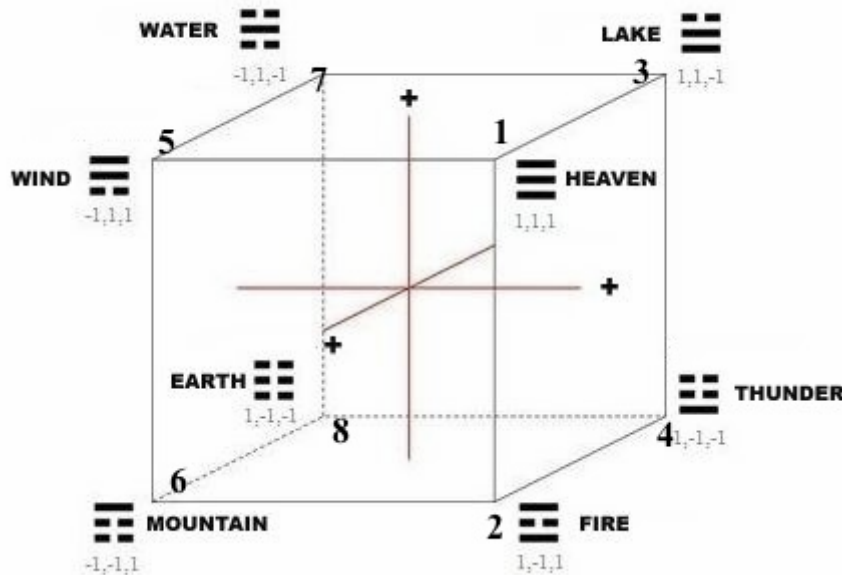
eight trigrams. In Fig. 3, we see how this translates to the modern AQAL Cube model of Integral Relativity. And in Fig. 4 we see how the Integral AQAL Cube model maps the underpinnings of the Kosmos as an Awareness-Energy continuum. The use of “K” pertains to a Kosmos that integrates and correlates the proposed Subtle Domain with the physical Cosmos or Concrete Domain.

Fig 1. The Primal Polarity with Four First Generation Polarities



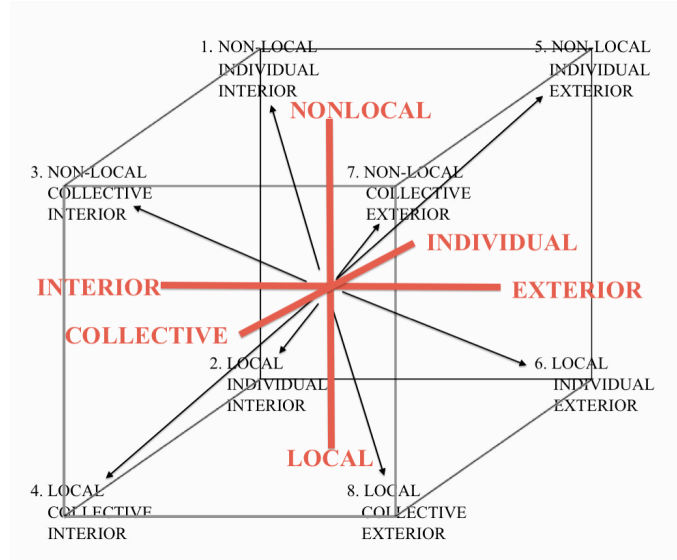
Fig

2. Eight Second Generation Polarities



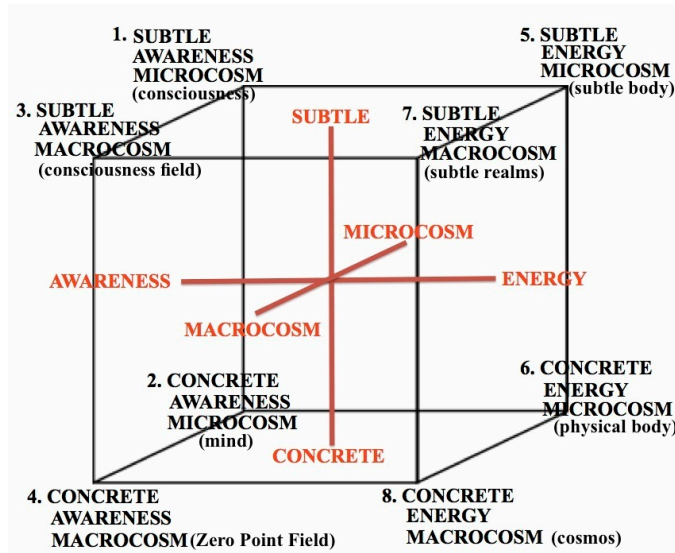
This tri-axial set of polarities is not only a basic energy structure, such as the three rotational axes of a wave, but is also the basis of perceptive awareness as perspectives.

Fig. 3. The Integral Cosmological Template of Eight Fundamental Perspectives



The Eight Fundamental Perspectives are the basis of the Integral Model where any specified entity, such as a photon, has an interior aspect, an exterior aspect, an individual aspect, a collective aspect, a local aspect and a non-local aspect. These six polarities through recombination give eight fundamental perspectives of that photon, or of that organism which must learn to survive through these perspectives. Because the 8 FP's can be applied to *any* specified aspect of the Cosmos *anywhere* in the Cosmos (Figure 4), they provide a valid model for a true TOE as a fractal cosmology. In Figure 4 the intersection of the axes is ground zero, such as Zero Point Awareness/Energy, and from there all eight octants evolve outward towards complexity.

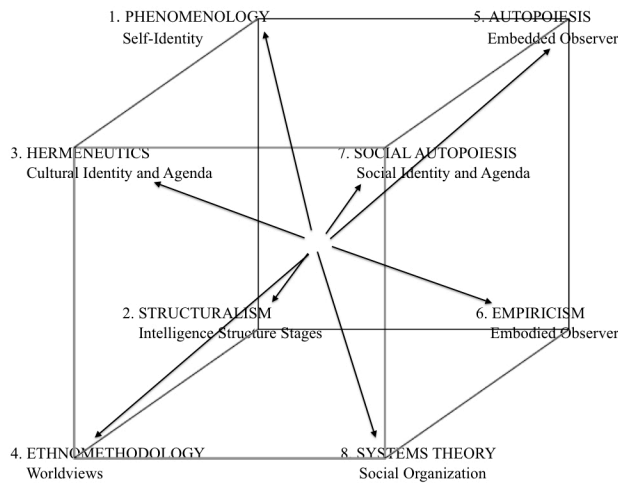
Fig 4. The Template of Kosmic Manifestation



The four lower octants 2,4,6,8 pertain to the Physical Universe (3 & 4 D Concrete Domain), and the four upper octants 1,3,5,7 pertain to the Meta-Physical Universe (5 & nD Subtle Domain). *We suggest these are the eight “archangelic” creative forces of most religious cosmologies.*

As an octo-dynamic fractal cosmology, it comes as no surprise that the Awareness and Energy systems embraced by Integral Relativity *inevitably* fall into the eight traditional academic disciplines according to the same template, shown in Figure 5.

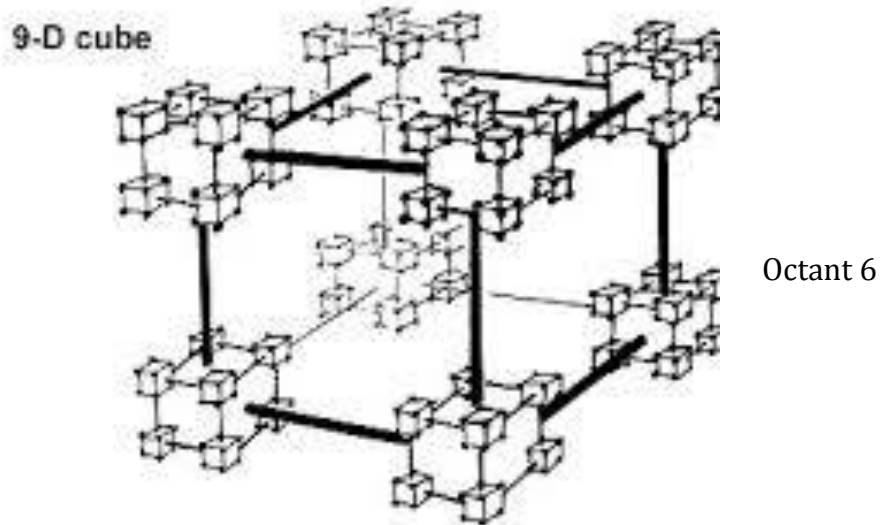
Figure 5. The Eight Disciplines



Octant 6. Empiricism is now about the evolution of scientific empiricism, while Octant 2 Structuralism is about the correlated stages of cognitive evolution. To take Empiricism as an example of continued octo-dynamic fractals, a single wave expands through the following *octaves* of harmonics: In the Standard Model, a single wave takes subatomic form through four force fields and four fundamental particles; the atomic form expands through shells of eight electrons as the Periodic Table; 4 x 2 amino acid pairs expand as a

molecular octo-dynamic code to become a cell's DNA molecule; the first eight embryonic cells as a blastula differentiate into the eight separate organ systems of the body, and so on. This octo-dynamic fractal paradigm is shown in Figure 5a.

Figure 5a. Octo-Dynamic Fractals



Both as Awareness and Energy, we are beginning to see the underpinnings of an octo-dynamic fractal cosmos. And the holarchic relativity between those myriad fractals is the basis of Integral Relativity.

DEFINING INTEGRAL RELATIVITY

Like Erwin Laszlo (2007), Integral Relativity also advocates the primacy of Awareness (from the Indo-European root *A Varus*, meaning “in Truth”, or *Veritas*) as the initiator of all en-action - *En-ergia* - Energy. Any energetic phenomenon therefore has its correlate in Awareness. from low frequency proto energy/awareness to enlightened high frequency Energy/Awareness as non-dual experience. Bernado Kastrup (2018) provides a plausible framework for this, whereby an intelligent cosmos can individuate its awareness through life forms to enact its agenda. From this premise follow the proposed **Four Tenets of Integral Relativity:**

1. The Equation of Energy with Awareness.

Awareness defines the latent potential of Energy; where Energy in all states is the action potential and kinesis of Awareness in all states, and becomes Awareness made existent.

This is a reiteration of John the Divine's biblical genesis:

In the Beginning was Energy, and the Energy was with Awareness, and the Energy was Awareness.

Integral Relativity proposes that a wave's configuration is its information, both as Awareness and Energy. In its *supra*-position, a wave's information is in its resting or latent potential, as Awareness in attention. In its *super*-position, a wave's information transduces to kinetic potential, as Awareness with intention to act or interact. In its *infra*-position, a wave's information further transduces to kinetic extension as Awareness enacting as Energy.

Accordingly, Integral Relativity predicts that Energy without super-positioned Awareness is entropic; and Energy with super-positioned Awareness is negentropic through recursion, through the capacity of Awareness to self-reference information. Therefore it follows that the higher the frequency of Awareness, the more negentropic its activity becomes.

2. The Conservation and Continuity of Awareness:

The Law of Conservation of Energy in all states, via the First Tenet, is extended to the Conservation of Awareness in all states, whereby Awareness cannot be created nor destroyed, but only transformed from one state to another.

This is a reiteration of the Buddha's assertion in the Pali Canon of the *Continuity of Consciousness*.

This also is in accordance with the quantum tenet that, like energy, information itself cannot be destroyed, but is inherent in the Awareness/Energy continuum. Information is a form of energy, because when information is removed from a quantum system energy is released in the form of heat (Berut, 2012).

3. The Continuum of Consciousness, Energy, Mind and Matter via the Kosmic Constant:

The Kosmic Constant is the primordial frequency, ground state or carrier wave of Energy from which all subsequent phenomena emerge through the CEMM continuum. It follows, via the First and Second Tenets, that the Kosmic Constant is also the primordial Awareness, or the Supreme Knower; the activity of whom is the primordial Energy and all its subsequent phenomena.

In accordance with Planck's formula, the higher the frequency of energy, the more information it encodes. The quasi-infinite frequency of the ground state would therefore carry a quasi-infinite capacity of information, which via the First Tenet would be its omniscience; with a quasi-infinite velocity as its omnipresence; and with a quasi-infinite action potential as its omnipotence. In this context, Planck's formula validates most religious cosmologies, and also validates the Kosmic Constant as the Absolute "In Truth", or *A Varus*, aka Awareness. And emerging from that ground state, as lower frequencies and their higher amplitude modulations, is the continuum of lower dimensional modes of Awareness and correlated Energy.

4. The Integral Relativity between Observers and the Observed in Hilbert Spaces as specified full-spectrum Domains:

The perception of any given observed phenomenon is relative to the Awareness frequencies of the Observers of that phenomenon.

In Integral Relativity we propose that modes or lenses of Awareness are differentiated variously as Sensory, Mind, Consciousness, and Witness, each according to the Hilbert

Space they occupy as a Spectrum Domain; where Sensory awareness is 3D, Mind is 4D, Consciousness is 5D, and Witness/Knower are nD Hilbert Spaces. So each mode taken by an Observer is *differentiated and defined by a correlated experiential injunction* of the mode of awareness. 3D and 4D awareness are of the Concrete/Physical Spectrum; 5D awareness is of the Subtle Spectrum; nD awareness is of the Causal Spectrum.

In other words, the Observer experience of any observed is relative to the specified Concrete, Subtle and Causal perspectives taken by the Observers. Integral Relativity is therefore a higher-octave take of Special Relativity, where an Observer's *velocity* now becomes analogous to an Observer's *frequency*. This is in accordance with Carlo Rovelli's (1996) Relational Quantum Mechanics, where all physical qualities are not only relative to the Observer's frequency, but are also embedded in and embodied by the specified substrate of the Observer's perceptive reality as Mind, (*and additionally including our proposed Consciousness and Witness*).

Richard Lawrence Norman (2015) formulates the Four Tenets for the purposes of this paper as follows:

1. Deriving from the First Tenet, "*Awareness defines the latent potential of Energy; where Energy in all states is the action potential and kinesis of Awareness in all states, and becomes Awareness made existent*", it follows that: mass/energy equivalence is extended to include cognitive teleology as an attentionally-defined, self-recursive, emergent process articulating all aspects of manifest reality including mass, as

$$E(-\Psi-)A = R,$$

where Ψ = Wave function, A = Awareness, E = Energy, R = Reality (awareness made existent), and "(- -)" defines an emergent self-recursive relation between elements.

As per Integral Relativity, **a wave must itself embody the link correlating Awareness and Energy.**

2. Deriving from the Second Tenet, "*The Conservation of Awareness, whereby the Law of Conservation of Energy in all states, via the First Tenet, is extended to the Conservation of Awareness in all states*", it follows that: Awareness and Energy are the components of information.

Awareness structures energy into information, which is expressed as frequency. Energy and Awareness are therefore necessarily conserved in a quantum paradigm, as energy is conserved. The quantum limit expressed in an elementary quantum of action then, necessarily implies a *delineated* hence necessarily finite (if mathematically "infinite") number of frequency bound energetic combinations, increasing with the amount of energy, which may be structuralized. Awareness, therefore, is conserved as Energy due to Planck's constant h .

h = in metre-kilogram-second units $6.62607004 \times 10^{-34}$ joule-second, with a standard uncertainty of $0.000000081 \times 10^{-34}$ joule-second.

The domain is constrained by the numerical specificity imposed by h as it subdivides E , the range then corresponds to said limit imposed upon A (allowing transformative restructuralization within a conserved and bounded energetic/informational medium).

Maximum bound delineating conservation of Awareness may then be expressed as:

$$Eh = A,$$

where A = Awareness, E = Energy at a given frequency, and h is Planck's Constant.

3. Deriving from the Third Tenet, "*The Continuum of Consciousness, Energy, Mind and Matter via the Kosmic Constant, which is the primordial frequency or carrier wave of Energy from which all subsequent phenomena emerge through the CEMM continuum*". It follows that: the vibratory quantum ground of universal processes as a functional of basis of conscious interactivity is expressed as a primary emergent ontological beat-frequency limited by the *coherent mass-fraction* of the universe.

To extend the ideas of Hameroff and Penrose (2014) to universal physical systems, we write:

$$\tau \approx h / (dEG / dCmf),$$

where τ = time, $\hbar = h/2\pi$ EG = *gravitational self-energy* of the *difference* between the two (stationary) mass-distributions of the superposition, derivative of the universal Coherent Mass Fraction (Cmf).

4. Deriving from the Fourth Tenet, "*The perception of any given observed phenomenon is relative to the Awareness frequencies of the Observers of that phenomenon*", it follows that:

$$dP/dv \propto P,$$

where P = Perception and v = Frequency, perception then being dependent upon the relative frequency of observers.

Integral Relativity therefore proposes that all types of Relativity, from General, to Special (Einstein), to Advanced (Sorli), to Integral (Neale), are collectively defined as *the relativity between Observers and the Observed in all Domains/Hilbert Spaces*; where each type of Relativity is defined by the *perception* of a specified Observer and an Observed in a specified Hilbert Space.

INTEGRAL RELATIVITY AS PERCEPTION

Relativity Theory began with Einstein's work on the Doppler Effect, as an experiment between two Observers, one a train and the other on the platform, as the train's whistle blew. Much later this progressed to the two clocks experiment where again there were two Observers, one on the ground and the other hurtling through space, comparing how the clock of the one in space was running slower. This supposedly affirmed the Lorenz Transformation and time dilation theory. However, Advanced Relativity per Sorli and Fiscaletti (2016) shows there is no time dilation, only the increasing duration of an event; which is not explained by velocity, but by the increasing energy density of space surrounding the accelerating Observer.

So Relativity Theory follows a progressive relativity between *assumed* Observers according to the frequencies and Hilbert Spaces of the Observers. In General and Special Relativity, the assumed Observer is the physical sense-body whose existence is experienced as 3D Hilbert space-time; where Relativity as variable rate of clocks is a function of their variable velocities; and whose assumed Absolute Awareness is Mind.

In Advanced Relativity, the assumed Observer is the Concrete Mind grounded in 4D Hilbert Space, or the Zero Point Field; where Relativity is a function of the Observer and observed moving through the variable energy density of the quantum vacuum; and whose assumed Absolute Awareness is the “Now” of Consciousness in 5D Hilbert Space.

In Integral Relativity, the assumed Observer is the Subtle Consciousness in 5D Hilbert Space, whose existence is experienced as a “Now” throughout the Concrete and Subtle Spectrums; where Relativity is a function of the variable frequency of the Observers; and whose assumed Absolute Awareness is the Witness in nD Hilbert Space. And for the Causal Witness, the assumed Absolute Awareness is the Supreme Knower/Observer, which is no longer assumed but finally realized; and where Relativity dissolves in a non-dual experiential continuum.

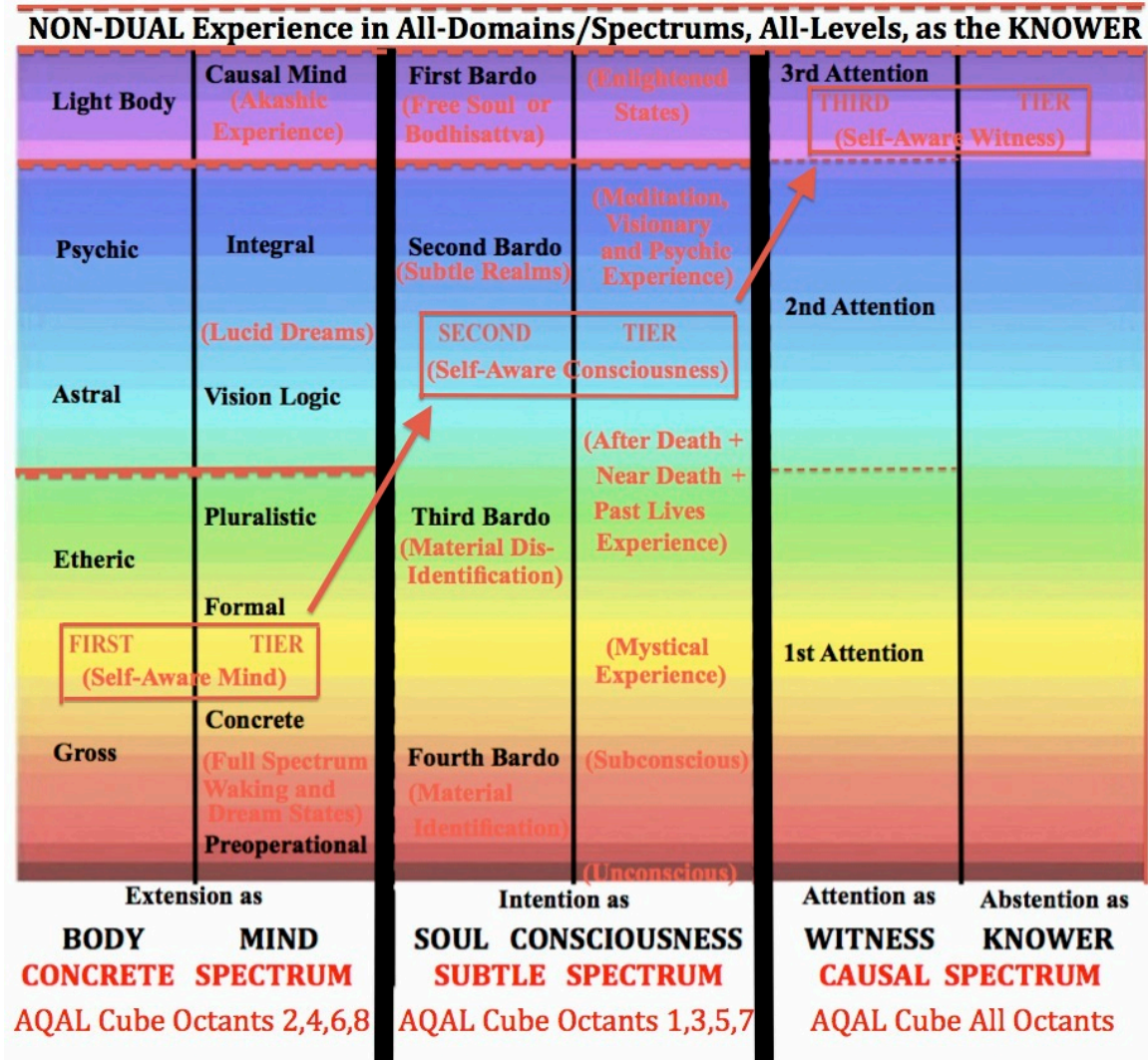
Through the Four Tenets, we propose that our perception is the result of Awareness operating in an unbroken continuum: in the Causal Spectrum as the Observer / Witness; in the Subtle Spectrum as Soul / Consciousness; and in the Concrete Spectrum as Body / Mind; where the Witness is the nD energy vehicle of primordial Awareness, the Soul is the 5D energy vehicle of Consciousness, the ZPF is the 4D energy vehicle of Mind, and the Body is the 3D energy vehicle of sensory awareness. It would seem therefore that perception is a process of Awareness viewing through this series of Domain lenses, at first “through a glass darkly” or unconsciously in lower frequencies, and then evolving through levels of greater self-awareness in successive Spectrum Domains.

The Fourth Tenet proposes that *the perception of any given phenomenon is relative to the Awareness frequencies of the Observers of that phenomenon*. The Fourth Tenet therefore describes perception as the process of Awareness viewing through specified Spectrum lenses at specified frequencies, as modes of Awareness. These frequencies are experiential injunctions. To demonstrate these injunctions, the chart in Figure 6 was presented at the The Science of Consciousness symposium, Tucson (2016), showing how the Concrete Body and Mind, the Subtle Soul and Consciousness, and the Causal Witness, are each full-spectrum, each culminating in the Non-Dual awareness in white. Each Spectrum Domain has two columns: the right hand column is the mode of Awareness, and the left column is its Energy vehicle. All the transpersonal research cited in this paper can be located on this chart, according to the experimental injunctions.

A simple analogy to explain the chart is to see the three Spectrum Domains of information as three Frequency Bands of a radio - HF, VHF and UHF - where the radio receiver itself is the physical organism; and where each Band has its carrier wave, or ground state carrying all the modulated frequencies of that Band. As we evolve, we learn to tune our Awareness to higher frequencies *both within a Band and between Bands*.

Figure 6. Chart of Awareness States in the Three Spectrum Domains

STATES OF AWARENESS CORRELATING MIND, CONSCIOUSNESS AND WITNESS



The red arrows show how we evolve, via the experiential Domain injunctions (such as in meditation) in the red boxes, through the Three Spectrums; where our physical **Energy Body** in the far left column is ultimately vibrating in “Ultra Violet” as a Light Body; where our **Mind** in the second column is ultimately vibrating in Akashic experience; where our **Soul** in the third column is ultimately vibrating in First Bardo as a Free Soul (Nagual, Bodhisattva); where our **Consciousness** in the fourth column is ultimately vibrating in Third Stage Enlightenment; and where our **Witness** in the fifth column is ultimately vibrating in the Third Attention. The red dotted lines across each column are the frequency barriers we need to transcend via the injunctions needed for awareness access to the next Domain/Spectrum Band.

The **Knower/Observer** in the sixth column is where we each individually operate from in all three Domains as our core **Awareness**. According to the First Tenet of Integral Relativity, the Observer both **views** as Awareness and **enacts** as Energy through all Domains **at specified Levels/Colors/Frequencies**. So the Observer **views** through

the Causal Spectrum of information as **Witness** awareness, and **enacts** through the Causal Spectrum as the **Attention**; the Observer **views** through the Subtle Spectrum of information as **Consciousness** awareness, and **enacts** through the Subtle Spectrum with **Intention**; the Observer **views** through the Concrete Spectrum of information as **Mind** awareness, and **enacts** through the Concrete Spectrum with **Extension**. The first column **Energy Body** is also synonymous with the vibrational frequencies of the Chakras.

From this it follows that: *the Witness can be defined as* Awareness viewing through the Causal Spectrum of information; that *Consciousness can be defined as* Awareness viewing through the Subtle Spectrum of information; and *Mind can be defined as* Awareness viewing through the Concrete Spectrum of information.

We propose that such a map can be used to help experimenters and their subjects identify and map their physical and meta-physical experiences in higher frequency states. However, by the same token, such a map also describes **a model of moment-to-moment perception** that operates for each sentient individual at specified correlated frequencies through All-Dimensional Hilbert Spaces.

We have proposed that in nD Hilbert Space the assumed Observer is the Causal Witness; whose existence is the *Attention*. The Witness in nD Hilbert Space operates at a specified level of Attention, which determines the level of the Observer in the 5D and 4D Spectrum Domains of information. So the lowest level or First Attention, the Witness enables the Mind its self-aware activity in 3D and 4D Hilbert Spaces; the Second Attention of the Witness enables Consciousness its self-aware activity through 5D HS; and at the Third Attention of the Witness, the Witness becomes self-aware of its activity in all Spectrum Domains. These experiential injunctions are being investigated by Radin (2017) at IONS, using high-frequency meditators.

We further propose that in 5D Hilbert Space, the *Intention* of Consciousness-as-Observer, through *Extension* into lower Hilbert Spaces, creates the variations in the energy density of the 4D quantum vacuum as Mind, per Advanced Relativity, which then leads to 3D microtubule encoding by photons in the neuron (Anirban Bandyopadhyay, 2016). Meijer (2017) describes the 4D Mind as the external workspace or mind field of the 3D brain and organism; where the 4D workspace contains nested holographic information screens (event horizons), and is thereby able to simulate 3D awareness in the brain.

TOWARDS PROVING THE FIRST TENET

The First Tenet of Integral Relativity draws the correlation between Energy and Awareness in *all* states, and an elementary proof of this correlation is in life itself as a process, in every awareness-correlated action taken by organisms. For example, a Rubik's cube can be unscrambled in two minutes; but for a blind person making random choices, without the recursive cycle of awareness guiding the actions, it can take up to 158 billion years (Hoyle, 1983). Meaning an organism, a living energy entity, can evolve exponentially through recursive awareness. This supports Integral Relativity's prediction that Energy without Awareness is entropic; but with Awareness is negentropic. However, such an example is restricted to the organism itself, whereas the Observer Effect shows that the Awareness/Energy correlation extends beyond such confines.

Under laboratory conditions, proof comes via every version of Double Slit or Double Mirror experiment to demonstrate the Observer Effect. The latest experiments of Dean Radin (2016) demonstrate to a Sigma 7 level of verification that the Observer Effect in these experiments extends *instantaneously* to remote observers half a planet away, when directing their attention and intention towards the lab-based equipment, resulting in their *observable manipulation* of its activity in real time. We predict that further experiments in this will visually demonstrate the real-time link between the Observer's intentions and the conformation of a wave, as further proof of the First Tenet.

Radin (2017) has now become involved with the Global Consciousness Project, which correlates the radical shifts in random number generators (RNG's) to radical events in their locality generating a massive coherence between observers, such as a calamity, or polarized awareness in mass meditation events. These are dramatic demonstrations of the Observer Effect as Awareness/Energy correlations in the global arena.

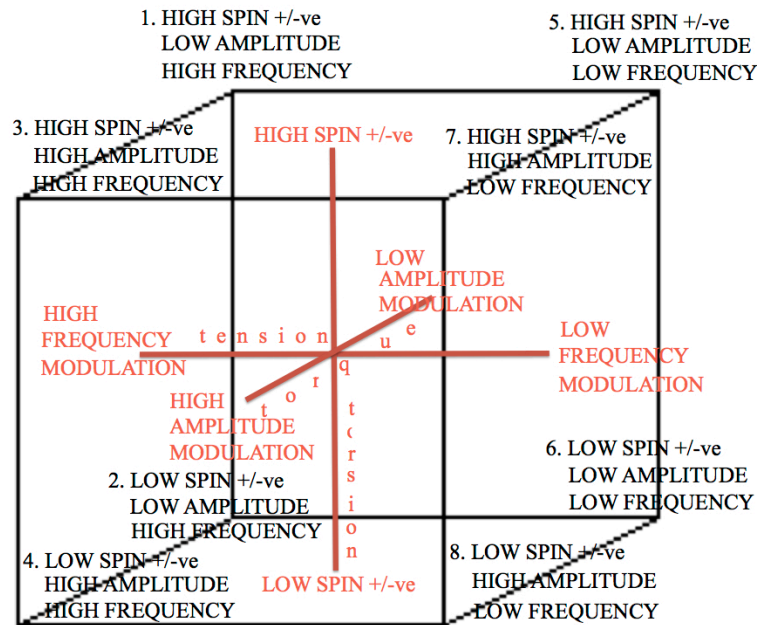
Integral Relativity proposes an explanation of the Observer Effect in a later chapter, as to how the Observer's attention and intention are the actual causes of that effect, as encoded in the very nature of a waveform. To provide a theoretical basis for further experiments, the First Tenet of Integral Relativity holds that energetic activity is the result of the Observer's attention on a conscious intent; so there must also be an energetic means to execute this intent within the waveform itself. In other words, ***a wave must itself embody the link correlating Awareness and Energy.***

A wave has **Amplitude, Frequency and Phase or Polarity (AFP)**. A wave's Amplitude, Frequency and Phase also have modulations, as in radio waves with AM, FM and digital Phase Modulation. This gives a wave a "quasi infinite" degree of complexity to codify Awareness/Energy information through AFP modulation.

Integral Relativity models a simple mechanism whereby this complexity can be encoded. A wave as Energy has Tension, Torque and Torsion, while Awareness has Attention, Intention and Extension. "Tension" comes from *Tensor*, meaning "holding"; and in this case it is the holding of its position in the Causal Spectrum of information by a wave, and its means of transduction between Hilbert Spaces. We propose a correlation between Tension/Torque/Torsion and Attention/Intention/Extension. The *Attention* correlates with a wave's *Tension*, which compresses/dilates a wave's *Frequency* to the level of an entity's Attention; the *Intention* correlates with a wave's *Torque*, which is a wave's *Amplitude* or force to execute the entity's intention; and lastly is the *Extension* of that information into a manifest correlated action by the entity through a wave's *Torsion*, which is a wave's capacity of *Phase Polarity or Spin* to traverse from Non-locality to Locality, or from its action potential in 5D to its kinesis in 4D and 3D. So through this mechanism, information as both Awareness and Energy can be transduced by the Attention between nD and 5D; by Intention between 5D and 4D; and by Extension between 4D and 3D sensory awareness.

In this way, the Observer Effect demonstrates how a waveform can codify and correlate an entity's Energy/Awareness via AFP modulations in the waveform through its Tension, Torque and Torsion. As a result, a single wave has the capability to encode the vast complexity of information in the Eight Fundamental Perspectives through its AFP modulations, shown in Figure 7.

Figure 7. A Wave Encoding the Eight Fundamental Perspectives

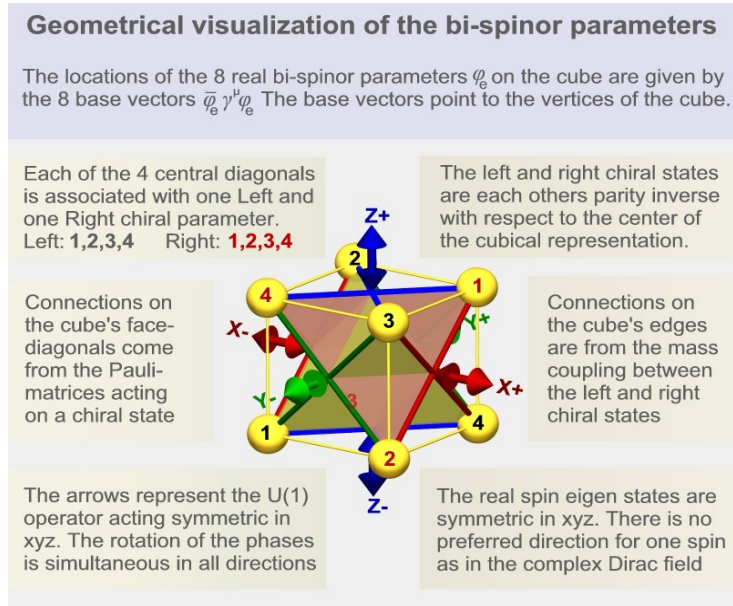


The properties of a wave in higher Hilbert Spaces are high frequency, high spin and low amplitude, whereas in lower Hilbert Spaces they assume lower frequency, lower spin and greater amplitude, resulting in the increasing density of physical properties, which are therefore the most dense in Octant 8. At the Planck scale, the emergence of a wave from the Zero Point Field, as a primal form, has been described as a “Fluctuon” (Jakubowski, 2010). The artist Michael Evans came up with a synonymous model of the ultimately fundamental 3D physical form he calls the “Trion Re”. It has only two vertices, as polarities, that is none other than a wave, which can self organize with others to form tetrahedrons as the Platonic basis of form, and as sub-atomic precursors.

The AFP wave structure of a single photon has been demonstrated holographically by Chrapkiewicz, Jachura, Banaszek & Wasilewski (2016). In this demonstration, the wave structure can be seen to dramatically alter according to the information it encodes, and to have at its forefront a “nose cone” pilot wave of a much higher frequency. Bandyopadhyay (2016) has also observed a high-frequency leading edge to photons, confirming it as a pilot wave guiding biophotons to their *intended* destination in a microtubule, triggering the selected dimers to form appropriate ions via a coding process similar to the coding of a DNA helix. This is the Awareness/Energy continuum transduced to neurological 3D en-action.

The latitudinal conformation of a torsional wave is a function of the wave’s spin, the reversing polarity of which is its means of self-transduction from one Spectrum Domain to another, and also of its instantaneous presence. Nassim Haramein and Elizabeth Rauscher (2007) have modeled this means of transduction via the quantum geometry of eight vectors deriving from six axial spinors, as two interlocking tetrahedrons that interface the 4D quantum vacuum with 3D space, as shown in Figure 8.

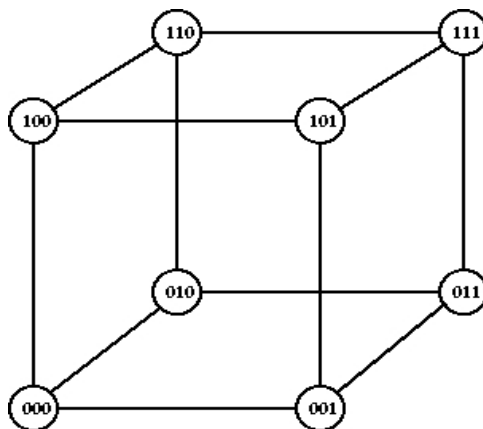
Figure 8. The Eight Vectors Star Tetrahedron



Haramain's Scale Unification (2008) shows how fundamental forms, such as the cubic star tetrahedron of the spinor, are structured by energy states rotating through three axes, where rotation is spontaneously triggered when energy enters the Zero Point state.

The resulting spinor coding format, of eight triplet permutations resulting from the six polarities, is exactly and inevitably that used in computer coding, shown in Figure 9 as one Byte comprised of eight Bits. In this way, Artificial Intelligence can be said to *mimic* Awareness, rather than actually *being* Awareness. In a sister paper to this, in preparation, we propose an all-Dimensional wave-coding mechanism of information, using Euler's math.

Figure 9. One Byte of Eight Bits



In other words, the spinors transduce subquantum information from the 4D quantum vacuum into 3D protophysical forms, that in turn fractally provide octo-dynamic templates for the emergence of all physical form via leptons, mesons, bosons and hadrons. Lisi's (2007) E8 Geometry elucidates the mathematical basis for this through

the Eight Quantum Numbers. These account for how the charge and spin of subatomic leptons, bosons, mesons and hadrons, through octo-dynamic recombination, go on to form electrons, protons, neutrons etc. as per the Standard Model. And then to the atomic level, where this octo-dynamic process proceeds through all atomic forms as the quantum shell octaves of the Periodic Table.

In this way there exists an octo-dynamic continuum of coded intentional Awareness/Energy information between non-locality and locality, as a negentropic toroidal informational recursive feedback vortex called *Entanglement*. According to Meijer (2017), information always arises from recursive interactions or entanglements that yield yes/no choices made by Awareness.

The Dalai Lama has lined up his best meditators under controlled laboratory conditions, also with Dean Radin at IONS, to show how higher Gamma frequency intentional Awareness from 80Hz to 140Hz yields higher frequency Energy enactments in the Lower and Higher Hilbert Spaces. These are the *siddhis*, or supernatural powers of the yogis. Radin (2017) is pursuing these higher awareness enactments, such as remote viewing and mind reading under strict laboratory protocols, using high-frequency meditators. Radin is also experimenting with intentional OBE's like astral travel, which brings us to the Second Tenet.

TOWARDS PROVING THE SECOND TENET

The Second Tenet of Integral Relativity proposes the continuum and continuity of Awareness, where the Law of Conservation of Energy in all states, via the First Tenet, is extended to the Conservation of Awareness in all states - wherein Awareness and its Information cannot be created nor destroyed, but only transformed from one state to another.

Flying in the face of this is the death and disintegration of the sentient organism, the perennial mystery of life after death, and of reincarnation. Towards proving the Second Tenet, there are several doorways into after death and meta-physical experiences, some of which can be verified objectively, and others subjectively, and all under the standard scientific laboratory protocols, including repeatability by other parties.

Perhaps leading this extensive field is Dr Gary Schwartz (2017) and his Afterlife Experiments, where he empirically explores the transpersonal Domains under multiple-blind protocols, using for each experiment several isolated mediums interfacing with a single deceased entity and their isolated living relatives. The deceased testimonies concur that they are no longer in the physical realm, but are able to make temporary high-frequency access to physically interface with the medium's high frequency awareness. The accuracy of exchanged information is at a Sigma 7 level of authenticity. Equaling these results are those Drs Ian Stevenson (U V) and Pim Van Lommel (University of Amsterdam) in their separate field researches into remembered past lives and reincarnation. In addition, Van Lommel (2013) has extended this into NDE's, where the subjects were able to disclose discreet but verifiable information resulting from their experiences.

Especially amongst Buddhist meditators there is much vivid experiential consensus regarding the nature of the Subtle and Causal Domains, and of past life recall, which is

necessarily a high-frequency ability, so the future of this research again favors those with high frequency awareness capabilities.

The cosmological picture beginning to emerge in the New Sciences, most notably quantum physics and quantum biology, is strikingly similar to that of ancient cosmologies. The Vedic scientists and meditators several thousand years ago in India mapped out an extremely detailed cosmology with three full-spectrum Domains called *kayas* or vehicles: *Nirmanakaya* as this Concrete Universe, *Sambhogakaya* as the Subtle Universe, and *Dharmakaya* as the Causal Universe. The individual Awareness is said to occupy or embody **all** these Domains via a series of full-spectrum “sheathes” or *koshas*: *Anamayakosha* is this gross physical body, *Pranamayakosha* is its accompanying Energy Body / Chakras, and *Manamayakosha* is the individual 4D Mind as our Concrete Awareness in the *Nirmanakaya*; *Vijnanamayakosha* is our 5D Subtle Awareness in the *Sambhogakaya*; and *Anandamayakosha* is our nD Causal Awareness in the *Dharmakaya*. They describe how when the physical *Anamayakosha* dies, the Energy Body *Pranamayakosha* and individual Mind *Manamayakosha* associated with it also dissolve back into the undifferentiated *Akasha* field from which they emerged, and where all the information as our experiences are stored in that universal memory. This Akashic ground state Laszlo (2007) equates with the 4D Zero Point Field. However, our *Vijnanamayakosha* or individual Soul awareness persists in the 5D Subtle Domain, and looks for another physical incarnation to continue its evolution with perfect continuity. In the Pali Canon, Buddha is recorded to have said that there are four injunctions to a self-aware “Continuity of Consciousness” between and during incarnations, which are a pre-requisite for Enlightenment. It is in fulfilling these injunctions that a special candidate is selected as the Dalai Lama.

To be able to pursue this scientifically, transpersonal experiential proofs lay in the Observers being able to perform the *experiential injunctions* for each Domain with repeatable results. For the Concrete Domain we require the Self-aware Mind; for the Subtle Domain we require the Self-aware Consciousness; and for the Causal Domain we require the Self-aware Witness. For example, experimenters require that the Observer can differentiate their passive Consciousness-as-Experiencer from the thoughts, emotions and sensory input of their Mind-as-Experience, which is the doorway into 5D awareness.

This also opens the door to further experimental corroboration of continuity between 4D and 5D Awareness. Our earlier discussion of Bandyopadhyay’s experiments show pilot waves as guiding photons to intended locations in the neuron microtubule, where they are recoded to form correlated ions for neuronal awareness. Pilot waves are of a higher order of Energy frequency, and in double slit experiments have shown evidence of retro-causality, or of a future guiding present outcomes, just as the past guides present outcomes. Aharonov (2010) shows how future states of quantum waves can influence past states. Meijer (2017) advocates a nested-torus multi-dimensional model to integrate the present time as resulting from past and future wave projections.

A common example of retro-causality in Awareness is the pre-cognition of a future outcome, which directs an action in the present to ensure or prevent that future outcome. The Integral Relativity model of the continuity of Awareness between full-spectrum 4D and 5D Domains can explain retro-causality and “6th Sense” precognition in the same *synonymous* way as high frequency 4D non-local pilot waves guiding lower frequency 3D photons in locality.

The chart in Figure 6 shows how our “VHF Band” Consciousness correlates with our “HF Band” Mind. Our 5D Consciousness is outside of 4D Mind and 3D Spacetime, and sees physical existence in an ever Now perspective, as a Big Picture. “At any time” Consciousness can inform Mind of a situation. For example, if our Awareness is operating “across the board” in the First Attention, say at the “Concrete” cognitive stage of Mind, we only have a vague feeling of what our Consciousness is trying to inform us, as a “gut feeling”. Higher up, say in “Plural” cognition, we have a much stronger “intuitive” sense of our Consciousness clearly informing us, like a guardian angel. And higher still in the Second Attention, where we at last become Consciousness Self-aware in “Vision Logic” cognition, we also become fully pre-cognitive as an incarnate Soul, remembering our past lives and our undying continuity of Consciousness. This is considered to be a high-frequency spiritual ability, with high evolutionary advantages. An evolving Awareness is an organism’s key to enhanced survival capability. This is the area of research for Gary Schwartz (2017), Pim Van Lommel (2017) and Gary Greyson (2017).

TOWARDS PROVING THE THIRD TENET

The Third Tenet describes the continuum of Consciousness, Energy, Mind and Matter via the Kosmic Constant, which is the primordial frequency or carrier wave of Energy, from which all subsequent phenomena emerge through the CEMM continuum.

Because Planck’s Law maintains that information is proportional to frequency, and that torsional waves at the Planck scale travel at *quasi-infinite* velocities, it follows that such a wave with *quasi-infinite* frequency in the quantum vacuum (Zero Point Field) tends towards an amplitude-related “omnipotence”, a frequency-related “omniscience” and a polarity-related “omnipresence”, which, through the Four Tenets, *are* the capacities of nD Causal Awareness. And because Awareness and Energy share full-spectrum Domains, the Awareness-Energy correlation in a waveform must apply all the way through to an “infinite frequency”, or Kosmic Constant, as the Primordial Carrier Wave.

The chart in Figure 6 shows how the “Ultra Violet” level in all three Spectrums is the ground state or Carrier Wave of each Spectrum, where the Light Body (Crown Chakra) correlates with Akashic experience (Universal Memory) in the Zero Point Field of the Concrete Spectrum, and with voluntary rebirth as an enlightened Soul in the Subtle Spectrum, while vibrating in the Causal Spectrum in the Primordial Carrier Wave.

Needless to say, there have been countless experiential claims of Enlightenment throughout history to the present, but the chart implies the possibility of having 4D Akashic experience without having realized the correlated 5D Subtle and nD Causal injunctions. Many enlightened beings in scriptural history have warned of this shortfall, saying that there are three degrees of enlightenment, which are to fulfill the injunctions of all three Spectrum Domains in “Ultra Violet”. In this present time, enlightened beings continue to make the same testimony – that the true the refuge of Awareness is to be found in the Causal Primordial Vibration of Energy, the Word, the OM. The marriage of science and spirituality, and the future evolution of the human race, rests in the confirmation of this ultimate validity claim.

Meanwhile, research in the New Sciences is favoring meditating high frequency subjects, whose Awareness can manipulate the Zero Point Energy ground state of the physical universe. This cutting edge research is spearheaded by Dean Radin at IONS.

THE FOURTH TENET - EXPLAINING THE OBSERVER EFFECT

The Fourth Tenet claims that the perception of any given observed phenomenon is relative to the Awareness frequencies of the Observers of that phenomenon. This is the key to explaining the Observer Effect.

Integral Relativity proposes that our Causal Awareness views through the ground states of each Spectrum Domain whether we know it (Ultra Violet) or not (Indigo and below). The ground state in each Spectrum/Domain is a given fundamental frequency, or the Carrier Wave of all subsequent frequencies **in that Domain**. So for the Concrete Domain, the ground state of a 3D Observer is 4D Mind residing in the Zero Point Field, or Quantum Vacuum; wherein a specific individual's Mind is a unique wave configuration differentiating it from other individuals sharing the Mind Field itself.

Integral Relativity proposes that for a 3D Observer at rest, making no observation, their 4D Mind is in its resting wave state as latent potential. The moment an intention comes to Mind, such as to make an observation, that intention originates in the Observer's 5D Consciousness, which also resides in and embodied by the 4D Mind. The 5D energetic intention has the effect of activating 4D Mind from a state of latent to a state of kinetic potential, which is the precursor of an energetic 3D action or kinesis correlated to that intention. The continuum for this process is *entanglement*, as described by Haramein and Brown's Unified Spacememory Network (2017). The Spacememory Network describes a quantum entangled wormhole network, where the spacetime structure of wormholes (from micro to macro) is the basis of entanglement

In the Observer Effect, the switch from the 4D Mind's action potential to kinesis is the switch from the Observer as Awareness to the Observer as Energy, according to the First Tenet. This is the energetic effect that is classically described in the Double Slit experiment as a "wave collapse to particle". However, with this new model of Integral Relativity, we can now see that *in the Observer Effect there is no actual wave collapse and no actual particle*, but simply a shift of modality from a wave's latent potential as Awareness to its kinetic potential and resulting Energy kinesis. We propose that the "wave collapse" is when a 5D Consciousness coded intention in *superposition* switches to *infra-position* as the 4D Mind's kinetic potential. This represents a shift in AFP Band Modulation information from its super-positioned intentional mode, as encoded in a 5D Consciousness waveform, to its infra-positioning as kinetic information, via spin transduction entanglement, to 4D Mind with its lower frequencies and higher amplitudes, which is now ready for correlated 3D kinesis/enactment. Thus there is a perfect continuity of information coding from 5D to 4D to 3D.

In the mentioned Anirban Bandyopadhyay and Stuart Hameroff collaboration (2016), it has been demonstrated how, in the final stages of the above transduction, an encoded photon appropriately transduces its information to a biophoton, via selected Alpha/Beta dimers in the helix of a neuron's microtubule, which is then brought into correlated 3D activity either via the cell's DNA, or a larger neuronal network such as the brain itself. In the experiment one can actually see the dimers flashing on and off in the microtubule as

the information is decoded/encoded from the photon to the biophoton. Nassim Hamein and William Brown (2017) show that this process is enabled by the coded resonance of the water column within the microtubule itself. Bandyopadhyay (2016) has recorded this symphonic resonance, showing how the biophotons are then converted to *phonons*, which then resonantly orchestrate the information into the coded assembly of ions and molecules as cellular messengers.

This entire sequential process is in fact *the Observer Effect in extension via entanglement*. Integral Relativity proposes and predicts that this entire sequence of coding is fractal in nature, as the octodynamic fractalization of information via Eight Fundamental Perspectives, into the increasing dimensional density of lower Hilbert Spaces. We are in preparation of a sister-paper to this effect – *The Octodynamic Coding of Awareness and Energy*.

All this suggests a new model of information theory that further explains the Observer Effect. In elucidating Integral Relativity it has become clear that Awareness and Energy operate through correlated levels in a holarchy of Spectrum Domains. The Spectrum Domains proposed by Integral Relativity are therefore spectrums of information through which correlated levels of Awareness and Energy operate recursively, where information itself is Awareness-neutral and Energy-neutral. Information in this context is therefore encoded in unique configurations of AFP standing-wave modulations throughout the Spectrum Domains, and instantaneously accessed by *correlated* unique AFP wave modulations of Awareness via entanglement, as described above. This model is in perfect correspondence with Hamein's Unified Spacememory Network, which posits the total connectivity of information through entanglement between Hilbert Spaces.

We now approach this through the mathematical model of Davide Fiscaletti (2016), who for the purposes of this paper has extended the Advanced Relativity math to include Integral Relativity in the next chapter.

QUANTUM ENERGY AND MIND IN ADVANCED RELATIVITY

Advanced Relativity, Sorli, Fiscaletti (2016), proposes the Tenet: *The Equation of Mind with Primordial Matter*, whereby the Physical Ground of Awareness resides in the Zero Point Field, as per Laszlo. First we consider the emergence of Quantum Energy from the subquantum ground of physical existence in the Zero Point Field, along with its awareness correlate as Mind. In other words, they propose that the Zero Point Field is also the ground of pre-quantum Mind. It is here that we can begin to elucidate the "Observer Effect" embedded in all quantum experiments, as proposed in AR, and from there begin to formulate Integral Relativity.

AR is a natural extension of Einstein's **GR** and of quantum mechanics, which fully integrates the Observer, yielding to a suggestive unification of Space, Matter and Mind. Sorli, Fiscaletti and Mageshwaran (2016).

In **AR**, universal space has its origin in a fundamental three-dimensional (3D) quantum vacuum, and time is merely the numerical order of changes, i.e. motion. In **AR**, elementary particles and stellar objects diminish the energy density of space in correspondence to the amount of their energy. Diminished energy density of space can be considered the origin of mass and gravity from the micro to the macro scale.

Each material object endowed with a mass m is produced by a change of the energy density of space on the basis of equation

$$m = \frac{V \cdot \Delta\rho_{qvE}}{c^2} \quad (1),$$

where

$$\Delta\rho_{qvE} = \rho_{pE} - \rho_{qvE} \quad (2),$$

$$\rho_{qvE} = \rho_{pE} - \frac{mc^2}{V} \quad (3),$$

and

$$\rho_{pE} = \frac{m_p \cdot c^2}{l_p^3} \quad (4)$$

is Planck's energy density (the energy density of space in the absence of material objects, which is the maximum energy density that can be sustained in the minimum quantized space, and can be considered as the ground state of the same physical flat-space

background), m is the mass of the object, V is its volume, m_p is Planck mass and l_p is Planck length. Equations (1)-(3) describe baryonic matter both in macrophysics and in microphysics.

In **AR**, each material particle corresponds to an opportune excited state of the quantum vacuum defined (in the center of that particle) by the energy density (3) and by the change of the energy density (2), with respect to the ground state, and, in analogous way to Chiatti's and Licata's transactional approach (Chiatti, 2012), its evolution is determined by opportune **Special Relativity** processes of creation/annihilation of quanta. It is described by a wave function as two components satisfying a time-symmetric extension of the Klein-Gordon quantum relativistic equation

$$\begin{pmatrix} H & 0 \\ 0 & -H \end{pmatrix} C = 0 \quad (5)$$

$$H = \left(-\square^2 \partial^\mu \partial_\mu + \frac{V^2}{c^2} (\Delta\rho_{qvE})^2 \right)$$

where equation (5) corresponds to the following equations

$$\left(-\square^2 \partial^\mu \partial_\mu + \frac{V^2}{c^2} (\Delta\rho_{qvE})^2 \right) \psi_{Q,i}(x) = 0 \quad (6)$$

for creation events and

$$\left(\square^2 \partial^\mu \partial_\mu - \frac{V^2}{c^2} (\Delta \rho_{qvE})^2 \right) \phi_{Q,i}(x) = 0 \quad (7)$$

for destruction events. By writing the two components of the wave function in polar form

$$\psi_{Q,i} = |\psi_{Q,i}| \exp\left(\frac{iS_{Q,i}^\psi}{\square}\right) \quad (8),$$

$$\phi_{Q,i} = |\phi_{Q,i}| \exp\left(\frac{iS_{Q,i}^\phi}{\square}\right) \quad (9)$$

and decomposing the real and imaginary parts of the Klein-Gordon equation (5), for the real part one obtains a couple of quantum Hamilton-Jacobi equations that, by imposing the requirement that they are Poincarè invariant and have the correct non-relativistic limit, assume the following form

$$\partial_\mu \begin{pmatrix} S_{Q,i}^\psi \\ S_{Q,i}^\phi \end{pmatrix} \partial^\mu \begin{pmatrix} S_{Q,i}^\psi \\ S_{Q,i}^\phi \end{pmatrix} = \frac{V^2}{c^2} (\Delta \rho_{qvE})^2 \exp\begin{pmatrix} Q_{Q,i}^\psi \\ -Q_{Q,i}^\phi \end{pmatrix} \quad (10),$$

while the imaginary part gives the continuity equation

$$\partial_\mu \left(\rho \partial^\mu \begin{pmatrix} S_{Q,i}^\psi \\ S_{Q,i}^\phi \end{pmatrix} \right) = 0 \quad (11)$$

where ρ is the ensemble of particles associated with the spinor under consideration and

$$Q_{Q,i} = \frac{\square^2 c^2}{V^2 (\Delta \rho_{qvE})^2} \begin{pmatrix} \left(\nabla^2 - \frac{1}{c^2} \frac{\partial^2}{\partial t^2} \right) |\psi_{Q,i}| \\ \frac{|\psi_{Q,i}|}{\left(\nabla^2 - \frac{1}{c^2} \frac{\partial^2}{\partial t^2} \right) |\phi_{Q,i}|} \\ - \frac{\left(\nabla^2 - \frac{1}{c^2} \frac{\partial^2}{\partial t^2} \right) |\phi_{Q,i}|}{|\phi_{Q,i}|} \end{pmatrix} \quad (12)$$

is the quantum potential of the vacuum (Fiscaletti and Sorli (2014); Fiscaletti and Sorli, (2016a); Fiscaletti and Sorli (2016b)).

The quantum potential of the vacuum is the fundamental entity which the guides the occurring of the processes of creation or annihilation in space, and makes the 3D quantum vacuum a fundamentally non-local manifold. In virtue of the quantum potential (12), the 3D quantum vacuum, as a fundamental medium subtending the observable forms of matter, energy and space-time, is a timeless background. On the

basis of the quantum potential of the vacuum (12), the behavior of matter in the universe can be seen as an undivided network of **RS** processes that take place in the 3D timeless quantum vacuum and time exists merely as a mathematical parameter measuring the dynamics of a particle or object.

In quantum mechanics, the energy of the photon is:

$$E = n \cdot h \cdot \nu ,$$

where h is the Planck constant, ν is the photon frequency, and n is the integer (1,2,3...). In **AR**, the photon is the wave of universal space, also called the “3D quantum vacuum” or “3D physical vacuum”, which is the matrix of Mind.

We can describe Awareness as the wave of n dimensional Hilbert space (where n is cardinal number of natural numbers). In physics we observe the photon in a 3D material world. When the frequency of the 3D photon is increased to an infinite value, it enters the higher dimensions of Hilbert spaces. Finally in n -dimensional Hilbert space, the energy of the photon is transformed into energy of the Subtle Spectrum and Consciousness. This is in fact the process of meditation, in raising our vibration to subtle states of awareness. We can describe this as:

$$\lim_{\nu \rightarrow \infty, n \rightarrow \infty} n \cdot h \cdot \nu = \text{consciousness} .$$

where integer n represents the dimensionality of Hilbert spaces. When vibration ν becomes infinite, integer n becomes the cardinal number of natural numbers. Consciousness is the vibration of n -dimensional Hilbert space whose limit tends to an infinite value of frequency, and zero value of the wavelength λ . Out of that, it follows that the velocity v of Consciousness is zero:

$$v = \nu \cdot \lambda = 0$$

This mathematical model is not a real picture of Consciousness; it only indicates its real nature. Consciousness does not move in space. When the vibration of Consciousness goes lower it enters the Concrete Spectrum as Mind and light.

Quantum Mind acts via bio-photons on the microtubules of the brain. Information flow from the Mind to the 3 dimensional living matter composing living organisms runs from n dimensional Hilbert space of Consciousness via the less dimensional Hilbert spaces of Mind, until it arrives in 3 dimensional matter. Each “information jump” to the space with a lower number is accompanied by the lower energy of the “photon”, according to the following formula:

$$E = n \cdot h \cdot \nu ,$$

where n is an integer (1, 2, 3, ...), h is Planck's constant, and ν is the frequency. In the formula above we can see the Planck constant is the constant, which bridges different Hilbert spaces.

Our standard view that the vibration can exist only in a 3D reality is now upgraded to the understanding that higher dimensions do exist, and that they have their own vibrations (these are different layers of old “ether” in spiritual sense). The Planck constant is the constant connecting these n-dimensional vibrations.

A Photon observed in a 3D world is connected with Mind via Hilbert spaces. Hence biophotons, discovered by Russian physicists Alexander Gurwitsch Gurjijef and German physicists Albert Fritz Popp, are of immense importance. Information that flows from the higher Hilbert spaces to the lower Hilbert spaces designs not only the functioning of the single living organism, but also entire the evolution of all life developing in the universe.

From the formula $E = n \cdot h \cdot \nu$ we can see that the energy of primordial Awareness in n-dimensional Hilbert space has infinite energy. The 3D world exists within this poll of infinite cosmic energy. With the lowering of frequency, while descending in the Hilbert spaces with fewer dimensions, the infinite energy of Consciousness becomes more and more solid, until finally we can measure it in a 3D world as a photon. Recent discoveries confirm matter is made out of photons:

<http://phys.org/news/2013-09-scientists-never-before-seen.html>

<https://www.theguardian.com/science/2014/may/18/matter-light-photons-electrons-positrons>

FROM ADVANCED RELATIVITY TO INTEGRAL RELATIVITY

We have stated that because Planck’s Law maintains that information is proportional to frequency, and that torsional waves at the Planck scale travel at *quasi-infinite* velocities, it follows that such a wave of *quasi-infinite* frequency in the Zero Point Field tends towards an amplitude related “omnipotence”, a frequency related “omniscience” and a polarity related “omnipresence”, which, through the Four Tenets, *are* the capacities of Causal awareness.

We now reconsider the two formulae previously stated:

1. $E = n \cdot h \cdot \nu$,

where h is the Planck constant, ν is the photon frequency, and n is the integer (1,2,3...). In **AR**, the photon is the wave of universal space, also called the “3D quantum vacuum” or “3D physical vacuum”.

2. $\nu = \nu \cdot \lambda = 0$,

where Consciousness is the Subtle Spectrum of n-dimensional Hilbert Spaces, whose limit tends to an infinite value of frequency, and zero value of the wavelength λ . From these it follows that the velocity ν of Consciousness is zero.

In other words, there is a resonant continuum of awareness-as-information and energy-

as-information between the Subtle and the pre-quantum-to-quantum Concrete Domains; and that this continuum is upheld by the First Tenet of Integral Relativity:

Energy is the action potential and kinesis of Awareness, and is therefore Awareness made existent (as the ZPF, aka Mind).

Whereas the Zero Point Field and its pre-quantum Mind correlate provide the ground of physical being, this is NOT the Ground of All Being of spiritual fame. To include the latter we now consider the “big picture” of Integral Relativity – by including the Subtle Energy Spectrum and its Subtle Consciousness correlate.

Through the Four Tenets, it follows that every level of Awareness through the Concrete, Subtle and Causal Spectrums have their correlates of Energy activity as bodies and realms of ex-istence. *Integral Relativity therefore proposes that these correlated levels of Awareness and enactment are synonymous with the Hilbert Spaces.*

Going back to our mathematical treatment of Advanced Relativity, the quantum potential of the vacuum (equation 12) may be considered the origin of Concrete awareness as Mind. Depending on the frequency modes which characterize the creation and destruction processes of the 3D quantum vacuum, the information processing of thought and communication at all levels can be described in terms of Fourier transforms (Sorli, Fiscaletti and Mageshwaran, 2016). By expressing the wave function in terms of the Fourier frequency modes, which represent its information channels (in the sense that they give rise to different levels of consciousness), equations (6) and (7) concerning the evolution of creation events and destruction events of quanta become respectively

$$\left(-\square^2 \partial^\mu \partial_\mu + \frac{V^2}{c^2} (\Delta \rho_{qvE})^2 \right) \int_{-\infty}^{+\infty} g_{Q,i}(\nu) e^{2\pi i \nu t} = 0 \quad (13)$$

and

$$\left(\square^2 \partial^\mu \partial_\mu - \frac{V^2}{c^2} (\Delta \rho_{qvE})^2 \right) \int_{-\infty}^{+\infty} h_{Q,i}(\nu) e^{2\pi i \nu t} = 0 \quad (14),$$

where

$$\psi_{Q,i}(t) = \int_{-\infty}^{+\infty} g_{Q,i}(\nu) e^{2\pi i \nu t} d\nu \quad (15)$$

and

$$\phi_{Q,i}(t) = \int_{-\infty}^{+\infty} h_{Q,i}(\nu) e^{2\pi i \nu t} d\nu \quad (16),$$

$$g_{Q,i}(\nu) \quad h_{Q,i}(\nu)$$

and being the frequency modes characterizing the creation and destruction processes respectively. In this way, in the quantum Hamilton-Jacobi equations (10)-(11), the quantum potential of the vacuum which the guides the occurring of the processes of

creation or annihilation in space and makes the 3D quantum vacuum a fundamentally non-local manifold, assumes the following form:

$$Q_{Q,i} = \frac{\square^2 c^2}{V^2 (\Delta\rho_{qvE})^2} \left(\frac{\left(\nabla^2 - \frac{1}{c^2} \frac{\partial^2}{\partial t^2} \right) \left| \int_{-\infty}^{+\infty} g_{Q,i}(\nu) e^{2\pi i \nu t} \right|}{\left| \int_{-\infty}^{+\infty} g_{Q,i}(\nu) e^{2\pi i \nu t} \right|} - \frac{\left(\nabla^2 - \frac{1}{c^2} \frac{\partial^2}{\partial t^2} \right) \left| \int_{-\infty}^{+\infty} h_{Q,i}(\nu) e^{2\pi i \nu t} \right|}{\left| \int_{-\infty}^{+\infty} h_{Q,i}(\nu) e^{2\pi i \nu t} \right|} \right) \quad (17).$$

According to equation (17), one can say that the non-local action of the quantum potential to guide the occurring of the processes of creation or annihilation in space is determined by the frequency modes, which appear in the wave of the quantum vacuum. In other words, the frequency modes appearing in relations (15) and (16) may be considered the different information channels of the quantum potential of the vacuum, the different levels of energy of consciousness. The different ranges and levels of

Consciousness are associated with the frequency modes $g_{Q,i}(\nu)$ and $h_{Q,i}(\nu)$ characterizing the creation and destruction events of quanta in the 3D quantum vacuum.

Moreover, the fundamental quantum Hamilton-Jacobi equations (10)-(11) of the 3D quantum vacuum become

$$\partial_\mu \begin{pmatrix} S_{Q,i}^\psi \\ S_{Q,i}^\phi \end{pmatrix} \partial^\mu \begin{pmatrix} S_{Q,i}^\psi \\ S_{Q,i}^\phi \end{pmatrix} = \frac{V^2}{c^2} (\Delta\rho_{qvE})^2 \exp$$

$$\left(\frac{\left(\nabla^2 - \frac{1}{c^2} \frac{\partial^2}{\partial t^2} \right) \left| \int_{-\infty}^{+\infty} g_{Q,i}(\nu) e^{2\pi i \nu t} \right|}{\left| \int_{-\infty}^{+\infty} g_{Q,i}(\nu) e^{2\pi i \nu t} \right|} - \frac{\left(\nabla^2 - \frac{1}{c^2} \frac{\partial^2}{\partial t^2} \right) \left| \int_{-\infty}^{+\infty} h_{Q,i}(\nu) e^{2\pi i \nu t} \right|}{\left| \int_{-\infty}^{+\infty} h_{Q,i}(\nu) e^{2\pi i \nu t} \right|} \right) \quad (18),$$

while the imaginary part gives the continuity equation

$$\partial_{\mu} \left(\rho \partial^{\mu} \begin{pmatrix} S_{Q,i}^{\psi} \\ S_{Q,i}^{\phi} \end{pmatrix} \right) = 0 \quad (19).$$

Equation (18) may be seen as a real Law of Conservation of Consciousness, while equation (19) may be considered as a Law of Continuity of Consciousness. Equation (18) physically means that Consciousness cannot be created nor destroyed but only transformed from one state to another. Equation (19) expresses always a conservation law, which can be interpreted as a conservation of the probability to observe the state of Consciousness corresponding to one or more specific frequency modes in whatever point in space. The quantum potential of the vacuum (17) may be seen as the real energy governing the behavior of Consciousness and its non-local action in the universal space.

In this way, by introducing the frequency modes (15) and (16) which characterize the creation and destruction processes of the 3D quantum vacuum, in terms of Fourier transforms, inside the mathematical formalism of the **RS** processes of the 3D quantum vacuum given by equations (5)-(12), **AR** can be extended through levels of Awareness yielding to a real Integral Relativity (**IR**), which turns out to be a metatheory inclusive of all structures and phenomena. 'Therefore, by definition, it is inclusive not only of all Energy states but also of all Consciousness states aware of such phenomena. As a result, Integral Relativity must deal with Consciousness and Energy as two sides of the same coin.'

The mathematical formalism expressed by equations (13)-(19) can be considered the starting-point of Integral Relativity and the explanation of the different consciousness states. Integral Relativity based on equations (13)-(19) can be seen as a Local-to-Nonlocal extension of Einstein's Special Relativity, where the relativity between Concrete Energy and Mass is extended to the relativity between Subtle Energy and Consciousness. Integral Relativity advocates the primacy of Awareness as the initiator of all en-action – *En-ergia* – Energy, expressed just by the quantum potential of the vacuum (17) determined by the frequency modes which appear in the wave of the quantum vacuum. On the basis of equations (13)-(19), any energetic phenomenon has its correlate in Consciousness. In particular, the fundamental starting-point equations of Integral Relativity are the equation (17) expressing the link of the quantum potential of the vacuum with the different frequency modes, the conservation law of Consciousness (18) and the continuity law of Consciousness (19).

It remains to be seen, how are Consciousness and Mind related? Here, we consider the problem of the emergence of Quantum Energy from the ground of physical existence in the Zero Point Field associated with the 3D quantum vacuum, along with its awareness correlate as Quantum Mind. In other words, we propose that the Zero Point Field defined by the quantum potential of the vacuum (17) is also the ground and the origin of the Quantum Mind. In particular, we define (15) and (16) as the two components of the fundamental wave function describing the quantum vacuum. In other words, (15) and (16) are the components of the fundamental ground state of Mind, corresponding to the fundamental, primordial quantum energy of the Zero Point Field.

Human awareness can be defined as the synchronization degree with the state of components (15) and (16), as finite approximations of the general state of components (15) and (16) and thus can be expressed as a superposition of a finite number of states

corresponding to specific frequency modes:

$$\psi_{Q,i}(t) = \sum_i |g_{Q,i}(v)\rangle \quad (20)$$

and

$$\phi_{Q,i}(t) = \sum_i |h_{Q,i}(v)\rangle \quad (21).$$

The Observer effect embedded in all quantum experiments can be elucidated by considering relations (20) and (21).

In Integral Relativity, Awareness can be expressed as a wave of a n dimensional Hilbert space (where n is cardinal number of natural numbers) and this wave is decomposed in specific several frequency modes. When the frequency of 3D photons increases, it enters higher dimensions of Hilbert Spaces. As a consequence, in 5-dimensional Hilbert Space, the energy of the photons is transformed into the energy of Consciousness. In other words, the fundamental, Primordial Awareness (namely the Kosmic Constant defined by the 3rd tenet of Integral Relativity) can be described as a fundamental wave, which has infinite frequency and exists in n -dimensional Hilbert space:

$$\lim_{v \rightarrow \infty} n \cdot h \cdot v = \text{consciousness} \quad (22)$$

where h is the Planck constant, v is the photon frequency. When vibration v becomes infinite, the integer n becomes a cardinal number of natural numbers. Kosmic Consciousness is therefore the vibration of n -dimensional Hilbert space whose limit

tends to an infinite value of frequency and zero value of the wave length λ . Out of that it follows that the velocity v of consciousness is zero:

$$v = v \cdot \lambda = 0 \quad (23)$$

which means that, at a fundamental level, the speed of transmission of Consciousness states is zero, namely Consciousness is an immediate, non-local phenomenon. When the vibration of Consciousness goes lower it transforms into light as Mind as a continuum of Energy and Awareness. In correspondence, the fundamental state defined by the components (15) and (16) is approximated by the Mind with a finite state of components (20) and (21). It is in virtue of the finite superposition states (20) and (21) that subquantum Mind acts via bio-photons on the microtubules of the brain. Because of the non-local action of the quantum potential of the vacuum (17) on the states of components (20) and (21), information flow from the Mind to the 3-dimensional living matter composing living organisms runs from n dimensional Hilbert space via less dimensional Hilbert spaces, until it arrives in 3-dimensional matter. Each “information jump” to the space with a lower number is accompanied by the lower energy of the “photon”, according to equation

$$E = n \cdot h \cdot \nu \quad (24),$$

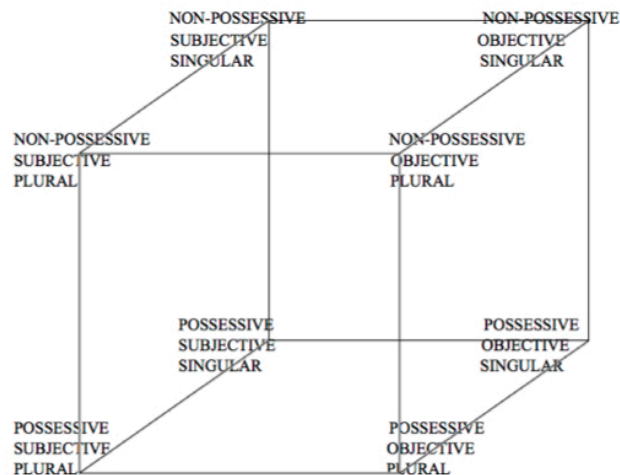
where we can see that the Planck constant is the constant, which bridges different Hilbert spaces. Thus, in Integral Relativity, our standard view that vibration can exist only in a 3D reality can be now upgraded with the understanding that higher dimensions do exist, and that they have their own vibrations (these are different layers of old “ether” in spiritual sense) of infinitely variable frequency modes.

CONCLUSION

Integral Relativity as a Metatheory appears to be developing as an E8 Geometry Fractal Metatheory. When modeled as a tri-axial cosmology of Energy manifestation generating Eight Fundamental Perspectives, this octo-dynamic then fractals into a myriad octaves of manifestation all the way through the spinor octo-dynamics of vibrational frequencies, the octodynamics of the Standard Model, the octo-dynamics of the Periodic Table, the octo-dynamic Classification of Phenomena (or Integral Methodological Pluralism), and onwards through to the octo-dynamic roots of our biological Self-awareness.

Which brings us to how we now language our Awareness. The way we see ourselves, and each other, we language primarily through the Personal Pronouns (“Me Tarzan, you Jane), which again follow the continuing cosmological template of the Eight Fundamental Perspectives. Figure 10 shows the Personal Pronouns Template, where the three axes have become Subjective – Objective, Singular – Plural, and Possessive – Non-Possessive. The latter polarity indicates that on the one hand we perceive a Tangible reality, and on the other hand we perceive an Intangible reality, shown in Figure 10.

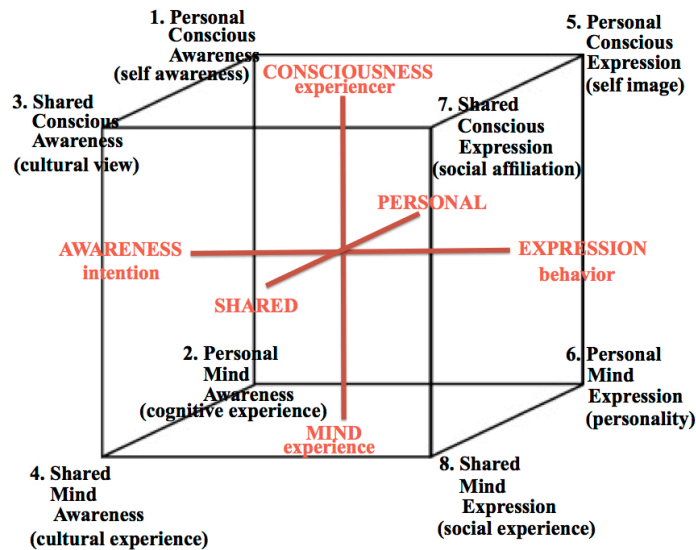
Figure 10. The Personal Pronouns Template



The personal pronouns are how we form a baseline set of perspectives, of how we see ourselves in the world. The fact that there are *eight First Person, eight Second and Eight Third Person pronouns in every language* (some of which conflate or lose one or two) shows how our cultural awareness *automatically and inevitably* uses the octo-dynamic template as the basis of our perception, as shown in Figure 11. Our eight First Person

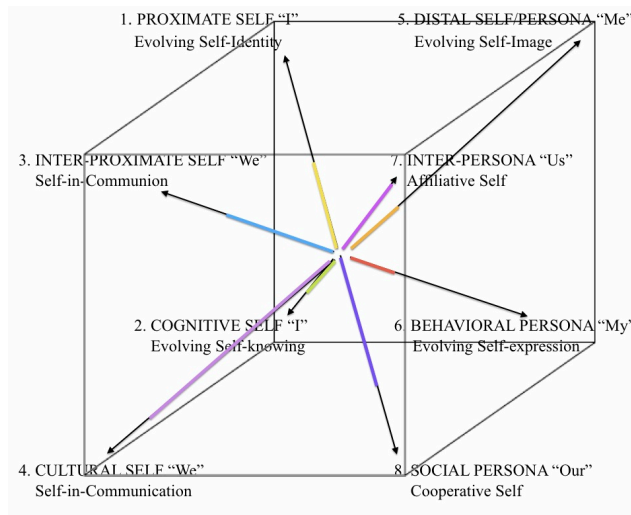
perspectives derive from the three axes of the Personal Pronouns Template, which now explain the mysterious nature of the vertical “Possessive/Non-Possessive” axis.

Figure 11. The First Person Template



“Non-possessive” implies intangible, whereas “Possessive” implies tangible, and there is cultural consensus that our identity as an experiencer is intangible, whereas our experiential identity is tangible. From this derives our First Person Pronouns as our core of language, shown in Figure 12.

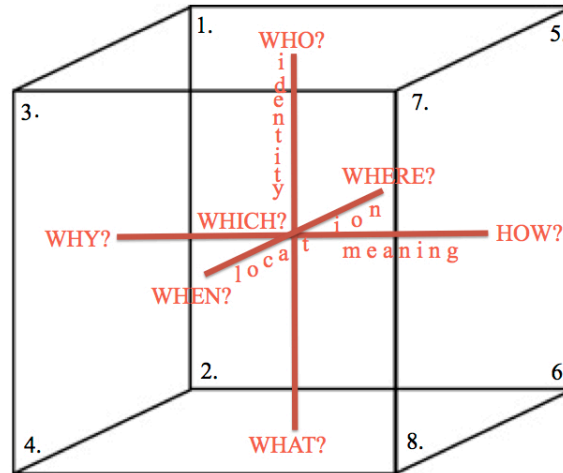
Figure 12. First Person Awareness as Eight Perspectives



In the English language the two “I’s” and the two “We’s” are not differentiated, but are in other languages. Meijer (2017) differentiates the two “I’s” as a 4D (Octant #1) and 3D (Octant #2) differentiation of self-awareness. This also works as a 5D Consciousness and 4D Mind differentiation of self-awareness.

As always, the Eight Pronoun Perspectives per Person are generated by a tri-axial core, which in turn reveals their linguistic underpinnings called the Prepositions. They are pre-positioned perspectives, but also pro-positioned, and super-positioned, and supra-positioned. As three axes, they establish our fundamental orientation as identity, our locational existence and our meaning as Awareness and Energy Beings. As six polarities, they raise the central questions that drive our evolution to establish our eight Self-perspectives, shown in Figure 13.

Figure 13. Prepositioned Orientation



As Awareness and Energy beings, our quest for identity, meaning and location leads to the asking of six fundamental prepositional questions for our orientation and navigation: Who am I? What is this life? Why am I here? How do I deal with it? Where am I going? When will I know? And in the center is Which choice do I make? But also in the center is located our ever-present Here/Now, which is not limited to 3D and 4D space-time.

So, it is no coincidence that the world languages differentiate an **octet** of personal pronouns **for each First, Second and Third Person**. It really does seem that *Awareness as our conscious worldviews is formed according to the same Energy fractal paradigm as the very Kosmos we inhabit*. The idea of a fractal holographic cosmology is becoming more and more self-evident in the New Sciences as time goes by. And so it is of no great surprise that a truly Integral Kosmology, as proposed by Integral Relativity, would be fractal by nature both as Observer and Observed.

The Knower/Observer, *Sciente*, is therefore the supreme overseer of Science as “knowing” in its dogged quest for Truth in all directions and on all levels. Following this paradigm, it would seem that our evolution is to be the knower of more and more experiential knowledge, all-the-way-up to a Supreme Knower/Awareness of a Supreme Knowledge/Energy. So we are drawn again and again to the inevitable and inescapable conclusion that Awareness and Energy are indeed two sides of the same coin of information – all-the-way-down, all-the-way-up. Socrates got it right: “Man, know thy Self”. Our own conscious perspectives matter, because they result in our own material manifestation. Integral Relativity provides a model and mathematical framework to explain how this is so.

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