Reality Begins With Consciousness:
A paradigm shift that works

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and

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[a] Drs Close and Neppe have worked closely together since December 2009, and prior to that had independently worked on a theory of everything in dimensional biopsychophysics for a combined more than fifty years. Both have prior public documents on this topic. These two eminent, highly creative, successful, experienced, motivated pioneers, from different yet complimentary scientific research backgrounds, had independently reached similar provisional conclusions and have now integrated this information into a new, workable, scientific, all-encompassing paradigm of reality. Vernon is Executive Director and Ed is a Fellow of the Exceptional Creative Achievement Organization.

[b] Dr. Close and Dr. Neppe are equal first authors in this book and its companion. However, one of their names had to appear first. Dr Neppe appears first in Reality Begins with Consciousness and Dr Close appears first in Space, Time and Consciousness.

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[d] The new terms in the keywords and in this paper are trade-marked by the authors and the concepts have been distributed selectively by electronically notarized unmodifiable Zmail (Zsentry.com) to establish prior claim to these ideas

[e] We have deliberately at this point kept the bibliography to essential references.

[f] We are hoping to receive peer feedback prior to publication on this e-book so as to make our preliminary model better. Thank you for your participation. It is much appreciated.

[g] www.pni.org and www.5eca.com; also www.brainvoyage.com

PRELIMINARY APPENDICES.

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DEDICATION

"Every day I remind myself that my inner and outer life are based on the labors of other men, living and dead, and that I must exert myself in order to give in the same measure as I have received and am still receiving." Albert Einstein

"All matter originates and exists only by virtue of a force. We must assume behind this force the existence of a conscious and intelligent Mind. This Mind is the matrix of all matter." Max Planck

"The notion of existence is one of the primitive concepts with which we must begin as given. It is the clearest concept we have." Kurt Gödel [1]

"The fear of infinity is a form of myopia that destroys the possibility of seeing the actual infinite, even though it in its highest form has created and sustains us, and in its secondary transfinite forms occurs all around us and even inhabits our minds." Georg Cantor

An Important Dedication, with great respect, appreciation, inspiration and awe: *To those great creative pioneers who have preceded us:*

Albert Einstein (1879 – 1955, Physicist), whose concepts of relative and warping are so critically important.

Max Planck (1858 –1947, Physicist) who introduced the idea of discreteness at the smallest level.

Georg Cantor (1845 –1918, Mathematician), who conceived of the relevance of the infinite and of the correspondence of sets.

Kurt Gödel (1906 –1978, Mathematician), who challenged us to realize that the closed finite reality is insufficient.

You have all allowed us to extend our imaginations and our very finite and limited thoughts to a new limited but slightly higher level.

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BIOGRAPHICAL DATA ON THE EQUAL FIRST AUTHORS:

Vernon M Neppe MD, PhD, FRSSAf, DFAPA, BN&NP.
Based on peer-reviewed publications, presentations, international honors and medicolegal consultations, Prof. Vernon Neppe has achieved an international reputation in several disciplines. These include Neuropsychiatry, Behavioral Neurology, Psychopharmacology, Forensics and Psychiatry (all specialties in which he has been listed under "America's Top Doctors"—and he is one of the few to be listed in all ten issues of this peer-reviewed book and the only one listed in five different subspecialties), Consciousness Research, Phenomenology, Epileptology and Neuroscience.

Dr Neppe has pioneered numerous pharmacological areas including anticonvulsants in psychiatry (impacting millions). He has described four new medical conditions, invented about a hundred new terms, suggested three major new classifications, developed more than thirty neuropsychiatric and consciousness related tests, evaluations and historical screens, pioneered several new theoretical concepts in neuropsychiatry and psychopharmacology, and developed the literary genre of sciction, He also pioneered showing the links of brain function and subjective experience, is the world authority on déjà vu phenomena, and developed the discipline of Phenomenology in the Neuroscience and Consciousness contexts. The author of nine books including Cry the Beloved Mind and two plays (www.brainvoyage.com), he has *overall* more than 400 publications on every continent. He has lectured in 12 countries, led the first USA and International Delegation in Neuropsychiatry and Psychopharmacology, and has chaired international symposia.

Originally from South Africa (where he mainly trained, with a Fellowship at Cornell University, thereafter), he established the first Division of Neuropsychiatry in a USA Psychiatry Department (University of Washington) and then a model institute (Pacific Neuropsychiatric Institue —PNI), which he directs (www.pni.org). He is also (Adj. Full) Professor, Dept of Neurology and Psychiatry, St. Louis University, St. Louis, MO. He was the first USA based MD to be elected a Fellow of the Royal Society of SA, is a Distinguished Fellow of the American Psychiatric Association, recipient of the Marius Valkhoff prize, one of the rare Diplomates of the ISPE (www.thethousand.com), and Executive Director of the Exceptional Creative Achievement Organization (5eca.com). questions@pni.org

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Edward R. Close is a Physicist, Mathematician, Cosmologist, Environmental Engineer and Planner, and international consultant. He was a charter member of the U.S.G.S. Systems Analysis Group where he developed state-of-the-art mathematical optimization programs, hierarchical modeling techniques and fractal geometry models of coastal geomorphology, storm cell development and other environmental modeling applications.

Pursuing an active research program in environmental remediation, he has made a series of breakthrough discoveries in using non-toxic compounds in mold research that have benefited millions. He is a charter member of the internationally known Integrated Health-Care Professionals Council. He has authored numerous technical papers and five books, including the groundbreaking "Transcendental Physics, Integrating the Search for Truth". He developed the mathematical "calculus of distinctions", described a brief but never refuted first published proof for Fermat's Last Theorem [2], several new theorems of consciousness, and important engineering applications.

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AUTHOR'S PREFACE (Dr Neppe)

"The more I learn the less I learn I know." Vernon M Neppe, circa 1967[h]

Since my childhood, I had contemplated the contradictions in our current scientific model— a model that I, nevertheless, realized worked very well in possibly 99.99% of cases. Yet I had wondered why these possibly 0.01% of apparent aberrations occurred. Over two decades, I gradually concluded that a new model could explain some of these problems: If an imaginary observer *existed outside* the "box" *of our current reality,* his relative position imagining the situation would be different. He would be able to observe far more of our current reality looking from the outside and then examining inward. This would imply that the number of dimensions could repetitively increase because the observer could look at that new reality from the outside, and this could continue *ad infinitum*. Effectively, I began to use this outside-in approach to examine ostensibly anomalous information. I applied it to many disciplines, and it seemed workable, too, across the sciences I examined.

I became convinced that this experience was *relative* to one's location. I penned notes about this, studied the existing data, and gradually by the mid-1980s, after many years of contemplation, had refined this to whether there was some kind of *essence*. I wondered about the essential core in our existence, whether it was always expressed in space and time in other dimensions, and whether we could be living in an *N-dimensional reality,* as part of a broader *infinite* existence. I realized we were only perceiving a tiny fraction in our conventional three spatial dimensions and one moment in time—our present experiential reality.

Moreover, I realized there needed to be a content and that the fundamental spatial elements could be expressed not in the rectilinear box noted by the observer, but in increasingly complex *curved movements*. I was struck by the ubiquity in all of nature of these *vortical shapes*. I wondered whether these three-dimensional spatial rotating objects—vortices—could be playing a role that was completely fundamental even in this multidimensional world that I was contemplating. I opposed myself: My rational mind argued that even contemplation of vortices was too ridiculous a concept to embrace. Yet the more I looked, the more this idea became feasible: Vortices and curved objects were ubiquitous in nature and they fitted the theoretical need I had conceptualized. Somehow there had to be a content by which any kind of individual, society or human-kind in general or any group or any other level of individuals or even other sentient beings, could interact. This was a

[h] This phrase has re-awakened over the years. As far as is known, it originates as indicated and was recorded at that time, though not officially published. It was chosen here because it is Dr. Neppe's motto.

function of social interaction and a consistent combined reality. Vortices could fit this role because they were dynamically changing in *state* reflecting movements from moment to moment, and yet they also reflected a consistent *trait* over time where others would be objectifying in a relative sense their realities with others. Vortices could be interacting and interfacing and there could theoretically be "zillions" [i]of such combinations taking place with much of reality being silent as they would not be expressing themselves in consciousness.

Moreover, there was no need for these dynamic forms to be full-blown classical vortices. Any moving curvature element would fulfill that role and provide a content for this interacting process (which many years later in our model we called "indivension"). Certainly, curved movement was easier to conceive of than rectangular ones because they were more natural and would not be as restricted to Euclidean space.

And so, in my initial model, first, there was *N-dimensionality*, with this outside-in derivation from an essence and an observational *consciousness,* and an inside-outside approach (the top-down, bottoms—up elements respectively). Then there was the role of infinity and an N- dimensional reality. But, then even to contemplate vortices— quite ridiculous surely, yet the idea persisted.

I gradually put this together into a model I called the concept of *vortex pluralism*[4]. I presented this as an invited lecture to a sub-branch of the American Philosophical Association [j], and I was surprised when instead of ridicule—after all I was not a philosopher and what did I know anyway? But it met with a standing ovation. I felt at the time that given N-dimensionality, this was pluralistic, not monistic or dualistic, and so I described my model as *"pluralism"*. It was going to be published in a book, but the editor objected to the lack of references. And that was true: It was my own idea that had spontaneously taken hold, and at that point, there were, strangely, no formal references yet. I revised this paper and placed it onto the Internet. And I added hundreds of references, discovering in retrospect, that, indeed, there was a theoretical justification for what I was positing. Later and more appropriately, I called the model "*vortex N-dimensionalism"* because I realized this model was not based on plural realities just N-dimensions, and that

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[i] The terms "zillions" is used here to communicate an extraordinarily large quantity. It is of the same order of magnitude as another term, now well known for a different reason, namely "googol". A googol is technically 10^{100}. An even larger term is when googol becomes exponential, namely "googolplex" which is $10^{\mathbf{googol}}$**!** [3]

[j] Paper in this area originally presented on 6 April 1996 to a subgroup at the American Philosophical Association: The Society For The Anthropology Of Consciousness at the Westin Hotel, Seattle at a symposium entitled "Tribal epistemology and philosophy of consciousness". This has become a more recognized theory since then.

[j] It was German scientist Rudolf Clausius who is generally credited as the first to articulate the 2nd law in his "on the mechanical theory of heat" published in 1850.

this reflected one unified reality.[5, 6]

I realized, too, that despite the fundamental laws of thermodynamics [k], *living* beings also exhibited *order* not disorder, and was puzzled why life came about. So, already at that point I was puzzling over finity and infinity, N-dimensionality, vortices, multidimensional space-time, observer consciousness outside our usual space-time, life, the role of order and the variable directional approach (outside-in and also inside out—later on we referred to this as the top-down and bottom-up approach). I produced a two part document of some eighty pages, and circulated it to a few colleagues. I was stimulated to action when an anonymous colleague overseas justifiably critiqued my then life's work: "But how can he test this? And where is the proof?" I understood this criticism, and agreed with it because I knew he was correct: And it was this extreme prod that provoked my need to work with a mathematician and a physicist and re-look at this paradigm.

Through the International Society for Philosophical Inquiry, I met Dr. Ed Close who had written the book *Transcendental Physics.* [7] This book had many similar fundamental ideas to vortex N-dimensionalism. We made an interesting team: I as a consciousness researcher, neuroscientist and psychiatrist, who could play the role of ignorant creative thinker in physics and mathematics, and on the other hand Dr. Close as a physicist and a mathematician, par excellence, who could, similarly, bounce off creative ideas in the biological, consciousness and social sciences.

I spent the next year immersed in complex physics and advanced mathematics because I realized I would need to apply sufficient skills to use logic and think creatively in these disciplines.

We were ready, and both of us recognized this was our song we needed to sing. It was a project that we were driven to complete: It was our gift, however small and possibly even misguided, to humankind. The result are these books: *Reality begins with Consciousness: A Paradigm Shift that Works* [8] and the companion book, *Space, Time and Consciousness: The Tethered Triad* [9].

Having spent months allowing colleagues around the world to critique over twenty major revisions of this model, we've become increasingly persuaded that our model is fundamentally truer than any other that currently exists: Often models die after six months of scientific, mathematical and creative critiques. Yet we've been able to answer challenges, and though the fundamental metaparadigm remains, the *emphasis* on certain areas, such as *infinity, order, life, meaning, time, consciousness, tethering, vortices and dimensionality* has been amplified—and concepts and definitions have been clarified. Every query has been seriously addressed, appropriately answered, and, we believe, adequately encompassed within our model. We are grateful that the clarifications required made the model stronger and allowed it to grow, both in being more coherent, as well as

more detailed, in its essentials. We are encouraged, too, by the support for the underlying hypotheses and the fundamental metaparadigm and the acclaim by responding scientists: This continued growth of a model would be expected for any consistent and feasible paradigmatic shift.

Has our model succeeded? For a paradigm to work, the underlying axioms should feasibly, without contradiction or demonstrable falsification, explain empirical data and be supported through mathematicologic approaches. Our model, now called the *Triadic Dimensional-Distinction Vortical Paradigm model (TDVP),* does just that, and, of course, is applicable across many scientific disciplines (physics, life, consciousness and psychological sciences) and mathematically is logically justified.

Yet, how dare we postulate a paradigm shift that cuts into the sheer fabric of current reductionistic materialism? And moreover, how dare we involve multidimensionality, consciousness, infinity, life and order? It's like suggesting the flat world is round, surely?

We have to agree, at this point, with expert reviewers who believe that TDVP will endure and will become critically important for a long, long time to come. Yet Dr Close and I both still anticipate the initial resistance, anger, denial, and even ridicule. This may not be surprising because *TDVP literally shatters many prevailing ideas about the very nature of reality, and it furthermore, has both the mathematics and the empiricism to demonstrate its viability,* with hypotheses that are not yet tested. Our TDVP model has emphasized the cardinal role of consciousness and the need for a specific kind of higher dimensionality. And it has addressed infinity, order and life, and restructuring of time as necessities. Based on empirical data, potential proofs of our metaparadigm, mathematical justifications, and qualitative tabulations, we have justified it as the most complete Theory of Everything and extensive practical paradigm ever posited.

Our first book, *Reality Begins with Consciousness,* is written to be more easily read. It is still formidable but those not reading all of it will obtain the fundamentals, without the data and amplifications, at the start. This book on TDVP begins with a 10 point summary of the basics of the TDVP model, then the key single statement, then jumps to 100 core points. It then deals with fundamentals and gradually builds up, in some detail, to why the key metaparadigm fits. It progresses as if one were doing a university course in the area, with basics and then with increasing complexity of some areas.

The second companion book, *Space, Time and Consciousness: The Tethered Triad,* relates to amplifications, specialized models and speculation. Here are the challenges, speculations and proposals for future research. This book incorporates some remarkable ideas, and is more complex than the first book. It's almost like one is then studying an advanced course. But in both books, our frequent headers and subheaders allow greater readability and the opportunity to skip certain areas, or to come back to them later.

We look at it simply as receiving two ostensibly cutting edge books, which I would postulate should impact the ideas of all of our readers. We hope that it will fulfill the initial reviewers' impressions that it will have long-lasting major impacts on the physical, biological, consciousness, psychological and mathematical sciences. Certainly, this remains far the most important life's contribution of both of us (Dr Ed Close and myself).

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AUTHOR'S PREFACE (Dr Close)

"Real scientists should have no need to defend their territory, because real science has no boundaries." Edward R. Close (p104) [7]

Albert Einstein saw that the forces of electromagnetism and gravity could be unified with a few elegant equations, revealing the beauty, as he said, of some of "God's thoughts". [10] He also reasoned that, if two of the fundamental forces of the universe could be unified, he should be able to discover the mathematical laws integrating all of them. He believed the universe to be ordered and logical, and that the laws governing it could be discovered and understood. A Theory of Everything would reveal the elegant harmony of the universe.

Einstein and many brilliant scientists since have tried to find this "Holy Grail" of science and failed. Why should we think that we have? We have done something that has not been done before: We have identified the missing elements of the current paradigm, and we have found a way to rectify the glaring omission of any mathematical representation of consciousness in the equations of the standard model. We have reunited science with human experience by formally describing the conscious act of the drawing of distinctions with a mathematical tool I call the calculus of distinctions. This simple act of including consciousness in the equations leads to a whole new understanding of time, space and consciousness.

What motivated us to seek an ever more comprehensive scientific paradigm? In my case, I believe the answer lies in the brain I was born with and the nature of my early environment. I believe the same may be true for Dr. Neppe.

The small town where I was born lay in a narrow valley in the St. Francois Mountains of Southeast Missouri. The largest high-grade iron ore and lead mines in the country lay to the north, A steep conical knob of porphyritic rhyolite, that had been mined for iron, stood on the east side of the valley, batholiths of granitic and basaltic rock blocked the flow of surface drainage to the south to form pools and waterfalls that were called "shut-ins". To the west lay several American Indian mounds along a small stream, and in the middle of the valley the earthen works of the Civil War Confederate Fort Davidson and the building where Ulysses S. Grant received his commission as General, were located. Emigrants came from all over Europe in the eighteen hundreds to work in the mines. My great grandfather was one of them. In this setting, it seemed natural that by the age of ten I was interested in geology, archeology and languages. I collected civil war bullets, stone-age artifacts, and was learning two "foreign" languages.

By the age of thirteen, I had active interests in science, mathematics, history, archeology, geology, and linguistics. I found it fascinating that, given observable facts, one could, with nothing more than one's own mind, discover new facts about things both seen and unseen.

At that early age, I knew I wanted to be a scientist. At the age of fourteen, I discovered Einstein's relativity, and I knew I wanted to be a physicist. In my naïveté, I thought physics was the answer to everything. I see this same naïveté in most mainstream physicists today. Physics was my first love. There was, however, a problem. This problem wasn't to surface until several years later when I was a physics and math major in college, but it was there from the beginning. The problem was, in a word, *experience*. I had experienced things which did not fit within the materialistic framework of mainstream physics.

From a very early age, I experienced things that seemed to be extensions of the five senses. These experiences could not easily be explained within the limits of known physical and biological science. Basically, some of my experiences did not easily fit within a materialistic paradigm. These experiences happened occasionally, unexpectedly and with no apparent cause. There were, however, some locations and circumstances that seemed conducive to them. They seemed to happen most often when I lay in bed just before sleep, or when I was alone in a natural setting. Opportunities to be alone in nature were frequent, as I was an only child, and our back yard bordered on the untouched wilderness of the St. Francois Mountains. I also remember having these experiences in the classroom in the fourth or fifth grade. Were they simply states of heightened auditory, visual, tactile or other awareness? The only person I confided in was my father. He allayed my concerns by saying that they were signs of "growing", and that he had had similar experiences as a child. They were nothing to worry about. Accepting them as normal, I began to analyze and even enjoy them.

These experiences impacted my thinking leading me to realize that some aspect of my consciousness might occasionally, under certain circumstances, be operating in ways that did not correspond with the pervasive everyday perception of reality. If this were true, the simple materialistic paradigm I was being taught in science classes could not explain it.

Because of my personal experiences, and some controlled experiments I participated in during my second and third years as a physics major in college, I also began to study everything that came out of the areas of consciousness research. I realized that concepts outside currently accepted physical science were required. I also realized that if consciousness existed somehow outside the physical body, it could explain some of the rare-event phenomena called psi phenomena, but that this would require a completely new theory of space, time, and consciousness.

Was it purely a coincidence that Dr. Neppe and I met? We had both joined ISPE in hopes of connecting with kindred souls with similar intellectual interests. As we began to share our thoughts, we realized that they fitted together like the pieces of a jigsaw puzzle. And coincidences began to happen. Soon after we began our collaboration, we advised each other of prior commitments involving travel that would ostensibly interrupt our regular

communications. Vernon would be traveling to South Africa, I to Egypt. I was participating in the production of a documentary film and my itinerary had been arranged by a travel agent employed by the company producing the film. Vernon's itinerary was also set. When we compared flight schedules and layovers, we found that we would both be in Amsterdam on the same day! Without any pre-planning, we were able to spend several hours together discussing some of the basic concepts of our theories. These discussions were recorded and became part of the archives and manuscript leading to this book. It could have been a coincidence, but the theme of this book emphasizing consciousness as it does, at least allows for other possibilities.

Other synchronous events followed. Both of us lead very busy professional lives, with client-driven schedules, deadlines and multiple commitments. In spite of this, we would often call each other at opportune times and find that we had been thinking along the same lines. We would wake up in the middle of the night with epiphanies that were nearly identical, or that would fit together in complementary ways. The frequency of such synchronous experiences led us to suspect a hyper-dimensional connection of some sort. As we developed our new paradigm, the possibility and reality of such a link became more and more apparent. When consciousness is seen to operate in more than four dimensions, synchronicity becomes the rule rather than the exception.

These experiences, while personal and anecdotal from a scientific point of view, convince me that science in general, and physics in particular, needs to be expanded to transcend the materialistic box in which it has confined itself. This conviction led to the concepts presented in my 1997 book "Transcendental Physics" and eventually to this book in collaboration with Dr. Vernon Neppe.

We are confident that our Triadic Dimensional-Distinction Vortical Paradigm shift will usher in a new consciousness-based comprehensive science with a tremendously expanded scope, a scope including the spectrum of human physical, mental and spiritual experience. This book and associated articles and papers form the basis of a scientific paradigm shift unlike any in the history of the search for truth and understanding.

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INVITED INTRODUCTION

To be named.

A note to the reader:
The initial version of our paradigm shift Theory of Everything holistic model (TDVP) was extremely complex to the extent that readers commented there were very few who would be able to understand it. Indeed that was so: It was multidisciplinary and required a high level of knowledge, a conceptualization background, and training in specialized aspects of the physical, psychological, biological, and consciousness sciences, in philosophy and logic, and a specialized background in mathematics: There were few who could fully appreciate all these disciplines.

Ideas that have inherent merit should stand the test of time. But they must be coherent. Sometimes such models are so esoteric they are difficult to interpret unambiguously. It's fascinating that when we look at "Theories of Everything" we find Kabballic and Vedic Mysticism have survived centuries or even millennia but are so complex that interpretations become ambiguous. We then find remarkable older models that focus on one specific area, such as consciousness. [11] [12] By contrast, in our model, we have strived here for clarity and lack of ambiguity. When information is unknown, we point it out or indicate the speculative nature of the statement.

The work that Dr Ed Close and I have done is very different from these single areas of focus [8, 9]. Our work has been an attempt at developing a metaparadigm that is feasible and not falsified in the major scientific disciplines, namely the physical, life, psychological and consciousness sciences, and to ensure that there is a mathematicological basis to justify this TDVP model, and a philosophical mystical basis to boot. Our fundamental metaparadigm has tens of eventually or potentially testable ideas using LFAF or Popperian falsifiability, and indirectly suggests about 600 different concepts, ideas, postulates or hypotheses. It uses the empirical data available (therefore inductive largely as empiricism is inclined to be) combined with the deductive bases of mathematics. So, the scope of our challenge is enormous.

We maintained our model, amplified it and converted it into two *readable* scientific books. There are now numerous chapters that can be read independently of the rest of the book; and particularly with the availability of the glossary, the consequence is that those who specialize in particular disciplines, such as psychology, physics, mathematics, or philosophy can be stimulated in their disciplines. The multidisciplinary emphasis, too, has become less challenging. We are gratified that those with particular interest in areas such as time or order can appreciate specific chapters. Clearly, this book focuses on consciousness research and those in that very broad scientific discipline may be able to conceive of the enormous leap to understand the need for change and the nature of an all-encompassing paradigm.

Vernon M Neppe and Ed R Close.

KEY WORDS: A SELECTION.

3S-1t, 3S-3T, 3S-3T-NC, Actual reality, Affect, Aharonov, Altered states of consciousness, Anatomicophysiological, Anatomy, Anthropology, Appearance of mass, Akashic field, Anthropic, ASC, Aspect, Astronomy, Astrophysical, Asymmetry, Atomic Vortex theory, Atoms, Axiom, Axiom of existence, Axiom of life, Axiom of origin, Axiom of original tethering, Axiom of physical reduction valves, Axiom of physical life, Axiom of reality, Axiom of triadic CT, Axioms, Bell, Bell's theorem, Bem, Bending, Bidirectional, Big bang, Biology, Black hole, Bohm, Bohr, Bottom-up, Boundary, Brain dynamics, Bridge, Brown, C-substrate, Calculus, Calculus of distinctions, Carr, Cantor, Carlson, Cartesian co-ordinate, Causality, Cause and effect, CEV, Chaos, Charge, Chemistry, Chronits, Close, Close's calculus of distinctions, Close's Transcendental physics, Closed, C-substrate, Cognition, Cognition-affect-volition, Cognitive-Theoretic Model of the Universe, Collins, Common reality, Complex numbers, Common reality, Conceptual, Conceptual reality, Confounder, Consciousness, Consciousness research, Conscit, Content, Continuous, Copenhagen Interpretation, Core questions, Corollary, Correlation, Cosmological, Countable, Creative, CST, CTMU, CTT unification, Dawkins, De La Sierra, Déjà vu, Delayed choice experiments, Deniers, Dennett, Density, Dimension, Dimensional Extrapolation, Dimensional fabrics, Dimensionometry, Discrete, Distinction, Distinction calculus, Distortion, Domain, Double-slit, Dualism, Dunne, Ego-boundaries, EHE, Einstein, Electrochemical, Electromagnetism, Electrons, Elementary, Elements, Emergent, Empirical, Energy, Enformy, Entanglement, Entropy, Epiphenomena, Epistemological, EPR, Essence, Euclidean, Event-horizon, Ethicospirituobiopsychofamiliosociocultural systems, Ethicospirituomysticobiopsychofamiliogroupsociocultural, Evert, Evert's mathematical model of vortices, Evolution, Exceptional Human Experience, Existence, Expanding earth, Expanding universe, Extent, Extradimensional extrapolation, Extropic reality, Extropy, Falsifiability, Feasibility, Fermat, Fermat's last theorem, Field, Filter, Finite, Finity, FLT, Fluctuating, Force, Formulae, Fractal, Fractal geometry, Fractional dimensions, Fractionated dimensions, Free will, Fundamental, Fundamental constants, Fundamental forces, Fundamental ideas, Funnel, Future, Gauss, Ganzfeld. General Relativity, Genetics, Geneva, Gesher, Global consciousness project, GCP, GIFECSS, Gisin, God, Gödel, Gödel's incompleteness theorem, Gould, Gravitation, Guiding, Guth, Hameroff, Hamilton, Hausdorf, Hawking, Heisenberg, Helices, Heuristic, Heuristic natural law, Hierarchy of infinities, Hilbert, Hitbonnenut, Hoffman, Holistic, Hologram, Hyperspace, Imaginary numbers, Indivension, Inequality, Individual-unit, Infinite, Infinity model, Influence, Information, Integrated, Intent, Interactions, Inverse square, Jigsaw, Kabbalic, Kelvin, Kinetrons, Klein, Langan, Lanza, Laszlo, Laws of nature, Leibniz, Lemma, Lemma of dimensional falsification impossibility, Leptons, LFAF, Life, Life sciences, Limitations, Logic, Lower dimensional discontinuity, Macrophysical, Magisteria, Mandelbrot, Manifold, Mass-energy, Materialist, Mathematical models, Mathematical, Mathematics, Mathematicologic, Meaning, Meaningful awareness, Meaningful apprehension, Meaningful information, Meaningful

influence, Meaningful knowledge, Meaningful perturbation, Meaningful reality, Median column geometry, Medicine, Meta-analyses, Metacist, Metaconsciousness, Metadimensional, Metadimensional reality, Meta-information, Metaparadigm, Metareality, Metaspace, Metatime, Meteorology, Metric, Minkowski, Minkowski space, Model, Monism, Monistic, Morphogenetic fields, Movement, Multi-dimensional, Multidimensional scaling, Multidimensional time-space, Muons, Mystical awareness, Mysticism, Mysticospirituotheological, Natural law, Nature, Nature of reality, N-Dimensional manifolds, N-1 dimensions, N-distinctions, Negative entropy, Neppe, Neppe's Vortex N-Dimensional paradigm, Neurological consciousness, Neurophilosophy of consciousness, Neuroscience, Non-Euclidean, Non-locality, NOMA, Nucleons, Nucleus, Numinosity, Object, Objective, Ockham, Ontological, Open, Ordinal, Origin Event, Ovoid, Packets, Panexperientialism, Panprotoexperientialism, Panpsychism, Paradigm, Paradigm shift, Paradoxes, Parallel, Parangular, Parapsychology, Particle, Past, Penrose, Perceptual, Perceptual reality, Pharmacology, Phenomenal consciousness, Philosophy, Physical life, Physical structures, Physicalist, Physics, Physiology, Physiobiopsychological, Pico, Planck, Polife, Popper, Postulate, Precognition, Present, Pribram, Primary consciousness, Primary receptor, Prime essence, Prime radiation substrate, Principle, Protons, Provable, Pseudoskeptics, Psi, Psitrons, Psychology, Psychoneurological, Pythagoras, Pythagorean theorem, Qualit, Quanta, Quantomacroasronomophysicochemicalethicospirituobiphysiopsychofamiliosociocultural Quantum consciousness, Quantum field theory, Quantum Hall effect, Quantum mechanics, Quantum physics, Quantum reality, Quaternion, Qubit, Radian, Radical, Radin, Random Event Generators
Random number generator, RNG, Rare event, Real numbers, Reality, REG, Relative, Relative actualization, Relative dimensionality, Relative tethering, Relativity, Relative Non-Euclidean, Relative non-locality, Relative infinity, Relative zero, Riemann, RNG, Roth, Russel, Russell, S-substrate, Samadhi,
Scalar, Schrödinger, Schroeder, Science, Scientific model, Self, Set theory, Sheep-goat, Shefa, Shefam, Sheldrake, Sieve, Sigma, Sirag, Smythies, Social sciences, Space, Space-time, Speculative critical, Special Relativity, Spinors, Standard paradigm, Staring, State, State specific, Statistical, String theory, Strong forces, Strong anthropic, Subatomic, Subatomicmacrocosmoreality,
Substrate, Subquantum, Subjective, Subject, Subreality, Substrate, Subtypes, T-substrate, Survival, Tegmark, Teleological interpretation, TDVP. Tensor, TES, Tethering, TOE, Theorem, Theorem of dimensionometry, Theorem of extra dimensional extrapolation, Theorem of lower dimensional incompleteness (of discontinuity), Theorem of lower dimensional indeterminate feasibility assessment, Theorem of parallel N-1 dimensions, Theorem of tridimensional distinctions, Theorem of tridimensional warping of reality axiom, Theorem of vortices, Theoretical strengths, Theory, Theory of Everything., Theory of relativity, Thought, Time, Top-down, Topology, Trait, Transdimensional vortices, Triad, Triadic, Triadic Tethered Ordered Origin Unified Relative Subjectivity, Trimath, Tridimensional warping, TTOOURS, Twistors, Tzimzum, Ubiquitous, Ubiquity, Ultimate,

Understanding, Unification, Unified Monism, Variables, Vector, Vedic, Volition, Volition. Life, Vedic, Vortex, Vortical, Warping, Watson, Wave, Weak anthropic, Weak forces, Wheeler, Whiteman, Wilbur, Wisdom

BRIEF GLOSSARY OF KEY TERMS.

KEY GLOSSARY: The following terms are used in special ways in our model, and defined briefly at this point to assist our readers. These terms are discussed in more detail through this book.

3S-1t: Our conventional scientific reality experienced as 3 dimensions of space and one moment in time.

Conceptual: The never complete interpretation of the perceptual combined with the logic inductive and deductive reasoning processes.

Consciousness: A broad, general term describing both infinite conscious meaningful information and finite awareness and responsiveness ranging from the discrete finite physical meaning at inanimate levels and extending to transfinite continuous interactions, and modulated in sentient beings in the brain

Continuous: Spatial, temporal or conscious extension, infinitely divisible, non-discrete, without breaks or gaps.

C-substrate: The conscious ground of all distinct entities, connecting the finite with the transfinite

Dimension: A continuous distinction that can be measured in units of extent. These interact together forming different domains with specific properties.
Euclidean dimensions can be characterized in degrees of freedom.

Distinction: Any finite object, event image or thought that can be distinguished from its surrounds.

Discrete: Finite, discontinuous, countable set of values; not continuous.

Essence: Fundamental infinite nature including infinite space, time, consciousness, information, order and life. Qualities of the infinite incorporate metaspace, metatime, and metaconsciousness, plus extropy and potential life.

Extrapolation: A mathematical term for the logical extension of a known parameter or parameters facilitating the process of moving to higher dimensions.

Extropy: The existence of spatial, temporal or other meaningful multidimensional order and patterns, including, but not limited to, negative entropy: “Negative entropy” is only one component.

Finite: Of limited extent in space, time or consciousness.

Fluctuations: Relative dynamic changes in dimensional perspective. An instance of chance; the rate or magnitude of change. These are within, across and between dimensions, and may be state related (at that moment in time) or trait related (more consistent over time).

Indivension: The process by which conscious individual-units relatively experience transdimensional perceptions through the fluctuating interaction of vortical distinctions. necessary new term in the absence of others. It portrays the fluctuating dimensions and domains in the individual-unit or a combination of individual-units experiencing a common reality.

Individual-unit: Distinct conscious biological unit or group including family, social, cultural and ethnic units.
Infinite: Limitless and unbounded
LFAF: Lower-Dimensional Feasibility, Absent Falsification; the basis for including logically feasible concepts in hypotheses that may not be falsifiable in 3S-1t. This is closely related to feasibility and is applicable at all dimensional levels.
Origin Event: The initial origin in finite reality of events at the beginning, corresponding with the origins of space time and consciousness, and possibly mass and energy.
(Some use terms like Event Horizon and this may be linked with singularity and expanding universe or the Big Bang, but these are controversial concepts, and we are using the term Origin Event non-prejudicially here. [9])
Paradigm:
A model of reality constituting a specific worldview underlying the theories and methodology of a particular scientific subject.
Perceptual: In physics, it is what we obtain from the senses and instruments extending the senses. It is considered as empirical evidence though in reality it is affected by the observer state and their relationship to the whole substrate. It is thought of as objective physical reality with measurable data and interpreted as reality but limited by the axiom of physical limitations. This is easily misunderstood, partial and incomplete element because of its necessary limitations of the senses and instruments measuring it.
Reality: The infinite and finite subrealities making an indivisible holistic unit. In sentient beings, that which is subjective, perceived or experienced; common reality may be verified independently by a majority of conscious observers.
Space: Volumetric extent including the dimensions of height, depth, and width (reflecting three variables of extent with an interval metric) within which physical reality manifests.
Substrate: The ground or source of all distinctions of extent, content and extropy: There is a space substrate, a time substrate and a special kind of substrate of "consciousness (C-substrate).
Tethering: Nonlocal trans-dimensional connection. It has two components: 1.) a fundamental inseparable existence of the parts at the origin, namely space time and "consciousness". 2.) Separation of these parts, namely any aspect of the STC components, when untethered.
Time: Duration of *finite* moments perceived together as past, present and future and an *infinitely* continuous substrate. In finite reality, this encompasses proposed 4^{th}, 5^{th} and 6^{th} dimensions of extent encompassing all lower-dimensional realities and events and necessarily moving through space and consciousness.
Triad: An inseparable trio such as space, time and consciousness
Vortex: A dynamic moving curvilinear manifold multi-dimensional distinction of any open or closed form, including spherical, ovoid, helical or spiral forms
Warping: The distortion of Euclidean dimensional realities by opposing forces.

SECTION A: THE FUNDAMENTAL PERSPECTIVE

CHAPTER 1: *OVERVIEW PERSPECTIVE*

Every day I remind myself that my inner and outer life are based on the labors of other men, living and dead, and that I must exert myself in order to give in the same measure as I have received and am still receiving.
Albert Einstein

Priorities

Reality Begins with Consciousness presents a sweeping new paradigm shift that we know will be greeted by a wide range of reactions. A few will embrace it, many will be stunned by it, and those with vested interest in a materialistic worldview will react with hostility. A new theory incorporating elements that lie outside the scope of the existing scientific paradigm will always meet with resistance. And this is as it should be. All of the major advancements, which Thomas Kuhn [13] called scientific revolutions or paradigm shifts, like those brought about by Copernicus and Kepler, Newton and Leibniz, Einstein and Bohr, challenged long-held assumptions and were met with great resistance. But a new theory should never be rejected out of dogged adherence to belief in *a priori* assumptions. If the new assumptions are correct, or even just more correct than the old, they will eventually win over open-minded scientists and thinkers.

Every scientific theory is based on *a priori* assumptions, and since they are *a priori*, by definition, no matter how correct they appear to be, there is always the chance that they may be wrong. This certainly applies to the tacit assumption of modern science that everything can be explained in terms of matter and energy interacting in time and space as we now understand them, and that consciousness is an epiphenomenon of material complexity. This new paradigm challenges this belief. But we are not just replacing one belief system with another, we present cogent arguments based on empirical evidence

from relativity and quantum mechanics, and we provide new mathematical and logical frameworks to support the new paradigm.

What we are asking you to do, dear reader, is keep an open mind until you have seen the whole picture. It will involve learning a number of new concepts and new terminology. If you will do this, we believe you will see the unfolding of a comprehensive new paradigm that will expand science to encompass aspects of reality heretofore excluded from the scientific search for truth.

In this book, *Reality Begins with Consciousness,* we present to you some remarkable ideas supported scientifically and mathematically. We realize it may be valuable for the reader to, at least, encounter our major points of emphasis now, then to read our overall paradigmatic statement, and then to devour a broader one hundred points about our model and then begin. We only then develop our detailed theme. We believe this will assist more in comprehending our ideas than disclosing these summaries only many chapters later because at any point you can return to these summaries. These initial statements in Chapter 1 at this point can be perceived as abstracts that are non-referenced. But we have endeavored to support every component of this model with appropriate sources spread through the body of this book.

The Ten Point Brief Summary of TDVP

In this book, Reality Begins with Consciousness, we propose a model that appears to be the first comprehensive paradigm that can be explained consistently in science, mathematics and philosophy.

The proposed model in this book is called the Triadic Dimensional-Distinction Vortical Paradigm model (TDVP). In its full descriptive name, it is called The Triadic Dimensional-Distinction Vortical Paradigm (TDVP) — The N-Dimensionometric, CST Substrate, Entropic-extropic, Infinite-finite Mathematicologic, LFAF Model: An integrated space, time and "consciousness" substrate reflecting event-horizon, warping-N-Dimensional extrapolation, extent-content-intent distinctional-C-substrate indivension,

open-closed, holistic-unified, biopsychophysical reality.

TDVP is based on a single metaparadigm: For clarity, we divide this metaparadigm of Triadic Tethered Ordered Origin Unified Relative Subjectivity (abbreviated TTOOURS) into four statements:

> Reality involves a unified wholeness of the continuous infinite with the infinite pervading the discrete finite experience at every dimensional level.
>
> The continuous, infinite reality reflects all of time and space in totality simultaneously (and therefore on a finite level appears nonlocal) and exists as a reality essence (a metareality) involving a pervasive consciousness (information expressed as metaconsciousness) and order (extropy) with potential life —*"polife"*—which then manifests as life in the finite when linked with the correct current physiology.
>
> The discrete, finite, natural-law based, cosmic reality component is fundamentally inseparably tethered from its origin as a triad of space—time— broader descriptive "consciousness" (S, T and C-substrates). This tethering then separates and manifests across, between and within multiple fluctuating dimensions, allowing a merging of individual-unit realities. Whereas individual-units may reflect single humans, they could reflect any individual sentient beings, or groups, or families, or societies or cultures or ethnic groups or any other living population, plus any components of finite S, T or C substrates.
>
> This finite-infinite reality is relative to <u>all</u> dimensional-distinction factors, and experienced subjectively (by individual-units). Experience of the commonly interpreted physical reality such as 3S-1t is profoundly limited by the living limited subjective perception, conception and common reality. In humans, the endpoint expression of such a finite-infinite interface is the brain and it can manifest meaning neurologically in consciousness (N-consciousness). N-consciousness (N-C) can be clear, or in various states of altered or impaired consciousness. There is a technicality here implying that because of the "consciousness" element, at minimum any sentient being is dealing with 3S-1t-1C because there is a dimension of conscious meaning that is fundamentally linked with S and T. And if we describe 1C then it is technically more consistent to describe N-C as there is no restriction in our experience to 1 dimension of consciousness and therefore it is 3S-1t-NC even in our regular human experience.

TDVP applies nine interwoven fundamental components to a proposed "theory of

everything" (TOE):

C-substrate (as an infinite metaconsciousness from metainformation possibly linked with finite quantal "conscits" with meaning translated into reality by neurological consciousness (N-C),

metadimensionality (including space and time, extended dimensions beyond our conventionally perceived 3S-1t plus interactions with the infinite),

infinity (with its mathematical, logical and philosophical implications),

infinite potential for life

with related implications for extropy (order across many dimensions) and going beyond negative entropy) and

inseparable finite tethering of space-time and C-substrate with a finite origin

at the Origin Event (the beginning of existence e.g. around the big bang or other event)

with aspects that are non-tethered and manifest in vortices (3 dimensional moving, fluctuating, curved or rotational content within, across and between dimensions and

with each individual-unit interfacing with other zillions of other vortical individual-units producing a complex web, and a finite origin of all information.

Based on this model not being contradicted, these eight features appear necessary. No other TOE applies more than three of these principles as necessary building blocks. TDVP extends these components to develop an extended explanatory model for all the sciences (physical, life, consciousness and social) from the finite subatomic to the conventional macroreality to the astronomic realities applying quanta or (more correctly) qualits (which include "consciousness elements plus all the subatomic elements in quantum physics) as basic finite discrete reality units, with the interlinking continuum of the infinite.

We apply a new philosophy of science model for evaluating science in addition to falsifiability, namely feasibility, generally expressed scientifically as empirical pieces of a complex jigsaw puzzle in our common physical reality experience of three spatial dimensions in one point of time (3S-1t or technically, 3S-1t-NC). This model is called Lower Dimensional Feasibility, Absent Falsification (LFAF). The TDVP model logically allows for feasible applications in all the sciences and non-contradiction in mathematicologic evaluations. This LFAF technique is combined with the recognized scientific analyses of falsifiability as part of the methodology of literature review, hypotheses, methods, results, analysis, discussions, provisional conclusions (including statistical, clinical significance and observational non-statistically needed analyses) and then amplifying by modifying the hypotheses until a paradigm and ultimately a metaparadigm is developed.

Mathematics and logic are applied to these fundamental principles to further validate the empirical findings and hypotheses.

The TDVP model generates over 600 new ideas, some speculative, that logically follow from its fundamental axiom. These are covered in this book, Reality Begins with Consciousness: A Paradigm Shift that Works, as well as the associated companion book involving more speculations and models, Space, Time and Consciousness: The Tethered Triad.

Amongst these ideas, the TDVP model provides for rare communications across a fluctuating number of dimensions. However, potential information, knowledge and meaning may exist without expression, just as we have available more than we see, hear, taste or smell at any moment, and only a tiny spectrum of these abilities are available for humans. This differentiates what is potentially available from what is used at any point.

The implications of TDVP lead to a new philosophical model which we call "unitary monism".

The One Point Summary of the TDVP Model

This complex metaparadigmatic statement is based on twenty one underlying axioms. We later express each of these axioms individually, but because of their essential unity, necessarily more than one idea may be contained in each axiom.

These fundamental axioms constitute the TDVP metaparadigm of the infinite, the finite and the relation between the two. The metaparadigm is conceptually a unit and may be more easily comprehensible only after appreciating the specifically defined terminology, such as *metaparadigm, metareality, consciousness, potential, tethering, triad, Origin Event, separate, fluctuating, vortices, subjective, relative, individual-units, extropy, 3S-1t, experiential, and subreality.* Please refer to the brief glossary in the front initial appendix: Later on these areas are explained in greater detail and we suggest this metaparadigm be revisited throughout the exploration of this book.
Nevertheless, we provide the metaparadigm now because it will allow the reader to conceptualize more the directions and approaches we are using. We have not yet found an area of reality that cannot be expressed within this global paradigmatic shift. It is therefore a practical "theory of everything", a philosophical model ("unified monism"). But our major intent is to provide and all-encompassing scientifically based paradigm with demonstrable supporting mathematics.

Our metaparadigmatic statement is the overriding higher level basis for the model called the Triadic Dimensional-Distinction Vortical Paradigm (TDVP).

Reality can be expressed within the laws of nature of the physical, psychological, biological and consciousness sciences with mathematical elaborations and involves a unified holistic reality with interweaving infinite and finite subrealities: the infinite is a

continuous essence metareality (i.e., an all encompassing consciousness/information, space and time, with potential order and potential life); this (the infinite) pervades a discrete finite, cosmic subreality manifesting as a fundamentally inseparably tethered triad (originating from the Origin Event) of S, T and C-substrates (space, time and broader descriptive "consciousness") which then separate into multiple interwoven, fluctuating 3-dimensional vortices within, between and across dimensions perceived and conceptualized subjectively (relatively by individual-units) via our responsive 3S-1t experiential entropic physical subreality interpreted by our living physiological extropy. (The metaparadigm of Triadic Tethered Ordered Origin Unified Relative Subjectivity [TTOOURS]).

CHAPTER 2: *THE HUNDRED POINT PERSPECTIVE OF TDVP*

"A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it"
Max Planck

The order of the 100 points below are logical.
We've emboldened 30 ideas to allow further perspectives for first time readers.
This way effectively there is another section: 30 key ideas followed by the other 70. But the 30 are more appropriately ordered by scattering through the 100 total.

The Limitations of our Current Paradigm for Reality

A paradigm refers to a specific worldview underlying the theories and methodology of a particular scientific subject.

Our standard paradigm for reality involves our usual current day-to-day world experience with the physical conventional reality domain of three dimensions of space and one point of time—3S-1t. The standard paradigm has applications for almost all our everyday earthly human realities, and works in almost every instance.

But a new model is needed other than our standard paradigm because there are rare areas in which the standard paradigm is incomplete and, indeed, falsified, for example:

contrary quantum experimental evidence (the double-slit and delayed choice experiments);

the contradictions of the standard model of subatomic physics particularly in the context of relativity and data that varies greatly from predictions;

the nine different six sigma meta-analyses in consciousness research.

the internal inconsistency in physics across quantal, macro- and astronomical levels;

the applications of special and general relativity theory have facilitated new approaches to the previous Newtonian physical understanding of the world but reduced new challenges.

Whether evolution can be applied to the standard paradigm cannot be demonstrated because it is not falsifiable, yet there is debate as to its feasibility: it is unanswered;

The unanswered question of how life comes about.

We argue that this standard paradigm cannot explain why there is complex structure and complex conscious organisms in the universe or a universe at all. This physicalist, materialist paradigm fails. In it, consciousness is nothing more than an emergent or

epiphenomenal feature of the physical world, and disputably neuroscience itself cannot adequately explain consciousness in terms of the physical brain alone.

Because of these failures there is a need for a radical new paradigm of reality which will address the complex controversies that are not explained using our standard model.

A paradigm shift refers to a fundamental change in approach or modification of our current underlying assumptions.

This book describes the authors' motivated "Theory of Everything" (TOE) and their recognition of a global paradigm shift that includes consciousness and interfaces every known area of scientific endeavor.

The Limitations of our Current Paradigm for Reality

Because there are areas with evidence and even proof in science that cannot be replicated, we need to consider adding to this approach in special circumstances.

The special circumstances in which the classical approach of Karl Popper in the Philosophy of Science [14] *requiring falsifiability cannot be applied include evolution, cosmology, new models (for example, Einsteinian General Relativity took some years), dimensions beyond 3S-1t, models of indeterminacy, psi, entanglement and alleged survival after bodily death.*

Because falsifiability is usually limited to only 3S-1t, we propose a new model approach to the philosophy of science. This recognizes that some elements cannot be falsified at this time in 3S-1t., yet there may be ample feasibility evidence in 3S-1t.

We propose the model of LFAF: Lower dimensional feasibility (usually 3S-1t), absent falsification. This is equivalent to using a jigsaw puzzle in 3S-1t and filling in the pieces that fit, but not allowing any contradiction where a piece of that jigsaw does not fit, implying it is falsified or misinformation or contradicted by empirical evidence.

By demonstrating the limitations of Popperian demands for the falsifiability of science in metadimensional realities (i.e., beyond 3S-1t), we apply this LFAF (lower dimensional feasibility—absent falsification /falsified) approach where logically indicated.

Because data at the higher dimensional levels cannot be completely represented in 3S-1t, they present like single puzzle pieces in a whole, multidimensional (i.e., >3S-1t) puzzle. They are only there in part and conclusions may be feasible yet not falsifiable or falsified in the traditional sense as they cannot be directly or completed represented in 3S-1t.

Requirements of a TOE AND Paradigm Shift

To be true, the key components of any TOE must allow feasible modifications from the current conceptual, mathematical and scientific models without contradicting fundamental knowledge (other than materialist reductionism). They must be feasible fitting pieces of the 3S-1t jigsaw puzzle without being falsified.

Any all-encompassing TOE must conform to all known laws of nature. Such a TOE must also seamlessly reconcile with the major theoretical models and authoritative sources of all the natural sciences.

a. Scientific areas that must be actively evaluated include not only the

physical sciences including physics, chemistry, meteorology, and astronomy;
the biological sciences including anatomy, biology, genetics, physiology, pharmacology, the life sciences and medicine;
the social sciences, including anthropology, psychology and sociology; and
the consciousness sciences including dimensional biopsychophysics, phenomenology, parapsychology and quantum consciousness.

b. *A complete TOE should also be specifically compatible with the three major disciplines examining concepts outside our 3S-1t conventional reality: Hyperspace, Consciousness research and Philosophy, except those concepts that can be falsified by new logic and/or evidence.*
c. *Moreover, we posit that such a TOE should be compatible at all levels of cosmology, from the tiniest subatomic packets to the macrophysical usual realities to the astrophysical.*
d. *The TOE should also be compatible with the known forces including all categories of energies.*
e. *We posit that a TOE should be able to explain events in all of time. This includes evolution.*
f. *A TOE must not only be empirically appropriate, but explainable within the confines of Philosophy including mysticism and spirituality.*
g. *A TOE should preferably have a demonstrable solid logical and mathematical base.*
h. *We regard the principles of LFAF and falsifiability as key to motivating any scientific models including TOEs.*
i. ***Our premise is that the laws of nature should be universally applicable to to all finite cosmic reality.*** *This includes scientific endeavors. We do not have data on infinite subreality. And the data that is expressed is discrete and finite.*
j. *We posit that a TOE should not imply anything supernatural or miraculous. What may be perceived as anomalous in 3S-1t may not be anomalous in other higher dimensions.*

TDVP as a New Paradigm

k. *We present our multidisciplinary Triadic Dimensional-Distinction Vortical Paradigm (TDVP) model. TDVP can be applied without contradiction to all those disciplines (physical, biological, social and consciousness sciences) under an all-encompassing TOE, and allows these disciplines to manifest consistent elements of the same unified world-view.*
l. *TDVP demonstrates the essential and maintained holistic-unified triadic nature of space, time and "a broader consciousness" (STC). This biopsychophysical reality applies to everything from the subatomic to the astrophysical.*
m. ***TDVP reflects origins true from the very beginning of the cosmos and involves tethering of STC and therefore also dimensional independence of STC as there are areas of Space, time, and consciousness that theoretically function separately (although the tethered component of the independent S, T or C is still is involved***

with linking information across STC)

n. *TDVP is controversial because of its implications. Nevertheless, the mathematics and the empirical data strongly support the necessity for this fundamental paradigm.*
o. *The TDVP model may appear presumptive given the failed attempts of the past century to achieve a TOE, but TDVP applies five key, fundamental differences:*

1. *"consciousness" in its broadest meaning: an obvious, but previously mainly ignored, phenomenon;*
2. *finite discrete multiple dimensions: linked with this "broader consciousness"*
3. *broader continuous infinity: this application is added to consciousness and dimensions;*
4. *order: the awareness of certain situation tending towards order as well as others towards disorder is critical to support the TDVP paradigm;*
5. *closely related to Order (which we call "extropy") is "life".*

6. *No other TOE has applied all these elements.*

A sixth unique and apparently necessary need is fundamental tethering of Space-time and C-substrate: This implies, too, areas of (at least theoretical) independent separation of content (possibly interfacing vortices) and process (involving various levels of identity "individual-units" [of individuals, groups, families, societies, cultures, ethnicities and any other subgroups] that intersect and interface creating billions of complex vortices across dimensions.

The TDVP model incorporates the mathematical proofs and empirical data supporting the relativity of several important areas, namely:

Relative dimensionality
Relative zero
Relative infinity
Relative vortices ("fluctuating indivension")
Relative non-locality
Relative distinctions.
Relative warping of reality.

Essentially, all these features may be necessary to ensure a compatible all-encompassing paradigm No previous TOE has applied all these elements.

By integrating "consciousness" into space-time, we are able to construct a TOE that utilizes and can be applied to every major scientific, philosophical and consciousness discipline, namely the Triadic Dimensional Distinction Vortical Paradigm (TDVP).

TDVP reflects an entropic-extropic, N-Dimensionometric CST substrate ("consciousness"-space-time) model supported by mathematical formulae, dimensional-distinction logic, and empirical physical, consciousness, psychological and life-sciences data, with the finite pervaded by the infinite.

TDVP impacts on every major scientific philosophical and consciousness discipline. It is a comprehensive multi-dimensional paradigm integrating physical and life sciences with consciousness, applying ontological, epistemological, empirical, heuristic laws of nature.

Essentially space, time and "consciousness" are fundamentally tethered inseparably from the event-horizon (e.g., the first appearance of matter at the end of the rapid expansion period of the big bang).

The fundamental and permanent tethering likely implies a unification of what, in our conventional reality of 3S-1t, we experience as past, present and future. This means that our concept of time is relative.

This also implies that there may be something outside of time as we experience it in 3S-1t. that concept could reflect continuous infinite realities or discrete multidimensional time in the finite or both.

With the tethering of a fundamental "consciousness" to space and time, the likelihood of a requisite order to reality becomes a theoretical possibility and there is empirical data (e.g. life and its origins) to support that.

This means that there may be another system besides the closed finite concept of physical "disorder" that we call "entropy". This is more than "negative entropy as it is multidimensional. We call this active system "extropy".

Key Terminology in TDVP

The term "consciousness": *"Consciousness" has been misunderstood, misinterpreted and variably used in different disciplines. It is narrower than "C-substrate" as that has several unifying elements. C-substrate refers to the broadest consciousness. There are several components to consciousness which we differentiate namely*

Neurological Consciousness *relating to brain functioning (N-consciousness or N-C implying neurological consciousness or C-substrate) as the final common endpoint and integrator of all awareness and responsiveness in sentient beings: N-C is exemplified by brain function and perceives, filters, integrates and responds to all the major incoming information in the brain—autonomic, automatic, physiological and psychological as well as any postulated external subreality. N-C ranges from coma to at least minimal awareness and/ or responsiveness to the clear distinction of self from everything else, in living organisms.*

Psychological Consciousness or ego-consciousnes*s (E-consciousness: E-C) including all psychosocial mechanisms such as conditioning and psychodynamics. Subgroups include preconscious-, subconscious-, unconscious-, collective- E-consciousness.*

Consciousness sciences: C-consciousness (C-C) *referring to any kind of subjective experience, afferent or efferent. Includes Psi and exceptional human experiences.*

Quantum consciousness: *Physics and consciousness or Quantum Consciousness, Q-consciousness (Q-C)*

Philosophical consciousness*: This is M-consciousness, abbreviated for mind consciousness (M-C)*

Paradigmatic sciences: *This is P-consciousness (P-C) This broader consciousness*

includes meaningful information and unifies all other areas of consciousness:
the consciousness sciences particularly in our TDVP discussion;
the biological and life sciences including neurological anatomicophysiologicopathological elements,
the psychological sciences across the systems spectrum of individual psychological, family, group and social, cultural, anthropological and ethnic, and mysticospirituotheological components; and the
physical sciences including all the laws governing the subatomic, macrophysical and cosmo- or astrophysical.
The altered states of consciousness e.g. 10 different kinds.
Infinite (I-consciousness) and finite consciousness (F-consciousness) may be artificial divisions.

C-substrate: C-substrate refers to the broadest possible interpretation of "consciousness", and is closely linked with P-consciousness as this integrates the sciences and philosophy. C-substrate also recognizes the finite (F-C) and the infinite (I-C) *summarized as follows:*

- *Metaconsciousness (or I-C for Infinite Consciousness) implying extended infinite consciousness. Some have used terms such as "collective consciousness", "the unconscious" (not in the Freudian but extended sense), "information repository". These may be similar, but are not identical because they are often described within the finite sentient being context. Whereas finite "conscits" of metaconsciousness may be perceived or conceived of by humans or other sentient beings after being expressed, filtered and likely distorted or amplified, through the nervous system, metaconsciousness is fundamentally an infinite concept reflecting an infinite essence repository. It is almost certain that other life-forms besides humans could tap into it, in which case metaconscious finite expression may be different. Metaconsciousness refers to an infinite continuous repository of infinite meaning extent derived from a infinite repository of information content (metainformation). In a broader sense, metaconsciousness can be expressed as discrete meaning that can occur, theoretically, at any dimensional level. At higher dimensions it may express itself with qualities such as honesty, love, hate, modesty, satisfaction, wisdom, understanding. It may also express itself across individual-units, reflecting metaconsciousness at levels such as the individual, group, family, society, culture or, ethnic identity.*
- *Meaning (or F-C for discrete Finite Consciousness of the C-substrate) involves both apprehension and influence implying at minimum very basic meaning at the most primitive level of reality even in subatomic particles or quanta or subquantally, all the way through to the macrophysical and then cosmological astrophysical level. This involves both the inanimate and the animate. At the animate level, this meaning may be so complex, it closely resembles all the information plus meaning acquired through the metaconscious, but at 3S-1t or 3S-1t-1C levels, it ultimately requires*

neurological expression and may be modified by the nervous system of the sentient being.

Therefore, C-substrate means the broadest possible interpretation of "consciousness" but in sentient beings F-C and I-C is expressed within N-C and admixed with N-C, E-C and C-C. It is also postulated to include Q-C which exists in any kind of finite subreality. M-C is conceptually different as it reflects philosophical interpretations so may not be incorporated, per se, into C-substrate.

The special use of "Vortices": *A major mechanism facilitating radical changes to the perception of the nature of reality is the predominant structural form of nature, namely 3-D vortical movement.*

The term vortex is used broadly implying symmetrical or asymmetrical movement involving ovoid, circular, spherical, arc, helical, elongated or twisting shapes.

Vortices interact and impact across and within dimensions and domains.

Vortices are naturally occurring, and demonstrably fundamentally ubiquitous across many areas of empirical scientific endeavor, and are now mathematically demonstrable across dimensions.

Vortices can be applied as one model to explain any field theory. Therefore, any field theory model explanation can be used for vortices. Vortices are empirically derived from nature, and mathematically justified by extension of Fermat's Last Theorem, Pythagorean interaction, and extending a modeling of General Relativity with warping beyond four dimensions.

Vortices link with other vortices or with scalars, vectors or tensors, allowing transfer of space, time and consciousness information across dimensions. Billions of interactions of variably shaped ovoid or curved movements (vortices in their broadest meaning) reflect reality experience at both 3S-1t and other domains in an N-D universe.

Vortices impact, impinge, repel, permeate and intrude through and within N-Ds. This makes for societies, cultures, ethnicities, families, groups, individuals and subatomic through cosmological stuctures.

Effectively, the vortical interfaces allow for C-M to transfer across all dimensional and systems levels, and it also allows for a vast quantity of potential untapped vortical data to be utlized as and when necessary.

The role of Distinctions:

Distinctions are used in the context of Close's Calculus of Distinctions which derive from Brown's Laws of form.

Distinctions differentiate two qualities via consciousness or form.

Unlike set theory which examines linear binary similarities, distinctions examine differences across many dimenstions—they can utlize a multidimensional approach.

To qualify as a dimension, we apply Close's Calculus of Distinctions.

Dimensions necessarily involve variables of extent (such as depth or linear

time or one kind of consciousness) not of content (such as mass or energy which can be characterized by their density, defined as amount of content per volumetric unit of extent).

Distinctions differentiate the perceptual, conceptual and experiential.

The concept of Dimensions:

Dimensionality is the study of different dimensions (measurable using variables of extent) including the metadimensional (going beyond 3S-1t).

Separation of dimensions are artificial as they interact together forming different domains with specific properties.

Dimensions involve combinations of any of the three fundamental substrates of S (space), T (time) and C (broader consciousness).

Euclidean dimensions can be measured using finite numerical units and are characterized in terms of degrees of freedom.

The term "triadic": Triadic refers to the fundamental components of space, time and C-substrate being inseparably tethered together. It does not mean that there are only three Dimensions but the application of triadic perspectives allows conceptual jumps of triadic kind: For example, vortices are three dimensional; there are three aspects of reality (perceptual, conceptual and common experiential); and the possibility of three dimensions of time with consciousness is relevant. This basic triadic nature of reality appears to be reflected often in logic, mathematics, linguistics, and philosophy.

Metrics: Dimensions can be measured metrically. In space and time such measures use fixed differences such as interval-ratio elements; in consciousness, measures are ordinal, applying comparisons (e.g. nil, mild, moderate, severed). The mathematical representation beyond 3S-1t often goes beyond simple Euclidean geometry, and we have called this "dimensionometry". However, the non-Euclidean dimension, n, can generally be closely represented by the Euclidean approximations (sometimes in n-1).

Metadimensionality: In TDVP, we regard the presence of metadimensionality (>5 dimensions) as strongly supported by logic, mathematics, dimensional extrapolation, and empirical evidence. Metadimensionality is required because our current 3S-1t is insufficient even with 3S-1t-1C. Indeed, C-substrate is particularly complex dimensionally with a large number of finite dimensions likely**.**

Individual-Unit: We introduce the (concept of the) "individual-unit" reflecting interactions at individual, family, social, cultural and any other systems impacting the broader ethicospirituobiopsychofamiliosociocultural approach. Individual-units may reflect single humans, they could reflect any individual sentient beings, or groups, or families, or societies or cultures or ethnic groups or any other living population, plus any components of finite S, T or C substrates.

Indivension, a necessary new term in the absence of other term expressing the concept.

Indivension portrays the fluctuating dimensions and domains in the individual-unit or a combination of individual-units experiencing a common reality—a quantomacroasronomophysicochemical-

ethicospirituobiophysiopsychofamiliosociocultural systems translation of common or individual experience at higher dimensional levels.

Indivension allows for transitory or fluctuating experiential realities and emphasizes that individual-units may not be experiencing static numbers of dimensions or domains but they are circumstance dependent. Whereas indivension is the "process", the "content" by which indivension works is through Transdimensional Vortices.

Indivension allows for a merging of individual-unit realities. Effectively, this allows for and produces common experiences, knowledge, information and interactions across various systems units (individual, group, social, cultural, ethnic, spiritual or any other identity)

The fluctuations are within, across and between dimensions, and may be state related (at that moment in time) or trait related (more consistent over time).

The interfacing meeting points may be vortical, vectoral, scalar or tensor and allow for information retrieval, apprehension, awareness, perturbation or influence.

Indivension provides for rare communications across a fluctuating number of dimensions.

However, potential information, knowledge and meaning may exist without expression, just as we have available more than we see, hear, taste or smell at any moment, and only a tiny spectrum of these abilities are available for humans. This differentiates what is potentially available from what is used at any point.

Tethering: "Tethered" *in the TDVP has two components:*

1. *a fundamental inseparable existence of the parts at the origin, namely space time and "consciousness".*
2. *relative perceptual separation of these parts,* namely any aspect of the STC components, that are not perceived as tethered in 3S-1t-1c.

In TDVP, "tethered" refers to an inseparable linkage of the parts—space, time and C-substrates—at some or multiple points. Useful metaphors would be the umbilicus linking the fetus to the mother yet the fetus being independent too; the ship being moored and the moorage being the tethered part; staples holding down a series of papers; the roots of the STC tree being common but the branches being separate; the balloons being held in hand by strings but potentially interfacing with each other.

This tethering leads also to very fluid vortical three dimensional separations of the various levels of individual-units by indivension, whereby interfacing and interacting, and movement across, between and within dimensions occur. Tethering is fundamental and inseparable occurring from the event-horizon (e.g., the big bang). This allows for the unified wholeness of cosmic reality. (Axiom of Origin; also called Axiom of Original Tethering or the Axiom of Tethered Origin [ATO] as part of the broader *TTOOURS in the (Metaparadigm of Triadic Tethered Ordered Origin Unified Relative Subjectivity.*

Reality is unified with infinite and finite subrealities. It is convenient to use the term *"essence"* for the components of the infinite relating to time that is enduring and ever present (i.e., past-present-future exist simultaneously as proposed in three dimensional

time), space that is all pervasive, C-matrix which encompasses the continuous metaconscious extent and metainformation intent, extropy and potential life. This essence pervades the discrete finite directly and at every dimensional level including 3S-1t (or more correctly as consciousness is always present, 3S-1t-1C or NC).

Applications, Uses and Understanding TDVP

Amongst the important mathematical demonstrations are new applications of:

- ***the Pythagorean theorem, showing that the three dimensional Euclidean substrate is common to space, time and consciousness;***
- ***All dimensionometric representations (not only Pythagorean) e.g., radians, can be used to show the same three dimensional limitation;***
- ***Fermat's last theorem, demonstrating the fundamental asymmetries in metadimensionality and the ubiquity of the vortex;***
- ***Gödel's incompleteness theorem, applied to finite complete arithmetical functions and therefore TOEs, which necessarily reflect Theories of Everything, would require infinity to go beyond the finite completeness (of peano arithmetic).***
- ***Bell's theorem and inequality being refuted demonstrating the Copenhagen interpretation of physics or equivalents;***
- ***later Leggett's inequalities showed the same findings;***
- ***the application of real, imaginary and complex numbers in metadimensional reality arguing for real numbers in space, Minkowski space time dimensions of imaginary numbers and C-substrate dimensions involving complex numbers which therefore can interface with S and T substrates;***
- ***the use of quaternions as potentially representing dimensions of the conscious substrate.***
- ***both Euclidean and non-Euclidean mathematics demonstrating the relative perceptual reality of curved non-Euclidean space;***
- ***extradimensionality going beyond Minkowski space and Cantor's set theory;***
- ***applying Close's calculus of distinctions, particularly with regard to the C-substrate (the broadest consciousness) as well as distinctions of extent, content and intent, plus interval and ordinal metric measures.***
- ***the calculus of distinctions involves a modification of classical Newtonian and Leibniz motion of motion calculus to a calculus of conscious forms and indications;***

- ***a potential use of Multidimensional Scaling applying Mean and Median Column Geometry can be applied to represent multiple higher dimensions into two dimensional graphs e.g. as with the Neppe déjà vu work.***
  The mathematics supports the feasibility of a number of the hypotheses in the TDVP model.

The TDVP model includes 21 fundamental axioms which create a unified metaparadigm based on the infinite, the finite and the relation between the two.

There are finite axioms of unification, triadic inseparability, CST tethering, discrete quantal expression, vortical ubiquity, nervous system endpoint and subjectivity.

The infinite axioms are axiom of infinite origin, of holism in space-time infinity, of living infinite reality, of extropic reality, of metaconscious infinity, of information, of pervasive, and essential infinity,

Linked finite-infinite axioms are of communicating relative infinity, fluctuating dimensional distinctions, continuous infinity linked with discrete finity, of artificiality, of boundaries, of metaconscious dimensional distinctions, and of relativity.

These axioms can be divided for clarity into four sentences creating a metaparadigm.

Reality involves a unified wholeness of the infinite and finite with the infinite pervading the finite experience.

The cosmic infinite reality component involves order (extropy), is in finite terms nonlocal (beyond space and time) but in infinite terms metareality of all existing metatime and metaspace, exists as a pervasive metaconsciousness and potential living, ordered subreality

The Finite reality component is fundamentally inseparably tethered from its origin as a triad of space—time— broader descriptive "consciousness" (S, T and C-substrates), which manifests across, between and within multiple fluctuating dimensions.

This finite-infinite reality is relative to all dimensional-distinction factors, and experienced subjectively (by individual-units)
(Metaparadigm of Triadic Tethered Ordered Origin Unified Relative Subjectivity [TTOOURS]).

28 other axiomatic impolications exist summarized by:

STC dimensions and domains,

- ***relative zero and relative infinity,***
- ***potential life and physical life,***
- ***interfacing extent and content,***
- ***distinction existence, distinctions,***
- ***permeability, protection, communication ease,***

- ***communication complexity***
- ***top down communication***
- ***metaconscious qaualities***
- ***metaconscious state and trait***
- ***individual units***
- ***physical reduction valves***
- ***positive and negative C-substrate dimesionality***
- ***three dimensional manifestation***
- ***forces and dimensional increase***
- ***holistic continuity and corrolary to axiom of origin***
- ***mathematical dimensional reality***
- ***fundamental three dimensional Euclidean space***
- ***fumdamental multidimenional time mathematically***
- ***consciousness (infinite metaconsciousness; finite meaning and transcendence; through N-C).***

In dimensionality, we apply the theorems of:

- *extra-dimensional extrapolation*
- *lower dimensional discontinuity (incompleteness) / N-Dimensional manifolds*
- *parallel N-1 realities and further N-D realities.*
- *Tridimensional warping of reality*

The TDVP model theoretically provides explanations for:

In biology, the feasibility of "extropy". The concept of extropy is simplistically a negative entropy but broader than that reflected in a finite multidimensional order.

In the life sciences, the potential for life arises around the big bang event horizon (see Definition section) in the C-substrate. Physical life becomes actualized into reality when the correct genetic and anatomicophysiological markers evolve to sustain such existence.

In the psychological sciences, the model provides a dimensional and vortical perspective for the "unconscious", dreams, altered states, and any level of group interactions.

Additonally, other subsidiary axioms exist:
unified, holistic simultaneous existence
CST unification and ubiquity,
extended physics of tridimensional warping of reality, and
rare event modeling and
"entanglement", as well as
the unification of the inverse square forces from the subatomic to the macrophysical to the astrophysical and has postulated components (namely qubits, chronits and conscits (including psitrons, kinetrons?) as part of the qualits (quantal discreteness of space, time, and consciousness).

We apply various theoretical ideas of:

Physicists such as Einstein, Planck, Bohr, Schrödinger, Aspect, Heisenberg, Wheeler,

Cantor, and Penrose.

Mathematicians such as Cantor, Gödel, Close, Pythagoras, Hamilton, Euclid, Fermat, Doctorow

In our lengthier documentation we include, too, Bohr, Bohm, Hilbert, Pico, Sirag, Bell, Leggett

We discuss relevant theories like Atomic Vortex, Conventional Quantum Physics, EPR, Copenhagen Interpretation, Holographic, Mass-energy and Morphogenetic Fields, Rare-event theory, String theory, and Tensor and distinction calculus.

Concepts Addressed by TDVP

Various principles and lemmas exist:

ubiquitous vortical shape

dimensional falsification impossibility

lower diemsional indeterminate feasibility assesment

open extropic systems likely involving he infinte

Pathagorean theorem extension to 3D and beyond

Metadimensionality requiring real numbers, imaginary and complex numbers

Pervasive multilevel tridemensional distinctions

Postulate of 3 fold quark combinations

Dimensiomentric waping of forces acting at a distance

Non-Euclidean dimensional representation approximated through Euclidean substrates (space, time, C-substrate)

Principle of Non-Euclidean space-time 4D continua are actual, not only perceptual and conceptual

Corollary of Pythagoras's theorem being only true for Euclidean spaces

Postulate of Indivension Tethering

The Postulate of TOEs requiring infinite reality

Rare Event Theory Postulate

Postulate that Rare Events Are Linked to Interfacing Vortices, Vectors, Scalars and Tensors

Postulate of at least 9 dimensions

Postulate of dimensional representation is based on the fundamental forces of nature

Corollary of Dimensional Warping

Corollary of double warping distortions

Corollary of Euclidean / Non-Euclidean perceptual experience

Postulate of Non-Euclidean spaces or domains are conceptual and not actual

Postulate of transfinite dimensions

Postulate of perceived different dimensionalities

Postulate of worlds with additional dimensions

Postulate of C-substrate warping additional dimensions

Corollary of Postulate of C-substrate warping higher dimensions

Postulate of initial symmetry then asymmetry

Postulate of distinction singularity
Postulate of the first distinctions
Postulate of infinite qualits in 3S-1t.
The Principle of Infinite Coexistence.
Principle of different experience
Postulate of perceptual consciousness and warping
Our model addresses core questions including:

- *the nature of reality and existence,*
- *the link of human consciousness to reality,*
- *why consciousness does not arise solely from the complexity of brain dynamics,*
- *the relevance of physical structures, meaning, extropy, entropy, manifestations in the organizing activities of "consciousness", neurological brain limitations*
- *the links of consciousness with and without physical realities.*

TDVP demonstrates how a single unified, monistic type, paradigm can encompass the findings of current knowledge by applying TDVP as a viable, radical, profound, new paradigmatic shift.

Our model incorporates some key features. It logically suggests some hypotheses that may or may not be true, or which have not yet been tested.

The key elements of TDVP relate to STC tethering, dimensional extrapolation, metadimensionality, distinctions, and vortices.

The next suggestive level reflected in our subtitle suggests
the possibilities of N-Dimensionality, as well as
extropy (as opposed to just the entropic tendency) suggesting and order in living organisms
applications of mathematics and logic to the model
the fundamental triadic role of CST ("consciousness", space and time)

At the next level of speculation, we tentatively suggest models of how to extrapolate dimensions, the roles of infinity within this metadimensional concept, and how reality can be unified by applying dimensionality and infinity.

Whereas we attempt to apply mathematical and physical data, and to utilize theorems, while supporting the feasibility of the broader model, it does not prove that exact model. This is why we have separated the primary aspects of our hypothesis from secondary elements.

We have used a paradigmatic shift and the major jump in ideas that flow from it might ultimately take several hundred scientific papers to evaluate parts of this data, but these will still be sources for debate.

Importantly, the refutation of any single concept does not refute the model, only that single concept. Even refutation becomes a building block to re-assess the status, a mid-course correction, and part of the heuristic structure of a related or modified model.

Dimensionality, fields, consciousness, and the fundamental forces of the universe link directly into the Principle of Dimensional Extrapolation, the Theorem of Asymmetry, and the Triadic and Holistic Nature of Reality.

The interval metric derived in dimensions is particularly valid in the space and time substrates and fundamentally with the ordinal distinctions of the C-Substrate. All three of these substrates are closely related to each other and to the proof of the chain of mathematical theorems and demonstrations that support the STC paradigm shift.

One way in which dimensions are conceptualized is the application of Close's calculus of distinctions. Dimensions necessarily require variables of extent.

Dimensions can be measured metrically ordinally in time and space, and ordinally in C-substrate applying extent variables.

TDVP impacts several speculative critical and fundamental ideas: Three dimensions of time, N-Dimensions of consciousness, cause-effect, cognition-affect-volition, ego-boundaries, free will, hyperspace, meaningful information, knowledge and awareness, understanding, wisdom and thought and their influence across and interactions with subtypes of affect and volition. life, mystical awareness, special higher qualities such as love, and causality. "Metaconsciousness", subject-object paradoxes, multidimensional time-space and numinosity, are all introduced. Relative non-locality, relative zero, relative time, relative infinity and even relative non- Euclidean mathematical dimensionometry facilitate the interface with our current physical universe. An ultimate end-point is the infinite interacting with the finite even prior to the Origin Event with a primary receptor. We show how warping of dimensions occurs, producing an open-closed, holistic-unified, finite-infinite universally applicable biopsychophysical reality. Ultimately, at minimum there is a 3S-3T-3C reality (*implying 3 dimensions each of space, time and C-substrate)*** **but there may be more dimensions and almost certainly it is 3S-3T-NC** *(implying N dimensions of C-substrate [broader consciousness])*

From a metaparadigm of the fundamental tethering of space, time and C-substrates from the Origin Event, TDVP generates about 600 different ideas. *TDVP generates approaching six hundred concepts, practical applications and implications. This includes about, twenty one fundamental axioms, and more than thirty more, fifty theorems, postulates and principles and over sixty conceptual definitions, This also includes some speculative hypotheses. Because of its general feasibility, practical applications, and supporting empirical evidence, all of TDVP cannot be refuted by refutation of any specific axiom or theorem, postulate or idea.*

. We briefly address philosophy and mysticism though we prefer to concentrate on scientific and mathematical detail and concepts. Nevertheless, the theoretical strengths and limitations of the models of Collins, Roth, Russel and Schroeder versus Dawkins and Dennett, although examined carefully, are not addressed in these books, per se.

Because the TDVP model is versatile, involving a process of fluctuating dimensions with indivensions, and a content mechanism with vortices, specific hypotheses or tests that have been proposed to support several other TOEs will not refute the TDVP model but provide added supporting feasibility data. *This great flexibility involving process-content across dimensions allows for the applicability of the model across numerous different disciplines and across many concepts.*

The specific content components of other current postulated "theories of everything"

models are not contradicted by the TDVP paradigm. These include the TOEs of Klein and Boyd, Laszlo, Evert and Sheldrake, Carr and Smythies in regard to mechanism of communicating consciousness. TDVP is also compatible dimensionally with certain physicalistic, non-consciousness hyperspace paradigms including String Theory and that of Hawking,

TDVP fits into these TOEs because of the ubiquity of the vortical and indivension structures being able to be applied to many different dimensional or consciousness substrates such as a proposed subquantum reality, akashic fields, to emptiness and ether, morphogenetic fields or any other kind of communication or interpersonal field. TDVP also encompasses and extends beyond the mathematics of string theory and other TOEs involving mathematical physics because of the use of Close's calculus of distinctions which is logically prior to conventional mathematical tools. Therefore, any postulated models to demonstrate these models also can be used to show that TDVP is feasible but may still remain compatible with the specific TOE on which the proposed hypothesis test is based.

On the other hand, a specific refutation of one of these TOEs based on detail (e.g., that subquantum fields are unfeasible, or that formative causation does not work) does not refute TDVP because of the versatility of being a higher level model on which these models would then become dependent but not vice versa.

The speculative but important idea of all fundamental forces warping reality as a mechanism to extrapolate dimensions, following on an Einsteinian general relativity modification is raised.

Even more so, the greater speculation of C-substrate particularly metadimensionality reflecting extra dimensions based on metaconsciousness forces is posited.

How TDVP Differs from All Other TOEs

One basis of our models is taking into account how other models fit in and can improve our model ultimately. This is why we compare, so we can make our model better or see its limitations. ***When the essential characteristics of TDVP and all relevant comparable TOEs are listed, there is no current TOE which fits all these criteria other than TDVP. This includes***

"consciousness". This is not unique for a TOE. Models such as those of Klein, Evert, Laszlo, Smythies and Carr recognize the pre-eminence of consciousness, however, they do not incorporate consciousness the way we do.

In TDVP, Consciousness has several unified components and so deliberately called "C-substrate" to ensure this concept is understood as the conceptualization may be unique.

C-substrate at the neurological level (N-C) has several components: It can be expressed in CEV: Cognition, Emotion, Volition.

Paradigmatically, it can be expressed as possible metaconsciousness component qualities such as love, honor, courage, wisdom, understanding. These are all distinctions of extent implying separate dimensions but also can be applied in the content context.

An N-Dimensional base. Such a base includes hyperspace e.g., Sirag's model and various string theories including M-theory and Hawking's model. (This requirement eliminates those models that are still based on the 3S-1t standard physical paradigmatic model which explains most daily experience but does not explain the contradictory data).

The unification of STC substrates. The only other TOE amongst the current ones is that of Laszlo. But this is not necessarily an inseparable whole.

The initial elements from the Origin Event or equivalent. This is comprehensible mystically e.g., Kabbalah and possibly Vedic philosophy and also with Laszlo, Lanza and Watson.

The unification of past, present and future. This is comprehensible mystically e.g., Kabbalah and also with Laszlo.

The integration of biology including extropy and life. The interpretation of how life actually begins is a unique part of the model and involves an explanation for life. A similar concept is implied in Watson's enformy.

Conceptual linguistic elements with order are used in Langan, and Watson et al, as well our TDVP model.

Multidimensional time which several have proposed but not integrated e.g., (alphabetically) Broad, Carr, Close, Dunne, possibly Hawking, Neppe and Whiteman. In this comparison of other TOEs with our TDVP model we are including previous models by the authors (Neppe and Close).

The concepts of pervasive processes is frequent in the TOE model. This includes not only TDVP with vortical indivension, but Sheldrake's morphogenetic fields, Carr's TFT, Laszlo's akashic fields, and also seen in String theory, Hawking, Langan, Watson and Smythies.

The only model that recognizes movement across fluctuating dimensions is TDVP.

The tethering and vortical separations allowing communications between, across and within dimensions is unique to TDVP.

Indivension relating to individual-units and communication both at a state and trait level. This integrates the social sciences and allows for a fluctuating number of dimensions. This is unique to TDVP.

The role of the infinite, and its interaction with the finite, which very few paradigms incorporate. Kabbalic and Vedic mysticism recognizes this.

The Space Substrate is at least three dimensional and represented mathematically as real numbers. The Time Substrate is posited as multidimensional and applies the imaginary numbers (as per Minkowski space). Because C-substrate is tethered with time and space, the interface is likely to be represented mathematically as complex numbers (the sum of real and imaginary numbers).

We tabulate and compare the major similar models namely those of Carr, Gould, Hoffman, Kabballic mysticism, Laszlo, Lanza, Langan, Evert, Hawking, Klein and Boyd, Sheldrake, Sirag, Smythies, String theorists,Vedic tradition, Watson, Wilber, and previous models by Neppe and Close. We also comment on De La Sierra and Leibniz.

Qualitative comparisons of TOEs: TDVP was directly compared with 19 other TOEs which involve consciousness, dimensions, order or infinity.

Scoring: 34 characteristics were carefully chosen based on relevance and different broad screening parameters. The first 21 were more universal, general characteristics; the remaining 13 developed from feedback on our TDVP model and have either specific relevance to TDVP or further requirements for other special criteria.

Results: TDVP as expected scores a maximum. In fact, at this point, the only TOE it competes against is making itself better. However, it is somewhat tautological because the criteria we have deemed important may not be the criteria that others deem important. Nevertheless, the criteria derivation were sent to the developers (or with Kabbalah and Vedic mysticism, the representatives) of all available authors (15/21). Remarkably TDVP scores a full (21+13) or 34/34. This would be required for a real TOE because it cannot afford exceptions. The older models on which some TDVP concepts were based easily come in second and third scoring highly at Neppe's Vortex N-Dimensionalism (17+8) or 25/34, and Close's Transcendental Physics (17+4) or 21/34. However, both of these model leave out key features making the combination TDVP profoundly more powerful. The long-enduring mystical Kabbalic (15+3) or 18/34 scores next (Vedic Mysticism 13/34 could score higher but needs esoteric clarifications). Several remarkable TOEs follow which contain outstanding original ideas namely Sheldrake's Morphogenetic Fields (12+4) or 16/34, Watson's TES (12+3) or 15/34, Lanza's Biocentrism (11+2) or 13/34, Langan (11+2) or 13/34, Klein and Boyd (9+3) or 12/34 and Smythies Material Dualism (11+0) or 11/34. Not far behind and also exciting models are those of Carr, Hoffman, Laszlo and Wilbur and 10/34 and those of Laszlo and Sirag (9/24) have great qualities. ***These results strongly motivate for the powerful breadth of TDVP as a TOE and a paradigm shift.***

These qualitative results are even more dramatic when looked at quantitatively.

There are fifty different mathematical theorems in TDVP, yet this is the only TOE that utilizes any (other than Carr with theorems en passant.).

There are some fifty new definitions and concepts and yet this was not even qualitatively measured. Other TOEs have, at most, a few new concepts.

TDVP is unique in the context of tethering and yet allowing independence of S, T and C substrates.

TDVP is unique in the context of fluctuating dimensions.

TDVP involves infinity not only as beyond dimensions but as an intimate integrating component of every dimension.

TDVP incorporates unique new mathematical and dimensionometric concepts and tools.

TDVP allows for appreciation of a new philosophical model called "unified monism".

Our Current Perception of TDVP

TDVP may be the first feasible paradigmatic unification of philosophy, science, and consciousness. TDVP is a universally applicable paradigm that should deepen our understanding of reality allowing science to enter a new world of expanded possibilities

demonstrating the ubiquitousness of a "consciousness" inclusive paradigm across all major scientific disciplines.

We perceive TDVP as a critically important beginning evoking further research and demonstrating a viable mathematical and scientific theoretical framework with demonstrated feasibility through application to various fields of science, from quantum physics to the life sciences to consciousness research.

There are always deniers and pseudoskeptics who will ignore facts. However, TDVP should impact every serious scientist and thinker in every human endeavor who wants to understand the nature of reality and the meaning of human experience and existence.

Confirmation of these research hypotheses should open the door to a flood of meaningful new research and discoveries in almost every field of science. This is because the laws of nature should be universally applicable to to all scientific endeavors. This is so also because it provides new, more comprehensive theoretical frameworks, conceptual and mathematical tools, and a vastly expanded domain for scientific investigation and even may require revision of concepts in Theoretical Physics.

Of these ideas, the core concepts of TDVP are solidly based empirically or mathematically. Additionally, there are lesser speculative ideas for further research or theorizing.

TDVP may become a major contribution to the physical, biological, psychological and consciousness sciences, as well as to mathematics, philosophy, the philosophy of science and impacts on the scientific linking of mysticism and spirituality TDVP pioneers the new discipline of "dimensional biopsychophysics".

The TDVP model has emphasized the fundamental role of consciousness, higher dimensions, infinity, order, the potential for life, multidimensional time, finite relative nonlocality and infinite metatime/space/consciousness, tethering with vortical indivension and individual-units, and finite origins.

TDVP also emphasizes the unified holistic reality of the finite and the infinite, the link between the two and the application of finite reality from the subatomic to the macrophysical to the cosmic astrophysical. It explains how different rare communications may be only one of billions of unused finite components reflecting a tiny fragment of potentialities.

TDVP can be explained philosophically by a new model called "unified monism". Despite the term, "monism" this is not reductionistic instead reflecting the holistic, unified, integrated reality of the infinite subreality pervading the finite subrealities.

Based on qualitative tabulations appears to be the most complete model of consciousness and dimensionality that exists, a true paradigm shift, and a theory of everything in which applying LFAF, it has not been refuted and is a significant advance in both the theory and practice of the understanding of reality. There will be significant advances beyond this but the TDVP model provides a basis for future research.

Summary

The unified metaparadigmatic statement is Our metaparadigmatic statement is the

overriding higher level basis for the TDVP model: *Reality can be expressed within the laws of nature of the physical, psychological, biological and consciousness sciences with mathematical elaborations and involves a unified holistic reality with interweaving infinite and finite subrealities: the infinite is a continuous essence metareality (i.e., an all encompassing consciousness/information, space and time, with potential order and potential life); this (the infinite) pervades a discrete finite, cosmic subreality manifesting as a fundamentally inseparably tethered triad (originating from the Origin Event) of S, T and C-substrates (space, time and broader descriptive "consciousness") which then separate into multiple interwoven, fluctuating 3-dimensional vortices within, between and across dimensions perceived and conceptualized subjectively (relatively by individual-units) via our responsive 3S-1t experiential entropic physical subreality interpreted by our living physiological extropy. (The metaparadigm of Triadic Tethered Ordered Origin Unified Relative Subjectivity [TTOOURS]).*

SECTION B: THE LIMITS OF WHAT EXISTS

CHAPTER 3: *THE DILEMMA*

Few people are capable of expressing with equanimity opinions which differ from the prejudices of their social environment. Most people are even incapable of forming such opinions.
Albert Einstein

"The views of space, time and consciousness which we wish to lay before you have sprung from the soil of experimental physics and the toil of consciousness research and the developments of mathematical theory, and therein lies their strength. They are radical. Henceforth space by itself and time by itself and consciousness by itself are doomed to fade away into mere shadows and only a kind of tethered union of the three will preserve an independent identity." [15 l]

Modified from Hermann Minkowski, 1908 to include our new paradigm.

Minkowski's famous quotation reflects the major paradigm shift of that time. He described a fourth dimension of time and realized the great unification of time and space. It certainly was revolutionary. But is this still the solution for a paradigmatic shift? We do not believe so and have added "Consciousness" resulting in a triadic tethered union.

In this book, we go well beyond Minkowski. We approach concepts such as consciousness and multiple dimensions. We use models such as the calculus of distinctions and vortices. We apply a model of geometry for multiple dimensions and emphasize the triad of three, inseparably substrates of Space, Time and an Extended Consciousness. We apply mathematics, logic and a new philosophical model. We realize the need to unify the infinite and the finite, to recognize the roles of order and disorder, of the animate life and the potential for life, and of the origins of existence. We explore the possible deeper links

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This quotation is adapted from Hermann Minkowski, in his famous Cologne public lecture: 80th Assembly of German Natural Scientists and Physicians. 21 Sept 1908 *"The views of space and time which I wish to lay before you have sprung from the soil of experimental physics and therein lies their strength. They are radical. Henceforth space by itself and time by itself are doomed to fade away into mere shadows and only a kind of union of the two will preserve an independent identity."*

[l] Some scientists, though using terms like electromagnetism still, would at another level separate out electricity and magnetism because they are sometimes orthogonal—effectively when the (electrical) force moves forward, the field [like the magnetic filings} moves at right angles [right hand rule]. Separately, there is good data for a direct opposing force of the expanding universe working at the same astronomic level as gravitation.

to these ideas and we recognize that all of this is ultimately involving ourselves in our current reality.

We present to you our rather complex sounding title:
The Triadic Dimensional-Distinction Vortical Paradigm (TDVP).
This incorporates the key features of a new Theory Of Everything which appears to work. But we need further clarifications and add essential details to these key elements, namely:
The N-Dimensionometric CST Substrate Mathematicologic LFAF Model.
We then go further describing further key principles to this paradigm:
An integrated space, time and "consciousness" substrate reflecting holistic-unified, finite-infinite entropic-extropic, animate-inanimate, event-horizon.
Furthermore, our model provides ideas for conceptual mechanisms:
Warping-N-Dimensional extrapolation, extent-content-intent distinctional-C-substrate indivension, open-closed.
And we look at all of this in the context of our current human experience in
biopsychophysical reality.

Let's begin at the beginning, understanding first why there are limitations in our current standard scientific thinking, recognizing the need for a new way to examine these.

The Standard Model
Current science includes conflicting theories and does not explain everything. The current paradigm of physical science, is comprised of three major parts: *Relativity, classical physics (primarily Newton's laws) and quantum physics*. Relativity has proved to be very successful on the astronomical scale, dealing with extremes of mass and relative velocity. Newton's laws of motion are still very useful and successful in the mid-range scale, dealing with events in the range of distances, matter and motion detected by human senses on this planet. Quantum physics, on the other hand, is very successful in dealing with phenomena on the sub-atomic or quantum scale. However, these three theoretical approaches to understanding reality are not entirely consistent. Everything is made up of quanta, yet different mathematical laws seem to apply on the three different scales of measurement, and physicists' efforts to develop a single consistent theory to deal with all reality (sometimes referred to as a theory of everything) have been largely unsuccessful. The reason for this lack of success is the fact that they have not included everything in the basic assumptions underlying their models. There is no place in the equations of the standard model for consciousness.

Limitations of the Standard Model

- There is no place for consciousness in the equations
- Consciousness is perceived as internally inconsistent across quantum mechanics, macrophysics and astronomical levels of reality, yet there are no solutions to

important quantum and consciousness paradoxes.

- The standard model cannot explain why there is complex structure and complex conscious organisms in the universe
- In fact, the standard model cannot explain why there is a universe at all. The universe appears to have originated in an explosion. The idea that all the complexity observed in the current universe is the result of accidental arrangements of materials flying away from that explosion is simply untenable: The accidental beginnings of any complex pattern of matter and energy would quickly be destroyed and dissipate in a violently exploding universe because the second law of thermodynamics acts continuously in any finite system, and the expanding universe is a finite system at any given point in the process of expansion. Explosions do not create complexity. Explosions do exactly the opposite, they destroy pattern and structure; they are the epitome of entropic activity. Someone has said that believing that the universe is an accident is like believing that a tornado could pass through a junkyard and assemble a Boeing 747 en route. Actually, it's much worse than that. It's more like piling all of the junk in the world on top of a hydrogen bomb and expecting the flying debris to accidentally form an Airbus 380 (the world's largest commercial aircraft) along with a full load of passengers and their luggage, and a crew with the knowledge needed to fly it.

Current status of science

In our conventional 3 S-1t (3 dimensions of space, 1 point in time reality) domain (our current perceived scientific reality or the Standard Model), time is assumed to be linear with each moment of time going only forward, and we experience three dimensions of space in our physical reality. This is the core of the current materialist, physicalist paradigm and it can explain almost everything in common experience. Whereas our standard physical conventional reality domain of three dimensions of space and one point of time—the present (3S-1t) has applications in most current experience, it is incomplete and indeed falsified by contrary quantum experimental evidence (the double-slit and delayed choice experiments), and the seven different six sigma meta-analyses in consciousness research. It is also internally inconsistent in physics across quantal, macro- and astronomical levels.

It also cannot explain certain quantum and relativistic observations.

Science cannot explain the rare empirical exceptions.

Nor can our standard paradigm explain why there is complex structure and complex conscious organisms in the universe or a universe at all.

We can choose either to ignore these or to confront why they are contradicted.

With respect to the conventional wisdom, we argue that because of these failures there is a need for a radical new paradigm of reality which will address the complex controversies that are not explained using our standard model.

It may be that our current reality is not best portrayed as 3S-1t but must include one or even N dimensions of consciousness as this is so basic to any sentient being. But for practical description here, we will use 3S-1t not 3S-1t-NC.

The Theory of Everything:
Modern science has not yet produced a consistent, comprehensive theory of everything (TOE). Essentially what is required is a logically consistent, generally recognized, ontological basis for integrating scientific knowledge into an *all-encompassing comprehensive natural-law* paradigm.
The syntax of the language used to express scientific epistemology, namely mathematics, does not include any meaningful representation of consciousness, which we believe is an important part of "everything".

The term "theory of everything" in the purely physics context, is certainly a misnomer, if not an outright oxymoron. When physicists speak of a theory of everything (TOE) they mean a theory that encompasses, in a logically consistent manner, the known fundamental forces of the physical universe. The question of whether such a theory, if attainable, is truly a theory of everything is certainly a legitimate philosophical question, and perhaps even a valid scientific one because:

- The "four fundamental forces of nature" as listed in the standard physics textbook: gravity, electromagnetism, the strong and weak subatomic forces, may not be all the forces in the universe [m].
- Consciousness has been systematically excluded from the standard model.

In our currently popular materialistic understanding of reality, the observer is represented as a dimensionless point (because it greatly simplifies the analysis and this is regarded as outside world scientific objectivity), yet the observer may, in reality, be more complex than that. Subjectivity is defined as that which goes on in the mind of the observer, and has created a conceptual dichotomy separating science from direct human experience. Consciousness is nothing more than an emergent or epiphenomenal feature of the physical world, and disputably neuroscience itself cannot adequately explain consciousness by the physical brain alone. this physicalist, materialist paradigm fails. Because of this failure, there is a need for a radical new paradigm of reality. This archive is the authors' motivated "Theory of Everything" (TOE). This interfaces every known area of scientific endeavor. We maintain that a TOE model should incorporate the mathematical and empirical relevance of dimensions, zero and infinity, vortices and distinctions. Essentially, the paradigm we propose works; the others did not.

We propose that a comprehensive TOE must also seamlessly reconcile with the major theoretical models and authoritative sources of all the natural sciences. Our premise is that the laws of nature should be universally applicable to to all scientific endeavors.

The scientific areas that must be actively evaluated must include:

the physical sciences (these include physics, chemistry, meteorology, and astronomy; the biological sciences (these include anatomy, biology, genetics, physiology, pharmacology, the life sciences and medicine).

the social sciences (these include anthropology, psychology and sociology) and

the consciousness sciences (these include dimensional biopsychophysics, phenomenology, parapsychology and quantum consciousness).

To qualify as a complete TOE, it must cover "everything". The TOE should be specifically compatible with the three major disciplines examining concepts outside our 3S-1t conventional reality: Hyperspace, Consciousness research and Philosophy.

Moreover, we posit that such a TOE should be compatible at all levels of cosmology, from the tiniest subatomic packets to the macrophysical usual realities to the astrophysical.

Additionally, the TOE should also be compatible with the known forces including conventionally recognized energies.

It could be argued that a TOE should be able to explain events in all of time, including the major event postulated to have been over billions of years in our conventional linear time, namely evolution.

We argue that a TOE must not only be empirically appropriate, but explainable within the confines of philosophy, including mysticism and spirituality.

We posit that a TOE should have preferably have a demonstrable solid mathematical base in its key areas.

We posit that a TOE should not imply anything supernatural or miraculous. However, what may be perceived as anomalous in 3S-1t may not be anomalous in other higher dimensions.

We believe that a new philosophy of science model may be required to explain information developed beyond our conventional standard experience of 3S-1t. This means applying new feasibility principles as well as ensuring that the presented data is not falsified as a key to motivating any scientific models including TOEs.

The TOE may require a paradigm shift to achieve this. This means a fundamental change in approach or modification of our current assumptions [13].

We motivate our own "Theory of Everything" (TOE) and recognize the need for this global paradigm shift that interfaces every known area of scientific endeavor.

CHAPTER 4: *WHAT THE STANDARD MODEL LACKS. SOME QUESTIONS TO SOLVE*

Imagination is more important than knowledge.
Albert Einstein

Let Us Imagine

In Einstein's classic paper in 1905 on the Special Theory Of Relativity, he imagined the electrodynamic interaction between a moving magnet compared with a stationary conductor, and then reversed the situation to illustrate his theoretical assumption of no preferred reference frame.
He did the same in his later classic paper on the General Theory of Relativity: Ultimately, this involved using the example of the observed departure of the orbit of the planet Mercury compared with that predicted by Newtonian physics. [16, 17] These were examples of his famous thought experiments.

Similarly, we have presented thought experiments pointing out the limitations of the usual standard paradigmatic physicalist conventional materialist model relating to 3 dimensions of space and one point in time (3S-1t) that we humans experience on earth on a day-to-day basis at this time.

- Let us imagine a model where space, time, and consciousness (STC) all exist.
- Moreover, let us imagine in a model, that the dimensions of STC are tethered together at a specific point or volume as inseparable units; and that this tethering can be partially released, altering this inseparability with each component protruding separately, although there is always the tethering in at least one point.
- Let us imagine a model where time is such that we cannot use our linear reasoning directly relating cause and effect, yet free will still exists.
- Let us imagine a model where time is not just one moment in time.
- Let us imagine a model with extra dimensions which will explain the existence of information, meaning or events in space and time.
- Let us imagine a model where there are always one or more dimensions in addition to the dimensions of perception so that one could see the completeness of the data but only from a higher dimension.
- If one had such a model, what evidence would be useful to demonstrate it?

We briefly mention such ideas, and these are amplified below because we have such a model. We choose five broad examples.

Entanglement

- Let us imagine a model of "quantum entanglement" where there is some kind of link of ostensibly separated evidence, energy packets, particles, photons or packets of information in time and space,
- Implying a non-locality at the 3S-1t level.

1. If, moreover, that entanglement had a statistical probability, which was demonstrable but not necessarily overwhelmingly high. It would imply a probabilistic state, which could not be predicted accurately relating to information transfer which at 3S-1t one could not accurately definitely predictably show in any specific, individual case.
2. If one was able to define and apply a mechanism that could explain why this entanglement would occur, involving a broader definition of consciousness, a meaningful intentionality or apprehension of reality, this would be strong evidence for some kind of tethering.

Psi

- Let us imagine a model where one was able to demonstrate that so-called psi phenomena existed, it would be very difficult to explain within our common physicalist framework of 3S-1t.
- In fact, it would be extremely challenging to explain unless one utilized the STC substrates as the framework for an explanatory model.
- If one were able to demonstrate retrotime, or precognition, or presentiment even seconds before an event, this would also not be explainable in terms of the current physicalist definition of dimensionality, but it could be explainable in terms of extra time perception which might be describable in terms of extra dimensions.
- If one were able to show that there were variants in terms of cause and effect, this would require some kind of extra time dimension.
- If one were able to show that there was some kind of survival of consciousness after bodily death, or even an overwhelming superpsi relationship that could not be explained in terms of known psi concepts, this could imply extra dimensionality because of the limitations of 3S-1t as a reality base for post-mortem survival.

Lower Dimensional Incompleteness and Higher Dimensional Extrapolation

1. Let us imagine demonstrating that there is discontinuity of information and of space-time when information is projected onto lower dimensions, then demonstrable continuity of the same information at a higher dimensional level would imply extra dimensions.

2. Let us imagine data showing links of events that have not occurred, but then being more easily learned once that event of data has been achieved. (At the risk of diminishing the fun of not giving answers at this stage, this could be explained, for example, by applying Sheldrake's formative causation [18], but at a higher dimensional level by another model such as, to be seen, vortical indivension. Therefore, some of these "imaginings" can be non-specific and have alternative explanations),
3. Let us imagine data showing that there are different states of "consciousness" with different realities in an individual this may provide evidence for fluctuating dimensions.

Life

How does life begin?

At what point does physical life begin? Varied explanations are the moment of conception, of birth, of particular development of the fetus. Could this be entirely different from the actual time that life becomes a potential?

Can one explain life purely on the basis of genes and DNA/RNA combined with appropriate physiology? Is that just a how based on physical limitations? Does that just reflect physical life?

Does such an explanation allow for consciousness?

Is there a threshold point for life?

What information contradicts there always being a potential for physical life always existing and the correct physical apparatus, genes and physiological functioning allowing physical life to actualize?

Evolution

1.) Let us imagine demonstrating that evolution exists. (There is cogent data, of course, that it does.) However, given that even Darwin pointed out the difficulties of evolution occurring purely by chance, let us imagine that at some point before or during the process such an evolution has had some kind of meaningful assistance or guidance and this could be cogently demonstrated. We are not addressing the feasibility of current evolutionary theory, either by confirmation or denial. We are here examining its possible integration into our specific TOE.
2.) Could that contribute to the feasibility of a complex mechanism involving a proposed STC tethering surrounding the Origin Event?
3.) Could that contribute to the feasibility of a unification of different kinds of multidimensional time, space, and consciousness? This last one would be a distant imagining because it would require numerous points not yet in evidence.
4.) Could it be that if evolution is occurring over time, what one ought to be looking at is the predetermined facets of guidance that created the possibility of evolution?
5.) Could it be that once this mold was created it could free-wheel and evolution would run without help?

Scientific Subatomic Model

Let us imagine that some of the fundamental questions that one can ask are about the limitations of quantum physics. Some of the limitations of the current scientific subatomic model are well-known and many particle physicists believe that it is an incomplete description of nature. Indeed, it is not a complete theory of fundamental interactions. It falls short of being a complete theory of fundamental interactions[19] because it does not incorporate certain fundamental physical findings. [20, 21, 22, 23,]

It is inconsistent, inter alia, with:

- the physics of general relativity, such as gravitation and dark energy, quantum field theories of gravity generally break down before reaching the Planck scale[24]. This contradiction has been a major problem.
- the emerging "standard model of cosmology requires modification [25]." particularly the observed amount of cold dark matter (CDM) which is associated with far too large contributions to dark energy[26]; viable dark matter particles would not correspond with the expectations of and the required properties deduced from observational cosmology: Consequently, this model does not fit within a reliable theory for the very early universe.
- correctly accounting for neutrino oscillations (and their non-zero masses). The specifics of neutrino mass are still unclear and may require an additional 7 or 8 arbitrary constants.
- puzzles such as the strong CP problem [n o] —why quantum chromodynamics[31] (QCD) does not seem to break the CP-symmetry)

it has unnatural properties like the hierarchy problem [32] The Higgs mechanism gives rise to the hierarchy problem if any new physics (such as quantum gravity) is present at high energy scales. In order for the weak scale to be much smaller than the Planck scale[24], severe fine tuning of Standard Model parameters is required;

the observed predominance of matter over antimatter (matter[33]/antimatter[34 ,35])

the isotropy[36] and homogeneity[37] of the visible universe over large distances requires a mechanism like cosmic inflation[38]. This should constitute an extension of the Standard Model, but likely occurs.[32, 39, 40] The inflationary hypothesis was originally proposed in 1980 by American physicist, Alan Guth, who named it "inflation". [41, 42] Cosmological inflation is the theorized extremely rapid exponential expansion of the early universe by a factor of at least 10^{78} in volume, and comprises the first part of the electroweak epoch following the grand unification epoch. [42] Without rapid expansion before and up until the so-called event horizon, the earth would still be a ball of molten rock with no life as we

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CP is the product of two symmetries [27]: C for charge conjugation, which transforms a particle into its antiparticle [28], and P for parity, which creates the mirror image of a physical system.

[n] a hierarchy problem occurs when the fundamental parameters (couplings [29] or masses) of some Lagrangian [30] are vastly different (usually larger) than the parameters measured by experiment.

know it. [43]. The inflationary hypothesis though we believe very well motivated, is still controversial amongst some, however. This is so as there is contradictory physical evidence in the literature, and an ostensibly continuous creation/ de-creation process observed in the mezocosmic range: this could make the Inflationary Hypothesis untenable. [44] Other data is esoteric but well motivated. For example, data suggesting possible deep subquantal origination of physical laws. Contradiction of inflation is even more evident below the Planck limit (to the Kolmogorov range and beyond), where these subquantum laws ostensibly apply.[44, 45]

Several Grand Unified Theories (GUTs) have been proposed to unify electromagnetism and the weak and strong forces. Grand unification would imply the existence of an electronuclear force; it is expected to set in at energies of the order of 10^{16} GeV, far greater than could be reached by any possible Earth-based particle accelerator. Although the simplest GUTs have been experimentally ruled out, the general idea, especially when linked with supersymmetry, remains a favorite candidate in the theoretical physics community. [19]

It is emphasized that the Standard Model of Quantum Mechanics agrees with almost all the experimental tests conducted to date. [40; 46] These areas of controversy are the exception rather than the rule.

This model is applied to other fields besides particle physics (like astrophysics[47], cosmology, nuclear physics [48], quantum field theory [49], spontaneous symmetry breaking[50] and non-perturbative behavior. Simulators help search for new physics and build more exotic models[51] incorporating hypothetical particles[52], extra dimensions[53], supersymmetry[27] and to try to explain experimental results at variance with the standard model. [21, 22]

The standard model is theoretically self-consistent. [21, 22]

Nevertheless, one of the fundamental questions that one can ask is about the limitations of quantum physics. The limitations of the current scientific subatomic model are well-known and many particle physicists believe that it is an incomplete description of nature. Indeed, this standard paradigmatic model is not regarded as a complete theory of fundamental interactions. It falls short of being a complete theory of fundamental interactions[19] because it does not incorporate certain fundamental physical findings. [20, 21, 22, 23]

Effectively, composite particles, account for the hundreds of other species of particles discovered since the 1960s. but a more fundamental theory may await discovery.

This subatomic model is theoretically self-consistent but has not only the difficulties above, but it excludes consciousness. Certainly, we feel that any discrete model should include Consciousness. We believe that until “consciousness”, “meaning” or C-substrate is inserted, this model will remain incomplete. The TDVP model fills these needs. This is why we are prepared to postulate composites such as qualits which contain composites of chronits, qubits and conscits. These would also have particle-wave components and the

conscits may have psitrons and kinetrons. Of course, this is all speculation. Could it be that our accepted wave-particle duality is incomplete and that we should describe an inseparable wave-particle-meaning? We postulate that this is so: The physicalist notion of particle-wave duality is incomplete because while quantum theory does consider the connection of content (particle or wave) with 3S-1t, it does not include the relationship of this content to the C-substrate. The third content component of any matter-energy object is consciousness.

A Physical Theory of Everything should unify all the fundamental interactions of nature: gravitation, strong interaction, weak interaction, and electromagnetism plus expansion of the cosmos reflecting a complete theory of fundamental interactions. The basis of the subatomic quantum mechanical model is the interface area of wave particle duality. [54] We posit that this concept may be insufficient given the overall limitations in related quantum mechanics.

These questions need answering. Some cannot be answered at this time. But there is data for some of them: The information on these form the basis for the feasibility of our model and we answer some of these questions in this article. To a large degree, demonstration of each of these may increase incrementally the certainty of the veridicality of our full model. We could simplistically answer that our TDVP model satisfactorily answers all the questions above by using the one simple principle of STC tethering from the beginning—in other words, Space, Time, and an Extended Consciousness concept, are tethered from the beginning of existence (the "Reverse Event Horizon"). From this tethering, entanglement is easily explained; so is psi as points or vortices meeting; so is evolution based on the early involvement of a broader consciousness; and so is the necessity for extra dimensions and understanding the incompleteness of our currently standard experience of 3S-1t.
We could be close to an accurate answer but in reality the level of veridical confirmation of all hypotheses and proposals can always be improved and to be able to understand the evidence we need apply a new model of feasibility.

Whether evolution can be applied to the standard paradigm cannot be demonstrated because it is not falsifiable, yet there is debate as to its feasibility: it is unanswered.

CHAPTER 5: *FALSIFIABILITY OF CURRENT SCIENCE*

Falsehood has an infinity of combinations, but truth has only one mode of being.
Jean-Jacques Rousseau (1712-1778, Philosopher)

Popperian Falsifiability
Karl Popper's need for falsification was initially inspired by the stark contrast between Einstein's models which involved difficult but later testable predictions with the untestable psychoanalytic ideas of Freud and Adler. [14, 55]

From this, Popper developed the idea of falsifiability—a key principle in the modern methodology of science. Falsifiability reflects a concept and not a scientific theory or statement of fact. It describes a *methodology* on how science must progress by learning from its mistakes. By this means, what is falsified eliminates what was not meant to be.

Popper applied his ideas from the past and heavily incorporated the history of science into his work. Popper is one of the rare philosophers whose ideas have been highly influential among scientists because falsifiability became the defining characteristic of a scientific theory. [55]

Does our current 3S-1t domain fit this prevailing model of falsifiability? To clarify, the current 3S-1t paradigm refers to the current conventional laws of the materialistic paradigm. 3S-1t reflects the three dimensions of space in a spectrum metric of volume, and one point in time reflecting this moment—hence the lower case. We use the term "domain" here to refer to a dimensional perspective of thought: The most current portrayal of our current purely physicalistic reality is the 3S-1t domain.

On the one hand, 3S-1t materialism currently embraces the accepted scientific method of Popperian falsifiability as the major method. But when we apply this well-accepted principle of Karl Popper's about the validity of our current materialistic 3S-1t paradigm, ironically, the current conventional laws are falsified, for example, based on the several "let us imagine" questions where we have pointed out the limitations. [56]. These exemplify contradictions that simply should not exist.

These contradictions have been reflected in several areas of scientific endeavor in mainstream physics, e.g., the Einstein-Bohr debate of the 1930s and the Einstein-Podolsky-Rosen (EPR) paradox. [57], [58]

These scientific debates and their historic resolution profoundly change our understanding of the nature of reality in fundamental and surprising ways, reflected in Bell's theorem [59], the validation of the Copenhagen interpretation of quantum mechanics [60], the Aspect experiment [61], and the Wheeler delayed-choice interpretations [62, 63]. Effectively, validation of the Copenhagen interpretation of quantum mechanics tells us that elementary particles and wave packets are not determined until they impact on a receptor [64]. [p]Combining what relativity and quantum physics tell us about the real nature of time, space, matter, energy, and consciousness, we find that the simplistic big-bang evolutionary theory is incomplete and incorrect on many levels: space and time are not independent measures of extent, but interacting dimensions of the dynamic space-time continuum. We motivate below that time is not linear and one-directional, and the present is not one single moment in the forward movement of time. Matter and energy are not independent measures of content, but different forms of the same universal substance. Our model posits that "consciousness" is part of that same universal "essence" that constitutes reality.

The purest Popperian scientific method involves trial and error, conjectures and refutations. [14] New hypotheses are then subjected to very rigid, careful testing in an attempt to falsify them. If they are not falsified, and instead replicated, they are regarded as "proven." But, theoretically, such inductive techniques cannot be rationally justified: This is so because even hundreds of repeated observations cannot guarantee that a rule inferred from such repeated observations is always true. This implies that all our scientific theories and laws are only conjectures— tentative hypotheses. [14]
Nevertheless, we still apply falsifiability as a theoretical method. How scientific reflects the degree to which something is testable. [70] However, this does not necessarily imply *only* falsifiability necessarily and allows an opening for what we call the LFAF model. [71]
Of the great scientists, Einstein and Hawkins utilized the Popperian method, as did John Eccles and Peter Medawar, but Newton, Galileo, and Copernicus, inter alia, did not. [70]

Moreover, there is some debate as to Popper's success amongst peers.
Kuhn [13] and Feyerabend [72, 73] and also Collins [74] argued how major scientific breakthroughs would not have been made if the discoverers had adhered to the rule of falsification or, any prevailing prescriptive philosophy of science and Laudan emphasized how he did not solve the demarcation problem [75]. To these philosophers of science, Popper appeared uninterested in falsifying his own assumption, and did he not look for instances that proved him wrong. He seemed to pick examples that did not threaten his views. To them, Popper smuggled inductive method back into science and yet empirical method has been a basic technique for centuries, so this is not true. But on the other hand, maybe they did not

[p] Whereas in this book, we mainly focus on the Copenhagen interpretation, we recognize there are other alternatives of Quantum Mechanics. These are discussed in more detail in our companion volume [9] in which we also discuss, inter alia, Decoherence [65], David Bohm [66], Michael Talbot [67, 68], Karl Pribram [69]and others.

refute Popper instead they just did not understand his simple ideas. [76] Nevertheless, this background is relevant to our model, because of our proposed concept of feasibility and empiricism.

Beyond Popper

Popper knew that testing and falsification are not always practical [14, 76]: Replication must be appropriate in methodology including data collection and have adequate controls to avoid leakage.[70] But that does not imply that theories cannot or should not be subjected to testing and hence possible falsification, or that it is impossible to falsify some theories. However, some would regard theories that are not currently falsifiable as better regarded metaphysics or ideology, not science. But that, in our opinion, defies logic.

How does one *prove* something that one can see and photograph and videotape at the same time? For example, the hypothesis that an apple under certain defined controlled circumstances on earth will always fall from the tree onto the ground. How many times do we need to demonstrate that to argue it is self-evident? Or is it feasible to demonstrate correlations of two events? Alternatively, what about psychological data or medical data involving ordinal measuring instruments where an individual scores high enough for us to regard them as depressed and then responds appropriately to antidepressants. Yet, we cannot falsify that a specific individual who does not exhibit one of these criteria is not depressed. Effectively, there is a difference between what is clinically relevant and statistically significant. Classical Popperian falsifiability does not account for the hypothetical and sometimes obvious. If the full moon and the sun cannot rise together, Popperian thinking would make it tentative, and potentially refutable, but in geometry, it is self-evident that this could not happen. We do not need a double blind trial, which cannot be performed anyway, to test such a theory. Popper largely ignored the analytic and deductive techniques of science, although he was possibly changing this in his later writings. [77] [78]

This kind of critique again supports the use of another method too. This is a supplement to falsification. We propose the model that we call "Lower dimensional feasibility, absent falsification" (abbreviated LFAF). Effectively, there are experiments and spontaneous data that cannot be falsified but can be observed and there is research that is feasible though not able to be observed or falsified. Also, there are situations at higher dimensional levels that cannot be proven at the 3S-1t level because the data does not exist or does not completely exist in 3S-1t, so we can only see pieces of a multidimensional jigsaw puzzle. As Klein ably puts it: "Non-replicability is a signature for higher dimensional involvement in the process under scrutiny, not a valid argument for refutation of its significance or eligibility for scientific consideration." [44] This is where feasibility, LFAF and what may appear to be just isolated jigsaw puzzle pieces in 3S-1t, may all have enormous application at the higher dimensional levels, where falisifiability is a non-issue because we cannot directly and empirically demonstrate the data in the *metadimensional perspective*. But we need to

realize that non-replicability is a fundamental component of the metadimensional perspective. It's like running in a dark maze during a raging tornado and trying to ensure the same route every time. Experiments on psi phenomena may be the closest to this in conventional scientific research: Replication requires the same experiment and the subtle changes do not allow that.

Scientific Model of Feasibility and Falsifiability: LFAF Model

Because there are areas with evidence and even proof in science that cannot be replicated, we need to consider adding to this approach in these special, ostensibly contradictory circumstances.

The special circumstances in which the classical approach of Karl Popper in the Philosophy of Science requiring falsifiability cannot be applied include evolution, cosmology, new models (for example, Einsteinian General Relativity took some years), dimensions beyond 3S-1t, models of indeterminacy, psi, entanglement and alleged survival after bodily death.

Because falsifiability is usually limited to only 3S-1t, we propose a new model approach to the philosophy of science. We recognize that some elements cannot be falsified at this time in 3S-1t, yet there may be ample evidence the pieces of the jigsaw puzzle fit in 3S-1t. This means the data may be feasible and not provably falsified by empirical data.

We propose a model which we call Lower Dimensional Feasibility (usually 3S-1t), Absent Falsification (abbreviated to the more useful acronym "LFAF"). We realize this is equivalent to using a jigsaw puzzle in 3S-1t and filling in the pieces that fit, *but this must not allow a contradiction*, otherwise the data may be falsified.

We believe that science must recognize this lower dimensional feasibility with the absence of falsification rule because it is not new. It has been used frequently before in major areas of science when a proposition may be not falsifiable but is feasible. Three obvious aspects are the big bang theory, evolution and distant astronomical objects. For many scientists, these are generally accepted prevailing science, but are not falisifiable (so they may be wrong and we don't know that), and therefore at least fit into Popperian conjecture.[14] Our proposed LFAF model usually relates to 3S-1t, but not exclusively so as applying, for example, thought or mathematics, other dimensions may obtain incomplete data from higher dimensions (and we discuss theorems to demonstrate the feasibility of such incompleteness).

This is an extension of conventional thought in the discipline of the philosophy of science. Carl Popper's theoretical self-evident axiomatic model of falsifiability in science pervades our thinking: the posit that science must be based upon falsifiability is very adequate for almost all 3S-1t related empirical data. Ironically, Popper's falsifiability axiom is untestable because it is not itself falsifiable! We posit it would be an error to apply it

alone—exclusively as the reasoning from the "self-evident". In fact, because of extended dimensions Popper's axiomatic approach to truth may be incorrect: There are many obvious *empirically* based prejudicial examples e.g., the origins of hypnosis, electricity, X-rays, meteorites, sterilization preventing death, round earth, earth revolving round the sun, Einsteinian relativity, warping of reality, splitting the atom, and psi. Moreover, even evolution in its broadest base is not falsifiable but it could be feasible at the 3S-1t domain —depending on one's a priori Bayesian prior distribution statistical calculations, although others have argued that it would require intentionality as well, and this is statistically completely unfeasible using Bayesian reasoning—because of this, a Bayesian "metadimensional" approach is itself inappropriate because there is no base to scientifically argue about probabilistic odds: "Metadimensional" is the term we have coined to describe the application of dimensions beyond 3S-1t. The great mathematician, Bernhard Riemann recognized this limitation in his "ND-conjecture" on the basis of his metrical doctrine, recognizing incompatible congruent classes of intervals and thus incompatible congruence relations [79]. Effectively, this means he recognized *mathematical* non-falsifiability in N-Dimensions.
Should falsifiability of science be the single fundamental instrument of proof? If so, this means that any hypothesis that involves more than four dimensions may be not falsifiable in 3S-1t, and thus become non-science. Under this dictum, many currently accepted theories would become pseudoscience, including evolution, most of biology, particle physics, and cosmology. Even Einstein struggled with this concept of falsifiability until the theory of relativity was shown to account for the divergence of the orbit of the planet Mercury from Newtonian physics and to accurately predict the bending of light rays around the sun, measured during an eclipse. Einstein's theory of relativity was not falsifiable for a long time after it was introduced in 1905. Also, the numerous models of string theory are not currently falsifiable.

By demonstrating the limitations of Popperian demands for the falsifiability of science in metadimensional realities, we apply the lower dimensional— feasibility absent falsification (LFAF) approach. Like single puzzle pieces in a whole, some conclusions are feasible yet not falsifiable in the traditional sense. This is so as metadimensions (i.e., D >3S-1t) cannot be directly represented in 3S-1t.

When science encompasses a theory that is *not non-falsifiable* within 3S-1t, *feasibility* may turn out more relevant than falsifiability.

1. If the data that exists as a "jigsaw piece" in our conventional 4D (3S-1t) current reality. This data must not have been contradicted by the best available information demonstrated in a specific scientific discipline. We use the term *"not falsified" or "absent falsification"* for this. Most non-falsified data, usually experienced in 3S-1t, is falsifiable, but that is simply a subset of the whole of not falsified group; so feasibility then comes in.

2. if data can be supported by some empirical base, this makes it feasible. In other words,

if there are data showing a postulate is feasible, it can be studied until definitive tests are devised (e.g., Bell's Theorem.).

3. if the hypothesis is both "not falsifiable" yet feasible, it fits our definition of "science".

The mathematical and logical equivalent of LFAF is non-contradiction. Contradictions differ from paradoxes. There are several paradoxical situations in mathematicologic which have proven correct despite their apparent illogic.

Feasibility: What It Does Not Mean

LFAF refers to Lower Dimensional Feasibility, but in order to analyze that lower dimensional feasibility there has to be appropriate empirical scientific basis for this. For example, in John Dunne's famous book An Experiment with Time [80], he talks about how there is no contradiction to what he is saying and refers to the soul, free will, and survival after bodily death and feels that this is proven. However, there is no empirical data: Mentioning a concept, en passant, such as free-will and stating it is feasible does not raise its level to "lower dimensional feasibility". This is not an application of LFAF.

CHAPTER 6*: THE NEED FOR A NEW PARADIGM*

If the facts don't fit the theory, change the facts.
Albert Einstein (attributed)

Requirements

1. Material flying away from the postulated Big Bang was somehow organized into complex forms that maintain their forms over long periods of time. This requires an organizing agent.

2. We can include "consciousness" in the equations describing reality by re-examining the basic assumptions and resultant structure of science and mathematics. This requires examining the beginning of the *finite* physical universe, and the beginning of consciousness.

To be true, the key components of any TOE must allow feasible modifications from the current conceptual, mathematical and scientific models without contradicting fundamental knowledge (other than materialist reductionism), and must also seamlessly reconcile with the major theoretical models and authoritative sources from the other natural sciences and be compatible with the three major disciplines examining concepts outside our 3S-1t conventional reality. In this manner, the laws of nature should be universally applicable to to all scientific endeavors.
Additionally, a TOE model may need to incorporate the mathematical and empirical relevance of:

1 an extended perception of consciousness (which we're calling "C-substrate")

2 dimensions (which requires careful definition which we apply in part with Close's calculus of distinctions; and a process across these dimensions—we use "indivension", and a content—we apply "vortices".)

3 infinity, if necessary relative infinity, and incorporating zero

4 order (as opposed to the physics concept of entropy implying a natural tendency to disorder).

Our model has arisen out of this necessity because a TOE requires no contradictions in order to attain its feasibility without any falsified empirical data in 3S-1t. We believe that no TOE has been developed satisfactorily before because the role of the C-substrate had been ignored, as well as the aspects that follow namely extra dimensions, and recognizing

the roles of infinity and order in reality.

Linguistic Needs

We have already used new terms and special definitions of current terms.
This is a necessary and essential part of any new framework there must be an efficient logical language capable of describing the interaction between conscious entities and the reality they experience. This requires careful definition, and in some instances, re-definition, of current concepts ensuring a lack of ambiguity and adequate operationalization of terms.
It also requires the development of numerous new terms. These neologisms must be necessary and perform a communication function. The new words must be chosen carefully so that there is an easy comprehension of the new meaning. These terms or phrases must communicate information when the English language is lacking such description. Additionally, these terms must complement the other uses.
We develop several new, necessary terms to facilitate understanding in this new specialty, that can be best described as Dimensional Biopsychophysics.

LFAF and Consciousness

The Triadic Dimensional-Distinction Vortical Paradigm (TDVP) is controversial because of its implications. Nevertheless, the mathematics and the empirical data strongly support the necessity for this fundamental paradigm. This paradigm may appear presumptive given the failed attempts of the past century to achieve a TOE, but it applies a key, fundamental difference: the obvious, but previously ignored, phenomenon of consciousness.
Essentially, this paradigm utilizes all these features and appears to work; the others have not. The multidisciplinary TDVP model incorporates all these disciplines into the same unified world-view. TDVP demonstrates the essential and maintained holistic-unified triadic nature of space, time and "consciousness". This biopsychophysical reality applies to everything from the subatomic to the astrophysical, and has been true from the very beginning of the cosmos.
Examining the particular example of relevance to consciousness:

1. Consciousness as an integral part of reality is feasible based on the empirical data that has been developed, and

2. Consciousness is also non-falsifiable and has therefore not been falsified.

3. There are not many aspects of consciousness that cannot be easily falsifiable because data replicability is difficult or even impossible because the abundance of variables (e.g., "experimenter effect", relative non-locality and object-subject interaction) is far more difficult to repeat exactly as an experiment than in most fields of science. Effectively, the same information in exactly the same circumstances never re-occurs, just approximations and dependent on the particular circumstances, the changed factors may be critical confounding elements to maintain reality. This multiplicity is seen as a reflection of the transfinite in the finite.

4. The abundance of six sigma results in psi experiments indicates a high likelihood that relevant components may lead to demonstrable falsifiability.

Re-examining the requirements for science, those aspects which are not demonstrably falsified, and yet feasible in 3S-1t, are still acceptable scientific approaches. This is demonstrably true in the context of the C-substrate.

A Perspective Approach to Developing a Metaparadigm

The metaparadigmatic approach

The term *metaparadigm* describes the overriding paradigm into which all others can be fitted. Metaparadigms reflect a worldview underlying all the theories and methodologies of all other paradigms. In that way a metaparadigm is a theory of everything. Given the absence of a viable metaparadigm to this point, our model of TDVP reflects a metaparadigmatic shift.

Proofs

To raise the TDVP Theory of Everything to the status of a real metaparadigm, we needed supporting proof. We had always maintained that this would be via mathematics and related logic and we have introduced several mathematical proofs for our model.

Methodology and assessing significance

Development of a metaparadigm ideally closely follows the methodology we use in science: We look at the literature on the topic, we develop hypotheses and we test the hypotheses by developing a proper methodology. From this we obtain results, and we discuss those results. Our results are analyzed by

statistical analysis or

when pertinent by what is clinically significant (e.g. a common technique in the Medical Sciences; one wants an antibiotic to work against a sensitive organism not statistically but almost every time —clinically; and at times,

direct subjective observation because we don't need to statistically analyze (e.g. You've smelt the fragrance of perfume: You are not trying to prove that you smelt it).

Sometimes double-blind studies cannot be done for ethical or other reasons— the classic story of the scientist who wants to do the double blind study of whether going from a parachute 2000 feet above the ground will work, and of course you have to have a control group of people not in their parachute.

Heuristic scientific approach

From our results, we draw preliminary conclusions. This constitutes a completed research experiment testing the limited hypotheses of this research.

In the majority of cases when examining data in 3S-1t (3 spatial dimensions at a moment in time) the data can be based on the philosophy of science idea of *falsifiability*: We can reject what is wrong and we can replicate our findings with another experiment. The

limitations of this approach, however, are the limitations of our conventional common physical reality being limited to experiencing 3 dimensions of space and one point in time. We then move to the next stage of *interpretation* allowing us now to further test extended postulates based on our conclusions.
Eventually we develop a *paradigm*.
However, many facets of paradigms may not obey the limitations of 3S-1t stringencies. This means they cannot be tested by applying the falsifiability alone. We have, of necessity, therefore introduced an ancillary technique called LFAF (Lower dimensional feasibility—generally in 3S-1t—absent falsification) to allow for evaluation of empirical results combined. Additionally, we apply mathematics and logic to ensure that our paradigm cannot be theoretically refuted by contradictions and even more so, when available, that it can be established by mathematical proof (a contradiction is a paradox in the strongest sense; it is a statement that flatly cannot be true under any circumstances).

Paradigms, axioms and eventually metaparadigms
Ultimately, combining all the paradigms together, the theorist and scientist may produce a broader series of paradigms and eventually develop a metaparadigm. This will be made up of numerous related postulated axioms, which can be unified together and still remain viable using LFAF. The challenge is large because it has never been done before.

Our New Paradigm: An Integrative Approach
Unlearning what we have learnt
A basic problem in developing a new theory of everything is unlearning much of what we think we already know. Overcoming this problem requires that we go back to our first ontological principles and re-build the entire epistemological structure of human thought from scratch. This is a formidable task that few have any lasting desire to undertake; and, when a new theory of everything is found, this same problem is mirrored in the task of presenting it in a way that will persuade others to follow that same arduous path. At the end of the arduous path from first principles, we (the authors) found reality to be holistic. The fragmented picture painted by current science is not a true reflection of reality, but rather a reflection of how we perceive and think about it. In addition, except for basic physical stimuli and response, most internal human experience is considered subjective, unreliable and unsuited for scientific study. There is no place in the equations of the standard model for consciousness.

Beyond reductionism
We were motivated to develop a comprehensive theory that would re-unite the scientific paradigm with human experience. In order to be inclusive, the essential characteristic of our new theory is integrative, in contrast to the methods of contemporary science which are largely reductionist. Because the new theory presented here includes realities heretofore excluded from consideration by legitimate mainstream science, describing and understanding it may require unlearning and re-thinking to an unprecedented degree. The

concepts below are amplified later but we briefly discuss now the essentials of the integrative approach.

Percepts and concepts are not actual reality
The first thing we must unlearn is the misconception that we, as conscious observers, are completely separate from that which we observe. Quantum mechanics experiments, e.g. the double-slit and delayed-choice experiments provide empirical evidence that the separation of the observer from the observed is perceptual and conceptual, not actual [7]. This perceived separation is the result of the limitations of our physical senses and the conscious act of drawing distinctions. In order to understand the integrative theory presented in this book, an acceptance and a clear understanding of the holistic nature of reality is needed. If you can accept the idea that reality may be holistic, it is our intent to provide you with a clear understanding of how and why this is so.

The separations of reality into distinctions of matter, energy, space, time, and consciousness are perceptual and conceptual constructions created by the limitations of the physical senses and conceptual choices. The matter, energy, space, time, and consciousness of the 3S-1t world are all ephemeral distinctions drawn within the infinitely continuous essence of reality. The separation of these distinctions, however, even though ultimately illusory, is quite real in the 3S-1t world in which we must operate.

Calculus of distinctions
Consistent with the ultimate holistic nature of reality, the various fields of science, mathematics, and geometry should not be viewed as separate; they all arise from the intrinsic logic of the substrate of consciousness and are based in the drawing of distinctions. Their axioms, theorems and proofs, when correct, are extensions of the primitive logic of distinctions underlying the perceptual reality of the universe. The formal logic involves the drawing of distinctions, called the Calculus of Distinctions [7]. From this integrated point of view, we are able to see the connection between the physical universe and human consciousness, and the connections between the infinite continuity of the substrate of transfinite consciousness and the finite distinctions of human consciousness, time space, energy and matter.

Re-uniting space, time and consciousness
The re-uniting of the physical universe with consciousness, and the subsequent re-uniting of science with human experience, is analogous to the re-uniting of mathematics with physical dimensions and the re-uniting of dimensions with their roots in the logic of the calculus of distinctions. When mathematics and dimensionometry (geometry extended into realities of more than 4 dimensions) are integrated, we have perfect tools with which to measure the variables of extent of space, time and consciousness, beyond which we discover a second level of distinctions: variables of content, by which we may measure the density of matter, energy and information within the substrates of space, time and

consciousness. It should come as no surprise, if reality is a holistic reality, to discover that there is a one-to-one correspondence between the various types of numbers in pure mathematics (conventional number theory) and the variables of extent and content in the multidimensional STC substrate. It is also quite natural to find mathematical invariants relating any reality of n dimensions to the reality extended into n+1dimensions, allowing the logical extrapolation from one dimensional reality to the next.

As indicated by the discovery of the red shift in the light from distant stars, consistently increasing with distance [43, 81, 82] and the equations of the general theory of relativity, the universe we perceive is expanding. Based on the occurrence of matter and energy only in quantum units, the triadic nature of dimensionometry and the forces of an expanding universe, application of Fermat's last theorem explains the breaking of the original symmetry and the prominence of spiral motions, helixes and vortices in the dynamics of our physical universe. In a multi-dimensional triadic (STC) universe of nine or more dimensions, all distinct objects, especially at the quantum level are seen as variants of the vortical form. This allows the incorporation of most of the features of string theory into the TDVP model.

SECTION C: KEYS TO A NEW PARADIGM FOR REALITY

CHAPTER 7: *OUR FUNDAMENTAL MODEL*

Acceptance without proof is the fundamental characteristic of Western religion, rejection without proof is the fundamental characteristic of Western science.

Gary Zukav (1942, "The Dancing Wu Li Masters") [83]

Towards a Logic for the Metaparadigm of TDVP

This model has been in development for over fifty years (more than 25 for each of the two researchers). We have taken into account feedback and have recognized the need for empiricism, mathematics and applying logic. For every concept, we have ensured that there is both a mathematical, logical and frequently an empirical basis to justify it by using either LFAF or falsifiability.

Historical background to TDVP

We have discussed briefly here the endpoints of our model but this did not occur in this order: Initially we realized the need for space and time but also that our current physical world was rarely, yet definitely violated by contradictions. We recognized the need for a further component besides space and time, some kind of consciousness, meaning or essence. This then was a rare but not unique model involving multidimensionality, space-time and some kind of consciousness. Between us we had developed two overlapping and similar models (Neppe's Vortex N-dimensionalism [5] and Close's Transcendental Physics [7]), but these were still different and incomplete. Neppe had recognized the role of vortices, and Close had developed the mathematics explaining the prevalence of spiral motion, but unification from quantal spin was the last of the final components of our TDVP model. We had realized the fundamental role of origin, but had to resolve the period around and before the Big Bang[q] or any other origin —it need not even be a finite origin but an infinite one or alternatively a process different from the Big Bang but something else. We had to find a way to link space, time and consciousness, and this was achieved by postulating the existence of the three as a *triad*. But we still needed to understand what exactly was that triadic mechanism and we introduced *inseparability*, but that was problematic because how would dimensions be expressed? We knew there had to be an absolute incontrovertible link of meaning with space-time dimensionality, but also that each of these theoretically had to have their own independence. The concepts of *tethering and dimensional extrapolation* allowed for this and also was paralleled by a mechanism

[q] We are not by using this example arguing that the Big Bang actually happened. As indicated, this is a conjecture and therefore we follow here with "other".

expressing itself across and between dimensions, with the vortex being the content, and the process being *indivension*. Moreover, this resolved the dilemma of the number of dimensions: They were not a constant but fluctuated in different states, and also potentially with traits of individuals. We needed to realize the biosocial significance but this required recognition that these traits were different dependent on which system unit one was referring to, hence the introduction of the term "individual-unit" that made this model into a *biopsychofamiliosociocultural* one. We realized there was a need to introduce the theoretical concept of dimension into consciousness and this was achieved through the calculus of *distinctions* and the application of *ordinal* comparisons of extent. But our model was still incomplete: We needed to explain life, unify consciousness and understand how the brain/ nervous system and sentient beings link. This was accomplished by incorporating how the infinite, life and order fit in and recognizing that there had to be a curved 3D-movement: Vortices are always in 3D and fit that description.

The necessity for the infinite

A major breakthrough has been the recognition of the definitive need for recognizing both the finite and infinite realities and their linkage.

Infinity is needed because the Gödel incompleteness theorem [84] requires it: We could not develop a metaparadigm based on finite reality alone, because to Gödel's theorem that would be a closed complete system. [85, 86]

Extropy

We speculate on another theoretical motivation for infinity. The second law of thermodynamics is based on a closed physical finite reality. Consequently, this does not easily account for the postulation of the order that is demonstrable in physical life, because it implies greater disorder elsewhere in that closed finite loop: This is unproven and may be illogical. Indeed, to regard "entropy" as the major component in all systems may be as illogical as accepting that the earth is flat. It defies our observation and logic: It is clear that physical systems in a closed finite subreality tend towards disorder. This includes the human body which tends to utilize energy sources and move towards lower equilibrium states. However, this is only one component. Living is an empirically demonstrable experience that billions of individuals can attest to—at least that their own life exists. We all experience a remarkable order and structure to life, a consciousness, and a separation of self from others. We are ordered beings even if tendencies towards physical disorder play a role. If we were purely entropic beings, we would die very quickly.

Effectively, how does that order come about? We can apply here extremely cogent inductive reasoning because it is based on consciousness observations that have occurred since the advent of humans. Each individual knows at least, that he or she exists. Physicists hypothesize a state of equivalent added disorder in the rest of the closed loop cosmos, to balance that order. This appears to us illogical. How do we know this hypothesis has any basis? Consequently, an alternative explanation and strong motivation is to explain

extropic ordered reality in living individuals though the concept of infinite continuous systems permeating through the closed finite discrete systems that may ostensibly produce disorder in physical reality. Using this logic, extropy is obvious, overt, and is real based on our common experience of life and order. Therefore, if the finite is insufficient to explain extropy, this strongly motivates the infinite reality.

Extropy and the infinite
Extropy further motivates a broader ordered reality that is not limited to a closed complete setting. The process we call *"extropy"* is far more than just negative entropy (negentropy) because an open, infinite setting implies metadimensionality. Entropy is applicable in a finite closed system wherein the second law of thermodynamics is not compromised, but it does not apply in infinite open reality.
The need for such extropy derives from existence in the infinite and conversely because of the limitations of explaining ordered life in the finite, extropy implies infinity.

Therefore, extropic order necessarily had to be in an open system otherwise the laws of entropy would be compromised and in turn, many of the fundamental laws of physics would be overturned. Extropy is not only a multidimensional level, but implies order at that infinity level— infinite dimensional reality ("metadimensional"). In summary, the physics of entropy is inapplicable if you go infinite because infinity reflects an open reality, and extropy is far more than just negative entropy because it is all pervasive, not unidimensional order.

Extropy and life
But is there a need for extropy? Yes, there is. The demonstrable need for extropy in physical life in the finite provided the correct physiology and genes manifest at that time. The consequence is living sentient beings, and effectively the abstraction is the *"life"* component. We posit this derives from the infinite reality of this existence and is accessible via extropy. Life is the ultimate expression of this extropy at the infinite level. Because it is a different life in the infinite, we call it "polife" or potential physical life, although it still may imply an existence in the infinite. Therefore, this is an example of the *infinite interfacing with the finite*.

Infinity and interfacing with the finite
Closely linked with order and life, is broader continuous flow of meaningful information. Consciousness and meaning are still linked up with our S, T, C tethering and inseparability at that discrete finite level and added meaning is acquired through the infinite interfacing with the finite: The finite is just a movie frame of the broader infinite reality. It is as if the order that comes from metainformation can be translated into the infinite continuous meanings of metaconsciousness. Again, this link is facilitated if one postulates unified infinite time, with multiple dimensions of finite time all beginning at the Origin Event.

STC Tethering
Tethering is far more than just physical links, per se: The various substrates are inseparable at the areas so that it is more than connection where space, time and C-substrate are all tethered. They are part of the same substance effectively and hence the term *Qualits*. The notation that is used is content, and the metaphor is one container of 3 different dimensional forms all mixed such that they form a new chemical mixture.

Infinite continuity and finite quantal discreteness
We realized recently the need for the infinite to be continuous, and the finite to be discrete, and we were therefore able to apply the same model of quantum physics, and specifically quantal meaning across the subatomic, macroreality and astrorealities and its relationship with a continuous infinite metainformation/ metaconsciousness reservoir. This has now been accomplished.

Top down tethering
In summary, we are describing reality both from the top down (the extension of the transfinite into 3S-1t) and from the bottom up by dimensional extrapolation. We have STC tethering at both ends. However, this is at the discrete transfinite level because it is contradictory to call the infinite anything local. In fact, there is an absence of S and T (both approximate) zero so this reality is *finite relative nonlocality.*

Quanta and discrete meaning
Metaconsciousness and quantal meaning are closely linked but in different contexts. Metaconsciousness from an infinite point of view is conceptually continuous. Quantal consciousness or quantal meaning is in quanta or perhaps qualits (in the context possibly of chronits) and is discrete. This implies that there could be some kind of particle or particle wave in relation to this meaning as well, and hence the hypothesis of a psitron or a kinetron would be a possibility at that level. We could speculate that this discrete meaning may not be at the quantal level per se, but potentially may even be at the subquantal level or in dark space (these could speculatively be the same). But ultimately, applying TDVP, the infinite and the finite subrealities interface at every level.

Non-locality in the finite; metacist in the infinite
John Bell coined the term "non-local" [87-89] to describe the strange state of elementary particles that would have to exist between their source and the receptor, if Bohr's interpretations were correct. [90] We prefer metalocal, metatime, metats, metacist The finite is non-local, the infinite meta-local.

Table 1: New terminology applied to essence

Meta-information vs. information (limited finite, discrete),
Meta- consciousness
Meta-time, meta-timal

Meta-space, meta-spatial Metats, metatsal Metacist, metacistal (consciousness, information, space, time).

Infinite space and time.
All of space and all of time combines as a single unit, so it is not a finite non-locality because non-local is in the context of the finite, but it is an illogical term in the context of the infinite particularly as it refers to *all of local space and all of time*. This motivates why we introduced metaspace and metatime, and combining them into space-time, it would be "metats" ("metast" is too close to metastasis) with "metatsal" (as adjective), if one combined the CST with consciousness as well. Additionally, we have "metacist" and the 'i' could be information.

Effectively, although space and time could be applied in an artificial isolated theoretical way, TDVP explicitly explains the axiom that S and T cannot be separated from the C-substrate *at the level of the tethered CST* and that this manifests from our (finite) Origin Event. This means that C-matrix (implying consciousness in some manifestation) always exists. We speculate that that part of the CST manifesting as Consciousness, Space or Time alone, with its vortical indivension projections, invariably involves manifestations in sentient beings in the C-substrate. This does not mean that multidimensional time alone may not be vortical but the sentient being will not register it. And the same would apply to Space, although we can more easily conceive of the first three dimensions of space. That ultimate registration is at some level of N-consciousness through the nervous system and the manifestation would be through the meaning of C-substrate with the rest not existing in our standard experiential reality. At higher dimensional finite levels, and certainly by the transfinite, it is far more difficult for us to propose anything but finite C-substrate dimensions.

On the infinity side we have CIST, namely, consciousness, information, space and time. The whole term *essence* incorporates metaspace, metatime and metaconsciousness, but it also incorporates extropy and life. Therefore, we can refer to the essence as the qualities of the infinite. We need not draw any theological or mystical allusions to this.

Philosophy
Finally, we were able to reconcile this model philosophically as *"unitary monism"* and even find justification with the concepts of infinity for theologians and mystics potentially to make interpretations, although we have not, per se, introduced anything pertaining to a supreme being. We do not go in that direction, but we can see how there are speculative jumps towards such conclusions. At one point, we had used the term "guided reality" because we were trying to transmit concepts of infinity and meaning, but we now apply the term *"meaning"* for a more balanced scientific approach. In any event, guided is better called "guiding".

Postulates and relativity
Our model then of itself generated several hundred postulates or ideas and these have become valuable, for example the role of forces and energies, a variety of different theorems relating to extradimensionality and even the possibility of extending warped gravitation to other forces, effectively extending Einsteinian relativity. We have recognized the need for relative elements and of even relative objectivity, and we've been able to introduce a speculative model unifying the quantum and subatomic supposedly objective components with the subjectivity of experience of such a model.

Essentials
We now regard TDVP as fulfilling the requirements of a metaparadigm. The core axioms effectively separate out each component of our metaparadigm for simpler explanation, but come together as a fundamental basic TDVP unit.

Extensions
We must not go beyond interpreting the basics, as the hundreds of speculations may or may not be true. These include models for psi phenomena and for entanglement.
Given its rapidity of change over the past several months, due to further development by the authors and consideration of peer review comments, with the same core ideas, but greater clarity, we have little doubt that this will continue to develop. We have briefly tabulated some of these ideas below, and then discuss them briefly, hoping this will lead to greater refinements and new directions and ideas.

The proposed model:
We propose a model that has the following attributes: This will become clearer once *the information on which it is based is perused below* but it is nevertheless presented here at the outset to allow a perspective of our postulates:

There is a single unitary reality conforming to the laws of nature with both continuous infinite and discrete finite components and a variably permeable boundary between.

Essentially space, time and "consciousness" are fundamentally inseparably tethered from the event-horizon (e.g., the big bang).

This fundamental and permanent tethering has components that are untethered. This means that space, time and consciousness still are very closely allied in meaning and interaction even when they are separated in finite space, time and consciousness.

There is a unification of what, in our conventional reality of 3S-1t, we experience as distinct past, present and future. This means that our concept of time is relative and requires at least a conceptualization of not one moment in time (zero dimensions) but a linear movement across time. We further motivate that time is likely to be multidimensional (at least two, more likely three) and this allows for such concepts as vortical indivension, tethering and free-will to be more easily developed.

This could also imply that there may be something outside or beyond our conventional standard experience of time. Because all finite realities exist in time, this concept would need to reflect infinite realities.

With the tethering of a fundamental "consciousness" to space and time, the likelihood of a requisite order to reality becomes a theoretical possibility and there is empirical data (e.g. life and its origins) to support that.

This means that there may be another system besides physical disorder that we call "entropy". This is more than "negative entropy. We call this active system "extropy".

Dimensional Elements in the TDVP Model

The following outlines these ideas relating to dimensions:

a. Existence has more dimensions than our conventional 3 dimensions of space and one point in time. We use the term "meta-dimensional" for this.

b. Existence implies at minimum, the intertwining of 3 dimensions of space, at least 1 dimension of time and of a C-substrate. (See the section "Statistical Basis Justifying a Paradigmatic Shift" below.)

c. Existence requires a triadic representation of the 3 substrates of time, space and C-substrate (what we are calling S substrate, T substrate, and C-substrate) in varying proportions making up a *metadimensional* existence. (Lemma based on the C-substrate axiom below)

Our ideas also relate to the structure of these dimensions, namely that in all of existence from the most subatomic particle or packet to the largest astronomical level, there is a necessary co-existence of space, time, and what we've called the C-substrate. We call this CST and observe the three components of this "triadic" model. We demonstrate this mathematically and dimensionometrically with dimensional extrapolation and proven theorems.

Triadic CST (or SCT) and Indivension

The structure we axiomatically propose is that CST acts as a tethered unit and cannot be totally separated in nature. This means a unified wholeness exists even at the Origin Event (the Axiom of Original Tethering or simply the Axiom of Origin as one of the fundamental 21 axioms in our broader metaparadigm).

To explain this structure across dimensions we require a content which in TDVP involves a ubiquitous curved shape which is moving, called "Vortices". The vortex here is used in its broadest context. This includes very complex such as spinors, helices, and shapes from elongated curved tubes to spheres, and movement that includes zero movement. Vortices are thus fundamental three dimensional ovoid movements creating content through space-time-C-substrate.

Our TDVP model recognizes the need for a process relating to that vortical content. This process is called "indivension" describing these fluctuating vortices moving across and between dimensions. The term *"indivension" was needed because no such term previously existed and it was coined out of necessity.*

Dimensions are necessarily beyond 3S-1t in our TDVP model because a fluctuating number of dimensions of consciousness exist and there is a solid logic to proposing more than 1 dimension of time.

A complex clarification: The three D element in vortices implies space, the movement implies time. However, this would be how we conceptualize them in 3S-1t. But they could be 3D of consciousness or of time, moving across and within other higher level vortices or dimensional structures, ad infinitum. Three dimensional structures could be involved at the metadimensional level as components of a broader transfinity. This means that vortices still have a universal applicability throughout N-dimensions.

In order to bring consciousness into the equations that describe reality, we involve it in the definitions of our most basic terms. This is needed as the current materialistic, physicalistic, reductionist, standard scientific, everyday 3S-1t paradigm ignores consciousness. This may be that it is not falsifiable and cannot be easily falsified by empirical data—this is illogical because it would make considerable parts of psychology and the social sciences into "pseudosciences" because of their lack of falsification. We accept the social sciences as legitimate sciences because it is convenient in those contexts to understand "consciousness" as axiomatic despite the difficulties of definition.

Whereas most physical sciences are falsifiable in almost every activity, the findings of both subatomic physics as well as overwhelming statistical data against chance in consciousness research sometimes require re-examinations applying LFAF.

It may well be that "indivension" reflects the projections out from the original tethering of space, time and consciousness. This would explain the practical mechanisms of how non-tethered links impact also on psi, entanglement, as well as indivension, or at least some of these. But this is at present a tenuous and speculative hypothesis, although theoretically the conceptual links appear to be worthy of further exploration.

CHAPTER 8: *REALITY AND SUBJECTIVITY*

"Reality" is the only word in the English language that should always be used in quotes."
Unknown

Monist or Pluralist?

The TDVP model may superficially appear a materialist model because it portrays the unification of space-time and consciousness. It therefore seems monistic, and since space is perceived as a substance, and time is experienced as a duration. However, it is anything but materialistic. It is almost pluralistic in portraying a transfinite number of individual realities all closely interwoven with each other at multisystems levels, but that ostensible "pluralism' is really a monism of one single natural law reality that has components that are experienced as separate and subjective, and perceived and conceptualized depending on the nature of the sentient being (e.g. human or even amoeba) that experiences it.

Unified Monism and Tethering

TDVP philosophically and conceptually portrays a *"Unified Monism"*, an inseparable *tethering* forever of space, time and extended consciousness at the most fundamental level of origin, *allowing separations in the non-tethered areas*. This tethering is inseparable for both finite and infinite subrealities, but because tethering occurs, there are zillions of projections that are non-tethered.

Reality and Individual-units

The realities are subjectively, finitely *experienced* individually by individual-units (groups, individuals, families, ethnicities, cultures, society and species——we have used this order in this example to easily portray the "individual-unit" that makes up all these subpopulations and all other combinations and spelling out GIFECSs). All these individual—units experience their own subjective reality within a finite environment of discrete events or objects or impacts. When our reality complements what others are experiencing, approximate the individual-units of others, then we are experiencing a "common reality" that is perceived as actual but still is subjective. In 3S-1t, the actualized common reality is usually experienced in finite units of every separate individual because one conceptual endpoint of experience is through the separated identity of each individual single brain. It may that this "endpoint" is a misnomer: the brain acts as an integrator and executive of information, and bidirectionally with input and output. Speculatively, the brain may even be one expression of a quantum or even subquantal physical mechanism. The individual-unit concept is far more than each individual brain, though the sum of these may produce a whole. Because of the GIFECS links (e.g. familially, sociologically and ethnically) the sum of all may be greater than all these brains not working in unison.

Finite Bottoms-up Tethering
The tethering could be conceptualized in finite subreality, from the bottoms-up, or the inside-out, for example, in finite reality. In our conventional 3S-1t domain, such tethering involves a finite progression from the most miniscule subatomic subquantal aspect through the macrophysical and astrophysical cosmological levels of both inanimate and animate existence. At that miniscule level, we speculatively postulate a *"qualit"* of any kind manifesting as an inseparable space-time-meaning with the potentials towards mass, energy and a directed information: It is a discrete unit, and although quanta may be the smallest such unit, this includes subquantal soup (the so-called black space) containing directed information within that space-time elements.

Transfinite Top-down Tethering
The necessary tethering of space, time and extended consciousness (STC), may occur at the highest dimensional levels (the discrete, countable transfinite kind of infinity). This can most easily be regarded as top-down, or outside-in. This STC can again impact all the "lower" dimensionalities with meaningful information because the tethering is only in portions, not complete. Effectively, the highest dimensional configurations do not require the lower ones to independently exist. They are closely allied and we postulate all dimensions influence each other. However, the higher may more easily influence the lower, because they are metaphorically able to conceptualize the lower dimensional jigsaw puzzles.

Tethering and Vortical Indivension
There may be zillions of other areas of interfacing of that tethering and because of the fundamental 3-dimensionality of structures, the conceptualized movement, and the rotational elements that appear ubiquitous, this tethering manifests vortically. As every individual unit manifests zillions of such vortices, and they interface, this effectively creates webs of interaction of individual-units at higher dimensionalities.
This is why we developed the term "indivension"— individual-units at higher dimensions. Some of these indivensions do not express themselves in experiential reality, they exist just as the whole infrared to ultraviolet spectrum limit us humans to a very small range of experiential light.

Actual Reality is Relative, Experiential Common Reality
The concept of an actual reality may initially imply materialism as the actual reality would reflect objective physics. But it is never an actual reality that is experienced by sentient beings. Instead of actual reality we use the term "common reality." This is experienced as one's own existential reality. There is certainly a closeness given the almost identical experiences of our species of space and time that it resembles a common reality—it has perceptual input, it is integrated, it is then conceptualized with interpretations, and this is experienced as common reality. This common reality is almost identical for all humankind,

just as our genetics are almost but not quite identical for all humankind, or for that matter all sentient beings.

The Misnomer of "Actual"

Our initial misnomer term, *actual reality*, changed because it is *relatively objective* and actual reality refers to "objective physics: Instead of actual reality, we therefore use common reality because it fits also into our idea of an individual-unit where there are different levels of *subjective reality* and an individual may belong to several subjective individual-units. We are not referring to the actual reality in the direct context of objective physics in our 3S-1t world earthly world domain. It is only ostensibly actual because large quantities of people can objectify it that it is still only relatively objectified by virtue of it's commonality. Effectively, it is *experiential reality* —common reality or *relative objective physical reality*. This is not to deny that there is an actual reality out there that is objective in that it exists irrespective of the observer, but that still contains elements of consciousness or meaning even at the subatomic level. Whether such objectivity, is truly objective therefore, could be debated as there may be subtle dynamic variations occurring subatomically at the level of quanta or qualits.

The ideas of perceived reality—perceptual reality, conceptual reality, and actual reality may initially imply materialism as the actual reality reflects objective physics. But objective physics is not truly objective: It still requires our subjective experiences and indeed cognitive interpretations and integrations in the brain.

Commonality and Interactions

The relative subjective context and relative objectivity does not exist in the absolute context. It is always based on perceptual, conceptual, and experiential commonality (a principle of the Calculus of Distinctions).
In fact, even indivension of these zillions of interactions is clearly perceptual and/or conceptual, depending on the number of dimensions that one is limited to, and these may fluctuate depending on state and trait circumstances.

The Inanimate and the Fallen Tree in the Empty Forest

What about the so-called inanimate? The subatomic particles, the molecules, the macroscopic objects such as bar of iron, which do not sustain any form of physical life. Do they involve these processes? No and yes. No, in that some kind of neurological consciousness is required in a living being to perceive, conceptualize and experience. But yes, in that TDVP includes a Quantum Consciousness because space and time cannot exist without meaning. So Yes, when the sound of the falling tree is not heard by any sentient being and the fallen tree is not seen by that sentient being as lying in the empty forest, it still has fallen, and it still exists because S, T and C are inseparably tethered in all existence from the origin. This "origin" reflects the finite "Origin Event: that may very closely be linked with the infinite continuous reality where there is no beginning.

Unified Monism Revisited
For the reason above, the unification of a single reality becomes apparent in TDVP. This is why the equivalent philosophical model is called *Unified Monism*. Despite its apparent *monist* qualities in its title, is not materialist nor monist in the modern sense. If dualism now refers to consciousness, it has a dualistic element. But for the purist it is monist and the infinite and the finite are unified as there is only one reality.

Relative Reality
The relative subjective context and relative objectivity does not exist in the absolute context. It is always based on perceptual, conceptual, and experiential commonality.

Relative reality follows from the fact that we are accepting general relativity. In the sense that there is no such thing as an objective reality independent of observation. We call this *relative objectivity*. The levels of appreciation reflect our perceptual afferents, our conceptual interpretations, and further validates relative reality, objective, common and manifest.

The reality hierarchy objectively is quantal subatomic, macroreality and astroreality. [91] Relative objectivity is reflected from the quantum level, and is expressed at all levels, not only subatomically, but in macroreality, and in astroreality. In order to have relative subjectivity maybe there has to be some kind of *animate* component as opposed to *inanimate* component. Relative objectivity always uses the *orthogonal Euclidean components* but there is *non-orthogonality and non-Euclidean* elements when viewed from other dimensional perspectives.

We should take care of distorted interpretations: Someone interpreting experience in a dichotomous way could make any terminology into an interpretative problem.

Conscious Reality Closed and Open
Consciousness reflects both the open infinite reality and the closed finite reality. This model speculatively allows both to fit together because we can translate the quantal meaning to STC via infinite metaconsciousness. It means there is no separation of meaning with metaconsciousness and that the ultimate integrator of conscious awareness and responsiveness is via the central nervous system of living beings.

The Gesher and Dynamic Freedom of Choice: Real Meaning in Our Lives
The finite and infinite subrealities constitute a single unified reality, necessarily existing *always* (note the universal time element) together in all space (note the universal space element). The question then is how does this interface take place? How does the infinite and the finite link? If they are technically one unified existence there is no need to link. All knowledge, all information, all existence is already there. But the finite, animate (living)

being requires a filtration mechanism, a barrier so as not to be overwhelmed. We call this a "gesher"—a mystical (?) bridge, mystical in the linguistic sense of interaction with physical and an infinite essence This gesher linkage allows incoming stimuli from the infinite and outgoing expression from the finite. It can be narrow or wide depending on one's needs. The infinite pervades the finite in all ways, but the finite can influence the infinite creating an influence on total realities that are higher. This is why we use here the term "mystical" because every action, every thought and every concept may have some influence on the *dynamic* infinite reality that may always change in the finite reality existence of our individual-unit worlds. Therefore, there is freedom of choice because the infinite has infinite possibilities and potential, and the real opportunity to influence reality is our special reality. The circulating air of the infinite is not stagnant.

The "Higher" Dimensions and Essence

The extended continuous infinite is melding into the transfinite still discrete very high dimensional finite like there is no separation. Of course, the concept of "higher" and "lower" is linguistic alone. STC links in finite tethering from below (at the "lower" level, the bottom-up or inside-out level) and in an infinite tethering from above, at the "higher", top-down or outside-in level. But all of space is present everywhere, all of time exists within the present, all of information is available as meaning, and all order is available across all domains as extropy, and life potential (polife) is ready given the correct physiology and environment. All these properties pervade the laws of nature, and make up an infinite essence. But it's just we do not know what laws of nature the infinite essence of extropic polife metacist (meta-consciousness, -information, -space and –time) consists of. The infinite need not impact from the top-down alone, it permeates all dimensions and directly impacts 3S-1t, our experiential, yet by the higher dimensions, possibly beyond 3S-3T-3C going towards NC a there is lesser and eventually only limited separation of the finite subreality and the infinite essence. The two have become one.

CHAPTER 9. *THE C-, S- AND T- SUBSTRATES, DIMENSIONS, DOMAINS AND DISTINCTIONS*

A human being is part of a whole, called by us the Universe, a part limited in time and space. He experiences himself, his thoughts and feelings, as something separated from the rest--a kind of optical delusion of his consciousness. This delusion is a kind of prison for us, restricting us to our personal desires and to affection for a few persons nearest us. Our task must be to free ourselves from this prison by widening our circles of compassion to embrace all living creatures and the whole of nature in its beauty.
Albert Einstein

Substrates

Why have we chosen the term "substrate" and not "matrix" to describe space, time and broad consciousness?

The substrate term is better than matrix: it is non-prejudicial unlike the *rectangular* matrix. Most of our model is curved and not rectangular. Also substrate is commonly used in chemistry, but not in mathematics and that means we are not therefore misusing it mathematically, but redefining it.

A *matrix* implies a rectangular array of values or measurements that can be 3 dimensions or even more. We had used this term initially for S, T and C matrices but recognized its limitations including conflicts in name reflecting different concepts e.g., Space Matrix in String Theory [92]. Therefore we changed it. What it is really expressing may or may not be as objectively mathematical. Nevertheless the term substrate expresses well our understanding about consciousness, space and time and can be used as a *dimensional substrate* or simply *substrate.*

Other synonyms such as milieu, identity or pattern do not fit. The only one that could is the term *domain*. But we already have an excellent use for domain and subdomain and we would have needed to have redefined domain there.

Substrate is the ground or origin from which something sprang.

The S-substrate, the T-substrate, and the C-substrate are all appropriate in the mathematical sense and may assist readers who are examining our model piece-meal. Moreover, substrate is great because within the S, T, and C substrates, there is one additional aspect better than the C-matrix which could have been conceived incorrectly as a single matrix, when in fact, we motivate that there are a many, even possibly, a

transfinite number of dimensional substrates of consciousness alone.

Dimensions

Dimensions provide a logical, geometric-mathematical framework within which to describe the objects and events perceived and/or conceived as distinct features of reality. In any reality model, there are many measurable variables; e.g., mass, energy, velocity, density, angular momentum, electrical charge, biological activity, information content, etc. But these are variables involving *content* not *extent*. While they are measurable features of perceptible reality, they are not dimensions.

The number of dimensions is equal to the number of variables of extent present. Extent implies degrees of freedom, i.e., directions in which something can move. This is contrasted with content which does not have degrees of freedom but can be measured in terms of units of the constituent; a third domain, one with variables of intent refers to determination to act but not the action itself.

Our use of the word dimension will be precisely limited to *variables of extent that can be measured and described geometrically and mathematically*. Therefore content elements are insufficient: There must be an extent measure; often density is the interface between content and extent describing something as per unit of the various variables making up the extent.

We do not use the word "dimension" in its many different other conceptual ways. This includes statistical analysis applications referring to having a "causal dimension" and a "resultant dimension". Nor do we use it to represent any measurable variable as a dimension.

Dimensions as we know them

The idea of 3 dimensions of space and one extra dimension of time is logical given that we are talking about independent co-ordinates needed to specify the things that belong to it. Spaces with many dimensions provide a convenient way to do this, as length, breadth, and height provide a convenient 3 dimensional fabric in this regard. [93] The points in these co-ordinates need not be zero dimensional points. So, for example ellipses are planar because they are conceptualized in planes. An ellipse requires 5 different numbers to specify: the 2 number of co-ordinates of the center of the ellipse, it's length 1 number, it's width 1 number, and it's angle of tilt 1 number. Now, one could argue therefore, that an ellipse is 5 dimensional but it is not as these are variables of content involving co-ordinates. It is a plane because there are effectively 2 variables of extent. Even several metric measures or co-ordinates, still do not change it from the same plane. But we therefore cannot say that this 2 dimensional space exists in 5 dimensional space. It is a space because if we change the number representing the ellipse by a small amount we can get an ellipse near by that looks very similar, but we cannot argue that it is a different distinction of extent.

Dimensions mathematically

This is very relevant from the point of view of vortices, which are 3 dimensional spaces of extent no matter how complex the vortical representation would be in co-ordinates. Therefore, one has to be very careful of measures. For example, in engineering if one has stresses and strains[94], you have a grid of a 100 metal girders you have a 100 forces to work with. You could argue incorrectly this is 100 dimensions, but effectively one really could be talking about degrees of freedom in content not extent. Even though these things can vary independently, they can be represented as tensors of content and they do not necessarily imply different dimensions, per se. In genetics, we can apply "DNA space" where we still have sequences of 4 bases with different variations, and one can extend it in terms of all possible kinds of transfinite spaces. [94] But again, this is at a 3 dimensional double helical structures and therefore a vortical kind of level. Even if you have a million such sequences, you still are dealing with 3 dimensional spaces. Moreover, the postulation of a "phantom DNA effect" [95] involving more complex space and holograms, is at this point speculative.

Euclidean dimensions and non-Euclidean space

There are mathematically 4 Euclidean dimensions but the fourth is more difficult to represent.

Orthogonality can be easily represented in terms of 3 co-ordinate axes. However, 4 dimensional space requires an extra co-ordinate orthogonal to the other 3. It is usually labeled w. But the length along the w axis produces 4 dimensional geometry. This is more complex than three dimensional geometry reflecting the three degrees of freedom. In context, this is the typical application of the Cartesian system to 3-D space but there are 4 degrees of freedom once time is introduced.

Because of the dilemma of what a dimension is, possibly we should use the phrase Euclidean dimension and non-Euclidean dimension. Effectively the first three space dimensions are always Euclidean as we're using it.

Thereafter, the imaginary dimensions of time could become non-Euclidean or Euclidean by applying warped forces measurable relative to the observer's CST frame, but otherwise such dimensions of extent still have degrees of freedom that could theoretically be measurable by applying Euclidean geometry—in the metadimensional context, Euclidean dimensionometry. Non-Euclidean space is apparent from one observer perspective and is perceptual at the n dimensional level but the n+1 observer would be still seeing it as Euclidean space. The real aspects are the invariables which we use to extrapolate reality into sets of three dimensional domains. The n-dimensionality is particularly applicable to the C-matrix and this substrate is invariably perceptually experienced and directly inseparably linked with S and T. The n-dimensional reality is embedded within n+1. At the higher level, n+1 invariably has a C-substrate.

Dimensionometry

In the context of dimensions beyond the three dimensions of physical space, the term

geometry should be replaced with the term "*dimensionometry*".
The answers to the questions about the nature of reality and consciousness may lie in understanding the extra dimensions of reality not normally perceived by our physical senses, but indicated by the existence of forces that appear to act at a distance and the special role of consciousness implied by the concepts of relativity and quantum mechanics. Even though we usually conceive of our direct experiential reality as a "domain" of only three dimensions of space and one of time, there is evidence indicating that we actually exist in a reality of more, perhaps many more, than four dimensions ("meta-dimensions").
Metric: The metric is a distance between two points or from the origin to any given point. This is the basis of algebraic analytical geometry. This is best understood by defining and using Cartesian co-ordinates. The arbitrary orthogonality (right angled, perpendicular orientation) of the ordinate and abscissa in three-dimensional space is the basis for defining the Pythagorean metric. Metrics at the ratio and interval mathematical level relate to the lower dimensions and metadimensions (possibly up to 3S -3T). However, the calculus of distinctions when involving ordinal data usually applies to much higher dimensions e.g., N-C.
Parangular: We have suggested a term like "parangular" because particularly when one exceeds three dimensions co-ordinates may not be orthogonal.
Cartesian Co-ordinate: A Cartesian coordinate system specifies each point uniquely in a plane by a pair of numerical coordinates, which are the signed distances from the point to two fixed perpendicular directed lines, measured in the same unit of length. These also reflect the positions of the perpendicular projections of the point onto the two axes, and expressed as a signed distances from the origin.
Ordinal, interval and ratio: Whereas many scientific measures are exact, involving specific measures of intervals between (interval scale) and usually including zero (ratio scale), our discussions of higher dimensions and particularly those in the C-matrix may reflect ordinal measures. These involve extents of change but inconsistent differences. Psychological and medical measures commonly use ordinal data such as None-mild-moderate-severe-profound or None-slight-great. This allows one to provide a degree of extent for such qualities as courage e.g., great courage versus slight courage or none. It is the *meaning* in the C-substrate that reflects fluctuations of ordinal measures of intensity as variables in the C Matrix. Meaning allows a method of differential order as a variable of *extent* contrasts with Information, which is the neutral *conten*t or pattern only.

Dimensionality notation
For uniformity and ease of expression in standard notation, we will represent the dimensionality of a reality that can be described with three dimensions of space and one dimension of time as 3S, 1T reality, where a specific point, P_1, in this reality can be uniquely described as $P_1(x_1, y_1, z_1, t_1)$, where x_1, y_1, z_1, t_1 are specific values of the dimensional extent variables x, y, z and t in standard units of measurement for distance and time from an arbitrarily located zero point. In general, the dimensionality of any space-time reality can be represented by NS, MT, where N and M are positive integers.

When not distinguishing space from time dimensions, we will use the notation D for dimension. Thus 3S, 1T can be expressed as 4D. An ND reality with N>4 will utilize N variables to locate any unique point in ND reality. In general, a point, P_1, in ND reality will be uniquely described as $P_1(d_1, d_2, d_3, \ldots d_N,)$ where the d_is are specific values of the N dimensional variables of extent.

Building dimensions

As human beings we can directly perceive only three dimensions of space and one point in time, and this works almost all the time in our ordinary 3S-1t reality. This is possibly because we are unaware of other dimensions impacting on ours.

However, we can build a conceptual model of a reality of additional dimensions in a straight-forward logical manner by discovering and using invariant features that link any n-dimensional reality or domain to an n+1 dimensional reality to extrapolate from one to the other. For example: an n+1 dimensional reality always contains an infinite number of N-Dimensional realities: A one-dimensional line (1-D) contains an infinite number of zero-dimensional points (0-D). A two-dimensional plane (2-D) contains an infinite number of one-dimensional lines (1-D), and a three-dimensional space (3-D) contains an infinite number of two-dimensional planes (2-D).

Infinity is therefore relative using this model ("relative infinity").

Hierarchy of infinite dimensions and of infinities

This reveals *a hierarchy of infinities:* The infinite number of points on a 1-D line, corresponding to the infinite set of real numbers, is multiplied by the infinite number of lines that exist in a plane when you go to 2-D. As one increases dimensions, the infinity is obviously "larger" than the first infinity because every number in the first infinity can be matched with an infinity of real numbers in the second, and could thus be called infinity squared, or an infinity of the second order. The infinity of planes in the third dimension contains the two lesser infinities, and could therefore be called infinity cubed, or a third-order infinity. The infinite number of points in each dimensional domain constitutes the basic concept of a field. The points on a line constitute a field in which each point corresponds to a unique real number (integer or decimal fraction). The points in a plane constitute a field in which each point corresponds to a unique pair of real numbers, and the each point in a 3-D space corresponds to a unique triplet of real numbers. This relative increase continues literally ad infinitum! The top down dimensionometric approach is relevant and one can conceptualize x dimensions more easily from x+1 or x+n dimensions. Dimensional extrapolation is relevant, Consciousness operates, we believe, in a Euclidean mode as this is how we conceive of it. [9] The field concept implies a functional modulator upon the "points" in a given dimensional domain, exerting its effect from a higher dimensional instance. [44]

Metadimensionality

Metadimensional is our term referring to any dimensions beyond 3S-1t. C-substrate can potentially be expressed as possible metaconsciousness components in variables of ordinal extent in qualities such as love, honor, courage, wisdom, understanding and a wide variety of qualities relating to higher attributes.

The metaconsciousness when linked with extropic physical life can be used to portray abstract qualities such as courage, honesty and determination. Whereas conceptually possibly S=0 and T=0 at some of these higher dimensionalities, the original STC tethering still applies at other dimensional levels. Therefore extended space, time, and C–substrate dimensions beyond our conventionally perceived 3S-1t, and ultimately these finite discrete interactions can be so large (countable infinity) that we refer to them as transfinite.

As Cantor defined it [96], the transfinite cannot really be conceived in terms of degrees of freedom because the metric is different. As long as one has finite dimensions, one can use DOF; but the transfinite does not allow this, and we've invoked the transfinite as a source of meaningful information. The ideas of the non-Euclidean do not *necessarily* apply as soon as the fourth dimension. Dimensional Extrapolation relates the non-Euclidean to indivension, but top-down the conceptions are Euclidean and any reality below that is embedded in ostensibly non-space and time consciousness. We cannot at this point have pre-conceived concepts of non-Euclidean space. Non-Euclidean geometry does not describe an objective reality outside of perception or conceptualization [9].
This is critical to understanding the interface of consciousness and the subquantal but will be discussed elsewhere [9]: Klein and Boyd imply a scale moving from cell to atomic to subatomic to suquantal [45] We perceive the Primary Receptor as not subquantal but omnipresent in both the finite and infinite, both infinitely large and infinitely small. The subquantal focuses on the very small only, and this may be an important interface below the Planck length [97], but the infinite may pervade and encompass everything in between from the infinitely small to the infinitely large. The essence is all of this in the infinite reality.

Dimensions, substrates and nesting

The substrate is the beginning of the whole concept, like nested things. We conceptualize the 1, 2, and 3 dimensions knowing that 3 dimensions must encompass dimensions 2 and 1 as well. By the same token, when we get to the imaginary single time-dimension where we have 4 dimensions, it is still the same, as the three are still nested. However, when you conceive of two or more time dimensions, then we may be introducing parallel or adjacent existence where each one of the two dimensional lines in the t-substrate actually has associated with it an entire independent time existence of xyzt or 3S-1t.

The second dimension of time (T2) is the domain of infinite orthogonal extensions originating in each point on the T1 "sequence" (T1 as nested in "All Time" T2). In this sense, any T2 axis may be related reciprocally to an infinite number of orthogonal

"manifested worlds" projections. This T1/T2 Many Worlds construct is coupled to the C Matrix via T3. Extending this dimensionometric process in *all* the conceivable metadimensional spectra, could reach a infinite pluriversal model. This brings the possibility of Multiple World concepts into metadimensions. [44]

Dimensions of content and extent revisited in practice
We have defined dimensions by variables of extent. These have metric measures. The problem is terminology because if 10 things exist and have some kind of measures, it doesn't mean to say that we have 10 dimensions: These are distinctions of content not extent so that even though we may have 10 different mechanical items with various co-ordinates they still are not variables extent. To convert from content to extent, we have what we are calling the " STC density measure" (SDM) reflected as "per unit of extent in space or time or consciousness".

This "density" provides a means of moving from thinking in terms of Content to Extent variables. Content allows us to conceive of mass and energy. This applies through everything below the transfinite. From that point we use terminology relating to the ordinal dimensions because estimation is impossible intervally.

"Intent" is the third component to "Extent" and "Intent" in CoD. It is an aspect of consciousness relating to motivation of volition. "Intent" when guiding may under certain circumstances reflect this "density" but density is far more than just intent.

Dimensional variation and indivension
Indivension is the process that allows for a merging of individual-unit realities (hence the "indiv") across, between and within individual dimensions (hence the "ension" from dimension). Effectively, indivension provides a postulated mechanism that allows for and produces common experiences, knowledge, information and interactions across various systems units (individual, group, social, cultural, ethnic, spiritual or any other identity. *Indivension provides for rare communications across a fluctuating number of dimensions. However, potential information, knowledge and meaning may exist without expression, just as we have available more than we see, hear, taste or smell at any moment, and only a tiny spectrum of these abilities are available for humans. This differentiates what is potentially available from what is used at any point.*
There is no fixed number of finite dimensions. Those who can experience higher qualities e.g. love, honor, wisdom have the likely trait of more finite dimensions.
This varies with individuals and individual-units because their conscious expression varies. These can be positive or negative (e.g. love versus hate) and have an ordinal quality and density of experience. They interface and may change to other qualities, for example, anger converted to love via vortical indivension. Therefore fluctuations occur within, across and between dimensions, and may be state related (at that moment in time) or trait related (more consistent over time).

The interfacing meeting points may be vortical, vectoral, scalar or tensor and allow for information retrieval, apprehension, awareness, perturbation or influence.
We postulate that the infinite "contains" an essence of all qualities and it depends which ones are specifically utilized.

Vortices in metadimensionality
Indivension is the process, and vortices provide the content for these movements. Effectively, the indivension is the variable of extent, the vortices the content variable, and the interfacing is the unit density of expression into metaconsciousness.
Vortical indivension plays a major role in expressing finite dimensional components predominantly at the areas of intersection or interface. This is so because dimensions themselves are theoretical concepts that cannot exist without each other: They are existing effectively as a unit and what one is experiencing via these interface areas is most relevant and important. These dynamic interfaces can be conceptualized in terms of some kind of qualit interface where different qualities of dimensions can meet and where possibly different quanta interface. The "qualit" may even be appropriate at the subquantal level, as well, reflecting a possibly infinitesimal interface but without the limitations of "quanta", as in the model of Klein and Boyd. [45] [r]

Domains and Subdomains
In TDVP we use the word "domain" specifically to refer to a cluster of dimensions that is being discussed or utilized in a specific context.
For example, 3S-1t is the usual description of our common reality being experienced as humans on earth. 3 dimensions of Space (with extension) and one point (moment) in time which implies a description purely of the present, not the past or future. If we wanted to represent that domain it would be 3S-1T (capitalized). Similarly, it is likely that all sentient beings experience some level of meaning and we could say the 3S-1t-1C or even NC domain, as we don't know how many dimensions of C-substrate exist at that state and for that extended trait of that. specific individual-unit. We can also refer to the multiple dimensions of C-substrate as the C-substrate subdomains or 3S-1t could be a subdomain of 3S-1T or of 3S-1t-1C.

Distinctions
A distinction is anything with perceived or conceptualized features that distinguishes it from everything else. A circle drawn on a plane surface, for example, distinguishes the area inside the circle from all other areas of the plane.
Three elements are necessary to produce a distinction (abbreviated *DFD*)

- the feature or features that distinguish it (that which *is distinguished),*
- a background, something that the distinction is *distinguished from* (that from which

[r] Quality and Chalmers's Qualia [98, 99] is not the same as the TDVP concept of Qualit.

it is distinguished) and
- the consciousness that perceives and/or conceptualizes it (*that which draws* the distinction).

Based on the definitions of three realities above, there are three types of distinctions:
To have validity in any existential reality, *a distinction must be defined by at least three types of variables:* variables of intent, content and extent (ICE).

Dimensions and distinctions
All dimensions require variables of extent in some form, which may be interval (ratio) or ordinal in measurement of the metric. The fundamental forces, vortices mass and energy are dimensions of content as they do not directly involve extent of space and time (and hence one cannot use "degrees of freedom" in that regard). However, all variables of content have extent that may be used using the metrics of extent by utilizing per unit measures of density.

Dimensions Conceived as Distinctions
*Close's Calculus of Distinctions (C of D)**:*** Distinctions are applied via one of the authors (Close) who developed the Calculus of Distinctions (CoD**)** [7, 100, 101] modified from Brown's Laws of Form [102]. CoD can greatly simplify the mathematics of substrate algebra by dealing with vectors, tensors, (scalars) twistors, and vortices as multi-dimensional distinctions. This makes the CoD especially effective for testing hypotheses.
There are three ways to differentiate distinctions, which have a relevance for reality (see above), namely Perceptual Distinction, Conceptual Distinction and Common Experiential (or Actualized) Distinction (PCE). The differentiation is subtle as distinctions occur in the context of reality.
In summary, distinctions therefore have PCE reality differentiation; ICE as variables; and also have the three essential elements DFD.

When the substrate variables of extent are space, time and C-substrate, and of content are mass and energy, then the calculus of distinctions expression for the STC substrates are:
$R= f(S,t,m,e,c,) = \sum([(m/S) ┐ e/t]┐ c/St\}┐ = \sum[(ST) ┐ C]┐$
Where R= all reality, S= 3Dspace, t= time, m= matter, e= energy, c= individualized consciousness and C= Primary Consciousness[103].

Distinctions in physics
The matter and energy of the reality we experience is comprised of actual distinctions. These are made up of elementary actual distinctions, called quanta, which obey the laws of quantum mechanics. Quanta might reflect "elementary distinctions" only in the relevant S3-1t domain in which energy and mass is very important.

Distinctions and the Origin Event
If we think of the expanding universe as the reverse of a black hole, the point where quanta

of matter and energy begin to form at the end of the rapid-expansion period is the *event horizon*. But we are calling the first *finite* events at the outset of existence—the beginning (e.g., the big bang, theologians call it "creation") —by a non-prejudicial term "*Origin Event".* At that point, the phenomena that make up reality do not exist until they are registered in an irreversible way upon a "primary receptor or receptors".

CHAPTER 10: *CONSCIOUSNESS AND THE NEW PARADIGM*

"The whole drift of my education goes to persuade me that the world of our present consciousness is only one out of many worlds of consciousness that exist."

William James (1842 – 1910, Psychologist)

We have a minor dilemma here. Consciousness and reality are so fundamental to our ideas that we have introduced them early knowing that the summaries in Chapters 1 and 2 allow an initial, albeit cursory perspective. We have not yet introduced all of our new paradigm and they form enough of a unit that earlier ideas impinge on the later, but the later again impinge on the earlier. We regard this and the previous chapters as key to portray our TDVP concepts of consciousness and reality. There may be concepts that are not quite clear at this point, but you can return if necessary after reading about dimensions, to the key axioms, essence, infinity and brain consciousness.
In an infinite subreality, we could superimpose these chapters upon each other but we endeavor here still to create continuity even in our finite subreality.

Consciousness

C-substrate and consciousness

We have found it necessary to use a global term that is different from "consciousness". This is because "consciousness" may be possibly misunderstood and misinterpreted and therefore not reflect the specific meanings we have for it. There are obvious ambiguities to the term "consciousness" and it is interpreted variably, and in each instance differently in each discipline. These areas include predominantly neurology, psychology and consciousness research, as well as physics and philosophy.

"Consciousness" in any of these disciplines is narrower than the "C-substrate" term that we use, and it may not even be as broad even when it is used when combining all the subspecialties above because of its metadimensional and infinite applications. This is why it has been necessary to coin the new term, C-substrate, so we could then contrast it with the Space and Time Substrates (S and T substrates).

We re-connect science with human experience by developing a logical framework for a comprehensive scientific paradigm including the consciousness of the observer inherent within existence, as part of the legitimate domain of scientific investigation.

Terminology in consciousness

Let us concretize the problems we encounter when using the term "consciousness" as differently used in various specialties. We still want to use it in its specific forms in our

model so it is necessary to clarify these differences, particularly as our TDVP model impacts all these different areas of endeavor that use this term.

We begin with the basic differentiation then move onto more detail.

In *Neurology*, in the brain, we refer to "clear consciousness," and various stages of impairment through to coma, including in lay-terms "unconscious". These measures relate to the extent of awareness, and responsiveness including speech. Neurological consciousness involves any living sentient being, live and ultimately dead (where e.g., the brain on electroencephalogram may reflect a flat tracing). Neurological consciousness, though critically important in our day to day lives, is only relevant in 3S-1t live sentient beings. It becomes irrelevant at other dimensional levels or in the infinite.

In *Psychology*, the unconscious is what is not manifesting directly into consciousness. There is also the broader term "collective unconscious or consciousness" for individual-unit groups or families or societies or ethnicities or cultures or humankind in general. "Preconsciousness" is used for that kind of limited awareness that is just below the horizon of brain consciousness. And the "subconscious" is largely used synonymously with psychological unconsciousness psychodynamics.

In *Consciousness Research*, various kinds of conscious awareness exist including out-of-body experiences (OBEs), near death experiences (NDEs), retrocognitive, contemporaneous and precognitive anomalous cognition or "extra-sensory perception," as well as other spontaneous, induced and experimental afferent and efferent phenomena. Consciousness research besides the psi phenomena above, also involves other kinds of subjective experiences, including Exceptional Human Experiences (EHEs), hallucinations and illusions.

In the *Physics of Consciousness*, also referred to as Quantal Consciousness, a broader meaningful information could imply "consciousness" as opposed to space and time (and hence debates about what nonlocality, spacelessness and timelessness is).

In *Philosophy*, consciousness is sometimes used synonymously with the "mind" and is distinguished from the "brain" or the "body" in dualism, and regarded as equivalent to such a body in materialistic monism.

In *Paradigmatic Consciousness,* which can reflect the spectrum of consciousness, particularly Neurological, Psychological and Consciousness Research areas, we recognize various "altered states" of consciousness (ASCs). Neppe proposed a model for subdividing these various ASCs [104]. This includes 10 different phenomenological subtypes including regular waking consciousness. (See Table 2)

Specialist Terminology for Consciousness

We cannot continue to use these various terms for consciousness interchangeably. We suggest the following:

Nervous System: The core of conscious awareness begins in the conventional physiological description: *N-consciousness* (for neurological consciousness). This is the

endpoint experience for sentient beings of all descriptions of the various terms for consciousness. It may reflect in part an epiphenomenon of conventional physiology including neurotransmission and synaptic firing. It may also be the endpoint of psychological features such as dynamics and conditioning, and it may be an expression of relatively non-local communications. Interpretations may be difficult because it may integrate all these source aspects.
Additionally, we then can refer to various *levels* of consciousness for any level of impairment of consciousness. This has its own classification such as the Glasgow Coma Scale [66]. We can use terms like clear consciousness, unconscious or coma or measure it for example, based on cognitive responsiveness, eye responses, and in terms of touch responses.
N-consciousness therefore has as a core feature both awareness and responsiveness.
Psychology and social sciences: E-consciousness (for ego-consciousness). Once we use *E-Consciousness* then we can go into detail relating into the various kinds of psychological consciousnesses such as pre-, sub-, un-, collective- E-consciousness. We include all psychosocial mechanisms such as conditioning and psychodynamics.
Consciousness sciences: C-consciousness referring to any kind of subjective experience, afferent or efferent.
Quantum consciousness: When we want to refer to Quantum Consciousness, we can use Q-consciousness.
Philosophical consciousness: This is M-consciousness, abbreviated for mind consciousness.
Paradigmatic sciences: This can be applied for broader consciousness such as meaningful information but in fact, incorporates all other areas of consciousness:
the consciousness sciences particularly in our TDVP discussion;
the biological and life sciences including neurological anatomicophysiologicopathological elements,
the psychological sciences across the systems spectrum of individual psychological, family, group and social, cultural, anthropological and ethnic, and mysticospirituotheological components; and the
physical sciences including all the laws governing the subatomic, macrophysical and cosmo- or astrophysical.

In our TDVP model, we use *metaconsciousness* in regard to *continuous infinity* and r*elative non-local conscious meaning in the finite* context. We could also refer to Infinite- and Finite-consciousness but we've not found it necessary to use such abbreviations, because we use the broader term *C-substrate*. (Those who read earlier versions of our model may recognize "C-matrix"). If we wanted to specifically emphasize the paradigmatic nature, without the broad implications of a substrate, this would be referred to as *P-consciousness* as Paradigmatic (also Psi) consciousness.

This broader P-consciousness can include the altered consciousness with the 10 different

kinds of ASC that we have suggested and using the broader term P-consciousness allows "normal waking" states plus these altered states (as in Table 2). These altered states are broadly applicable in N-, E- and C-consciousness, and must be solved by philosophers in M-consciousness and explained by physicists in Q-consciousness.

The paradigmatic sciences involves this attempt to unify the sciences, and may be best exemplified, with respect, in our TDVP model.
Metaconsciousness in the infinite necessarily has the properties of being continuous, meaningful, and having an infinite extent of all available content information (metainformation). At the finite subreality level, this metaconsciousness could be experienced at higher dimensionality levels but is necessarily translated into our conventional experiential living paradigm of 3S-1t usual human experience into a discrete meaning expressed though our brain. This metaconsciousness at the finite level expresses itself as *relatively non-local*, and at the infinite level as an aspect of a continuous essence (infinity).

Paradigmatic consciousness
We globally refer to this kind of "consciousness" as C-substrate, as opposed to S-substrate (Space) and T-substrate (Time).
Consciousness as we use it is used in a paradigm. This reflects both meaning consciousness, and the non-meaningful derived objective side would be information. With the concept of metaconsciousness as extent, information would be the content. If you apply meaning to that information you would acquire a consciousness and that meaning is a meaning that begins at the subatomic level but includes the microphysical and the astrophysical. Meaning implies that quantal meaning, or quantal consciousness. This is the same consciousness in relation to that meaning even with neurological consciousness — quantal meaning or quantal consciousness in the nervous system.

Density in C-substrate
If mass can be conceptualized as having density, which is measured in a metric extent, then meaning could possibly be the discrete density equivalent. Meaning in its various cognitive, affective and volitional forms could reflect the complex scalar or tensor per unit ordinal equivalent of extent. Meaning would be the functional mechanism, and if some kind of guiding occurs in some way, we could speculate that this is the "intent", and that intent in that instance links the information content with the consciousness extent. What is scalar in one dimension, could be tensor or vectorial in another. Similarly there is a complex role of the 3D fabric of vortices and indivension with these mathematical representations.

So with the simple use of prefixes like N- (neurological), E- (ego),
C – (consciousness), P- (paradigmatic) we can ensure at least that "like" in consciousness is phenomenologically conceptualized with "like".

Impacting all four of these consciousnesses (N, E, C and P) are altered states of consciousness.

Table 2: Neppe's Proposed ASC Terminology Classification[105]

ASC type	Abbrev	Variations
Wakefulness	*WA*	*"Normal" Wakeful Consciousness Awareness*
Sleep	S-ASC	Hypnagogic (Gs-ASC), hypnopompic (Ps-ASC), stage (1-4s-ASC), dream (Ds-ASC), Lucid (Ls-ASC)
Psychiatric	P-ASC	Psychotic, psychiatric, transitional (describe)
Lucid	L-ASC	Lucid hyperawareness
Induced	I-ASC	Ganzfeld (Gi-ASC), meditative (Mi-ASC), mystical religious (Ri-ASC), experimental (Ei-ASC or Ei-WA)
Trance	T-ASC	Dissociative (Dt-ASC), focused (Ft-ASC), or clear (Ct-ASC).
Recreational	R-ASC	Recreational drugs (drug should be stated)
Between	B-ASC	Transitional or between states, e.g., Dt-Ct--ASC
Mixed	M-ASC	Combinations
Nondescript	N-ASC	Not otherwise specified

C-substrate

We now focus on this P-consciousness and its broadest base, C-substrate.
The C-substrate includes three components and any of these is sufficient to be part of the C-substrate, though living mankind could have access to all three.

Neurological Consciousness: N-consciousness.

This has been referred to as neurological consciousness and is that part of living mankind exemplified by brain function.

Ultimately in the living organism, the expression of such awareness while awake in clear neurological consciousness is through the brain (CNS consciousness). It can be expressed neurologically by three fundamental mental status components namely Cognition, Emotion and Volition (CEV). These all have solid expressions through neurophysiology.

Ultimately all consciousness in the living organism goes through neurological consciousness which allows for perception, conception and actual or common experiential reality (experienced as actual or objective, but still subjective for that individual).

N-consciousness involves the awareness, integration and responsiveness to our internal

world of images, sensations, thoughts, feelings, information and higher qualities. Yet cerebral electrical and chemical activity in the brain cannot easily explain all components of consciousness such as qualities like honesty or wisdom. It can correlate, but there is no causal link established. The brain appears to be necessary but not sufficient to express *neurological* conscious awareness and that awareness is a subjective interpretation. We emphasize the neurological component here as conceivably in non 3S-1t domains there could be a conceptual description of C-substrate not requiring an endpoint brain. For example, what happens if there is survival after bodily death (and we will discuss the cogent supporting six sigma data in that regard.)

N-consciousness awarenesses and responses may be even minimal or in deep coma absent. But the potential is there.

N-consciousness can be expressed in terms of the Calculus of Distinctions as the distinction of self from everything else with a separation between. This distinction generally has been applied to living organisms.

Metaconsciousness:

Extended human consciousness is postulated to go beyond the most usual neurophysiological component of brain awareness and responsiveness. We call this "metaconscious" and postulate that it includes the infinite repository of content information converted into a meaning extent.

Metaconsciousness also includes, E-consciousness —what the psychologists call the unconscious, collective conscious, preconscious and subconscious, and the paradigmatic altered states of consciousness (and even speculatively, the philosophers "mind" or the theologians "soul"). Effectively, any form of extended awareness / responsiveness state that is postulated to originate or terminate outside the sentient being.

Whereas such a state may well be so, and we believe it is appropriate based on current knowledge to regard it as such, this metaconscious state may not be pertinent in a living human 3S-1t domain where the physicalist monist would argue that this is all simply an epiphenomenon part of the brain, part of N-consciousness, expressing itself in features that we cannot easily explain such as honesty, courage, wisdom, understanding or love or the negative equivalents. The problem is that no such localities for such higher qualities have been demonstrated. Indeed, it is extremely difficult to motivate a localization for some of the various components of the complex function of memory (registration, retention, integration, cued recognition and recall) and we cannot consistently evoke specific memories by stimulating specific brain structures. [106-108] One may find papers arguing that specific brain stimulations produce a "God spot" or equivalent [109, 110 111-113 105, 114], but these are very tenuous in consistency and also even the part epiphenomenal expression does not exclude the probability (based on our model and the data we present e.g. on psi) that metaconscious experience involves an N-consciousness endpoint not origin. This has been a major research and theoretical area of study for one of the authors (Neppe). [105, 114-118]

Whereas we perceive metaconsciousness as relating to humans, it is possible other life-forms could tap into it. Metaconsciousness, at the finite level, may be particularly pertinent when extending to "metadimensional" states. *Metadimensional* is our term referring to any dimensions beyond 3S-1t. C-substrate can potentially be expressed as possible metaconsciousness components in variables of ordinal extent in (interfacing indivension) qualities such an love, honor, courage, wisdom, understanding and a wide variety of qualities relating to higher attributes.

Meaningfulness (or Meaningful apprehension and influence):

We also use the term to describe any meaningful reality. We are defining this purely objectively without any theological meaning. Therefore although "Guided reality" is ostensibly a good term implying "meaning", "guided" has the "baggage" of theological interpretation, and may be as provable or non-provable as theology. We have used the term "guiding" which may or may not be relevant to meaning.

Instead, by meaning we imply apprehension or awareness of objects or events at the afferent level and perturbation or influences on them at the efferent level. This is also incomplete, as the model has possibly incorrect cybernetic afferent-efferent, stimulus-response implications. This is incorrect because there might be no such element (unless S and T =0), as existence is triadic with an organismal or space-time-meaning base.

This means that the existence of any subatomic particle or a quantum packet incorporates this meaningful reality C-substrate reality (implying a role for Q-consciousness). In fact, meaningfulness, linguistically, is meant to be a broad definition, and does not, therefore, necessarily only apply to living organisms. It applies to any kind of subatomic particle, packet or quantum or even subquantum, if it were shown that such a subatomic aspect exhibited a deliberate change contradicting entropic tendencies towards disorder. Meaningfulness would then include apprehension and influence implying at minimum very basic meaning at the most primitive level of reality even in subatomic particles or quanta or even subquantally, Meaningful apprehension and influence are not only in the smallest components, but go all the way through to the astrophysical level. This meaningfulness could involve both the inanimate and the animate.

When the meaningfulness is expressed in sentient beings, it is possible that at times such higher metaconscious qualities as honesty and love are being expressed as meaning. Therefore meaning in the finite in 3S-1t may incorporate, in part or in whole (we can speculate which type or both) the metaconscious which derives from the infinite essence.

Meaning could potentially express itself discretely metadimensionally, at higher finite dimensional levels through to the transfinite. Again, this is a speculation, and it may imply that meaning is the finite equivalent of the infinite metaconsciousness.

Because of the close links between N-, E-, M-, Q- and P-consciousness, we are using a term such as C-substrate below because we want to ensure that it incorporates meaningful reality, neurological consciousness and metaconsciousness as well at the complexities of psychodynamics.

CHAPTER 11: *METADIMENSIONS AND THE C-SUBSTRATE*

This blindness (or prejudice, or whatever you may call it) of logicians is indeed surprising. But I think the explanation is not hard to find. It lies in a widespread lack, at that time, of the required epistemological attitude toward metamathematics and toward non-finitary reasoning. …
Kurt Gödel [119]

C-substrate Perspective

Let us now examine C-substrate in a more detailed explanatory fashion. Many of these statements are axiomatic and could be approached top-down from the fundamental TTOOURS metaparadigm of TDVP.

Infinite expression

The infinite level of metaconsciousness reflects a measurable qualitative and ordinal quantitative extent (e.g., none-slight-moderate-profound) continuous infinite knowledge, wisdom, understanding from the neutral infinite (source) of metainformation content (which cannot be metrically measured by any means except to differentiate quality of information.)

With the concept of metaconsciousness as extent, information would be the content. Applying meaning to that neutral vast infinite array of information, we acquire consciousness. Metaconsciousness originates from an infinite essence that we postulate also includes an all-encompassing infinite space (metaspace), a time that exists in the past, present and future infinitely at the same moment (metatime), and potential towards life (polife) and infinite order (extropy). There is therefore complete space and time at the infinite level—metaspace and metatime linked inseparably with the metaconsciousness.

Finite expression

In finite reality, this meaning is a meaning expressed from the subatomic level of finite reality, acquired through the infinite linkage via the permeable boundaries or filtering of the infinite-finite interface. Meaning might reflects the same qualit discrete form from the subatomic to the macrophysical to the astrophysical, implying a progression of density of quantal meaning to the quantal consciousness (conscits) that may be more easily recognized in sentient beings.

The infinite metaconsciousness might be expressed in finite consciousness subjectively as meaning in 3S-1t. The unit of density here may well be “meaning”. It is at that level that it

is translated into subjectivity by the consciousness of the brain.

This consciousness with the meaning is linked with, limited by and enhanced through neurological networks producing a consciousness that has quantal meaning or quantal consciousness in the nervous system. This ultimately may express itself as cognition, affect and volition. This neurological consciousness uses the boundary sieve, barrier, filter or permeability elements to control, limit and sometimes amplify input so as to be able to (or attempt t^$)achieve optimal functioning. But N-consciousness also may distort meta-information without the sentient being easily differentiating, for example, their own psychological dynamics (E-consciousness) from the permeable metaconscious data.

Triadic elements
We call our model triadic, because of our space-time-consciousness (or meaning) reflecting different dimensional elements. We can translate *triadic* in the quantum model via meaning for consciousness.

Metaconsciousness and metadimensionality
There are also extra elements of metaconsciousness besides *simple* meaning. Metaconsciousness may not have equivalents of space or time at the finite level in specific higher dimensions or domains: at that level, dimensional level space may equal relative zero, time equals relative zero, but consciousness is still reflecting meanings. So metaconsciousness when linked with extropic physical life can demonstrate abstract qualities such as courage, honesty and determination. Whereas conceptually, possibly, S=0 and T=0 at some of these higher dimensionalities, the original STC tethering still applies at other dimensional levels meaning entanglement, psi and rare communication transfer can occur. This therefore explains teleologically the C-consciousness elements: This may be linked up with zillions of interfacing vortices expressing themselves as meaningful information (psi or creativity) at times, and at other times demonstrating higher qualities (e.g. love, courage). These closely interacting vortices could be conceptualized as metadimensional higher level "fields" far more pervasive because of their higher dimensionality than for example, Sheldrake's morphogenetic fields. [18]

The CST Model (C-, S- and T-substrates)
We propose that none of the components of reality can be proved to exist without the action and participation of consciousness in some form. The links of consciousness with the physical reality of space-time suggests the possibility that consciousness may be another more complex and subtle form of the same universal substance that manifests in 3S, -1t space-time as matter and energy, or it may be beyond substance and energy as we perceive them, existing as a substrate outside the 3S-1t domain, yet interfacing, we postulate, continuously. We propose that this C-substrate is as equally important as space and time, and speculatively more fundamental. Whereas previously we spoke of space-time, we now need to talk of the unitary space-time-C- substrates (STC substrates) as the

fundamental structure of reality.

There is the classical dilemma: The materialist physicist will note that when an apple falls from the tree, it falls, it makes a sound, it lies on the ground and it rots.
The Idealist philosopher will argue that the subjective personal experience is what exists and it is only when the observer (themselves) observes it that it truly exists.
This is illogical but then quantum mechanics seems illogical.

In TDVP, there is a tethering of consciousness with ST even in our usual physical experiential domain. This means that, indeed, the apple does fall from the tree to the ground where it rots. But it exists, it has its own consciousness, it is involved with its own meaningful reality. There is no contradiction.

Justification of the C-substrate
Statistical demonstrations have shown a small but profoundly significant effect in consciousness studies (more than 1 billion to 1 against chance in seven separate endeavors!). These suggest the need for a radical alteration of the perspective of physics because although explaining phenomena in terms of matter and energy in space-time is usually sufficient for technological application, it does not always explain everything and is contradicted under rare circumstances. This is why we have proposed the need to involve a special use of "Consciousness" —the C-substrate—at the primary level.

Higher dimensional consciousness
ASCs: Altered states of consciousness
Altered states of consciousness also can produce changes in dimensional states e.g. dreams, sleep, hypnosis, meditation are all mechanisms (dimensions of intent) to allow different higher dimensional states.
We could refer to these as "fluctuating dimensions", or the "variability of dimensions".
However, perhaps the term *shifting dimensions* for state changes and the more stable individual units of state consciousness variations are *varying dimensions*.
There are variable levels of elevation / denigration dependent on nature of the sentient being.
Ultimately there may be a commonality of more stable varying dimensions trait in individual-units such as groups, societies and cultures.

These fluctuations generally are linked with meaning and consciousness implying meaningful information.
If they were totally random, the term information would be used.

Higher finite dimensions
Metaconsciousness reflecting a higher finite discrete dimensionality may have a relative objective equivalent that would be metainformation at a higher spin breaking through. It is

not only relative perception or conceived but intended and experienced in 3S-1t as these qualities that cannot easily be explained by cerebral mechanisms—and if they could, only as partial epiphenomena of brain function.

Infinite STC

Moreover, STC tethering, still implies a separation of space, time, and consciousness, at other finite points or as part of the infinite continuity. Within our metaparadigm, there should be a STC tethering in the infinite realm as well, but space and time might be irrelevant in the infinite subreality because there is metaspace and metatime—the time that exists is simultaneous over all time from the beginning (past, present and future are the same) relative to the 3S-1t finite physical reality; the same omnipresence (all of space existing as one vast unit of space) would apply to space. Effectively, applying the top-down concept of the infinite continuity or of the discreteness at the levels of the transfinite, that STC and the tethering would also imply dimensionalities coming down. These dimensionalities would, theoretically, be so large that they are transfinite. Hypothetically, almost exclusively, they might involve a metaconsciousness that expresses themselves transfinitely as discrete information packages of meaning. The C-substrate dimensions reflect not only the information content of cognitive stuff, but reflect special qualities (positive and negative) such as love or for that matter, honor or courage but also hatred, fear, and anger. We can convert or anger into love, or hatred into love. So, when we talk about fluctuating metadimensions, and fluctuating dimensionalities of consciousness they are completely transient because the state of the one can be linked up with the other.

Conscious Distinctions

The most basic logical concept linking different dimensional domains to consciousness is the drawing of distinctions by conscious entities. These "conscious entities" can be at any of the subatomic, macrophysical and astrophysical levels. Even at the subatomic level, the key concept finding arising from the Copenhagen interpretation of quantum mechanics [63, 120, 121] and proven by the resolution of the EPR paradox by Bell's theorem [60, 122], the Aspect experiment [61] and many more refined quantum experiments, that no reality can be said to exist without the involvement of consciousness. With the triadic axiom, this is equally applicable at the macrophysical level where the six sigma consciousness research data is pertinent, and at astrophysical levels e.g., expanding universe with extropy and life forms despite the second law of thermodynamics.

CHAPTER 12: *INFINITY AND THE FINITE: THE MATHEMATICS AND THE LOGIC*

The actual infinite arises in three contexts: first when it is realized in the most complete form, in a fully independent otherworldly being, in Deo, where I call it the Absolute Infinite or simply Absolute; second when it occurs in the contingent, created world; third when the mind grasps it in abstracto as a mathematical magnitude, number or order type.

Georg Cantor

Substrates, Dimensions and Infinity

The TDVP model may contain 3 real substrates of space, with 3 substrates of time with imaginary numbers as the unit of measurement. The 3rd component of C- substrate (as a broader consciousness) is expressed as quaternions. This means that even n-dimensions of consciousness substrates fit in the dimensional model. This is because the quaternion concept is based on the finite, but consciousness links directly from the infinite. S and T also are pervaded by the infinite, but C is, as indicated, appears necessary for S and T beyond 9D and S and T both may equal zero at many transfinite levels. Provided we incorporate S and T into the finite dimensions, they still fit into the C of the finite component in terms of the meaning and the inseparable STC tethering. On the other side, we have the expression of the infinite expressed as the finite with n-dimensions of C because we are effectively obtaining as many extropic, ordered meaningful dimensions as we need from the infinite and it is expressing itself at the infinite metaconsciousness level and at the finite quantal level including the CNS level.

For every timeline that is created in the T-substrate by the drawing of distinctions by a sentient being, every one of those creates an entire universe. That means just on that basis alone the C-substrate has to be infinite.

A conceptual model is reflected in Table 3.

TABLE 3: The infinite versus the finite

Infinite	**finite**	**Comments**
Conceptual	Perceptual and conceptual	Meaning
Extent	Content	Intent may imply guiding reality or motivation via CNS

		at 3S-1t level.
Continuous	Discrete	
Ordinal	Interval (first 6 dimensions), Ordinal thereafter	
Infinite metaconsciousness, extropy, polife	Countable discrete finite qualities: *Qualits, Chronits, Qubits, Conscits*	
Extropy	entropy	
Life	STC physiology	
Infinite Essence: metaconsciousness, extropy, polife, STC	Finite essence: Animate: Life, extropy, meaning, STC	Animate essence
Entropy is minimal or absent	Entropy, inanimate	
Conceptual	perceptual	
Non-Euclidean	Euclidean at 3S-1t	
Metaconsciousness at higher dimensionality	Meaning vs. neurological	
Continuous	Discrete quantized qualits	
Non-orthogonal interfacing	Orthogonal and parallels	
Metatime, metaspace, metalocal	Discrete series of dimensions of STC	
CIST (consciousness, information, space, time) are complete and total	Time space consciousness may be conceptualized as nonlocal	
Top down approach	Bottoms up approach with transfinite Top-down	
Metaconsciousness top-down	Higher dimensions qualities	Qualities can be positive and negative and change in state but be more stable in trait
Metaconsciousness lower	First 9 dimensions meaning STC inseparable and tethered from bottom up	
Continuous infinity Consists of STC inseparably and also	Alef zero, Alef subzero, Alef transfinity at highest levels beyond tethering;	

tethered from top down	S and T may appear to be 0 at those levels.	
N-dimensional time, also N-dimensional space and N-D metaconsciousness	Time is multidimensional likely 3 dimensional if finite freedom of choice	
Time is unitary: Past, present, future are all the same.	Time is experienced as a moment in linear time	
Natural law: Experiential and non-experiential	Natural law: Perception limited to physical valve limitation axiom	*universally applicable to all scientific reality/*: Bohr—science can only describe the reality we experience, no more and no less [120].
Potential life (animate infinite) does not have infinitely linked physiology	For sentient being life occurs if physiology appropriate is purely potential	
Whole metareality reflecting existence at all levels.	*common actuality is perceived as experiential*	*Finite great flexibility involving process-content across dimensions.; common actuality is experiential*
At origin, Origin Event	Origin Event needed for C-substrate as otherwise a discrete threshold for interaction of meaning vs. information would occur.	No discrete threshold can be demonstrated so origin is postulated
	STC inseparable	
Three C-substrate elements translated to metaconsciousness, Nervous system, Meaning are artificial. They're all the same continuous in infinity, discrete in the finite.	Consciousness cannot be explained as an epiphenomenon of physical evolution without resorting to some unexplained "self-organization".	
Continuity of time, space and	quantum physics requires that consciousness	Resolution of EPR paradox

consciousnesses unified into single whole.	precedes the first quantum out of the big bang.	
Animate	Inanimate	
metaspace, metatime, so metats, metacist	Total time and space unrepeated so nonlocal expression in finite reality.	
Essence / polife continuous	Individualized essence/Physical being discrete	
Essence: metaconsciousness	Essence: Extropy / order in life	meaning does not convert to life.
Polife	Life process	Evolution from Origin Event
Extropy/order	Inanimate: Entropy/ disorder	
Extropy.	Entropy. Second law of thermodynamics; in sentient being: Extropy	
Continuity conceptual infinite	Discrete perceptual finite	
Potential Dimensions	Metadimensionality	Origin Event to present universe
Superimposition of all possible forms	Dimensional manifestations (vortical movement expression) Rotation	Indivension: Relative separation by universal expansion
All possible patterns, forms, information and meaning	Indivension produces combinations of meaningful linkage of information via entanglement and meeting points interfacing.	
	Tethering allows for entanglement	A postulated relationship
Continuous STC with metainformation. Metacist	Discrete Space- Time - Consciousness	Transfinite substrate
	Meaning	
No quanta as continuous.	**quantum level subatomic, macroreality,**	Quantal finite world links with subatomic, macro and

	astrophysical reality	astroreality. **Quanta** influence all levels —micro through macroreality through to astrophysical including CNS [123]
Infinite dimensional reality	*N-finite dimensional reality (transfinite)*	
Reality hierarchy / conscious substrate	Quantal: subatomic, macroreality, astroreality	
Open infinite reality.	*Closed finite reality*	

TDVP, Mathematics and Consciousness

The reason TDVP works mathematically is that first it incorporates consciousness at the most primitive level (the drawing of distinctions, necessarily present at the Origin Event) in terms of meaning, and this same meaning is linked quantally throughout all STC substrates at that subatomic level all the way through to astroreality. It also incorporates 3D-rotational spin at a quantal level and the (3D) vortical movement expression in the context of individual-units by indivension at the relative subjectivity level, allowing for the higher C-substrate finite dimensions. This is the finite translation of the metadimensionality coming from the infinite. This model is necessary because one cannot explain indivension in 3S-1t alone and applying the finite subreality even at higher dimensionalities limits a conceptualization of an all-encompassing consciousness. Consequently, infinity arises in the TDVP model as a source of necessity. Moreover, it allows the incorporation of extropy with metaconsciousness as an expression of the infinite, as well as polife and also metaspace and metatime (all together called "essence".)

Extropy and Thermodynamics

It is this infinity linked up with the order which logically has to be a direct consequence of the infinite. Whereas the criticism has always been, "you don't get around that second law of thermodynamics", you do here, because you have life. The existence of life in the universe has to be acknowledged by even the most hardened reductionist. But it is unexplained by any materialist model. Physiology and DNA do not explain why life comes about, just how. The infinite is sufficient to explain the existence and persistence of order, but the finite is not. Balancing the order of living organisms with disorder somewhere else only makes sense in a finite physical system with continuously active organizing forces to prevent an instant collapse to maximum entropy consistent with the 2nd law of thermodynamics, and these organizing forces are not explained by any finite physical theory. However, if we regard the order of life or polife itself as infinite because they are based on an infinite reality which easily, and potentially profoundly if necessary, impacts every finite dimension contiguously and also distantly, then the continued existence of

both order and life is explained. Extropy is reflected via life.

What Kind of Infinity?
At this point, there is no need to invoke Cantor's infinity of infinities [96], though this is a useful concept in infinite regresses but not fundamental to TDVP. The concept of an infinity of infinities is essential to the Copenhagen interpretation proof of the existence of consciousness in some form prior to the emergence of the first quanta at the big bang event horizon, and the recognition of infinities within infinities is a fundamental invariant in dimensional extrapolation**.** Thus Cantor's work is strongly supportive of TDVP, but infinity need not be n-dimensions plus or beyond n-dimensions because mathematically (e.g. parallel infinities in N-1 dimensions) infinity can be *contiguous* with any number of dimensions (e.g. 3D would imply a 3 dimensional infinite component). This is a key to understanding the unitary component of infinity at any level of the infinite.

The existence of an infinity of infinities in the STC substrate isn't fundamental to TDVP, but it is strongly supportive. Without the infinite descent demonstration of the consequences of the Copenhagen interpretation of quantum mechanics, TDVP's inclusion of consciousness would appear to be arbitrary and belief driven.

Mathematics, Infinity and TOEs
Our whole model is far more than just a specific TDVP unified monism presentation. The whole model creates an integrated way of thinking in mathematics and this actually must be the case for any TOE, not only TDVP. The mathematical inclusion of consciousness and infinity, and the application of Gödel's incompleteness theorem to finite systems is what makes this a metaparadigm. Metaparadigm in this sense is beyond a theory of everything because it has practical implications that are mathematical and potentially testable in science.

Any comprehensive model of reality has to include infinity because otherwise we are going to encounter both indeterminacy and incompleteness. Though the principle of Russell and Whitehead in Principia Mathematica [124] that logic and mathematics are complete was disproved by Gödel, he disproved it in the context of *finite complete* systems. [85] The infinite remains indeterminate by definition and this is quite acceptable in any model. [125]
But our current materialistic scientific 3S-1t model, allows only the existence of finite physical systems and nothing else and ignores the infinite. But let us go beyond what our current worldview says. Only then can we discover the logic and mathematics of an infinite reality.

Infinity
Our concept refers to the *infinity of the continuum* reflects the infinite reality subdomain (or subreality) of continuity. This is as opposed to a countable infinity including transfinity

(Georg Cantor's concept)[96] which is in the finite reality subdomain of discreteness. We use the terms "subdomain" here because the finite and the infinite are inseparable and cannot be described separately in our TDVP model, except theoretically. This is just as STC described in their inseparability *at the tethering level* cannot be subdivided into their separate space, time and consciousness components except theoretically, though when untethered they can be perceived or conceptualized as separate. Similarly, when the infinite and finite interact in a permeable boundary, they are non-tethered, though still with all the essence of the infinite substrate available.

Infinity becomes theoretically countable as it is translated down into the objective, but the infinity described in TDVP is continuous in the infinite subdomain.

Rules of the Finite and Infinite

The following rules derive from this:

All dimensions exist in the same unitary existence.

Relative objectivity incorporates the infinite and the finite.

Space, time and consciousness exist in the infinite and the finite from the zero-th dimension to the highest N-dimensional substrate.

3S-1t relative objectivity does not exist on its own, so S=0 and T= 0 may legitimately occur at higher dimensional realms.

The original finite singularity was S, T and C all = 0.

This ultimate compression reflected the singularity and given the role of meaning in STC, we postulate it may likely have been a meaningful coincidence.

Time in the present is a moment, and so is a point not a linear dimension, and therefore also a singularity with zero dimensions.

The higher dimensions of consciousness reflect ordinal not interval metrics. These may be associated with ratio metrics for S and T e.g. when S=0 and T=0.

The infinite and the laws of nature

An essential of the TDVP paradigm is that the laws of nature prevail. A second essential is that reality has a finite subreality completely pervaded by an infinite subreality. Are these contradictory? We do not believe they are because effectively we know almost nothing about the infinite subreality. Even what we have postulated in terms of essence with life or potential life, order, metaspace, metatime, metaconsciousness, and metainformation are all simplifications of this broader, expanded, without end ("*Ein Sof")* component [126, 127] of what infinity is all about. We cannot even, except in the most rudimentary manner imagine infinity, and therefore we cannot say that it does not obey natural laws. Our 3S-1t, finite limitations lead us to interpret anomalous events as miraculous or supernatural, when instead by applying a broader metadimensional finite level approach, and realizing the infinitely infinite, we can simply say we do not know.

Infinity from the Top Down

Infinity is most easily modeled by looking at everything from the top-down. This is because then you can conceive of life and extropy as reflections of what is in the infinite essence and that they are just manifesting discretely instead of continuously in infinite reality. In our experiential physical reality, life and extropy are perceived and conceptualized by sentient beings predominantly through 3S-1t. This is a key differentiation of the finite from the infinite reflecting the continuous versus the discrete respectively. Indeed, we cannot conceive of anything in the finite that is actually continuous, and the basis of quantum physics recognizes this.

Similarly, we cannot conceive of anything in the infinite that would represent the discrete. The term *Infinite Continuity* [128] is a useful one (and the title of a previous book by one of the authors, Dr. Close). It is so beautiful and so elegant because this is a key basic assumption, maybe the truest of all. From this, the assumption that reality is ultimately infinitely continuous can be applied to explain (from the top) all the way down the line from the infinite to the finite, how it manifests ultimately in the 3S-1t living domain. The model explains extropy, life, and everything that we experience. The reason why physicists haven't come up with a true Theory of Everything is because they cannot explain everything we experience with 3S-1t because that is finite, and the things that we experience are reflections of the infinite in the finite.

Metaphenomena in the Infinite and Survival

The use of terms like non-locality or even *relative non-locality* at the infinite level is meaningless. In fact, we postulate we ought to be using the terms *metaspace* and *metatime*: One could postulate that one of the difficulties of alleged communications supportive of the survival of bodily death may be the profound difficulty of penetrating the boundary between the infinite and finite: In the infinite, metaconsciousness or that aspect of essence that is existing is in a continuous metaspace and metatime reality, making any meaningful discrete communication extremely difficult and rare. Effectively, a conversion has to occur across a narrow permeable bidirectional bridge of continuous non-specific infinite information into a finite discrete meaning. Moreover, even if some part of an individual or individual-unit consciousness survives, other factors that could make such communications rare are shock, disorientation and lack of identification with a finite form. There is no reason why such communications should be any easier from the infinite to 3S-1t than from the finite 3S-1t into a specific infinite communication "vortex". On the one hand one could postulate that tethering at the infinite level still could occur in survival with all of metaspace, metatime, metaconsciousness or metainformation being relevant. However, one could equally point to the non-tethered separation—the detethering—being a mechanism. Our personal preference, is the STC links in the infinite.

Also at the finite level S may equal 0 and so may T at certain higher dimensional levels. We speculate that a certain point, the transfinite and the infinite realities so meld that the

differentiation of continuity from discreteness becomes (literally) insubstantial.

Mathematics

Proofs

Pertinently, we realized that to raise our TDVP theory of everything into a real metaparadigm, we needed supporting proof. We had always maintained that this would be via mathematics and related logic and we have introduced several mathematical proofs for our model. This is why we provide the outlines of such proofs in this book and amplify with mathematically rigorous details in our companion book. [9]

Relativity of zero and infinity

All of our models are relative with respect to the reference frame of the conscious observer. Even relative zero and relative infinity are pertinent.

For example, based on our perceptual and conceptual experiences in 3S-1t, a relevant domain implying additional dimensions in the transfinite direction, may have S=0 and T=0 at that level relative to the observer/ experient in 3S-1t. This is relative zero. On the other hand, when we conceive of a level of extent and content that reflects the infinite, we are again basing it on our sentient awareness. This is relative infinity. It is not absolute because it is relative to our own conscious interpretation.

Dimensional zero

But there are also entirely different elements of metaconsciousness. Metaconsciousness itself theoretically does not have any relative space or time: dimensional level space equals zero, time equals zero, but it still could reflect meaningful information. The metaconsciousness originates from a continuous infinity and the translation into the finite discrete meaningful information through the brain or nervous systems makes it *perceived, conceived and experienced* in the conscious awareness and responsiveness of human, individual-unit and other sentient beings.

Singularity

A finite singularity is not only a singularity of no space, or of absence of time, it is also absence of pattern, meaning and individualized or individual-unit consciousness. If it is a true or absolute singularity, as opposed to relative zero, with zero dimensions, it doesn't have a dimension of space, time, or consciousness. The consciousness comes from the infinite and that could be interpreted as the "primary receptor". This primary receptor, because of the 3D nature of time, exists throughout relative time and space even without any distinction of self.

Pythagorean elements in space

Given that we perceive only 3 spatial dimensions, we can define a 3S reality in terms of a saturated, or infinitely continuous field of dimensional singularities (points) in 3

orthogonal dimensions. Dimensionometrically and mathematically, it is not possible to have another orthogonal dimension or any other kind of projection, in 3 dimensional space. This can be demonstrated in Euclidean or non-Euclidean space. The Pythagorean theorem is simply a handy tool that can be applied in Euclidean space to demonstrate this, but it is not the only one. We can demonstrate it with a totally different mathematical scheme to locate points that have nothing to do with the Pythagorean theorem, for example, by using radians.

Applying other mathematical representations like radians instead we can demonstrate the limitations of Euclidean space to 3 dimensions. This use of radian measurement to locate any point in the field of 3S simply substitutes three different parameters for the x, y and z in Cartesian co-ordinates, using the angle subtended between a reference line through the origin and a line from the origin to the point in question, and can handily utilize trigonometric functions. But, whatever method we use, we still need three parameters to describe three parameters for 3-D space. Interestingly, however, the use of radians also implies application of such a principle in curvature of space, which is relevant for 3S-1t.

As long as we use real numbers to represent the measurement parameters, even if we assign one of them to a fourth dimension, we find ourselves back into 3-D space. Thus a form of numerical representation other than real numbers must be utilized to represent a fourth dimension. Otherwise, all we are doing is representing a complex manifold surface within a 3-D space. The only non-real numbers available are imaginary numbers. Minkowski and Einstein realized that time could be included as a fourth dimension only if represented by imaginary numbers about 100 years ago. Accepting this and identifying invariant relationships between adjacent dimensions of any n-dimensional reality, we can proceed to define dimensional realities (of extent) beyond three and four. Effectively, we do not refer beyond 3S to spatial co-ordinates, though we may list mathematical points instead. We can therefore analyze 22 different parameters by, for example, multidimensional scaling [129] applying median and mean column geometry in R^{22} and reflect it in a plane 2D graph. But representation of such points (ordinal or interval) does not mean the same as 22 spatial dimensions, it refers simply to 22 parameters with variables of content that can be metrically represented mathematically by applying an extent to them via a "density" measure (per unit of extent).

Orthogonality in the representation of 3 or more dimensions is not a requirement, but simply easier to conceptualize and represent mathematically. We find intrinsic and invariant consistency in extent variables of groups of three represented by imaginary and complex numbers once one goes beyond 3S. There are really only 3 spatial dimensions. Contemporary uses of Riemann, Hilbert or other hyper-space analyses are simply conceptual tricks used to solve certain problems (e.g. rotating 3D space using quaternions) but they have no implications regarding space-time dimensionality. Similarly, we maintain that folding spatial dimensions as in String Theory does not get beyond 3D. Complex

surfaces analyzed using non-Euclidean geometry are simply being rendered Euclidean from a different perspective.

Space and time
This reasoning applies to any number of dimensions (variables of extent), and therefore also applies to time. We describe time in terms of the measurement of duration, another variable of extent. The measurement problem in physics, especially quantum physics, arises because of this mathematical diversity in dimensionality and the difference between space dimensions, time dimensions, and dimensions of consciousness. Space can be measured by ratio / interval measures. But time can only be measured linearly by interval measures, otherwise it may require the use of complex ordinal numbers as consciousness does.

Time as a necessary extra dimension
We can frame these different phenomena in logical and even mathematical terms. The justifications with Minkowski's work and relativity exist and also strangely, with the consciousness substrate and the laws of form: Brown [102], without any reference to Minkowski space or any kind of space, concluded that in order to take the "form out of the form" (to use his terminology) the only way to do that would be with what would be with the equivalent of imaginary numbers. It can't be space, he says, so, it has to be time. It comes in as a necessity to continue the development of the laws of form. It is fascinating that he saw this without reference to geometry of any kind. It appears that Spencer Brown is not understood by most scientists and may have long given up trying to get people to understand what he was talking about.

More spatial dimensions
Conventional mathematical physicists may argue that Pythagorean parameters (i.e. orthogonal dimensions) are not limited to 3 dimensions, but can be up to nine, ten or more. However, mathematically we've demonstrated that even if a model of greater than 3 multiple real dimensions is conceptualized, all points within the hypothetical n-dimensional space can still be located with 3 Euclidean dimensions. This is a hotly debated topic but as far as spatial dimensions are concerned there are only three. The similarity of dimensions beyond 3 to spatial dimensions is no more than the similarity of the imaginary numbers used for the time dimension (the fourth dimension) to real numbers. Essentially, there cannot be more than 3 spatial dimensions, Euclidean or non-Euclidean. There can be n-dimensions, with n reaching nine or ten, but they are not spatial dimensions, or time dimensions necessarily.

Even if there were more spatial dimensions, following our examples that lead to 3D-vortical indivension, every non-Euclidean space is actually Euclidean from some perspective. If that is true then we can always translate it into Euclidean n dimensional space, just as Einstein did for general relativity. Scientists have either not recognized, or

avoided the Euclidean non-Euclidean issue, and have confused variables of content with dimensions. The absence of recognizing the Euclidean-Non-Euclidean and extent versus content dichotomies is a large part of the reason the other attempts at extra-dimensional or hyper-dimensional space-time theories have failed. The primary reason is that they have not included consciousness nor the concept of infinity as part of objective dimensionality.

Creative thought and the Euclidean dichotomy

To the rookie mathematician, the relativity of Euclidian/non-Euclidian dichotomy is easy to contemplate because he will not realize that most mathematicians just accept the assumption that Euclidean and non-Euclidean spaces are fundamentally different. To that rookie, certain of the fundamental basics are not prioritized allowing an advantage because it allows creative lateral thinking not constrained by conventional concepts, and his conclusions may be either very wrong or very creative. However, scientists may be tied to their own terminology and concepts. If this applies to us, the proof of the pudding is in the eating. The farther we analyze the TOE of TDVP, the more it holds together. Ultimately, the proof of the pudding (paradigm) is in the eating (practical application).

Euclidean limitations of 3D of time

Contemplating a potentially infinite number of 3D co-existing realities, through extra-dimensional extrapolation, if you have n dimensions, you must have an n+1 dimension in order to observe the warping of the n-dimensional reality. N+1 in terms of our Pythagorean time, or our Euclidean time, would stop at 3. But there is no reason why we cannot get to 3 by using this kind of logic, and yet we could go beyond Pythagorean time into Euclidean and/or non-Euclidean realities, which may be reflected potentially and very speculatively in the infinite. Theoretically, we can go to as many dimensions of time as we want into a transfinite time. We have to stop at 3 dimensions of time however, *if* time is represented by imaginary numbers, which we postulate is correct. This is a revolutionary idea but we argue that we can't go beyond three dimensions of time by dimensional extrapolation, as going beyond that redefines the entity of time: This is so as it can no longer be represented by imaginary numbers and it also cannot be represented by real numbers because dimensionometrically that would return the entity to 3S. Whether Euclidean or non-Euclidean, this new entity must contain both space and time characteristics. Algebraic number theory supplies us with the appropriate type of number: the complex number a+b*i* This space-time entity is more than the sum of its parts. Because it contains the tethering aspect of consciousness, we are calling it the consciousness substrate (C-substrate) and these can be represented by quaternions, at least from dimensions 7 to 9 of consciousness. A rigorous development of the ideas relating to this virgin territory of S3-T3-C3 and beyond is presented in our companion book. [9] In this, we apply mathematical dimensionometric logic. We can ostensibly utilize non-Euclidean time (going beyond 3 time dimensions) but that would imply warping of 6-dimensional space-time, which would produce another (seventh) dimension. This properly should not be called "time" but "consciousness" because time could no longer be described with a

simple multiple of the square root of minus one, but it would have to go to complex numbers. This is as different as time is from space. We have limitations of the 3 dimensional structural limitations of time via quaternion mathematics, which we relate to the complex number dimensional equivalents of C7-9 (dimensions number 7 to 9 which we are describing in the context of the C-substrate).

The outside in or top down approach again.
The only way we could ever be aware of any non-Euclidean dimensional reality is to be outside of it. Then what we have is a non-Euclidean space embedded in a Euclidean space. A visualizable analogy is the surface of a mountain standing on a relatively flat plain. Representing the surface of the mountain as a non-Euclidean surface distinguishes it from the geometry of the plain, but you can still locate any and all of the points on the curved surface of the mountain-side in 3D space. In 3D time, just as in 3S, you can actually represent any point on any curved or weirdly shaped time manifold conceptualized in 4D time in 3D time because attempted representation in an additional dimension will result in being embedded in a Euclidean 7D reality, and the 7^{th} dimension cannot be simply space or time, as indicated.

Through indivension, dimensional embedding may relate to tethering. Tethering can occur in those first 9 dimensions, 3S, 3T, 3C as they are embedded with each other in a kind of Euclidean hyper-space. Going beyond 9D, we postulate vortical indivension where we can represent as many finite dimensions we can conceive of (and this vortical indivension may or may not be equivalent to the non-tethered realities up till 3S-3T-3C). In conclusion, non-Euclidean dimensionality is postulated as relative and conceptual, while Euclidean dimensionality is perceptual but can always also be conceptualized, just as we can conceptualize ideas even in our regular 3S-1t subdomain. Because of the inclusion of the infinite through tethering, there may be a feature of the STC substrate that transcends the perceptual and conceptual.

CHAPTER 13: *LIFE, EXTROPY, ESSENCE AND THE INFINITE*

Man is equally incapable of seeing the nothingness from which he emerges and the infinity in which he is engulfed.
Blaise Pascal (Mathematician, 1623 - 1662)

Infinite Continuity

Infinite Essence

The infinite is continuous and is different from finite quantal subreality. Essence is a key theoretical portrayal of the properties of the infinite. The combination term for the STC, life and extropy is postulated as *essence*—the quality of this essence is not defined at this point, but is the essential component to maintain life.

This combination term includes space and time as well in its five elements and is valuable because of this exemplifying the ultimate relevance of the holistic, unified infinite expression of reality.

Finite essence

The infinite essence interfaces through all components transmitting discrete packets to the finite physical essence in terms of 3S-1t. We call that *finite essence* life and extropy within a finite STC (3S-1t) experiential standard reality.

Life

Life and consciousness

Life is also different from consciousness but a sentient being is able to appreciate conscious awareness and responsiveness. Essence refers in the physical finite context to sentient beings who can screen aspects of metaconsciousness dependent on level of functional physical need, and possibly level of spiritual development. It has components, too, of space and time, just as the infinite does. But the difference is 3 dimensions of space and one point in time is experienced in our day-to-day earthly physical standard reality, whereas space and time are all-pervasive in the infinite, though this all pervasiveness is outside our 3S-1t and experienced as "non-local" in our standard reality.

Life, polife and the infinite

Life at the infinite level is described as *polife:* This reflects *potential physical life* with the essential characteristics to maintain physical life in 3S-1t already existing in the essence from the finite Origin Event period; only manifesting physically when the correct physiology and genetics are adequate. The infinite essence is not alive physically, but may activate a vehicle such as an individual-unit, either individually or at another systems level

e.g. groups, family, society, culture, ethnicity. This essence contains or is imbued with a metaconsciousness. Effectively, essence is fundamental and inseparable in its qualities of STC, entropy and polife. It may be that this is only experientially evoked when a sentient being is cognitively or affectively or motivationally linked with such an essence which means that there is a pathway from the infinite metaconscious to a specific finite point. This linking through the boundary filter between the finite and the infinite involves again vortices, vectors, scalars or tensors link with points of meeting.

Sometimes the term *"life force"* has been used in lay terms, but we have no proof this is a force in the usual physical sense, so prefer to avoid such a speculation or misnomer. Infinite order—extropy is insufficient for life, but finite physical life manifests with extropic elements: order is necessary in living and a consistent state of disorder would produce death very quickly; but the persistence of life is not a statistical toss-up: We can make longevity predictions over time and this contradicts the second law of thermodynamics because the living should be continuously moving toward the entropic disorder that reflects death.

Similarly, after writing about *polife*, we were struck by the superficial similarity to the theological "soul". But soul in the conventional sense is not quite what we're referring to. Polife specifically refers to the life potential in the infinite that may, indeed, manifest (if this occurs, and we have discussed cogent data in this book) as some form of consciousness after bodily death but without the baggage of a term like "soul". This concept may be more akin to the Sanskrit term *atma* than the English word *soul*.
But we do not know how this polife may then manifest: Is it, for example, individual or collective? Does it involve different and overlapping sparks of awareness and does this relate to an infinite consciousness? Also, polife is not a *thing* like a "soul", it is a concept of life always existing in the infinite and in the finite, from the Origin Event of the initiation of our universe providing life's other physiological requirements are met. It is the conceptual base of not requiring a "soul" or "life-force" or any equivalent to be "added" at some point like conception or after a short period in pregnancy or at the moment of birth. Polife is always there from an origin conceptually. It does not have physical extent, nor content, but it speculatively could have intent in the same way as conscious meaning may sometimes play a guiding intentional role.

Extent, content and essence
Essence reflects all those distinctions of extent and content that exist as potential on the infinite side. It includes meta-space and meta-time. In other words, it is not space-less and time-less, but it includes all of space and all of time, and these can manifest extent and content variables. The content variables might include forces and mass. The extent reflects the extent of space and time which is infinite. The major way in which essence manifests is through metaconsciousness, in terms of imbued metainformation with meaning, and life with order—extropy. Order has extent which translated to the finite reality is transfinite,

but extropy also has content; similarly, life has content, but also has extent. Life is more than just great order. So, essence involves variables of extent and content, but which are holistic and therefore infinite and absolute but with infinities of infinities of all of the qualities of the STC plus order and life.

Animate extropy.
Life is, as far as we know, the ultimate reflection of order in 3S-1t, and order is an infinite property. The animate essence manifests both infinitely and finitely and in both extropy is not usually separate from life. Extropy is part of a reflection of life and when we see order, we are seeing the potential in terms of life—*polife*. Some would regard this as a mental kind of life or a mental existence. Disorder, based on entropy and the second law of thermodynamics is finite.

Extropy and Entropy, Animate and Inanimate
Extropy and entropy
If there is *entropy* at the finite level, are there entropic components in terms of infinity, as well? Logically, it would seem that there has to be, because one linear aspect of the converse of extropy would be entropy. That essence includes this order, which is reflected in the process called extropy. Extropy refers to an infinite-dimensional order, not just the linear negentropy opposing the second law of thermodynamics implying the polar negation of that entropy. We define many kinds of *extropy*, because it is an infinite phenomenon and contained as part of the *essence*.

Entropy basis
Entropy is based on 3S-1t thermodynamics, and is totally compromised with the infinite. Entropy works very well in a finite closed inanimate system wherein the second law of thermodynamics is not compromised because energy conservation is preserved in the closed, finite system. Extropy is far more than just negative entropy because it is all pervasive order. However, extropy is not only operating at a multidimensional level, but at that infinity level, it reflects infinite dimensional reality. That is where the order comes in.

Animate Essence
We posit that an overriding feature of the infinite is this animate essence.
Extropy is fundamental to life. There is speculatively hypothetically a subset of order that does not require life, and a subset of life that does not require order, but it is not obvious what, other than robotic machines! They are certainly not synonymous, but appear to be very highly correlated.

Infinite essence
Indeed, conceptually, there might be very little in the infinite level besides this essence. However, the essence may reflect *metaconsciousness* as a profoundly relevant or overt component of infinity. There is also an *infinite* life element *polife*—potential life—and

essence could be conceived as *animate* as opposed to *inanimate*. All of these elements are unified and inseparable infinite essence: extropy, life, metaconsciousness and there has to be a metatime and metaspace in the STC substrate where all existence for all time and space are one.

Content and process

Life reflects the application of extropic order in part and therefore reflects the *contents* of the extent *process* of extropy in the infinite. Other processes and contents are relevant in other models in TDVP: For example, vortices reflect the *content* of the extent *process* of indivension in the finite discrete reality.

Projecting Concepts of Essence

Essence, Primary Receptor and the concept of a deity

Historically, Neppe used the term "essence" as a very primitive statement at that point when he wrote about vortex N-dimensionalism [6] but essence was not properly conceptualized. We are able now to emphasize the enormous role of the infinite and this may be synonymous with Close's initial "primary receptor", and what the theologians may be calling a "creator" or a "God". However, we don't want to entertain philosophical speculation here about what the infinite is all about. All of the various theological paradigms may have been attempts to explain what we are talking about in terminology that was limited yet would appeal to the population of the place and time. The conceptualization of a creator as something like a man with a long white beard sitting on a throne is necessarily just a metaphor. But, objectification into this cultural context is what people could understand. It is justified culturally, metaphorically, theologically and mystically within cultures. This is not a critique but a different, more logical approach. It is not, however, part of the scientific approach.

An unknown but great mystic once implied that those masters who have attained the great cosmic consciousness cannot explain it because they can only talk in terms that their listeners are familiar with. If the mystic talks about a flower like a rose, then this is an object that the listener is familiar with, but he may actually be describing a beauty that exists in a higher state of consciousness that simply has no direct exact analogue in the 3S-1t world.

But we do not wish to enter that discussion here; ours is the scientific approach and theology is not part of the scientific approach. TDVP is portrayed in broader conceptual terms of essence without the theology. Yet, ultimately, our TDVP ideas may play a part in the unification of science and spirituality.

Quantal Uncertainty and the theological model

How does one explain the Heisenberg uncertainty principle in regard to Quantum mechanics and meaning? Does this reject the theological model? The Heisenberg Uncertainty Principle [130] apparently puts a dent in spiritual thinking because of the introduction of an intrinsic uncertainty. [131] In contrast, we argue that if it wasn't for the

uncertainty at the quantum level, there would not be a door through which consciousness could have an effect from individual-unit consciousness on matter and energy other then mechanically, and this would exclude free will. Yet we know there is such an influence. Certainly Quantum Theory, prima facie, seems to have compromised any idea of something guiding or of any mystical concept. However, quantum theory involves discrete quanta and the infinite is continuous.
Also, we recognize that there have been models that debate the uncertainty of quantum theory.

Chaos theory

Chaos Theory [89, 132, 133 134] is an important theory that tried to explain why quantum uncertainty was not something that was illogical. This explains any kind of order and extends this to the butterfly effect [135]. Theoretically, great variations might occur with cascades in terms of quantal results, producing highly improbable events or results which could not otherwise have happened. Effectively, having these enormously large variations could theoretically produce further step-wise effects in terms of gradients and cascades. We do not perceive chaos theory as a viable explanation of the persistence of order, but it is one of the explanations against a random quantal effect. We perceive chaos theory as a red herring that misguides people concerning what we call extropy, producing order by means of the hypothetical "self-organizing nature of reality." It is an attempt to bolster the materialistic perspective, but It is a cop-out: Nature itself organizes, but why? Chaos theory does not answer. With a mathematical model sometimes you have large variations in output from very small bits of input—in modeling, when we look for these kinds of variables, we call it *sensitivity analysis*. [136] You look at which variables make the biggest impact with the smallest input on a model. The reason that happens is not, we argue, because of chaos: It happens because of the complexity of the interdimensional relationships and the inability of a finite mathematical model to mirror an infinite reality. Anyone bringing that up as an argument for anything beyond the materialistic paradigm, may be, and most likely is, in our opinion, totally missing the point.

CHAPTER 14: *THE INFINITE-FINITE BOUNDARY*

…Mind, in its use, is not static, but constantly developing. … Therefore, although at each stage of the mind's development the number of its possible states is finite, there is no reason why this number should not converge to infinity in the course of its development.

Kurt Gödel [119]

Permeable Bidirectional Filter

We postulate a bidirectional communication between the infinite and the finite. Terms such as "barrier", "sieve", "permeability", and even "bridge" could be used. Effectively, one creates "bridges" in a variety of different settings. Amongst those are the physiological settings such as the "blood brain barrier" (BBB) where there is a barrier of permeability that is bi-directional between the brain and the rest of the body. The BBB allows appropriate small or fat soluble compounds to enter and leave the brain, but it acts as a mechanism to prevent what the body deems inappropriate to cross. When the BBB breaks down, for example when infected, it may transfer compounds that may damage the nervous system. Similarly, there is a prolonged membrane bridge across from the gastrointestinal tract to allow nutrition to be absorbed into the systemic circulation but to act as a barrier for what the body experiences as inappropriate. On the output side, the liver is the prime mechanism to de-activate and alter chemicals. Without such metabolism, we cannot maintain physical life.

Gesher and Bridges

These are all examples of necessary physiological bridges that function remarkably in sentient beings. We propose a special kind of bridge that may allow bidirectional interchange between the infinite and the finite. Certainly, all of these terms like filter, sieve, funnel, "tzimzum" (contraction), expansion, barrier and permeability apply. We could use the word "bridge", as well, and that would be non-specific, and we may apply the physiological or physical ideas of barriers and sieves to it. But this bridge may be entirely different, so we sought out a foreign term, that we could use specifically at this level, and we suggest "gesher", a bridge in Hebrew, but here to refer to the special kind of meaningful bridge between the finite and the infinite. The gesher could be narrow allowing minimal connections of interfacing with the infinite, it could be at any level such as one person or any individual-unit, or it could be broader allowing the essence of space, time, consciousness, life and order to interface and interact between the infinite continuous and finite discrete subrealities—in unified monism, they are the same reality but they are

conceptually different. Distinctions involve sentient beings differentiating content, extent and intent and are discrete and therefore are finite. The continuous infinite does not distinguish and therefore does not have dimensions itself.
We prefer the Hebrew word "gesher" because this creates a less prejudicial appreciation of what we are talking about.

At times, the gesher is more penetrable, for example during meditative states, dreams and possibly any sleep state. The barrier may be loosened possibly with hallucinogenic drugs in certain instances, possibly in psychopathology such as schizophrenia, and demonstrably anomalous temporal lobe functioning is linked with more subjective paranormal experiences.

This barrier allows a filter of information coming through as physical reality. It may be that there is usually passage through from the infinite into the finite, but that it could be the reverse: Could it be that thoughts in our physical finite brain about something or someone or some idea may access the infinite via this gesher (which is not a place but an informational exchange mechanism) and allow a narrow bridge of deliberate contact?

Would induced meditative or OBE states or alleged mediumistic states about a specific deceased element facilitate communication? Or is this gesher a physiological artifact, a distortion of spirituality which remains in the brain but fools the individual? Certainly, this could be so because the psychological and the physiological influences are very powerful, but it may not always be so: It is this dilemma of differentiating one's own idiosyncratic, personal and unvalidated reality from the pathological and "normal" higher brain functioning which is so difficult. And it may be that that "gesher", in fact, is physically equivalent to the blood-brain barrier (BBB) in that the information transfer is directly into the brain, via, for example, the temporal lobe, and the executive action exits via the frontal lobe.

The Boundary and Communication
Deliberate communication from the infinite C-substrate to a physically live human requires communicating to and from a specific discrete finite 3S-1t domain. This we postulate would and could be very difficult and has to go through a bidirectional permeable boundary of a narrow gesher: Let us imagine that we think of the deceased John Smith. By that means, we might be setting up a track through that boundary where we "contact" an aspect of John Smith in the transfinite or infinite substrate. Now, John Smith has a direction to communicate because he has to align through a general metaconsciousness to communicate to a discrete specific finite reality. But he must convert information not only to finite meaning but handle finite space and time. This helps clarify not only why communication of specific ideas to finite sentient beings would be very difficult in so-called "survival after bodily death", but it may also explain the limitations of creatively obtaining knowledge, understanding or wisdom from the infinite

metaconsciousness. Anything that is in the infinite and converted to the finite requires conversion from infinite continuity into a specific discrete phenomenon. There are an infinite number of degrees of freedom in infinity. In the finite there are really no more than the degrees of freedom that are consistent with the dimensionality of 3 or 4 dimensions. This really makes it comprehensible. It also makes it understandable that we can talk about 3S-3t, and maybe 3C, plus n-dimensions, because communication may be much more complex dimensionally than we can conceive of.

Smith's communications might be easier because he is top down compared to bottom up. But the top-down idea is conceptual. We could see infinity being (say) on the left with the finite to the right, and the boundary between. We could move most of infinity conceptually to the top-down side. We would then portray most of the finite from the bottom-up: All of our scientific approaches are to a large degree the bottom-up one, but the infinite is the top down one.

Continuity and Discrete: Metareality and Nonlocal Reality

The important point is that even in the simplest conceptual dimensionality of one, two and three dimensions we see the infinite continuity of infinity and the quantal discrete component of the finite elements. We cannot therefore just have the finite without the infinite. The two are necessarily more than interacting all the time—indeed, they are an inseparable whole. We have conceptualized space and time as being zero in this finite reality ("nonlocal' spaceless and timeless) but in fact in an infinite world it is not space-less or time-less it is a *holistic* space and holistic time, where the two cover everything, in all time and in all space, all at the same time (so "nonlocal" is applied differently, as *all* not none, pervasive but not specifically locally located). In certain ways there are parallels with the implicate order of Bohm [66] with relation to this infinity, and it was Bohm who recognized the reality of quantum interconnectedness [66]. The translation in terms of cerebral function and some kind of hologram in terms of the thinking of Karl Pribram [69] and Michael Talbot [67, 68] is also logical in this regard. Talbot, like Schroeder before him, tried to incorporate spirituality, religion and science and so illuminate profound questions. His most popular book, The Holographic Universe, explores the metaphysical implications that underline quantum mechanics. Following David Bohm [66] and Karl Pribram, Talbot uses holograms to somewhat explain supersymmetry, psi, and mysticism. However, neither Talbot nor Pribram postulate infinity. Clearly the infinite is the most obvious component that is necessary here.

Interpreting Data

Even when there is an interface of the finite with the infinite, there is a hard time perceiving what might come from the finite brain and what might be an infinite reality. There is a difficulty differentiating the two that complicates interpretations. Psychologically we refer to ego boundaries and ego boundary disturbances, and that ego boundary has a real function from the individual unit point of view. It is not only from an

individual level, but at a greater group social, cultural, and psychological level.

Boundary and the Brain

The boundary between finite and infinite is likely a conversion barrier of the continuous infinite into the discrete finite where effectively we are translating Essence information into quanta or qualits. These quanta are translated into a succession of serial bits of time. Neurophysiologically, the brain reveals this same discreteness. Synaptic transmission moves in jumps in these discrete neuronal connections.

Specifically, Neppe has shown that theoretically the temporal lobe of the brain may the great integrator of the brain and empirically proposed that dysfunction produces disintegration, [106,137] The temporal lobe could hypothetically reflect the main conversion barrier between the infinite and the finite [106,137] The temporal lobe not only appears to be a potential window from the mind and into the mind, [138] it also integrates incoming perceptual experience and information coming from other areas of the brain. [106]

Similarly, we distinguish meaning and its relevance as fitting well into our models of the infinite and consciousness. The discrete finite metadimensionality and the continuous infinite and the difficulties of the permeability (boundary, barrier, filter) between infinite metaconsciousness and meaning at 3S-1t make the situation even more complex.

SECTION D: THE KEY ELEMENTS TO TDVP

CHAPTER 15: *THEORETICAL MODELS AND AXIOMS*

The grand aim of all science is to cover the greatest number of empirical facts by logical deduction from the smallest number of hypotheses or axioms.
Albert Einstein

The Philosophy of Science model: A New But Necessary Synthesis
LFAF: "Lower dimensional feasibility, absent falsifiability" is a legitimate scientific technique, often used in science and technology, especially technology, without being identified as such.
A.) The model of feasibility without any facet being falsified is LFAF.
B.) The model of falsifiability is superior to the model of feasibility in the construction of a TOE. This is because at the level of proof there is a negation as opposed to a possibility. But it is limited to aspects of 3S-1t in general.
Both models are pertinent in scientific endeavor and reflect a relative proof only.

Within this discussion are axioms and theorems in pure and applied mathematics. In science, hypotheses are commonly tested by falsifiability when possible, but if not, by applying the philosophy of science concept of interpreting reality that we've suggested, namely LFAF. Applying empirical data in 3S-1t as the most commonly experienced lower dimensional domain, and assists testing for falsifiability but even then not always (e.g., evolution). The LFAF / falsifiability evaluation may reflect epiphenomena and gradually this leads heuristically to building a paradigm. We believe that this model of what is feasible and is not falsified (LFAF) is critical for advancement in the study of dimensionometry. LFAF is generally applied at the 3S-1t level.
The equivalent of falsifiability in mathematics may be the contradiction of the basic logic of the calculus of distinctions.

This section discusses the broader approach philosophy of science model to evaluating Theories of Everything applying our current sciences.

Our Usual Reality
Some relevant findings are not subject to statistical analyses. They may be too obvious using our conventional physical senses. For example, smelling a specific odor of burning, seeing someone on the roof, or hearing a noise. This produces a subjective *perceptual* reality and it is interpreted into *conceptual reality* by the individual based on their previous and current sense-data experiences. Others may confirm such a smell or sound in which case we talk about *reality or objective reality or physical reality,* but effectively this is the

common or collectively agreed upon 3S-1t higher level interpretation of that subjectivity and may have degrees of certainty. However, these phenomena are not subject to statistical analysis, though there are increasing degrees of certainty relative to 3S-1t, as more individuals observe that common reality, or alternatively, an instrument, like a computer or lab test or detector of light spectra photography not directly available to human sensory perception may do similar non-statistical but observational confirmations. Alternatively some observations can be statistically quantified such as random number generators, which may independently find something. Therefore, reality, even objective reality is relative and this is why we are using "common reality" not "actual reality" because use of the term actual implies an absolutely objective material base that may or may not exist.

The Contribution of the Psychological Approach and Metadimensionality

Reality, even objective reality is relative and this is why we are using "common reality" not "actual reality" because use of the term "actual" implies an objective material base that may or may not exist, though the "objective" consonance is so consistent that we can base our life and reality experience on such objectivity. But surely when several individuals observe the same information, does that not produce objective reality? It may be very close, even approximating objectivity by 99.999% or more in many instances. But it still produces "common" 3S-1t reality because the final stage is conscious experience. For example, there may be a common distortion in observation of an event based on the individual's expectation and this is well demonstrated in psychological testing (observing, reporting, memory, expectation in specific higher brain interpretations of patterns or colors, for example). We use the terms, perceptual, conceptual and common reality. The term *actual reality* should not be used. This is why we call it 3S-1t common reality or if not in 3S-1t, we could describe it as the Common Reality at a specific metadimensional level, and this may be modeled mathematically.

Clinically Relevant Approaches and When Statistics are Less Meaningful: Applying the Medical Model

Let us re-examine the examples given, namely, smelling a specific odor of burning, seeing someone on the roof, hearing a noise, and apply a medical model. Ironically, however, even these may not appear what they could be: Episodes of burning smells may reflect abnormal firing in the temporal lobe of the brain, seeing someone on the roof may be a visual hallucination, and hearing a noise may again involve stimulation of an area of the brain, sometimes the superior temporal gyrus if well formed [139, 140].

Similarly, in medicine, clinically relevant information may not require statistical validation.

In fact, in a double blind study, if someone responded to a Drug A 51% of the time and yet placebo 50% then after a large sample size, a difference between the two would be demonstrated for Drug A. But realistically to treat a patient for that condition with Drug A

would be meaningless. Instead, we would expect an almost complete response to the specific condition requiring an antibiotic treating a bacterial infection where the bacteria have been demonstrated to be sensitive. We look at clinical significance, which takes into account other features such as side-effects of the drug, and long-term secondary elements requiring management. There is a balance in Medicine, which though often originally based on the double-blind studies, are meaningless unless the clinically significant results are attained. [141, 142] Statistics are far more pertinent to demonstrate differences in rare events such as we we've discussed in psi research, but even there spontaneous events are more meaningful for individuals because they can personally attest to their occurrence, but that personal attestation still may be scientifically incorrect as to origin: Psi, pathological hallucination, coincidence, memory falsification, distorted interpretation are all pertinent. The ultimate farce would be the parachute irony: Proving a parachute effective requires a control of individuals jumping without parachutes! In reality, there are medical studies like this too: Neppe [143, 144] in his Tardive Dyskinesia research, saw such profound results from using high dose buspirone, that it would have been unethical doing a double blind study. Instead, he resorted to a single blind patient study, where the clinicians adjusted the dose suitably for the patient.
Today, two decades later, there is still as far as we're aware, not a single reported failure with this treatment provided the very high doses required are tolerated and the indication is correct, but because there was no double blind study, it often does not get into reviews of tardive dyskinesia management. This is an illustration of how medicine literally shoots itself in the foot: What may be approved because there is a statistical difference but is clinically marginal, will invariably reach the medical literature. But what is clinically relevant, but not statistically demonstrated, may be ignored.

Conventionally, Medicine applies history-taking eliciting symptoms. This is fundamentally descriptive, phenomenological and subjective). The practitioner then examines the patient eliciting *objective* physical signs; these are replicable by other practitioners in that specialty producing a common reality base). Laboratory results may then demonstrate or confirm the condition. Neppe [114, 116] points out that the next confirmatory feasibility step is appropriate response to medication or treatment chosen for these conditions. In each instance, not all features may occur—for example, the patient may not have all the symptoms of the condition, or labs may not confirm the diagnosis, or the expected response to management may not occur at all or fully. Incomplete responses or data may produce a presumptive or differential diagnosis but not a final diagnosis. Sometimes, time may assist diagnosis based on progression of the condition. Therefore, there are the key symptoms, signs, labs, response cross-sectionally at one point, and long-term measures over time. All are pertinent and consolidate the paradigm of medical evaluation.

Correlations in medicine move to causality:
The Neppe bidirectional (multidirectional) approaches a relative certainty in interpretation of medical data. Neppe [114, 116] has emphasized the bidirectional causality approach that has

been prevalent in Medical Practice for centuries, yet seldom verbalized. This application allows more definitive diagnosis as opposed to correlation: These techniques allow for conceptual translations of the perceptual experience and a common reality called diagnosis. Effectively, for example, diabetes has a series of symptoms that the patient reports. On examination, the physician may find signs compatible with the complications of the condition. On lab tests he may elicit changes pertaining to elevated blood sugar (e.g. HbA1C above a threshold which also allows a metric that correlates with severity). He then prescribes a treatment for diabetes (e.g., medication and diet). The patient improves over time.

Neppe's approach has been to demonstrate how correlations move to diagnosis because of the bi-directional or even multi--directional confirmations. For example, symptoms of malaria are confirmed by lab tests demonstrating active plasmodium parasite in the blood. That may result in a *definitive diagnosis* of malaria. Or the patient has on examination, a throat that looks like it has streptococcal infection. He responds to an appropriate antibiotic. The results in a *provisional diagnosis* of streptococcal pharyngitis. On the other hand, only eliciting symptoms or signs may utilize the correlation of it's possible that the patient has streptococcal pharyngitis or some other related disease. In medicine, this may be a differential diagnosis, which means there is an uncertainty but correlative data.

Neppe has applied such an approach to phenomenology particularly consciousness and psi research.

We can apply such techniques in our paradigm building, especially when we can tie a hypothesized concept into the logic of a demonstrably consistent mathematical model, moving to higher levels of certainty, making conclusions or jumps based not only on falsifiability and replicability of the more consistent (broader objective data that we call 3S-1t reality) but on the logic of increasing feasibility of findings (where no data is falsified using LFAF).

The Gould Magisterial Approach

Furthermore, there are times when we cannot even apply even correlative data. Such comparisons are qualitative but not quantitative. Gould [145]has separated out magisteria. There is a major difference between the magesteria of belief related phenomena such as in religion, and of science, which draws conclusions from facts. To Gould, religion based on belief, and science based on drawing conclusions, are not directly comparable. World religions such as Judaism, Christianity, Islam, Hinduism, and Buddhism can be tabulated for similarities and differences. And the similarities can be correlated statistically as can their differences but the ultimate judgment of value may be subjectively based on belief.

Applications of the Statistical, Common Reality, Medical and Psychological Models to TOEs

Therefore some information may be empirically based but on feasibility, not falsified by data, and may not require statistics though comparisons can be made. Indeed, in areas such as cosmology and evolution, statistics as indicated are difficult to interpret because what is the statistic for the null hypothesis? Similarly, sometimes a theory of everything cannot be directly evaluated for quality although quantitative data of differences can be elicited. From that perspective, the more common features to a TOE can be understood, as well at the unique features. But ultimately, the translation will be falsifiability and LFAF.

There are horses for courses. In a model for a theory of everything, a key aspect has been testability and comparison by replication using conventional falsifiability criteria, or applying LFAF. But prior to that Neppe [105] has emphasized the need for phenomenological analyses as one legitimate approach to applying empirical data and by so doing helping with the analysis of multiple confounding factors. At that point the testing reflects the adequacy of methodology applied to hypotheses. Then comes interpretation, which we conventionally report in scientific papers under "Discussion" of the "Results". We then draw conclusions. In our instance, our conclusions attempt to locate a broader paradigm which truly fits. This therefore is a product of feedback back and forth. The endpoint of a paradigm which fits across many areas of endeavor is a theory of everything. Great refining of the multiple paradigms could rarely achieve an ultimate statement axiom that appears generalizable. Our ATO (Axiom of Tethered Origin) is such an axiom. The process then continues from the "top-down" re-examining information.

The application of information to TOEs.
The process of achieving an overriding Theory of Everything, is therefore an extension of the current methods of science as described above and summarized below.
It is well illustrated, based on both the medical model of evaluating statistical and clinical significance, and applying the techniques of evaluating scientific publications in the area:

Empirical data analyses: These include the clinically relevant, the phenomenological with perceptual and conceptual experience (e.g. we taste something that tastes like garlic; based on our concepts of garlic's taste, we conclude it is garlic)

Postulation of narrow testable hypotheses.

This may lead, ultimately, to postulation of broader hypotheses or skipping the narrower postulates as there may not be any narrow hypotheses.

Results and analysis, by statistical, clinical, phenomenological or responsiveness (e.g., treatment) means.

Discussion, emphasizing the methodological limitations and strengths.

Re-refining the process.

Drawing narrow conclusions from the data available.

Re-evaluating other areas and integrating these conclusions into a model

Combining all pertinent information in models to evaluate the feasibility of a paradigm change.

Ensuring the mathematics and logic must not contain any logical contradictions. We

differentiate this from paradoxes. Paradoxes are indicators of inadequate or incorrect assumptions. Sometimes such paradoxes are only apparent and must be approached within the limitations of their a priori assumptions. (E.g., Gödel's incompleteness theorem is limited to finite reality) or paradoxes may be perceived as such only because of being counter-intuitive as in the twin paradox of relativity. Logical contradictions cannot be true under any circumstances. However, when discussing metadimensionality, we may note apparent 3S-1t contradictions which may not necessarily be contradicted at a different metadimensional level or in infinity. Therefore, these may be paradoxical 3S-1t contradictions that are not so at specific or general N-dimensionality levels, for example, time is linear and forward only in 3S-1t. Multiple time dimensions are logically contradicted in 3S-1t but legitimate in e.g. 3S-2t. This is a paradox not a metadimensional contradiction. Schrödinger's cat may be dead or alive in 3S-1t [146, 147], but if survival after bodily death occurs, in another metadimensional realm, death becomes relative and is paradoxical, not contradictory.

Ultimately achieving a single, consistent statement axiom if the several subcomponents of paradigmatic change are still justified.

The process is then continued but from the top-down to assure internal consistency: Any paradigmatic change must continue to be consistent with the results.

In our TDVP model, the essential components of our TOE are simple: the Axiom Of Tethered Origin is consistent with an infinitely continuous conscious substrate. This infinity is without beginning and without end so is linked with a unified before, during and after period, even before the even horizon. This infinity expresses itself in consciousness, order, and an ever existing time (past, present and future being one) and an ever existing space (which is nonlocal in finite dimensional realities), as well as a universal life potential.

We need to postulate the need for tethering. Our changes are borne out of the necessity of empirical evidence and experience, not convenience. And our lessons are learnt from our previous models, as well as from the attempts by others in the areas.

A TOE is not based on belief. That would imply the magesterium of religion and faith. TDVP or any other scientific approach is based on fact, and has gone beyond belief reaching legitimate conclusions. Those require key ideas that have broad application and can instead be tested through LFAF and feasibility. In our instance of TDVP, the inseparable unification of space, time and C-substrate from the very origin is a key aspect and yet there also needs to be independence of multiple components of S, T, and C substrates too, though tethering at one or some points of origin is something required. To this, was added a process (indivension) and a content (vortices) allowing further applications in the metadimensional area and an awareness of the need for utilizing both order (obvious but in physics, an area that is neglected) and infinity (obvious in mathematics, but conveniently ignored as theological—which it is not necessarily—in sciences.)

There is a consistent build up of these tethers and meeting points by vortical indivension. Every separate component is *integrated into a very large multisystems base* allowing heuristic building together of this single unit.
In TDVP, we have the specific Axiom of Origin or Original Tethering or Tethered Origin leads to several others producing the metaparadigm (, and several logical theorems that derive from there, as well as postulates, sometimes speculative. This is one level of the heuristic hypotheses and testing going bottom-up, and also top-down. Another is the continual interaction of components within and between systems by vortical indivension: Effectively, this is a continued meeting point of tethering across, between and within dimensions and domains.

The meeting points of information intersection or interface, or space or time meeting points intersecting by vectors, scalars or tensors, may be the equivalent of TDVP's interfacing of information via the meeting points of vortical indivension.

TDVP: The Criteria of Scientific Correctness and the Problem of Intersubjectivity

With our TDVP model, the broader metaparadigm is compatible, and in fact, we can apply the overall unifying mathematical logic of the calculus of distinctions across the various physical, biological, social and consciousness sciences, and also across dimensions. Effectively, this is an extension of our idea of LFAF for scientific data but into the metadimensional base involving several domains.

1) We require terms to be specifically defined by using known terms, and not metaphorically unless to illustrate a concrete point (e.g., in tethering).
2) Abstract concepts should be differentiated from the concrete.
3) There should be a hierarchy of hypotheses as in our TDVP model. The fundamental is distinguished from the more speculative, and there are degrees of certainty which we attempt to indicate.
4) Ockham's razor argues that the simplest explanation should be preferred all other components being equal: The parsimony and simplicity of a single assumption of infinite continuity underlying TDVP is excellent, but the coherence and logic are also very relevant. Additionally, in the case of anomalous observations it could be debated which interpretation is simpler. (e.g., is superpsi more parsimonious than survival? In our opinion, it is not because superpsi is completely unproven and purely a theoretical construct).
5) The role of internal and external consistency of concepts is emphasized by the absence of contradictions.
6) We like to emphasize rational logic but what is logical is again sometimes debatable. But there should be a consistency of hypothesis, methodology, results and conclusions.

We have applied these principles with TDVP and we have been particularly cognizant of

definitions, and careful to differentiate any speculative ideas. We have tried to be internally and externally consistent, simple and logical.
In TDVP we recognize the state and trait components of neurological and metaconsciousness. We realize that altered states may even occur in individuals and psychosocially, Individual-units may differ, and states may differ in the same unit at the same moment depending on perception, conception and reality. Consequently applying the three groups of three basic principles of the calculus of distinctions (content, extent, intent; perceptual, conceptual, relative experiential actual/ common realities; self (in the context of individual-unit as well, not self, and differentiating border), TDVP solves this problem of differentiating (as opposed to set theory which looks at similarities, predominantly mathematical not consciousness, and along linear dimensions.)

In TDVP, such a model is similarly developed: Is it compatible with other models? In what way can we look at the process and content, the state and the trait, and to what degree? The ordinal use of metric concepts in distinctions allows C-substrate to have various dimensions each different but interwoven by vortical indivension-- content and process.

We therefore recognize the need for a new Philosophy of Science, and that our current Popperian scientific criteria are insufficient to examine TOEs.

Modern Science cannot explain many complex or borderline phenomena, though is quite sufficient for possibly >99% of our 3S-1t domain reality. But it cannot explain those phenomena that do not fit its standard paradigmatic base. Therefore TDVP involves a philosophy of science paradigm shift.
We realize that if we can demonstrate that empirical data are compatible with LFAF and Popperian Falsifiability and TDVP is supported theoretically by mathematicologic and theorems, our fundamental axiom becomes a more cogent model. We argue that we have done so.

Gödel's Theorem: The Finite and the Infinite in TDVP
A pertinent question relates to Gödel's second incompleteness theorem. According to Gödel, if a system is consistent, then the sentence expressing the consistency of the system cannot be proven within a finite system. To prove a complete formal explanatory framework, requires there to be some external and more general explanatory framework effectively going outside that system. Gödel's model was originally applied to peano arithmetic involving functions such as multiplication and division in a complete finite number system, but mathematicians have generalized from this. Close applied Gödel's theorem to quantum physics and cosmology in Infinite continuity and Transcendental Physics. [7, 128] and also Neppe developed a similar motivation: We've applied this to our TDVP model which utilizes both the finite and the infinite. TDVP's model necessarily incorporates infinity because Gödel's theorem specifically to the *finite*. This is why in TDVP, we necessarily postulate a corollary including the infinite. This is mathematically

and logically necessary because without it could not be a TOE. TDVP could not be complete if it is purely finite because of this interpretation of Gödel's theorem of incompleteness. The inclusive top-down approach in TDVP includes the infinite and the finite, and the interface of infinite with finite. A purely bottom-up approach cannot include the infinite and although TDVP allows approaches en route to its fundamental axiom that are both bottom-up and top-down, the one does not exclude the other.

In TDVP, our metaparadigmatic model was fundamentally developed from the top-down as a broad more comprehensive consciousness-based TOE. This top-down approach did not initially have the limitations of what could be theoretically possible. We were able to develop 21 related axioms, all linked with tethered origins and unification of the discrete finite with the continuous infinite producing a unified reality. Our metaparadigm, effectively our *Metaparadigm of Triadic Tethered Ordered Origin Unified Relative Subjectivity (TTOOURS)* built from this concept, and we then re-examined *feasibility* (a very important concept for metadimensionality) in the context of known endeavors. Only then did we evaluate in detail existing theories and so TDVP in its first and final drafts remains largely outside the framework of existing TOEs, which are used for comparison not incorporation, and to appreciate those components of uniqueness.

CHAPTER 16: *THE KEY AXIOMS*

Ethical axioms are found and tested not very differently from the axioms of science. Truth is what stands the test of experience.
Albert Einstein

The justification of these axioms and corollaries are in the material listed mainly in the second companion book [9]. These axioms are largely independent of each other unless otherwise stated. Refutation of any of these axioms does not refute any other axiom or theorem unless they are corollaries or lemmas.

The metaparadigmatic statement based on 21 underlying axioms.
We are expressing each of these axioms individually, but because of their essential unity, necessarily more than one idea is contained into each axiom.
At times we amplify the axiom to clarify briefly.
These fundamental axioms constituting the TDVP metaparadigm are:

Finite Related Axioms
A. Axiom of Finite Unification
All of existence (space, time and C-substrates [STC]) is unified into one reality. STC constitutes a fundamental triad.

B. Axiom of Triadic Inseparability
Components of space, time and C-substrate are inseparable This inseparability is fundamental and ubiquitous, and occurs at all levels of nature from the subatomic quantal to the macro-level to the astronomical levels. (This inseparability reflects all dimensions and domains: In some space or time dimensions may be equal to zero, not existing at that dimensional level= relative zero).

C. Axiom of CST Tethering
Space, time and C-substrate (STC) are inseparably tethered together and constitute a single unit. The STC triad that is inseparable at certain points may be independent of each other at other points. Therefore, there is always a fundamental linkage of STC but all of STC can manifest independently.

D. Axiom of Discrete Quantal Expression
Quantal meaning is expressed at all levels from subatomic, to macroreality to astroreality and incorporates the biological including the nervous system. Substance, waves and meaning are in discrete packets (wave, particle, meaning) better called qualits (as C-matrix is involved)

E. Axiom of Vortical Ubiquity
Existence manifests ubiquitously in three dimensional curved shapes, which we broadly call "vortices". Quantally, these are expressed in part by spin. (Not all shapes are vortical. Interfaces of information content, of mass and forces can also occur via vector, scalar and tensor communication.)

F. Axiom of nervous system endpoint
Experiential living physical reality is subjectively experience through a nervous system. All discrete information is ultimately translated via that response.

G. Axiom of Subjectivity
Reality is expressed subjectively applying the calculus of distinctions into what is perceived (*perceptual* reality), what is conceptualized (*conceptual* reality) and what is ultimately experienced by the sentient being (*experiential* reality). Conceptual reality involves a neurological type process in which information may be either *actively* interpreted (*interpretative* reality) physically through neurological full conscious understanding of the concept, or through concepts that can also form without full consciousness as well, for example, in so-called altered states, dreams, in one's psychological unconscious, or even ultimately in a reflex way (so-called "motor memory" is an example where one may have the conceptual framework of hitting a top-spin forehand but it does not require active cogitation). Experiential reality usually very closely resembles what is the *common, manifest reality, apparently objectified reality* but this is *not an absolute* reality. Though this manifest reality may, at times, be so tangible that it is almost indistinguishable from the absolute common reality, it still is experienced at an endpoint subjective phase through the nervous system of sentient beings constituting together billions of individual-units that have common though necessarily limited discrete physical sensory and motor apparatuses, that allow very similar interpretations of the *objectified finite STC content* of a reality.

Infinite Axioms
H. Axiom of Infinite Origin
A unified wholeness of cosmic reality occurred at or around the Origin Event. This unified wholeness constitutes the fundamental structure of reality. Underlying the physical universe is an infinite form of reality that existed prior to the appearance of the first quantum (we call this the "primary receptor: occurring at or just prior to the "Origin Event". This *had* to exist prior to the emergence of the first quantum from the big bang. (This axiom though axiomatic is supported mathematically).

I. Axiom of Holism in Space-Time Infinity
Infinity is not non-local in the sense of spaceless and timeless. It reflects the simultaneous coexistence of all of space and all of time.
J. Axiom of Living Infinite Reality

The infinite allows for a N-dimensional living reality. This provides the basis for physical life with the infinite providing *polife:* Potential life once the physical apparatus is dealt with.

K. Axiom of Extropic Reality
Extropic reality manifests not only in the closed, finite, discrete context, but also in the open, infinite, continuous context. The extropic process involves far more than just negative entropy—*negentropy*. This is so as the second law of thermodynamics in space time is applicable in a closed finite system not in an open, infinite, living system and therefore entropy at a linear finite closed level is just one component of broader extropy. Invariant mathematical and dimensional relationships emanating from the C-substrate, and S,T and C substrate linkages exist, forming the basis of the natural laws of the cosmos. These laws are intrinsic to the STC substrate and thus ultimately support the persistence of extropic patterns, information and meaning.

I. Axiom of metaconscious infinity
The infinite provides the context for an open holistic nonlocal (in space-time), metaconscious—metainformation system.

M. Axiom of information
Information exists and is translated in individual-units (including quantal meaning) into a broader consciousness. Cognitively this involves wisdom, understanding and knowledge. This holistic information source (metainformation) translates into a holistic broader consciousness source (metaconsciousness).

N. Axiom of Pervasive, Essential Infinity
Reality manifests in the laws of nature. These laws are not only limited to the finite but also have an essential, pervasive infinite component. However, we at this point, do not know what natural laws govern the infinite essence of metaspace, metatime, metaconsciousness, polife and extropy, but we postulate that they are consistent with known universal laws of nature, not only empirically in terms of demonstrable scientific manifestations, but they may also be revealed through mathematical and dimensional invariants, dimensional extrapolation and the application of the calculus of distinctions.

Linked Finite-Infinite Axioms
O. Axiom of Communicating Relative Infinity
The infinite pervades continuously all the finite individual-unit dimensional realities —it imbues, interfaces, impacts, apprehends, perceives, perturbs (individually and collectively), and influences contiguously and with noncontiguous extent relative to each dimension and domain.

P. Axiom of Fluctuating Dimensional-Distinctions

Reality manifests in ≥ 3 D space (likely 3D)- multidimensional (likely 3D) time-N-dimensional fluctuating "consciousness" with the finite impacting from the infinite.

Q. Axiom of continuous infinity linked with discrete finity
Metaconscious continuity converts its content to *quantal* meaning through the STC continuum into 3S-1t reality. Because quanta are usually referred to as the smallest discrete elements of space-time or mass-energy-spin, "conscious discrete meaning" would theoretically be excluded. Consequently, we use the term "qualits" instead of quanta. Qualits can be subdivided into what may be overlapping Chronits of time, Qubits of space, and Conscits of consciousness. Applying the concept of the quantum, Conscits, in turn, might hypothetically, involve discrete subatomic or even subquantal elements of particle, force (not necessarily energy) and spin, of conscious nature.

R. Axiom of Artificiality
The presence of specific dimensions or descriptive domains is artificial in the context of the unity of infinity but relate to theoretical imaginings or experiential interpretation e.g. 3S-1t finite.

S. Axiom of boundaries
The distinction between infinite and finite requires a boundary.
These boundaries reflect self and not-self and could be synonymous with the boundary between nervous system individuation and others. This boundary takes place at the infinite level. We call this boundary area a "gesher" or complex, infinite-finite linking, bridge.

T. Axiom of metaconscious dimensional-distinctions
Metaconsciousness manifests the linking of infinite with finite distinctions of extent, and quantal meaning expresses itself in STC (Metaconsciousness and quantal meaning together make up a "broader consciousness" (also called "C-substrate—this includes its expression in living organisms —consciousness in nervous system). These distinctions of extent allow for ordinal expression of C-substrate as dimensions.

U. Axiom of Relativity
All factors constituting the TDVP metaparadigm are relative, not absolute, because they are impacted through the consciousness experience. These include the individual-unit, dimensionality and domain, space-time-"consciousness", subjectivity-objectivity, the discrete-continuity dichotomy and the finite and infinite subrealities. Concepts such as zero and infinity are also relative.

These twenty one axioms are linked together to constitute one composite statement, the metaparadigm.

The Four Sentence Axiomatic Metaparadigm Summary

This can be divided for clarity into four sentences creating a metaparadigm.
1. Reality involves a unified wholeness of the infinite and finite with the infinite pervading the finite experience of STC content and extent.

2. The essence infinite reality component is without extent because it exists or potentially exists in all space, time and consciousness, and information content. Infinity involves the potential towards order (extropy). Discrete elements of the infinite are manifested in the finite. Consequently, in finite terms, infinity is conceptualized as nonlocal (beyond space and time) but in infinite terms it involves a metareality of all existing metatime and metaspace, existing as a pervasive metaconsciousness and potential living, ordered subreality. Metacist is an acronym for metaconsciousness, meta-information, metaspace and metatime.

3. The Finite reality component is fundamentally inseparably tethered from its origin as a triad of space—time— broader descriptive "consciousness" (S, T and C-substrates), which manifests across, between and within multiple fluctuating dimensions.

4. This finite-infinite reality is relative to all dimensional-distinction factors, and experienced subjectively (by individual-units) (Metaparadigm of Triadic Tethered Ordered Origin Unified Relative Subjectivity [TTOOURS]).

This is the overriding higher level metaparadigmatic statement for the model called the Triadic Dimensional-Distinction Vortical Paradigm (TDVP) and it is combined as follows, effectively a one sentence rewrite of the 4 subparadigms above:
A unified wholeness of cosmic infinite ordered, nonlocal, existing—living reality pervades a finite fundamentally inseparably tethered original triad of space—time—broader descriptive "consciousness" (S, T and C-substrates) across, between and within multiple fluctuating dimensions experienced relatively (by individual-units)
(Metaparadigm of Triadic Tethered Ordered Origin Unified Relative Subjectivity [TTOOURS]).

These 21 axioms together combine several axiomatic paradigms (unification, infinite-finite, triadic inseparability, CST tethering, fluctuating communicating dimensional-distinctions, and origin) into the TTOOURS metaparadigm.

CHAPTER 18: *CONCEPTUAL DEFINITIONS*

The more I think about language, the more it amazes me that people ever understand each other at all.

Kurt Gödel [148]

We clarify now some basic concepts.
We define all of the terms we use as precisely as possible.
This means that these first conceptual bases should be re-examined after evaluating these definitions.

Definition I: Reality
The totality of all experience.
One component of reality is subjective (individual or group reality): If reality is defined as everything we experience, there are three aspects of this reality: perceptual reality, conceptual reality, and common reality.
Definition I(i): Perceptual Reality – Reality detected by the senses of the observer;
Definition I(ii): Conceptual Reality – Reality conceived or pictured in the mind of the observer— based on the mental image;
Definition I(iii): Common (or Actualized) Reality – The quantum reality underlying perceptual and conceptual reality: It is made manifest (actualized) by an action resulting in an irreversible manifestation of a pattern of effects that integrate a consistent set of perceptual and conceptual distinctions. However, this actualization reflects a common reality at an individual-unit level.

The three forms of reality may be understood more clearly by revisiting the Einstein-Bohr debate, and thinking through examples illustrating the Copenhagen interpretation of quantum mechanics which was validated by the logic of Bell's theorem and the results of the Aspect experiment. (See below)

Definition II: Dimensions
Our use of the word dimension will be precisely limited to *variables of extent that can be measured and described geometrically and mathematically*.
In any reality model there are many measurable variables; e.g., mass, energy, velocity, density, angular momentum, electrical charge, biological activity, information content, etc. But these are variables involving *content* not *extent*. While they are measurable features of perceptible reality, they are not dimensions.
The number of dimensions is equal to the number of variables of extent present. Extent

implies degrees of freedom, i.e., directions in which something can move. (This is contrasted with content which does not have degrees of freedom but can be measured in terms of units of the constituent; a third domain, one with variables of intent refers to determination to act but not the action itself).
Dimensions provide a logical, geometric-mathematical framework within which to describe the objects and events perceived and/or conceived as distinct features of reality. In the context of dimensions beyond the three dimensions of physical space, the term geometry should be replaced with the term "*dimensionometry*".
The answers to the questions about the nature of reality and consciousness may lie in understanding the extra dimensions of reality not normally perceived by our physical senses, but indicated by the existence of forces that appear to act at a distance and the special role of consciousness implied by the concepts of relativity and quantum mechanics. Even though we usually conceive of our direct experiential reality as a "domain" of only three dimensions of space and one of time, there is evidence indicating that we actually exist in a reality of more, perhaps many more, than four dimensions ("meta-dimensions"). We do not use the word "dimension" in its many different other conceptual manners. This includes, Close's statistical analysis application of as having a "causal dimension" and a "resultant dimension". Nor do we use it to represent any measurable variable as a dimension. In any reality model there are many measurable variables; e.g., mass, energy, velocity, density, angular momentum, electrical charge, biological activity, information content, etc. But these are variables involving *content* not *extent* alone. While they are measurable features of perceptible reality, they are not dimensions.
Metric: The metric is a distance between two points or from the origin to any given point. This is the basis of algebraic analytical geometry. This is best understood by defining and using Cartesian co-ordinates. The arbitrary orthogonality (right angled, perpendicular orientation) of the ordinate and abscissa in three-dimensional space is the basis for defining the Pythagorean metric.
Cartesian Co-ordinate: A Cartesian coordinate system specifies each point uniquely in a plane by a pair of numerical coordinates, which are the signed distances from the point to two fixed perpendicular directed lines, measured in the same unit of length. The coordinates can also be defined as the positions of the perpendicular projections of the point onto the two axes, and expressed as a signed distances from the origin.

Definition III: Distinction

Distinctions are applied via *Close's Calculus of Distinctions (C of D)***.** This can greatly simplify the mathematics of substrate algebra by dealing with vectors, tensors and scalars, as well as applying vortices, and a subgroup of these, twistors, as multi-dimensional distinctions. This makes the C of D especially effective for testing scientific hypotheses.

Based on the definitions of the elements, the variables and realities below, there are three different conceptual qualities of distinctions:

- Distinguished, distinguished from, consciousness drawing *elements* (DFC)
- Intent, content and extent *variables* (ICE)
- Perceptual, conceptual, actualized *realities* (PCA)

Elements of distinction
A distinction is anything with perceived or conceptualized features that distinguishes it from everything else. A circle drawn on a plane surface, for example, distinguishes the area inside the circle from all other areas of the plane.
Three *elements* are necessary to *produce* a distinction (abbreviated *DFC*)

- the feature or features that distinguish it (that which *is distinguished),*
- a background, something that the distinction is *distinguished from* (that from which it is distinguished) and
- the consciousness that perceives and/or conceptualizes it (*that which draws* the distinction).

Variables of distinction
To have validity in any meaningful existential reality, a distinction must be *defined* by at least three types of *variables:* variables of intent, content and extent (ICE).

Conceptually, we classify "intent", at times, in the C-substrate but it may or may not exist on its own in the S and T substrates, although the intent in from C-substrate may pervade the other two. In practice, "intent" would potentially be one way in which meaningful contextual information could be dimensionally represented, for example, by applying the concept of density through an "infinite guiding reality". This could theoretically allow pure information to be converted to the C-substrate ordinal variables of extent, and might invoke theological postulates. However, it is likely that more commonly, the "intent" could reflect drive or intention or motivation which may be applied mechanistically through psychological or neurological volitional mechanisms. But although, "intent" could be one method of applying density, the simple physical per unit conversion in 3S-1t is likely far more common: In that instance, without any intent applied, we can use the concept of "content per unit extent", which we have in CoD called "density". Through CoD density, we can convert variables of *content* such as mass and energy into measurable variables of *extent*—in other words, the CoD "content" component of "mass" is composed of certain measurable aspects. To measure it requires determining the amount of content per dimensionometric unit, in this case 3S—the three dimensions of space that we call volume. This CoD density measure is done, literally, via the more familiar concept of density that we recognize and use in basic physics. Similarly, "energy" is not directly measured because it has several components, for example, mass, distance and time as in f=ma. In fact, energy, also, requires conversion to an "extent" from a "content" in CoD by being divided by its "density" element involving the dimension of per unit time and applying another metric of extent, namely the dimensions of space.

All dimensions are expressed in terms of variables of extent in some form. As shown above, mass and energy are measured with variables of content as they do not directly involve extent of space and time (and hence one cannot use "degrees of freedom" in that regard). The same applies to fundamental forces and vortices. And as indicated, all variables of content occupy extent that may be measured using the metrics of variables of extent and the concept of density. *Variables* are measurables that, when taken together with intent, may define a distinction. Sometimes abstract concepts are mistaken for dimensions. For example, Cognition, Emotion and Volition (CEV) are not distinctions, because they are concepts without dimensional variables, even though they *may* involve variables of intent. Similarly, the concepts of x, y, z, of space and t of time, or consciousness itself, are not distinctions. Such abstract concepts have no extent, even though they may have content ranging from zero to infinity.

Reality distinctions
There are three ways to *differentiate* distinctions in *reality*, namely Perceptual Distinction, Conceptual Distinction and Actual (or Actualized or Experiential) Distinction (PCA). The differentiation is subtle as distinctions occur in the context of reality.

Therefore, distinctions have the three essential elements DFC; have PCA reality differentiation; and have ICE as variables.

Dimensions can be conceptualized as distinctions.
For example, when the substrate variables of extent are space, time and C-substrate, and of content are mass and energy, then the calculus of distinctions expression for the STC substrates are:

> The calculus of distinctions expression for the STC-substrate is:
> $R= f(S,t,m,e,c,) = \sum([(m/S) \urcorner e/t]\urcorner c/St)\urcorner = \sum[(ST) \urcorner C]\urcorner$
> Where R= all reality, S= 3Dspace, t= time, m= matter, e= energy, c= individualized consciousness and C= Primary Consciousness[103].

Distinctions in physics:
The matter and energy of the reality we experience is comprised of actual distinctions. These are made up of elementary actual distinctions, called quanta, which obey the laws of quantum mechanics. Quanta might reflect "elementary distinctions" only in the relevant S3-1t domain in which energy and mass is very important.

Distinctions and the Origin Event.
If we think of the expanding universe as the reverse of a black hole, the point where quanta of matter and energy began to form at the end of the rapid-expansion period is analogous to the *event horizon* of a black hole. We are calling the first events at the outset of existence—the beginning (e.g., the big bang, theologians call it "creation") —by a non-

prejudicial term "*Origin Event"*. At that point, the phenomena that make up reality do not exist until they are registered in an irreversible way upon a "primary receptor or receptors". But we refer to "Origin Event" in the finite 3S-1t context, as it may be an illogicality to use the term in the infinite context with concepts of metatime, or even at the higher dimensional finite levels.

Definition IV: The Primary Receptor

This introduces a significant paradox: What was the first or primary receptor?
The primary receptor had to exist prior to the emergence of the first quantum from the big bang. (This is an axiom). The first receptor could not have been composed of quanta of matter or energy because they did not exist. If this was not made up of components of space and time, it had to be relatively non-local using our Space-time 3S-1t dimensional model. *We postulate that it was made up of the C-substrate.*

Life and conscious beings reflect apparent evolving complexity of reality, with a persistence of *"extropy"* (negative entropy and therefore an ostensible second law of thermodynamics contradiction). We, therefore, postulate that it is likely that the primary receptor still exists and functions continuously in some form. This therefore means the C-substrate still exists.
This syllogism means we still experience a complex physical universe through a complex physiobiopsychological self-conscious organism capable of interacting with the universe and other similarly sentient beings.
Some would conceive of the Primary Receptor as being synonymous with an infinite existence that at that stage (theism) and also later (deism) interfaced with reality, and call this "God": This may not be God in everyone's definition; We're talking about something that had to exist based on the realities of quantum physics and not conceptions of God. That is a theological concept and our model does not extend to an infinite omnipotence, omnibenevolence, omniscience, omnipresence or omnificence, per se. If one used terms such as these, "omnipresence" is used to imply all of time, but possibly all of space: A term like "omnilocal" instead may more easily confirm the metaspace elements. These are major conceptual jumps which we cannot prove and are subject to belief. We make this comment to clarify the concept of "Primary Receptor" not to directly impact theological implications (although some would interpret this as such.) Our model restricts this concept to an origin (Primary Receptor), to an Origin Event (such as theorized in the standard model as the big bang or some similar event), and to unitary-holistic existence across CST and that we living human beings on earth are experiencing only a tiny portion of reality in 3S-1t, and that the Primary Receptor necessarily implies an *infinite reality*. Notwithstanding, metadimensionality can be conceived of in the finite, as well.

Definition V: Existence

The essence of existence is *actualized distinction*. In order for a distinction to exist as a meaningful, actualized reality [Definition I(c)], it must have three components: existing

perceptually, conceptually, and actually. Dr Adrian Klein, a great Israeli theorist of dimensionality, defines "existence" as any xD configuration perceived from a [x+y D] perspective.[44] Existence is not dependent on the number of dimensions: It may apply to any number from zero through the transfinite, and in the essence context, to the infinite. Zero dimensions may imply a certain non-existence, but we can still mathematically define a "point" which therefore exists.

Definition VI: Consciousness

The term "consciousness" is generally misunderstood and misinterpreted. In common usage, the term is narrower than the substrate we call the C-substrate. C-substrate has three components and each is a significant functional aspect of the C-substrate:

i. Metaconsciousness implying extended human consciousness.

ii. Meaningfulness—apprehension and influence implying at minimum very basic meaning at the most primitive level of reality from the subatomic particle or quantum level, even subquantally, all the way through to the astrophysical level.

iii. Consciousness with at least minimal awareness and/ or responsiveness of the distinction of self from everything else, in living organisms. This relates to the neurological functioning of consciousness in the brain which links with metaconsciousness as well as the meaningfulness.

In the description of our paradigm, "consciousness" is used in its broadest C-substrate context, but because it may be misinterpreted we use the C-substrate term. Consciousness therefore refers to the all of neurological brain consciousness, metaconsciousness and for even the subatomic level, some aspect of meaningfulness (apprehension or influence). It has components translatable into the calculus of distinctions: Consciousness is the awareness of the distinction of self from everything else. Consciousness performs three functions— drawing the distinction of self from "other", i.e., to see self as distinct from everything else; drawing distinctions in the other; and organizing these distinctions into meaningful patterns. These distinctions can apply most easily to the human model but it may be extended to the subatomic level and to metaconsciousness.

Consciousness, cybernetically, can have either or both of two levels of organization: Awareness of some kind, and responsiveness of some kind. To have this stimulus (S) - response (R) component requires the third integrating "that which does": Psychologically this is referred to as the "organism" (O). So the S-O-R model involves the 3 levels of distinction. We refer to this model of consciousness as the "C-substrate". In it, awareness, responsiveness and organism also include zero in instances where is there is no "awareness" or no "responsiveness" or no "organism". This allows C-substrate to be applied under any dimensional circumstance.

Awareness implies ability to appreciate or apprehend the environment. This may even be at the subatomic level of elementary particles where Heisenberg's uncertainty principle [130] allows consciousness to affect or guide the process of physical manifestation in 3S-1t. Responsiveness implies ability to respond or influence or perturb the environment. This

may even be at the subatomic level of elementary particles. Organism is clearly linked in the 3S-1t-1C domain (what was 3S-1t where neurological definitions of consciousness, awareness and responses are easily applicable) but organism may be applied at other dimensional consciousness levels given the concept of self, or even collective self. Consciousness is not purely an epiphenomenon of brain function. But brain function is an important facet of level of awareness and responsiveness neurologically.
The C-substrate as "broader consciousness" is internally consistent across quantum mechanics, macrophysics and astronomical levels of reality, and contribute to quantum and consciousness dimensional fluctuations. It is as an integral part of reality and is also non-falsifiable.
Consciousness may involve any component of individual or individual-unit sociologically or at its most minimal level subatomically. It may fluctuate varying dependent on state and may include cognition, affect and volition as well as such qualities as honor, love, bravery, strength, understanding, wisdom and knowledge.

These qualities can be measured with an ordinal metric such as slight, moderate or marked and therefore are variables of extent that can theoretically be applied to dimensionometry.

C-substrate is broader than “consciousness”. C-substrate also includes the neutrality of “information availability” in metaconsciousness. This information is neutral but when it is linked with meaning, even at the minimal level manifesting subatomically it implies a level of “consciousness”. A metaphor may be that the information can be perceived as not registering rather like the emptiness or darkness of space. It is only when it registers, rather like quantum consciousness or mechanics that it reflects “consciousness”.

“Consciousness” is energyless and massless but the tethering of the C-substrate of consciousness to space and time substrates means direct and immediate interaction and the availability of knowledge distantly at a relatively non-local level.

Definition: Extropy
The organizing function of consciousness and life creates extropy (negative entropy), wherever conscious life appears. For simplicity, we now officially replace the term negative entropy, sometimes called “neg-entropy” with a positive term: extropy. Extropy is more complex than pure negative entropy. This is so as it may reflect various degrees of order amongst different qualitative distinctions, dimensions or substrates. It is, therefore, not linear but multidimensional. It has potential “essence” infinite components and, we postulate, that it may be closely linked with time, space, consciousness and life.

Definition VIII: Life
Any organized structure that can react to distinctions critical to its continued existence. Life needs to have a direct connection with the C-substrate.
(Artificial intelligence will not have life unless it is part of the C-substrate.)

Definition IX: Variables
Variables are algebraic representations of features of reality measured in units of extent, content, or quality. At least in S and T, they form calculable metrics. They are the components that make up different distinctions. There are three types of units of extent: distance, time, and awareness; there are three types of units of content: mass, energy, and information-meaning. There may be three types of units of quality: favorable, unfavorable, and indifferent but these can be represented as extent linearly as well.

Definition X: Qubit
Qubits are conceptual distinctions analogous to quanta and quarks in 3S, 3T reality.[s] Our use of it here is defined more specifically as a unitary distinction in the conscious 3C-substrate, represented as quanta in the 3S, 3T reality. Qubits, like all conceptual units, are flexible, expanding or contracting as appropriate in the context of a thought and or image in 3C reality. There are three types of qubits, which are conceptual distinctions of substance: matter, energy and C-substrate (the special definition of *consciousness*).

Definition XI: Chronit
Chronits are conceptual distinctions of time. These are flexible in 3C reality, like in the individual 3C mind of a sentient being, but analogous to the three finite, relativistically measurable time units in 3T reality when related to specific events.

Definition XII: Conscit
Conscits are conceptual distinctions of consciousness that occur in three types: cognitive—logical (meaning), emotive and motivational. Outward manifestations of these conscious distinctions are: cognitive functions, emotional feelings and volitional acts. (The adjective is "conscial").

Definition XIII: Qualit
Qualit is the combination term for triadic C S and T.
S is reflected mainly by particle, S and T by packets with waves or quanta or energy, STC by Qualits implying the fundamental element.
If we want a pure term for C-substrate we have psi or maybe numinosity or maybe influence (but influence does not need psi) or PK. We have postulated Psitrons and possibly Kinetrons (at the influence, perturbation level).
Packet, wave and psi components of the qualit.

The equivalent of spatial and temporal in this context is *conscial* with the units being qubits, chronits and conscits respectively. (See Dimensionometry below).
Conscits have mental dimensions of cognition, emotion and volition. Conscits could have

[s] The term qubit was coined by physicist John Wheeler and described in his discussion of "It from Bit[62].

spiritual and possibly causal (effect, influence) dimensions. (See Dimensionometry below).

Definition XIII: Vortex
A dynamic N-D form, generally rotational. A key feature of the vortex is movement with circular, ovoid or curved components. It may or may not expand as the degree of change may be zero. It may or may not be symmetrical. Note that a sphere is one form of vortex, so is a helix, so is a spinor. These may be stationary (zero movement) or moving or elongated.
An N-D vortical form may appear in 3S, 1T reality as a rotating ovoid shape, vortex, helix, spiral, sphere, string, line, or almost dimensionless point. The exact shape of a vortical form will depend upon the perspective from which it is distinguished.
Because of the occurrence of asymmetry in combined forms, as described above, and the opposing forces of gravity, universal expansion, the strong and weak atomic forces, electricity, and magnetism, vortical forms are also common on the macro scale; e.g., spinning planets, planetary orbits, tornadoes and whirlpools.

Definition XV: Relative Non-locality (see I. Proof, logic and illustration of N+1, N and N-1 reality for more background):
In 3S-1t, spaceless and timeless data existence. Posited at that domain is Quantum entanglement e.g., as in Einstein-Podolsky-Rosen Paradox (EPR) correlations[58].
The signature of a higher-D object in a lower-D reality is evidence of invisible *entanglement*, or what John Bell called non-locality, now known to be a common characteristic of elementary entities at the quantum level, including photons and electrons. Based on the double-slit, Aspect experiment and Wheeler Delayed choice, the LFAF allows for extra dimensions.
Given the interpretation of fields as higher-D connections (see Appendix), we regard this action at a distance as resulting from higher-D entanglement since such an object is continuous in the higher-D reality yet manifests discontinuously, entangled, and ostensibly separately in 3S-1t. We also note that as the number of dimensions increases, the connections and the way they manifest in lower-D realities become more complex.
The introduction of at least two additional dimensions is necessary to explain the behavior of electrons and photons. It may take even more extra dimensions to explain the processes of perception, and the experience of conscious awareness, including the distinction of self from other.

Definition XVI: Substrate
The term we use to describe each component of the broader Space-time-C triad. There is a space substrate, a time substrate and a special kind of substrate of "consciousness,: we call C-substrate.

Space: The dimensions of height, depth, and width (reflecting three variables of extent

with an interval metric) within which physical reality manifests.
Time: The indefinite continued progress of existence and events in the past, present, and future regarded as a whole (reflecting a variable or variables of extent with an interval metric)
S-substrate: The substrate of dimensions in which space exists.
T-substrate: The substrate of dimensions in which time exists.

Definition XVII: C-substrate
Allows for "consciousness" to be described without resorting to neurological, psychological or philosophical descriptions with the essential component as meaningful interaction.

Definition XVIII: Domains
Domain describes any ordered combination of STC Dimensions.
Cluster of specified dimensions. e.g., 3S-1t reality is the usual physical experiential reality we on earth: This would be the 3S-1t domain as opposed to 3S-3t –xC domain or the N-D domain.

Subdomain
A component of a domain e.g., the 3S-1t vortex or a specific cluster of dimensions as parts of the larger domain cluster.

Definition X1X: Realm
Realm is the description focusing on specific dimensional combinations of STC and D reflecting Intent. In vortex n-dimensionalism, Neppe used the world realm. Realm may sound mystical so we use the word *domain* instead.
We could imply the different reality realms, but the different reality realm at the relative objective level would be the complete unit of all the different STCs. Domain conveys the intended meaning more easily.

Definition XX: Dimensionometry
Geometry representative of N-Dimensions, including the C-substrate. Polynomial dimensional geometry was a similar term but did not incorporate the ordinal C-substrate data.

Definition XXI Prime-essence
Prime-essence as a term for the original non-quantum receptor (also called Primary Receptor).

Definition XXII: CST metric
Space-time and C-substrate all as measurable ordinal or interval quantities.

Definition XXIII Manifold

Mathematics geometrically multidimensional shape or form: a collection of points forming a certain kind of set, such as those of a topologically closed surface or an analog of this in three or more dimensions. Manifold manifests in N-1 D reality

Thus a line and a circle are one-dimensional manifolds, a plane and sphere (the surface of a ball) are two-dimensional manifolds, and so on into high-dimensional space. More formally, every point of an *n*-dimensional manifold has a neighborhood homeomorphic to the *n*-dimensional space R*n*.

Definition XXIV: Triads

Linguistically, the *triad* reflects the C, S and T dimensional substrates acting as one unit. Dimensional jumps may possibly exist in these CST units and ultimately we have triadic trailing where the dimensional increases are predominantly or exclusively in the C-domain. (We considered trialism but this was introduced by John Cottingham [149] relating mind body and sensation so we needed a new term).

Definition group XXV

i. Axiom

An important statement or concept that must be accepted as *a priori* because it is self-evident and/or cannot be inferred or deduced from more basic concepts.

ii. Postulate

A postulate involves a proposition that is not proved or demonstrated but is hypothesized to be true based on the available information. It is not at the level of an axiom because it is not accepted a priori. This definition is ours and though some regard "postulate" as synonymous with "axiom", in the context of this paper we are differentiating the two.

iii. Theorem

An important statement or equation that may be proved or demonstrated to be true by a series of logical or mathematical steps from an axiom, or from another theorem.

iv. Corollary

A secondary statement or concept that is closely related to an axiom or theorem and may be inferred directly from that axiom or theorem.

v. Lemma

A logical or mathematical statement that serves as an intermediate step between two theorems.

vi. Principle

A general rule or law that is an inevitable consequence of known facts and applies to all members of a given class of situations or circumstances.

vii. *Paradigm*

In TDVP, an all-encompassing, fundamental model with supporting mathematical, logical and empirical evidence, going beyond the postulate of a "theory".

Definition group XXVI: Indivension Cluster

i. Indivension

Describes the fluctuating dimensions and domains in the individual-unit or a combination of individual-units experiencing a common reality. Indivension allows for transitory or fluctuating experiential realities and is circumstance dependent.

ii. Relative Actualization

In one individual, multiple dimensions or domains may be perceived or conceptualized and actualized as their relative reality at that time.

iii. Tethering

"Tethered" in the TDVP has two components:

1. a fundamental inseparable existence of the parts at the origin, namely space time and “consciousness”.
2. separation of these parts, namely any aspect of the STC components, when not tethered.

In TDVP, "tethered" refers to an inseparable linkage of the parts—space, time and C-substrates—at some or multiple points. Useful metaphors would be the umbilicus linking the fetus to the mother yet the fetus being independent too; the ship being moored and the moorage being the tethered part; staples holding down a series of papers; the roots of the STC tree being common but the branches being separate; the balloons being held in hand by strings but potentially interfacing with each other.
Tethering may be different at different dimensional or domain levels (Relative tethering).

This tethering leads also to very fluid vortical three dimensional separations of the various levels of individual-units by indivension, whereby interfacing and interacting, and movement across, between and within dimensions occur. Tethering is fundamental and inseparable occurring from the event-horizon (e.g., the big bang). This allows for the unified wholeness of cosmic reality. (*Metaparadigm of Triadic Tethered Ordered Origin Unified Relative Subjectivity [TTOOURS])*.

iv. Relative Tethering

Open components may be tethered in 3S-1t conventional reality domain, but not tethered at different dimensions.

v. Individual-unit

An individual or unit such as a group, society or culture who share specific information.

vi. Dimensional fabric

Separation of the STC unit into separate space, time and C-substrate components (as when the tethering is loosened allowing each component to reflect itself separately, but still in an entangled way.)

vii. Ethicospirituobiopsychofamiliosociocultural systems approach

Describing the ethical, spiritual, biological, psychological, family, social and cultural systems approach, or components of these reflecting individual or various

collective approaches, with each reflecting a broad dimensional variable of extent and, in this context, implying any systems approach including subgroups, military, political, economic or other collective or individual variables reflecting part of the C-substrate of metaconsciousness.

viii. State specific

Reflecting a specific finite state of metaconsciousness at a 3S-1t moment in time. This can be broad waking, various stages of sleep or any other ASC.

ix. Trait dependent

Reflecting a broad maintained distinguishing quality or characteristic, typically one belonging to a person or an individual-unit This is particular relevant when referring to C-substrate.

x. Altered states of consciousness (ASC)

Reflecting an altered state of metaconsciousness. This translates into any state specific state besides regular 3S-1t waking reality, and may reflect various variables of extent in different dimensions.

SECTION E: THE THEORY AND PRACTICE OF TDVP

CHAPTER 19: *RATIONALE FOR DIMENSIONS BEYOND 3S-1T*

Man's mind, once stretched by a new idea, never regains its original dimensions.
Oliver Wendell Holmes (Physician, 1809 - 1894)

Historical Base for the Existence of Dimensions Beyond 3S-1t
Historically, the feasibility of the idea that reality includes geometric dimensions beyond 3S was *disputably implied* by Albert Einstein when he developed the Special Theory of Relativity in 1905 [150]. He suggested a metric with four variables x, y, z and t, creating a unique 4-D reference frame). However, the fourth dimension was not specifically mentioned in his 1905 paper nor in the related paper where each system has its own matter-energy ($e=mc^2$). The credit for describing time as a fourth dimension should therefore go to Hermann Minkowski [15] developed the mathematics needed to describe 4-D space-time, but with some assists: Minkowski, in fact, lent heavily on the work of several other great scientists before him—Poincaire, Hilbert, [his former student] Einstein himself, Lorentz, Maxwell, Gauss and Helmholtz) [151]. Einstein's first reaction to Minkowski's contribution was that it was an unnecessary mathematical sophistication. It wasn't until 1915, when he was working on the General Theory, that he used these terms and discussed the mathematics of four-dimensional space-time. He then embraced the idea for General Relativity, published in 1917, and this re-awakened a broader awareness of a fourth dimension. Effectively, Einstein's special relativity with its non-preferential frames of reference upheld the absolute void context, but Einstein's general relativity with 4-dimensional space-time curvature swung the pendulum back toward an underlying "plenum" or pattern in basic reality in the space-time metric [152].

Newton's laws describe how the force of gravity varies with distance, but *not* how a physical force is effectual across empty space with no mechanical connection. General relativity revealed that gravity is not an attraction across a distance but the effect of the warping of the dimensional structure of the space-time continuum by relative mass.

But relativity did not involve any kind of "consciousness". Was there an early link of quantum frames of reference with consciousness? Indirectly, yes. The idea of consciousness having such a relationship is not new. Even in 1929, Alfred North Whitehead posited that quantum mechanics perceived the universe as a process of events, at least some of which are imbued with a mental quality ("throbs, or occasions of

experience") [153, 154]. However, this was ignored for many years. There are now parallels with the modern view of Abner Shimony [155] to the extent that Chalmers calls this a "psychophysical law." [156].

There are various descriptions of a fundamental *quantum sea, vacuum, foam or spin network*. These have been used to describe underlying space-time geometry. This could be speculatively relevant to the understanding of consciousness [152].

An extension of this idea through a process of what we call "the Theorem of Dimensional Extrapolation" leads to the hypothesis that all forces that act over distance in three-dimensional space (3S) are the results of the interaction of additional dimensions with 3S-1t. This idea will be developed further in the companion book [9]. Applying this concept to the other fundamental forces of nature, we discover the existence of additional dimensions. Additional fundamental forces, such as the strong and weak atomic forces and electric and magnetic forces producing the phenomenon we call light, and likely the postulated expansion of the universe force with gravitation, all are involved with resulting dimensional warping and attendant extra dimensions, and are seen as the natural results of distortions in the space time continuum. Each force is integrated into the picture as the result of the progressive bending or warping of the continuum. This provides a clear and straightforward demonstration of the metadimensionality of reality in space-time.

Statistical Basis Justifying a Paradigmatic Shift

To be accepted as feasible, hypothetical models require justification and our models are justified below. The tests justifying a new paradigm are based on already demonstrated empirical data emphasizing the need for re-examining the role of "consciousness" and also our unidirectional perspective of time only moving linearly forward.
Justification for this lies in the discoveries that

1. In *special relativity:* An observer's perceptions of physical reality (space, time, matter and energy) vary depending upon the observer's relative velocity and position relative to concentrations of mass.

2. In *quantum physics*, specifically in the double slit and delayed choice experiments: A real link between the conscious decisions made by the scientist and the outcome of the experiment is demonstrated.

3. In *consciousness research*: There are at least seven six sigma findings in consciousness research and phenomena that do not fit the fabric of current 3 dimensions of space, 1 point in time reality. This means at minimum, one in a billion against chance data in seven independent areas and these result may be unparalleled in scientific endeavor (technically $9.866*10^{-10}$ vs. chance; 1 tailed). Each of these areas have involved years of research. These data are thought to reflect similar mechanisms, called psi.

CHAPTER 20: *CONSCIOUSNESS IN THE BRAIN*

Reading, after a certain age, diverts the mind too much from its creative pursuits. Any man who reads too much and uses his own brain too little falls into lazy habits of thinking.
Albert Einstein

The Need for Proper Controls

Our perceptions, conceptions and exposure to common though still subjective reality could easily flood us. We have far more information than any conscious mind could process. Moreover, our nervous system allows for remarkable learnt behaviors including the unconscious extras such as cognitive patterns, inferring and deducing, and creativity, plus all learnt new reflexes or patterns (bike riding; tying a tie; playing a musical instrument; responding directly to a trained tune). If we allowed all this input, we would easily be overwhelmed. We need the proper filter, ignoring what should be ignored, and appreciating what should be recognized. These are direct elements that our brain without any psi functioning can explain, and in fact, is expert at.

Information Versus Consciousness and the Brain

When information becomes meaningfully loaded we are referring to that as metaconsciousness. We are accessing that information through some source of communication, and that communication is invariably what Stephan Schwartz [157] has called the *opening to the infinite*. We are allowing this metacommunication to open up to the infinite, but it is also opening up to realities within our own brain because we posit that our brain functions as a filter in part and more than a filter to the infinite where it sieves by permeability those relevant awarenesses which we allow. Our brain might be that same infinite boundary, that impermeability/permeability that allows us to function and not be overwhelmed by the information that is irrelevant, but it also allows us to experience special selected pertinent information and distinguish when it is needed. There is a two way passage between the barriers of the infinite and the finite. The brain must handle all incoming information, integrate and juggle executive expression and it needs to adjust. Teleologically, it is safer having the safer bits and bets of language communication and the various memory, cognitive, affective and volitional and motoric expressions, both at the levels of awareness and also in automatically learnt responses, than relying for survival in our society on psi phenomena, which are elusive and can seldom be directly validated by others.

Meaning in C-substrate

What is the meaning that is implied in the consciousness that individuals experience in the 3S-1t context? Is this qualitatively and quantitatively different from the meaning that is

implied in such qualities as honesty, truth, justice, courage, love, or a negative one—which may be a continuity of love or quite separate—hate? In other words, is this a qualitative difference or is this the same meaning we are referring to throughout? We are uncertain of the answer, though we very tentatively posit that it is the same unified meaning because everything is unified—and this means metaconsciousness at both finite and infinite levels contains all meaningful information: But we cannot conceptualize this in our 3S-1t experience. We utilize a very limited amount of the infinitely available information, not all of the information: Our "axiom of physical reduction valves" points out how we are limiting incoming data to what we can utilize or understand. But this axiom also has a self-growth implication because the development of bidirectional higher consciousness leads potentially to actualization, transcendence, growth and development of self or of individual-units, even cultures, and ultimately there may be progression towards the individual-units finite/infinite development, possibly implying more higher dimensional awarenesses and a closer perception or conception of the sublime realities or of the infinite. These are the different elements.

Is Psi Always on Call?

Psi, relative nonlocality (they may be synonymous) and metaconsciousness, ultimately require the brain to be the endpoint integrator of limiting itself to finite discrete information. And most of the data the brain is perceiving and integrating and then executively expressing involves day to day functioning.

It is well explained by appropriate physiology and psychology. We do not need to invoke psi.

The brain is more than a superb computer and does an excellent job in ensuring what is necessary, available, accessible, handleable and not overwhelming for each individual. The brain, when normal and healthy, ensures we function optimally with maximal beneficial utility.

It is conceivable that psi may always be one of those options that exists but manifests into full conscious awareness only sporadically and often unpredictably spontaneously. However, certain established protocols can demonstrate it, if not consistently, certainly via the statistical deviation from what is expected. We differentiate psi information or expression that may be rare, from a phenomenon that may exist all the time, just as our senses of smell, taste, vision and hearing are continually on call, even though they may be screened out and ignored. Is psi part of what is normally screened out?

Recognizing psi: The difficulties

But even if psi was persistently available in the background, there is little wonder we have difficulty distinguishing veridical psi from psychological and neurophysiological distortions.

Even more so, our SPEs (subjective paranormal experiences) [158] are peculiarly idiosyncratic. We do not have any base to objectively validate an individual possible psi

experience unless there are others who experienced the same reality at that time (a relative rarity), or there is demonstrable instrumentation (e.g. fMRI) showing a simultaneous epiphenomenon, or we are able to statistically quantitate the uncertainty of what is happening.

Ego-boundary distortions and psychopathologies

Moreover, sometimes we have a breakdown of this system. Psychopathology results. One aspect of this pathology, may be ego-boundary disturbance. And one component of this ego-boundary disturbance may be incorrect delivery of relative nonlocal data into the brain. The endpoint is our intermingling with perceptual, conceptual subjective experience and we sometimes cannot establish whether the origin is psi or is endogenous physiology or psychological adaptations. And the epiphenomenal expression neither confirms nor denies the veridicality of our experience or its origins, and this applies to SPEs too.

Future Research on the Interaction of the Brain with the C-substrate and Special Skills

One research approach is to examine the exceptional cases, such as truly remarkable memories, where a rare group of individuals appear never to forget any information. Is this from within the brain or from accessing through that permeable sieve barrier, one's metaconsciousness, recording like a camcorder, all events forever. We can approach what should most have been long forgotten and try to understand why it is not, and yet what limitations occur. This might give us a great deal of insight into metaconsciousness because conventional brain function is limited in its explanations.

Also we could look at states of coma or anesthesia where events happen that are not easily explained. Of course, this area is linked up in part with NDE research.

Brain Epiphenomena

The brain may be part of the machine allowing the information to work. For example, the car has an engine but there are several other necessary components to make it move, one of which is a driver. The brain synthesizes, analyzes and integrates information, while also providing?/controlling? affect and volition that allows one to function, but is that sufficient on its own? If so, why can we not demonstrate how honesty, love, or beauty is appreciated? We see the epiphenomenal result, but not the initial component.

Current Limited Explanations for Consciousness

Explanations pertaining to reducing consciousness to several alternative methods have been insufficient:

neurotransmitters, neuropeptides, or electrochemical firing.

quantum physics extended to a living macroreality with minute microtubules inside nerve cells creating quantum effects that might produce consciousness.

computer modeling ultimately expressing consciousness emerges from the complexity of the brain's processing. Certainly a chess computer can beat a world champion but it is

not conscious, just fed all the reasonable options and still consulted by humans.
chaos theory cannot explain inherently increasing order.

There is mild support for consciousness beyond the brain. For example, the body's ability to heal itself [159]. However, the data is still limited, though sometimes cogent, and therefore controversial. We do not currently know, using our conventional scientific paradigm, how consciousness occurs. We know about correlations, not causal links.

Sorting Out Confounders

Let's examine a few issues here: Animal experiments even when carefully controlled, could be attributed to experience of body language cues plus differential sensory acuity (compared with the human's physical sensory limitations e.g. in olfaction). After controlling for this, what remains is a modest statistical effect. We still need to understand why psi does not occur all the time, as we cannot compare it's effectiveness with live speech communication or for that matter, electronic assistants like phone ringers in phone telepathy experiments.

Solutions?

We know the brain is necessary for expressing active conscious awareness but conceivably consciousness exists in the infinite without any necessary brain: The sound is in the forest despite being heard. Essence is infinite, but ultimately our experience as sentient beings is expressed in the finite.

We motivate here that the TDVP model provides a fruitful explanation for consciousness. One large clue is data obtained by the various studies on psi. Based on the data that has been obtained on psi, the current reductionistic brain paradigm is insufficient to explain consciousness. Psi when demonstrable may manifest correlatively with epiphenomena such as fMRI or correlate with symptoms but it does not obey the inverse square law, and is relatively non-local in the 3S-1t context. Moreover, it may ultimately express itself in space-time but it is inherently linked with the C-substrate.

For a paradigm shift to occur, ostensible anomalies must be demonstrated that cannot be explained by conventional current scientific methods. Furthermore, legitimate attempts to explain those anomalies must occur, that are not refuted. The paradigm shift in consciousness must include known data. Besides psi, we list the numerous inconsistencies above, for instance entanglement, evolution, life, lower dimensional incompleteness, and consciousness itself. However, the current explanations are inadequate.

We apply the paradigm shift which our metaparadigm TDVP appears to constitute to establish how well it fits these models. We believe it gives greater insight without refutation to each and every one of them. By using our metaparadigm for TDVP, C-substrate can be portrayed as part of the infinite STC essence ultimately expressing itself in a reality.

CHAPTER 21: *TOWARDS THE NEW PARADIGM: LFAF AND TDVP MODEL*

Einstein's space is no closer to reality than Van Gogh's sky. The glory of science is not in a truth more absolute than the truth of Bach or Tolstoy, but in the act of creation itself. The scientist's discoveries impose his own order on chaos, as the composer or painter imposes his; an order that always refers to limited aspects of reality, and is based on the observer's frame of reference, which differs from period to period as a Rembrandt nude differs from a nude by Manet.

Arthur Koestler (Author; 1905 – 1983; p. 253) [160]

TDVP Motivation

With clear evidence that the C-substrate of sentient beings directly interacts with physical reality, a new paradigmatic approach is needed. We can no longer represent the observer as a dimensionless point with no direct interaction with that which is observed. We need a new consciousness-inclusive paradigm, and a mathematical framework capable of describing the total reality of conscious experience, not just the externalized mechanical components of reality described by current mainstream science.

To motivate the development of a TOE, such a model must not be falsified and yet be feasible based on accumulated data in every area of endeavor. (LFAF).

Our TDVP model appears tenable in all disciplines using other natural scientific models ranging from conventional macrophysics, quantum physics, string theory, relativity, Copenhagen interpretation, to astronomy, chemistry, meteorology, anthropology, genetics, physiology and pharmacology, biology and anatomy and consciousness research. It also can be explained within the bases of philosophy and theology.

Previous papers and a book preliminarily introduced these multidisciplinary areas (see Neppe's Vortex N-Dimensionalism; and Close's Transcendental Physics).

Moreover, it is essential to be able to model areas of difficulty with mathematics and logic.

Our model, we believe, is consistent with the actual origin of life (not DNA or physiology but the understanding of when and how life begins).

The authors believe this paradigm may be the first paradigm to unify all areas of science and philosophy.

a. It applies the model of feasibility/ absent falsifiability **(**LFAF model) when non-falsifiability is not readily demonstrable.

b. There can be no TOE without taking "consciousness" into account. This is why Einstein, Kaluza and Klein, string theory and its variants, Hawking and Tegmark did not succeed in this endeavor.

c. We present the logical basis of the essential elements of two plus decades of work by each of the two scientist authors culminating in a combination unification in the past two years, namely: *The Triadic Dimensional- Distinction Vortical Paradigm (TDVP)* — The N-Dimensionometric CST Substrate Extropic Mathematicologic LFAF Model: An integrated space-time "consciousness" substrate reflecting event-horizon, warping-N-Dimensional extrapolation, extent-content-intent distinctional-C-substrate indivension, open-closed, holistic-unified, finite-infinite biopsychophysical reality.

d. Our main title— *The Triadic Dimensional- Distinction Vortical Paradigm (TDVP)* —expresses key features: a triadic paradigm (CST is fundamental—C-substrate of "consciousness", S-substrate of space and T-substrate of time) It applies metadimensionality (beyond 3S-1t) and Close's calculus of distinctions of extent, content and intent as the logical bases for mathematical description. Its content involves CST communications in and through a three dimensional vortex. This vortical movement in its broadest sense implies a moving ovoid/ arc/ circular/ spiral /helical/ curvature base. This includes zero expansion or movement, and is across through and within various dimensions with interfaces and interactions of theoretically infinite other vortices at varying dimensionometric angles. The vortices may be closed or open, depending upon the number of dimensions represented in the description.

e. Our subtitle— The N-Dimensionometric CST Substrate Extropic LFAF Mathematicologic Model— expresses key principles. We apply an extension of geometry to beyond 3 dimensions —dimensionometry— and include C-substrate in that, making it more than just dimensional metrics. The fundamental substrate of CST implies metadimensionality. We posit an N-Dimensional model implying infinities both in the Cantor sense of infinity of infinities and in the sense of interfacing with infinity at every dimensional level. We introduce the term "extropy" (the opposite of entropy, but an active phenomenon of orderliness in CST which does not contradict the second law of thermodynamics but refers to order in a specific system (such as life). We use the mathematicological model of proofs with

axioms, theorems and lemmas and the scientific model of LFAF to demonstrate the empirical data.

f. Our model integrates three necessarily co-existing space, time and "consciousness" substrates, which are linked from the start of existence (the "Origin Event"). It applies dimensional extrapolation through warping across N-Dimensions using distinctions of metric extent, of vortical, mass, energy content, and of C-substrate intent, content and ordinal extent. TDVP can be applied in the closed finite model or within an open infinite model. The whole is unified and there is no differentiation of time, space and consciousness—past, present and future all existing simultaneously. Our model fits biopsychophysical reality at the biological, physical and psychological consciousness levels.

g. This provisional overall full title encompasses about 33 fundamental TDVP elements. Conceptual advances are growing by the week. Compromise of any sub-title does not invalidate the rest of the paradigm.

TDVP and TOE

To be true, the key components of any TOE must allow feasible modifications from the current conceptual, mathematical and scientific models without contradicting fundamental knowledge (other than materialist reductionism), and must also seamlessly reconcile with the major theoretical models and authoritative sources from the other natural sciences like anatomy, anthropology, astronomy, biology, chemistry, genetics, life sciences, medicine, meteorology, psychology and social sciences, physiology and pharmacology. It should also be compatible with the three major disciplines examining concepts outside our 3S-1t conventional reality: Hyperspace, Consciousness research and Philosophy including mysticism. Our premise is that natural laws should be universally applicable to to all scientific endeavors. The multidisciplinary TDVP model incorporates all these disciplines into the same unified world-view. We discuss these individual components in the attached papers (e.g., Neppe: Vortex Multidisciplinary…) not specifically in this archive which concentrates on the model, LFAF and mathematicologic.

TDVP: What Is It?

TDVP impacts on every major scientific philosophical and consciousness discipline. TDVP is a comprehensive multi-dimensional paradigm integrating physical and life sciences with consciousness, applying ontological, epistemological, empirical, heuristic natural law. Essentially space, time and "consciousness" are fundamentally inseparable from the event-horizon (e.g., the big bang) implying a unification of what in our conventional reality of 3S-1t we experience as past, present and future. TDVP generates almost five hundred concepts, theorems, axioms, practical applications and this also

includes some speculative hypotheses. We show how warping of dimensions occurs, producing an open-closed, holistic-unified, finite-infinite universally applicable biopsychophysical reality.

We present first the key elements of our model.
We then define concepts. We do it this way so that the core components can be initially appreciated.

After reading the definitions and then the axioms and theorems we suggest you reread the fundamental model, the theoretical sub-hypotheses, and the cogent and demonstrable, then the less cogent hypotheses.

As these hypotheses move down, the level of implication or speculation increases. Again, certain facets of this model may prove incorrect but we believe the core elements to have solid bases mathematically, logically and also empirically. At the end of this archive, are major clarifications of current science based on applications of our model.

CHAPTER 22*: SIX SIGMA DATA IN CONSCIOUSNESS RESEARCH*

The further the spiritual evolution of mankind advances, the more certain it seems to me that the path to genuine religiosity does not lie through the fear of life, and the fear of death, and blind faith, but through striving after rational knowledge.
Albert Einstein

Perspective
There are several independent overt six sigma protocols in consciousness research based on statistical analyses. Six sigma refers to six standard deviations beyond the mean. In statistics, it is an astronomically high number with results of less than six sigma being roughly around 1 in a billion against chance. ($9.\ 866*10^{-10}$; 1t)
The six that have been analyzed in detail are:

5. RV: Remote viewing
6. REG: Random event generator
7. Ganzfeld
8. GCP: Global consciousness project
9. Presentiment
10. Retrocognition/ precognition --- Bem protocol.

Three more have further data.

11. Staring
12. Survival and superpsi
13. Precognition.

The eighth protocol with six sigma data is different, namely survival data while even using impeccable highly rated cases. The ninth is listed only as "further data" because the research has not necessarily been as impeccably examined.
Therefore, essentially there may be at least eight separate areas of consciousness research independently (including staring and survival) and at least six have replications performed over years that reflect at minimum 6 sigma protocols.
Moreover, with all of these, there are independent lab replications.

A Perspective to Such Overwhelming Data and to Meta-analyses
Numerous other protocols have demonstrated astronomical figures as well. Protocols like dream ESP only overall generate meta-analytic statistics of just 1 in 75 million! However, an earlier meta-analysis in that yielded six sigma data: It's important to obtain a perspective here. Meta-analyses reflect all studies, and sometimes they're a little different

(apples and oranges but that is reasonable if they're fruit), the studies may vary in quality (and therefore one has to examine top-rate solid studies too optimally) and they may suffer from reporting of positive studies (so-called file drawer effects). The bottom line is the techniques for such analyses have become very refined and statistically very careful attention is paid. This is relevant because some, possibly legitimately argue that such studies have such overwhelming implications that one cannot use the same level of analysis as one would a medical or psychological study where 1 in 20 against chance is usually regarded as adequate, knowing that there may be an error 1 time in 20. This is why these absolutely amazing statistics are generated here. Exceptional hypotheses may demand exceptional data and exists.

But there is one component that is truly remarkable. The scientist likes to replicate data. And based on the TDVP model we're presenting, and based on the empirical data in the area of psi, experimental psi is a rare phenomenon. This is the nature of the beast, just as certain findings in physics are by their natures rare. Rare events are part of the litany of psi, and even more so, when replication occurs it becomes harder. There is always the interaction of an extended consciousness (possibly a metaconsciousness that has information beyond the brain, with the neurological and psychological elements of brain consciousness which distort information (therefore making predictions less reliable because psi cannot often be differentiated from the psychological or the psychopathological experiences in the brain) and moreover, repetition ostensibly lowers interest and motivation, and scores fall off: This is known as the decline effect. Add in different effects dependent on the expectations and attitudes of experimenters and the subjects, and it is easy to see why replication of data in consciousness research is so difficult.

This means that such remarkable statistical data based on solid, careful research is even more cogent when it occurs, and its occurrence across eight different areas makes it even more overwhelming.

Even studies on biological psychokinesis are statistically significant: DMILS (Direct Mental Interaction with Living Systems) is only relatively significant using our usual statistical frequentist methodologies.
Other areas of endeavor such as impact of crystallization of water and studies of water also suggest changes to our perception of reality.

If these were truly independent and applying the less than 1 in a billion statistic each time, the combined data would produce a figure more astronomical than likely anything in the cosmos. This implies solid proof of consciousness and psi phenomena.

It must be emphasized again that these are rare events. This is why studies require large sample sizes because there are just slight deviations from statistical chance. This explains,

too, the reason 3S-1t appears to work most of the time in our usual life.

The Nine Six Sigma Protocols in Parapsychology
1.) RV: Remote viewing
2) REG: Random event generator
3.) Ganzfeld
4.) GCP: Global consciousness project
5.) Presentiment
6.) Backward precognition (Bem protocol)

Possibly (because measures are stringent in a different way)
7.) Staring protocol
8.) Survival-superpsi
9.) Precognition

Psi
Events, broadly called "psi events, whether they be apprehension of objects of events, so-called extra-sensory perception, or manipulation or influence of objects or events, so-called psychokinesis, are rare. This cybernetic afferent/efferent model may well be incorrect because the mechanisms involved are uncertain: There may be many kinds of consciousness with one single mechanism.

The discipline of parapsychology has developed over a century and studies psi phenomena. Experimental psi as a phenomenon is a rare event. For example, if the chances of something occurring are 1 in 2, and a study in psi is being done, it may be that instead of the 50% probability, one will see a 51% or a 49% depending on the predictions. This reflects a minimal change and therefore does not compromise our usual standard scientific 3S-1t paradigm.

Consciousness Research and Psi
An enormous amount of research on at least eight different areas of psi has generated profoundly statistically significant results. This is despite the methodologies used in parapsychology being profoundly more stringent than any other area of scientific endeavor. Certainly, it is not even comparable with the physical, biological and psychological sciences because of the great emphasis on stringently preventing sources of leak, and trying to ensure that like is only compared with like [115], [161].

Important Principles in Psi and Consciousness: A Primer.
The multiple studies and the multiple different areas of parapsychology have generally indicated a common pattern.

- *Decline effect:* For example, initially when a task is novel, the potential for psi appears to be higher, but as the task becomes more routine, one sees a well-demonstrated, statistically demonstrable "decline effect" with a tendency toward chance results.
- *Attitudes matter:* Moreover, another a well-demonstrated, statistically demonstrable effect is that attitudes matter, and those participants, be they "agents", "percipients" or "experimenters" or even those "researchers" remotely involved in that specific study, may influencing the result of the experiment. For example, if their attitudes are a little negative, their results may turn out negative. If their attitudes are a little positive, statistically their results may turn out positively. This can be analyzed for each participant and an ostensibly common pattern can be found over time.
- *Replication difficulty:* Consequently, when one looks at data which has initially produced profoundly strong results, there may be a fall-off leading to claims of non-replicability. Effectively, one is not replicating the same study, the reason it is so critical for "like" to be properly analyzed with "like". And often one cannot replicate because that experimental set-up will never occur again.
- *Repeatability:* Repeatability has therefore been a bug in parapsychological research. But it is mainly because the experiment cannot effectively be replicated and this is not recognized. The experimenter effect or attitudes of various subjects, or even the broader time frameworks (e.g., sidereal time) have produced a complex need to analyze data phenomenologically [105], [161]. Therefore, it is difficult creating a situation of replication per say, and so repeatability has its limitations.
- *Rare events:* In our 3S-1t environment, psi phenomena are rare events. They may occur spontaneously in the great majority of individuals but only once or a few times in their lives. Experimentally, one does not see results far away from chance so that if chance were 50% one is more likely to see results overall reflecting 52% instead of 50% than 80% correct in a psi experiment. This is clear because our 3S-1t ordinary standard living on earth actually works and is predictable. We rely on our physical senses and physical realities many, many orders of magnitude more than the ordinary person relies on psi. Psi skills unless cultivated are exceptions not rules.
- *Large sample sizes needed:* Data analyses invariably require based a large number of data points and sometimes a multitude of studies to demonstrate significance. Meta-analysis is therefore important but has the limitation of whether the studies were identical e.g., decline effects, attitudes.
- *Frequentist statistics:* In lab situations, psi studies, as in other scientific disciplines rely on statistics, usually stated as P (the probability) < 0.001.

Now whereas, in most sciences $P<0.05$ reflects an error only in 1 in 20 studies, the idea of psi is so ludicrous to some that the bar is usually much higher. However, one cannot apply such a Bayesian approach easily as one does not know what the degree of probability would be. If one says the chances are impossible, no statistics will help.

- *Leakage:* The major difficulty in parapsychological research is not the statistical demonstrations but their meanings. This is why these researchers have become the most stringent in any science, eliminating if possible (and it is experimentally) all known sources of possible misinterpretation. Computerized records and delivery of information are routine for example, eliminating any handling errors.
- *Blind protocols:* The main use of the blind protocol is not in medicine, but in parapsychology and consciousness research so that fraud and t experimenter or sometimes subject bias can be eliminated. However, the assumption of a blind trial is a difficult one because research from therapeutic intent/healing to remote viewing suggest that: all consciousness from single-celled organisms to human beings may be interlinked through a non-local aspect of awareness they all share"[157]. Certainly, TDVP supports this linking through indivension.
- *Meta-analyses:* This is an essential tool in scientific investigation in the social and medical sciences and now in consciousness research. It involves combining the outcomes of well-designed and appropriately executed research in a particular area. The methodology has become stringent. Meta-analyses have to be performed carefully as not all studies are of the same quality; nor do they measure exactly the same parameters. As indicated, in consciousness studies particularly, even if one did ostensibly replicate, there are changes because of the decline effect. This implies that meta-analyses will produce less and less potent results as the number of studies increases (a testable hypothesis)—even before the non-reported studies (file drawer effect) are accounted for.
- *File drawers:* This "file drawer effect" makes meta-analyses particularly difficult. Effectively, not all studies are reported and possibly there may be more non-reporting of negative studies—although, in parapsychological research there is data supporting the fact that more negative studies are reported then in other areas of science, in general. Nevertheless, this file drawer effect has to be taken into account and there are statistical methods to account for that based on curves and distribution of data. Effectively, one is also looking for empty chairs that must be properly accounted for. Therefore, meta-analyses are difficult because whereas one would expect meta-analyses to be the combination of all statistics because of the need to take into account all data, this is not really so and excellent studies are mixed with poor studies.

Psi in the General Population

As an important aside, the area of subjective paranormal experience reflects events that individuals interpret as paranormal. This is not a rare phenomenon and numerous studies indicate that the great majority of the population report such events. Whereas we can reject such SPEs scientifically based on their pure subjectivity and usually their lack of validation, for the individual having them, it is often a profoundly changing awareness or a source of perplexity or denial of it even being possible.

The fact that possibly four fifths of the Western population are convinced that they have had such subjective paranormal experiences at least once in their life does argue that such events are in fact, a normal, but individually rare, phenomenon that should be taken into account.

This is something we as scientists would prefer to ignore, but it is intellectually dishonest not to recognize that we are dealing with a universally experienced phenomenon, that transcends cultures, and has an inherent dimension of strong perceived reality attached to it.

CHAPTER 23: *SIX SIGMA STATISTICAL DATA IN CONSCIOUSNESS RESEARCH*

Five senses; an incurably abstract intellect; a haphazardly selective memory; a set of preconceptions and assumptions so numerous that I can never examine more than minority of them - never become conscious of them all. How much of total reality can such an apparatus let through?
Clive S. Lewis (Novelist; 1898 – 1963)

Because six sigma data refer to results six standard deviations beyond the norm with less a one in a billion (1 in 10^9) chance expectation, such infinitesimal results could only happen by chance once every billion times. Effectively any such results are statistically proven.

We emphasize, however, that six sigma results are not consistent for *every* study in a particular group or for every meta-analysis. We use the term "six sigma" only in its broadest sense, because it is more than adequate to prove a result if any well-controlled, scientifically impeccable study, or cluster of studies, or overall meta-analysis of all the studies in that specific protocol group (between pre-stipulated dates, for example), attain six sigma data, This is then so overwhelmingly proven statistically, that we need go no further in our statistical quest. At that point, we ask, what does this statistic purport to measure? And when six different outstanding protocols and possibly another two (which still involve solid scientific approaches but are by their nature more difficult to control) achieve six sigma data while allowing for the same mechanism—psi—then psi becomes as proven a phenomenon as any in science or our regular experience and the object instead should be to try to understand how, why and when, this 3S-1t rare event occurs.

By comparison, in usual psychological studies, it is acceptable to use a less than 1 in 20 statistical result against chance (in other words, $p < 0.05$). This means that although there may be an assumed link for a chance result one twentieth of the time, most scientists would regard the data as cogent. In some studies, when one really wants to show that there is great significance, result may even reach $p < 0.01$ (1 in 100), and very rarely, more by accident, a study may show a significance of $p < 0.001$ (1 in 1000). This is very unusual in psychological experiments and generally reflects that the sample size is very large, in fact, much too large as the same study could have been done with less subjects, for example, or less data. Again, 6 sigma is just one million times more stringent than that and such results are never listed, but can, as shown below, be calculated.

It should be emphasized this is a difficult area, at times: Some of the more prolific psi protocols accumulate so many experiments that researchers obtain truly astronomical data such as 9 or even 12 sigma. However, some analysts may counter with selective meta-analyses that reduce the confidence estimates. We have emphasized that the *effect size* still remains small, because one is dealing with rare events: Effect size refers to a difference from expectation that may vary depending on the units used across experiments. Two statistical measures there are Cohen's d, and a normalized difference, r, calculated by dividing the composite Z-score by Sqrt(N). Ertel [162] points out ingenious modifications to this.

What is sometimes neglected, but highly relevant however, in psychological and medical or clinical experiments is the clinical significance of the data. In other words, if there is just that minimal chance of that event occurring, is this of any clinical significance? It may not be. It may be that if a person has a 51% or a 50.5% chance of a drug being successful compared with a placebo, which has a 50% chance, it is of no great relevance to use that drug because there will be a great deal of side-effects and the risk-benefit ratio makes its use improper.
This is where a difference occurs in parapsychological research. Only these minimal variants are expected in 3S-1t, and so a great change statistically over a large sample size may reflect these rare-events. Because of its rarity, the stringency must be there to examine what it purports to examine and a century of parapsychological research has produced exactly that, more than any other scientific endeavor[6]—a stringency borne from the rare event necessity.

Six Sigma Research: Nine Types
There are at least nine different ways in which studies in consciousness research have demonstrated six sigma results. Any one of these eight could be quite sufficient to prove the phenomenon. 6 sigma is a profound result, over 1 in a billion. We are not even talking 1 in a thousand which is amazing and seldom do statisticians even state results beyond that. We are talking a million fold higher than this.

The fact is these studies have been very stringent and if one were to combine these eight results, each $<10^{9}$ which are broadly postulated to be via this same mechanism, namely psi, then despite being on any individual hit a rare-event, the results are absolutely astronomical—possibly more than all the grains of sand in the whole world. We should bear in mind that regular psychological studies are regarded as demonstrated with results of $P<0.05$. Here we are talking about results 50 million times as high in stringency and some of these results in fact are at much higher levels (e.g., staring achieving results in the trillions against chance).

These studies have indeed been performed impeccably and generated from very stringent

statistical analyses. One would expect the statistics to be lower, yet despite that some studies, even individually, have generated the one in a billion or more against chance results at least in one analysis. Such results are so profound they become statistically meaningful.
We must bear in mind that this kind of statistic is not consistent and most are relatively much lower but still highly significant.

However, when one examines these results, there is a limitation: The question is always one of the limitations of our being able to be unaware that actually some kind of physical communication system or equivalent set up, or leakage of sensory realities, has not occurred. Because of this, these studies have become tighter and tighter in precautions with the attempts to become leak proof. Moreover, almost invariably there are control studies to rule out confounding factors: These allow comparable periods of time where any confounding limitations would be expected to statistically wash themselves out.
We refer here to eight different areas of six sigma research. Sometimes, meta-analyses, applying all known studies have generated much lower statistics than the first study or studies. The reason is very simple: the decline effect which may include the lack of enthusiasm of researchers for replicating.
More particularly, researchers may regard the first study as very good but then the critics will point out theoretical limitations. The methodologies then tighten and this too may definitely have an impact on enthusiasm or ability to perform for the subjects. The statistic then may drop a little.

The consequence is that one has to look at these studies as a whole, and looking at just figures such as just six sigma may be misleading. However, even when one looks at these tightened methodologies, invariably these results are highly significant, often in the range of one in many thousands against chance or even far less frequent than that. We briefly go through these different methodologies.

Ganzfeld

The Ganzfeld technique is probably the most well researched and highly examined area of parapsychological research. It was independently delivered in several psychological labs by Chuck Honorton, William Braud and Adrian Parker in the 1970s, (From “Ganzfeld”, the German for “whole field”). The Ganzfeld is a mechanism whereby subjects are perceptually completely sealed in physical perceptions particularly in being delivered white noise for hearing, and vision being blocked out. In many experiments this may be in a sealed chamber, impervious to electromagnetic communications, a comfortably seated subject gives information about a target (e.g., a photograph with other controls) There are various methodologies, but fundamentally people in a Ganzfeld setting are trying to guess the appropriate answer and this is statistically quantified by others in a blind setting. Bem and Honorton’s early studies review reveled an effect size against chance of 1 in 48

billion[163]!! The modern Ganzfeld experiment is as "as close to the perfect psi experiment as anyone knows how to conduct." [164]. There have been many studies leading to a variety of different statistical debates. In one instance, two skeptical critiques argued that the statistics were relevant, but not overwhelming, yet further re-analyses of the same data set demonstrate that even the statistics analyzed were in fact overwhelming. This is a major area of generating amazing statistical results, particularly when one does meta- analyses and when one combines even the most complex of these studies. For example, Storm et al [165] in their meta-analysis of 29 modern (1997-2008). Ganzfeld studies showed enormous effect sizes ($p=2.13 *10^{-8}$) The overall consistency of data collection in Ganzfeld assists as it may be of an order of 30% higher than chance expectation. This is simply not something that can occur by chance.

Global Consciousness Project (GCP)

The next area of six sigma data is the Global Consciousness Project (GCP). This is an international effort involving researchers from several institutions and countries, designed to explore whether the construct of interconnected consciousness can be scientifically validated through objective measurements applying such as random event generators produces a steady flow of unpredictable bits with data consisting of a continuous stream of "trials" taken by each Egg at a rate of one per second. The project developed from outstanding lab experiments conducted worldwide since the 1960s demonstrating that human consciousness interacts with random event generators (REGs) apparently "causing" them to produce non-random patterns. There are over 60 active eggs in the network, in Europe, the US, Canada, India, Fiji, New Zealand, Japan, China, Russia, Brazil, Africa, Thailand, South America, Australia. The hypothesis is that the instrument (the network of "eggs") will show anomalous deviations associated with Global Events when there is widespread participation or reaction to the event.: Within minutes of a global event, many round the world will have their focus on it. The experimental results now demonstrate that non-random activity occurs during widely shared experiences of deeply engaging events. The methodology used is impeccable and the data graphed. For example in the most recent data analysis the August 1998 to February 2011 the results overall against chance are greater than a million to one.

The main researcher involved has been Roger Nelson at Princeton, but he has collaborative set ups all around the world. whereby attempts are being made using extremely complex quantal type measures to see fluctuations in terms of global consciousness associated with major events. For example, 9/11, or the millennium time, where one could look at different parts of the country or the world and find differences in terms of consciousness. Again, the results have been remarkable and combining in these results one is dealing with six sigma type of results. (See e.g. [166], [164]. Effectively the results indicate a small but consistent excess of deviation corresponding to the expected deviations.

The TDVP model works with the GCP as one broad feasibility test showing a broader global metaconsciousness coherence in this particular level of individual-unit. Some would postulate that that occurs at a higher consciousness dimension but this is speculation. Interestingly some events seemed to begin shortly before specific events e.g., 9/11 suggesting possible precognition, again logical given TDVP's multi-time dimensionality.

Remote Viewing (RV)

Remote viewing is a significant variant that may have grown out of the sterile testing environment that constituted the original Zener card extrasensory perception experiments that JB Rhine and his colleagues were performing. But whereas these were local experiments, generally in the same building, remote viewing involves detailed examinations and looks at information sometimes over thousands of miles.
RV was coined by the physicists Targ and Puthoff [167].

In this context, the remote viewers have been able to find amazing objects, but more remarkably, when one starts statistically analyzing it again one is dealing with these people being able to portray objects, or sometimes events, sometimes current and contemporaneous, but often, in fact in the future, sometimes just a fraction of a second later, but, for example, where computer generated data has not yet formed in 3S-1t. These experiments are again at a six sigma level. Replications of data overall has involved multiple experimenters, possibly the most famous being the large PEAR lab sample, often involving precognitive (foreknowledge) studies involving researchers Bob Jahn and Brenda Dunne [168], where their specific study demonstrated chances of a mere 33 million to one result!
Remote viewing is especially valuable because it can generate consistently remarkable results from many individuals who have been trained in the techniques of RV. This means that it is likely that psi is a quality that a significant degree of the population can develop.

The profound results over long distances becomes highly relevant because of the fact that psi does not appear to obey the inverse square law: Although, there are variants of psi that seem to have psychological overlays and this may distort distant results, this is not a physical inverse square law, just a psychological component to it. This has relevance to the TDVP model because inverse square phenomena may be limited to physical 3S-1t and higher consciousness may exhibit relative non-locality. Additionally, the precognitive data requires a re-examination of the whole 3S-1t domain as the only reality. The application of relative non-locality at a metadimensional consciousness may be relevant here.

Random Number Generators (RNGs)

Possibly we should have begun with this next example of six sigma data because it was the earliest of the group: An early variant, but a profound variant all the same. Already, way back in the 1970s one could argue that psi was totally proven due to the advent of random number generators. Random number generators are extremely useful in terms of

communicating statistically significant psi information without any kind of sensory leakage and where everything is electronically quantified. The attempt might be to influence the random number generator in a particular way, just as one would be influencing coin tosses to toss minimally more heads than tails. One can change tasks, and one can change orientation, but effectively this is completely automated. Often results can be interpreted as supporting psychokinesis because of the set influence of the RNG attempted, but conversely this may support precognition knowing what to predict. Essentially in a meta-analysis by Radin and Nelson the odds against chance were less the staggering a staggering 1 in a trillion (10^{17}) to one. Their study assigned each experiment a quality score, examined the 152 references they found in 832 studies. 68 different investigators performed 597 experimental (of which 258 were from the PEAR lab in Princeton) and 233 control studies (which were well within chance levels); [169], [170]

Presentiment

One highly relevantly recent exciting piece of research looks at unconscious responses, sometimes in the brain, other times in other parts of the autonomic nervous system (e.g., heart). The most provocative is research on presentiment, because not only is this psi research, but research where one has to change one's perspective of time. Effectively, this is work with precognition with the difference that this knowledge is not even consciously made, it is completely unconscious and looks at events just seconds before they are actually actualized. The apparatus generally is very sophisticated and therefore such studies are usually very expensive. The most important physiological measures used in presentiment studies are heart rate, EEG, fMRI (BOLD signal), and electrodermal activity (EDA). So far, all of these have shown evidence of presentiment, so the whole body appears to be involved. Presentiment is measured in terms of certain physiological changes in the brain, the heart or in one's brain waves. Communications generally involve two different individuals, if necessary separated in different rooms, but monitored together by a stimulus to the one which can also be recorded in the other, and surprisingly reflecting, at times, the response seconds before. Quantitative measures include functional MRIs or positron emission tomography (PET). Experiments have also been done in a free-running environment. Much of the early work to that date has been well-summarized by Radin and Nelson [164, 169, 170] but research continues. Testing presentiment hypotheses in experimental research designs that are familiar to mainstream psychologists, such as studies about learning and habituation, may encourage psychologists to better appreciate the anomalous results and to attempt to explore presentiment hypotheses themselves [171]. However, the methodology has to take into account appropriate techniques to perform and interpret: Harvard researchers have stumbled [4]. Presentiment research has even been done in non-humans, including earthworms! It is interesting, as an aside, that there do not appear to be significant declines in presentiment research, possibly because it involves unconscious measures. Essentially, when one again does a meta analysis in terms on presentiment studies, the overall carefully assessed statistic suggests these results happening by chance are less than one in a hundred million billion ($p<1x10^{17}$ based on 37 studies between 1978

and 2010 based on Mossbridge, Tressoldi and Utts, 2011[172]! Many studies in this field of presentiment research have confirmed what appear to be these retrocausal effects, in which physiological arousal occurs *before* the stimulus [173].

Presentiment research has shown some special characteristics [171]

- Emotionally arousing visual or auditory stimuli produce stronger anticipatory effects than more neutral ones.
- Women appear to be somewhat more sensitive to presentiment than men. Effects of meditation are mixed.

Bem Protocol

The most recent study, which has caused consternation even while "in press", is that of Cornell Psychologist, Daryl Bem and his precognition/retrocognition research[174] which was impeccably done. This has been very heavily examined as this study has been the source of frustration for many scientists as it threatens their whole materialist edifice may collapse. Indeed, Larry Dossey [175], has written a detailed editorial on this.

Bem's study was an eight-year project involving more than a thousand Cornell students in nine separate experiments. When one analyses the studies together, the overall statistic is astronomical against chance, about 1 in 74 billion. (Stouffer's $z = 6.66$, $p = 1.34— 10^{11}$ with a mean effect size (d) of 0.22.) (All but one of the nine experiments yielded statistically significant results) These are so-called frequentist analyses, and later on we briefly examine the problem with using Bayesian statistics in such research. Bayesian statistics say that the chances of something occurring are only one in X. In consciousness research generally they are regarded as extremely improbable, and therefore one looks at a null set in terms of zero. There are major limitations to using Bayesian statistics and Bem, Utts et al[176] have shown that these cannot be inappropriately applied.

Effectively, Bem's research is a test for retroactive influence by "time reversing" well-established psychological effects so that the individual's responses are obtained before the putatively causal stimulus events occur. Data are presented for 4 time-reversed effects: precognitive approach to erotic stimuli and precognitive avoidance of negative stimuli; retroactive priming; retroactive habituation; and retroactive facilitation of recall. All but one of the experiments yielded statistically significant results; and, across all 9 experiments. The methodology has varied. In one controversial one erotic stimuli are use and the hit rate for the erotic stimulus was 53.1 percent (not the expected 50%), again reflecting the small effect size in such consciousness research experiments and the "rare event" model, we have indicated has to exist in the usual consciousness we experience while awake in the 3S-1t domain. Bem found that the subjects' bodies generated a physiological arousal two to three seconds *before* the erotic picture appeared on the screen, and even before the computer had decided which "curtain" would conceal the erotic picture. It was as if the subjects were seeing the future, or that information from the future was perhaps traveling backward in time to the present. In another study, using "priming"

(the effect of a subliminally presented word on a subject's response to an image), Bem found that the priming effect seemed to work backward in time as well as forward. In another, students were better at recalling words that they would *later* type, as if reinforcement from typing acted backward in time.

Less Usual Six Sigma Protocols

These six protocols—Bem time shift, Presentiments, Random Number Generator, Remote Viewing, Global Consciousness Project, Ganzfeld—are looked upon as the most usual kinds of six sigma protocols. However, there are two more; rather unusual, but very relevant.

Staring Protocols

Rupert Sheldrake and others (starting with Charles Coover in 1913 [177]) have been involved in Staring protocols. These are very fascinating because of the fact that again we are not dealing with a profound effect, where if somebody stares at somebody else under experimental conditions one is getting 80% differences. A special component of Staring Protocols is there simple design. Staring even when set up experimentally to avoid sensory leakage (not the same room, blindfolds), does not require sophisticated apparatus, though it does require time and effort. There are a variety of different experimental methods, and these experiments have gradually been tightened up methodologically. Radin [164] reports a meta-analysis of 60 experiments with 33,357 trials. Once again, we are dealing with small differences from chance expectation, in this instance just 54.5% instead of the expected 50% overall. (It's surprising this is not higher as the figures for spontaneous staring without warning could, we speculate, be much higher; the difference experimentally is the expectation and possibly motivation factors). However, one examines it, the results are profoundly statistically significant. In Sheldrake's initial studies [18]the statistics were so overwhelming that one cannot even talk about 1 in a billion, but 1 in absolutely astronomical figures.—202 octodecillion against chance ($2*10^{59}$)

In its simplest form, the "sense of being stared at" can be investigated by means of simple experiments in which subjects and lookers work in pairs, with the looker sitting behind the subject. In a random sequence of trials, the looker either looks at the back of the subject, or looks away and thinks of something else. The effect still occurs in experiments in which subjects were blindfolded and given no feedback, showing it did not depend on visual clues, nor on the subjects knowing if their guesses were right or wrong, looked at through closed windows[178]. Studies have been in many countries and Sheldrake's staring work in Britain, was replicated by schoolteachers in Canada, Germany and the United States with even more significant positive effect than in his own experiments despite ensuring visual, auditory and olfactory clues had been eliminated. This implies that the sense of being stared at does not depend on the known senses [178].

Survival After Bodily Death

Finally, we have the most controversial area as well, the area of so-called Survival Research—survival of some component of human consciousness after bodily death. There are arguments that if data are transmitted, no matter how complex that data, that data is not occurring from somebody who survived bodily death because logically this may be a hypothesis that appears more improbable than just communicating by psi. In fact, if there is communication, it is postulated that it is by psi, so the term *superpsi* has developed as a pure theoretical construct, despite any evidence of this actually existing. We are not here at this point going to debate whether or not this is superpsi, which probably is simply psi, or survival. The important component is that sometimes when data is transmitted it is of such a kind that the statistics against chance are completely overwhelming. Such was the case in a famous so-called chess game involving the alleged communicator, the great Grandmaster Geza Maroczy and the world senior chess champion Victor Korchnoi. The important point statistically here is that Maroczy was able to communicate 31 out of 31 correct answers in terms of extraordinarily esoteric data, which nobody knew about, and where eventually a professional librarian had to be hired (blind to the reason) in Hungary to authenticate the answer: He thought this was just for a biography for Maroczy and did not know the purpose. Effectively, all 31 out of 31 esoteric data pieces were correct. Now, the chances of any esoteric data piece being correct may be very low, for example, we would put the Bayesian probability at one in a hundred or one in a thousand. However, even if one takes a one in two probability, one is dealing with 2^{31}, or close to a one in two billion chance statistic. Overall, in this particular study "Maroczy" reported 79 out of 81 correct items. [179] This again is so high that it can be compared to all the grains of sand that are on the earth.

Precognition and Six Sigma Data

Precognition research also demonstrates six sigma data in psi research. Precognition involves information about knowledge of the future which is not obtained by statistical prediction or logic. It can be studied in the lab situation with excellent controls for any kind of information leakage, particularly as the event being considered has not yet occurred in our current reality.

In this regard, there are two important data bases: The first is a meta-analysis of many studies, and the second is a particularly impressive study from one lab, both with overwhelming > six sigma data.

The meta-analysis is by Charles Honorton and Diane Ferrari [180].They analyzed research data from 1935 to 1989 pertaining to precognition. They examined 309 precognition experiments carried out by 62 investigators. 50,000 participants were used and there were more than 2 million trials.

30% of these studies were statistically significant whereas only 5% would be expected to be significant by chance. The statistical significance of this meta-analysis is overwhelming even for six sigma data: 10 20 against chance. This on its own constitutes overwhelming

evidence for a mechanism occurring that cannot be explained by chance.

The single lab study comes from the Princeton Engineering anomalies research labs in Princeton, NJ. Robert Jahn, Brenda Dunne and Roger Nelson performed 227 formal experiments on precognitive remote perception[181].
Individuals were asked where one of the researchers would be hiding at a pre-selected later time. The probability against chance was 1 in 100 billion.
The description was accurate to the same degree whether the viewer was looking hours, days or weeks into the future. This has implications about the concepts of future time and the inverse square law.

CHAPTER 24: *APPLYING TDVP TO SURVIVAL / SUPERPSI DATA*

A human being is part of a whole, called by us the Universe, a part limited in time and space. He experiences himself, his thoughts and feelings, as something separated from the rest--a kind of optical delusion of his consciousness. This delusion is a kind of prison for us, restricting us to our personal desires and to affection for a few persons nearest us. Our task must be to free ourselves from this prison by widening our circles of compassion to embrace all living creatures and the whole of nature in its beauty.
Albert Einstein

We can apply this to TDVP: Dealing with a real phenomenon, there are enormous implications in terms of consciousness research because it may be that these data imply a whole different mechanism in terms of dimensional communication. If indeed there is survival after bodily death, this implies a whole difference in terms of space-time as well. In our conventional standard physical world of our human living at 3S-1t, the space-time component in relation to survival of consciousness would be described as S and a T of zero.

We can apply the Indivension model in TDVP with interacting vortices at certain points producing little bits of information, or more significant information: If there is a more significant interaction, this may be via vortices, vectors, tensors, or scalars. Mathematically meeting at a point or in any three dimensional curved angle CST is a rare event. Therefore, psi is a rare event.

Psi will always remain a rare event in 3 dimensions of space and 1 moment or short event in time. In fact, if it didn't it would overwhelm. Similarly, once one enters a broader consciousness, a metaconsciousness, there is far more interface in interaction of such vortices because there is less tethering. This means that psi becomes a far more common event at higher dimensions and at even further dimensions, psi is extremely common, and a TDVP test postulate would be that the mechanism of communication would be greater and more detailed. Because survival by definition in our general 3S-1t domain involves higher dimensions, we would postulate that survival data would be far higher statistically in correct hits or detail than psi in living humans.

Further applying Indivension, because survival in our conventional physicalistic earthly 3S-1t domain would be perceived as involving 0S and 0t. It implies that it has a higher

dimensional level, or numerous higher dimensional levels so that one might be able to move between different flexible dimensions, just as potentially one does in a meditative state, in a mystical state, or in dreams. Consequently, the hypothesis is again that data in relation to survival would produce a higher statistical generation of psi. The only way this can be examined, however, is communications in alleged survival to individuals or Individual-units in 3S-1t. This filtering phenomenon may well diminish down the extent of information communication and other aspects of dimensional consciousness such as emotionality and distortions of information may also occur. However, these are therefore two testable hypotheses, namely the incidence of psi should be rare because the vortical indivension links are spontaneous and unusual, and the incidence of data received from alleged survival or superpsi should be far more common.

This data is supported where reports of veridical communications may be of the order of 77% or more[182]. The Maroczy example shows the extent of potential positive data. Of course, as one moves from 3S-1t to higher, the potential in terms of difficulty proving one's instrumentation at an adequate scientific controlled level from a 3S-1t perspective becomes higher. In other words, the statistics or veridical data may exist but the implications of this data are more limiting.

Perspective on the Consciousness Statistical Protocols

There are therefore eight different six sigma protocols in psi research and effectively this reflects studies in metaconsciousness. Whereas one can refute one or two, by trying to invoke fraud or poor methodologies, it is difficult to refute all of them. As they are different, they all support each other in terms of coming to the conclusion that we are dealing with a real phenomenon.

Bayesian Statistics

This, too, raises the debate about what Bayesian statistic would constitute a legitimate null hypothesis. This is particularly so if it is argued that results are logically impossible. However, quantification of what is applicable in terms of Bayesian improbabilities and null hypotheses should be based on legitimate knowledge not prejudice applying LFAF. At that point, the postulated impossibility becomes inappropriate. The term is "theoretical implausibility" —the objection to use when all else fails as some experimental findings are so counterintuitive and nonsensical they should be rejected in principle: the earth is, indeed, flat.

One could argue that if something is falsifiable at the 3S-1t domain, then one has some base to apply or estimate, a priori, Bayesian prior distribution statistical odds and examine a null hypothesis. However, when something is not-falsifiable because the factors in a metadimensional world cannot be entirely replicated in 3S-1t, then the use of the Bayesian reasoning approach is statistically completely unfeasible. The "metadimensional" aspect leaves just LFAF information in 3S-1t meaning that one has small pieces of the jigsaw. Bayesian approaches then are inappropriate because there is no base to scientifically argue

about probabilistic odds: If one chooses impossible prior estimates, then Bayesian methods will appear to accommodate the researcher but it will produce meaningless, nonsensical results[174]. This is one reason why we have used a "frequentist" approach to statistics, citing the six sigma data.

We pointed out the small deviation from the expected chance results that are often attained in consciousness research, and another reason for this rare event phenomenon is the fact that the end-point result is expressed in feasibility in 3S-1t only. Despite the exact circumstances of research never being replicable, for example, experimenter and subject attitudes, and emotional states at the time will vary and these play a critical role and even local sidereal time may play be relevant, and therefore could confound, there still should be other factors that will ultimately dilute out these confounders.

The Bem work has caused enormous consternation because finally conventional materialist scientists cannot refute it besides illogical Bayesian arguments. Their whole carefully constructed edifice may suddenly collapse. The wall of mud will leak. Dossey has written a carefully crafted editorial on this [175].

In conventional physical, biological and psychological research these factors wash out rather quickly and easily. However, in consciousness research, these factors are prime: They are the key factors because consciousness with space and time is so impacting. This means that large sample sizes are needed to counteract the apparently small deviation of data from chance, which has been aggravated because confounders are not taken into account.

Consequently, studies require large sample sizes to tease out these remaining differences. Fortunately, the progress over the past three decades, particularly, have allowed researchers to demonstrate, usually via meta-analysis, frequentist type statistically significant results that can still accumulate over to 1 in a billion against chance. This is, in fact, what has so far happened in at least seven and possibly eight areas of consciousness research.

Speculative Application to a Consciousness-Dimensionality Model, Specifically TDVP

The demonstration of psi phenomena across several different levels of examination means simply that psi exists in one form or another.

For those flat-earthers, yes, the earth is flat: It is just awful to be required to unthink all one has thought before. But that is required for anyone who is scientifically appropriate. An objective, open-minded skeptic *trained and experienced in the area* who examines the data, must come to the legitimate conclusion that psi is a proven phenomenon and move on from there. Nonetheless, there are pseudoskeptics who do not know the area, or who make a professional living out of debunking scientifically solid information that cannot be explained in any way other than psi. In other disciplines, this would be equivalent to someone with a second grade education debunking the findings of a leading expert PhD in his area of expertise, simply because they did not like the discipline or could not understand the results, or were being scientifically inappropriate: It should not happen in that instance. And nor should it happen in consciousness research of any kind.

The great CD Broad summarized this: "Anyone who at the present day expresses confident opinions, whether positive or negative, on ostensibly paranormal phenomena, without making himself thoroughly acquainted with the main methods and results of the careful and long-continued work may be dismissed without further ceremony, as a conceited ignoramus." [183]

Statistically, there is solid proof of a consciousness that is non-local in the context of our conventional 3 dimensions of space, 1 point in time reality. These overwhelmingly large statistics prove that these phenomena are real. They have required large sample sizes because they are rare events experimentally. But their rarity in the experimental 3S-1t domain does not obviate their existence. Moreover, by their very existence, the staid insistence by many in the scientific and philosophical community in a materialistic reductionist existence is falsified and becomes not feasible when dealing with such realities. Also, the absence of null results fails the feasibility of the physicalistic paradigm in these areas.
All of these examples of consciousness, effectively may relate to the meaningful reality of the C-substrate or of metaconsciousness.

A Model of Psi Applying TDVP
An explanatory model is needed but a broad well-documented model has not been demonstrated to explain all of psi.

- Applying the TDVP model, psi implies some kind of connecting impact.
- Further, applying the model of indivension and vortices it may be that these connections relate to higher dimensional consciousness phenomena intersecting and interacting across individual-units (individuals or clusters; human or other animals or even inanimate objects). The TDVP model proposes a mechanism for psi.
- The TDVP N-Dimensional indivension mechanism explains the rarity in 3S-1t domain as one goes higher and higher dimensionally. It may be that there is more and more impact in terms of such communication of consciousness type information at the higher dimensional levels of consciousness (e.g., deep high level passive meditative or active meditation ("hitbonnenut") states, reaching levels like "samadhi"), compared with lower levels of consciousness (e.g., maybe dreams).
- The impact of psi may vary depending on the kind of "receptor' involved because possibly more individual-units can be influenced but only to a limited degree. Additionally, so-called psychic individuals statistically may be more sensitive than those who are less sensitive, and possibly some animals may respond differently from humans.
- At the subatomic level, the delayed choice experiments in Physics may reflect entirely different consciousness mechanisms such as just a communication of

consciousness involving some kind of meaningfulness or information delivery or influence.

- The broader tentacle of reaching many conceivably could relate to potentially higher fluctuating dimensional vortices but at these higher levels, the influence on a much lower dimension e.g., 3S-1t may be less than an immediately higher C-substrate dimension.
- Higher dimensionalities all reflect a relative non-locality of space and time in 3S-1t. The interface, influence or apprehension of information with 3S-1t events or objects may well be less on this conventional 3S-1t standard domain than can occur in higher dimensional consciousness
- 3S-1t as a "lower' dimension may effectively be several dimensions of consciousness from the higher consciousness dimensions.
- The parallel may be apposite with the various forces (gravitation and expanding universe are very weak, yet extend large distances; strong and weak subatomic forces impact very locally but are relatively more powerful).
- Just as space and time have their own forces and packets e.g., leptons and hadrons, such psi communication could speculatively be by some kind of different particle, for example a postulated "psitron" or a "kinetron".
- The use of such data from consciousness research is critical when evaluating hyperspace, string theory, and higher dimensionalities. As soon as any kind of metaconsciousness is postulated the consciousness that is occurring at that level is, by definition, metaconsciousness, because we have defined regular consciousness as the limited information that one is obtaining from within the brain in terms of awareness and responsiveness. This is actually a good evolutionary control because otherwise there would be so much information coming in that individuals would not be able to handle it. They have to be able to filter it and synthesize it. In other words, the process of perception, conception, and actualizing reality is far easier in the limited neurophysiological closed brain system.
- This way individuals can have control over their cognition, the emotion, and their volitional functions, with the cognitive and the emotional functions.
- Emotional functions are extended in metaconsciousness and brain consciousness: It also include higher developmental attributes such as courage, love, and determination, zeal to perform, and the development of creative skills. These are areas that have some limitations in terms of many individuals' performances, and at the highest levels are regarded as exceptional human experiences, a term that can also be attributed to psi.
- Psi does not require obey the inverse square law. This is one reason why one can posit if there are such aspects as packets of psi, a spaceless, timeless component

such as a positron or a kinetron, would exist that allows communication. Effectively, it could be that the vortical motion is a similar but purely non-physical C-substrate force.

A New Model for Psi: Applying Specifically Vortical Indivension Interfaces of TDVP

Psi has been proposed to occur when vortices interface with each other or through vector, scalars or tensors connecting. In TDVP using the vortical indivension model, this is not a random process. Psi involves a situational component making it far more common in situations of emotional, cognitive and volitional familiarity and linkage and conversely may be repelled by situations that are against these principles. E.g. love may be more conducive than hate, common cognitive understanding more conducive than entirely different interests. Therefore there are environments for psi and this appears to be supported in both spontaneous psi descriptions as well as psi-linkage in experimental studies.

Effectively, individuals who are linked psychologically, familially socially, culturally, or in other ways, or the same individuals for that matter, are more likely to have intersecting vortical components or contents that interface and therefore provide a fruitful site for potential psi linkage. This is so as information content in vortices is at least in part within the C-substrate, and this has the meaningful reality or meaningful components. Therefore, people who are in love, identical twins, mother-child relationships, siblings, or people who are very close in other ways may very well be interfacing far more at this N-dimensional level than otherwise. Consequently, the psi relationships of people with connectedness are far greater. Such connections may be at any of the dimensional levels or qualities of the C-substrate: Emotional links may be profoundly relevant, but also cognitive links are highly important, too, so that the coincidental meeting of individuals with the same ideas, or the emphasis of the same concept across several different meeting points (e.g. learnt behavior, patterns becoming easier, same scientists investigating information at the same time) also is explained by such interfaces.

Therefore the mechanisms of interfacing at a vortical indivension level provides a coherent model for the occurrence of psi and connectedness.

1. Connectedness

It explains connectedness in its broader base. Psi is not a random process. It is based on the meaningful elements of C-substrate interfacing in the living with S and T (note mass and energy are end point contents; Space and time reflect multiple variables of extent with metric measurements and hence dimensions.

2. Rarity

It explains the rarity of the phenomenon in the context of “rare” events.

Rarity, semantically, we suggest may be an acronym for rarity: "FIR"—not only of "frequency" (very unusual event) but also "intensity" (e.g. how much it can be

differentiated from the underlying noise) and "robustness" (which must take into account variations even in subjects, experimenters and other conditions). All three of these factors imply “rarity” of psi. Consequently, for example, small changes to a random distribution would require a statistical demonstration of differences from the control. "Rare" here implies small changes to an overall larger picture. That is "rare" because it is not "obvious" —like clinically significant phenomena: In the medical model "clinically significant" evaluations and responses don't require statistics: We can see dramatic changes occurring consistently in a particular intervention almost every time we try that intervention (e.g. the person has a streptococcal throat infection; we give an appropriate antibiotic; in almost every case we will see that infection get better) or the features of a condition are so consistent that we can make diagnostic predictions (e.g. the person's fasting blood sugar is 160; diabetes now by definition is 126 or above; we regard that result as clinically significant for diabetes). Now in both instances previous statistical analyses may have been involved in initial validation of such information. In the medical model, rarity would imply small deviations from those expectations e.g. side-effects in less than 1%, or it may be a rarity based on extent of change, though the event may be slightly different expectation.)

The rarity here, in vortical indivension, expressed as connectedness or psi, is the rare event of sufficient intensity, frequency and robustness of interfacing across vortices or vectors. Some events such as well-done presentiment studies may show changes that are highly significant when separating these parameters. But the fact that they need demonstration of presence statistically does argue against there being on "a more probable than not" phenomena which we see in clinical significance. Something that is clinically very reliable in day to day communication is speech which is why we use it far more than psi in direct interaction, although there still may unconscious psi processes motivating it.

3. Psi conducive and repulsive phenomena

It explains factors that are potentially psi –conducive including psychosocial, interest and understanding, emotional and environmental elements which may allow greater convergence of vortical interfaces within and across dimensions. Therefore, there are areas that may attract and repel psi, and ostensible meaningful coincidences and these many not just be points of interface but significant interaction or joining of vortices allowing commonality of experience. There is much that is “submerged” —not expressed—by these “zillions” of vortical indivensions: Every action, every individual, every individual-unit influences others and may change not only individual realities but ultimately impact on all other realities, however, minimally. Some vortices may influence more profoundly than others: We hope this book will, simply because of our intense perceive realization of the relevance of this model to thought—even if it is wrong, it is very provocative.

4. Improbability of the superpsi hypothesis

This also explains the illogicality of the theoretical precept of “superpsi” usually invoked as an all-encompassing, all-embracing extended psi without limits and invoked as an

alternative to survival after bodily death. The problem is there does not appear to be empirical support for any instance of superpsi in the absence of survival communication data. Moreover, using this model of vortical indivension, psi occurs fundamentally as *rare* spontaneous events. A century of research has demonstrated this. This is why we require statistical validations because of this fundamental property.Superpsi would imply either a control of these rare events or a greater collections of complex psi events together or of such a kind that it would appear to need to be more common: And we have no data supporting any of these.

5. *Learnt skills*
Support for the model of formative causation: Sheldrake with his morphogenetic fields suggested that a repetitive new learnt skill may become increasingly easier to a certain point. Effectively the closeness and connectedness of an idea or skill creates a more extended clustering and greater accessibility to the underlined vortices, almost metaphorically like tuning into a radio station in 3S-1t.

6. *Decline effect*
Once routinized, an initial psi or connectedness event, loses the enthusiasm and emotional investment and cognitive attitudes. This change leads to the well known decline effect in parapsychology).

7. *Apprehension and influence*
Event information or space-time data that are received or perceived or acquired or in other way apprehended (some use the possible misnomer ESP or extrasensory perception) and which alternatively may be influenced or perturbed (some use the possible misnomer PK or psychokinesis) may occur spontaneously or be induced or occur experimentally. We posit that experimental psi because it would require directedness to a limited number of vortical interactions is more rare than spontaneous psi. When individual-units (e.g. single humans, groups of meditators, global consciousness project) try to actively influence or acquire information non-specifically —contact with any vortical interfaces this should be easier (less rare) than specifically focusing on a piece of information (as in remote viewing or Ganzfeld).

8. Psychoneurological influences
Ultimately all psi is expressed through the brain, as the significant neurological filter, barrier and permeable unit for metaconsciousness and STC tethered quantal through astronomical data. This means there will be some distortion of these mechanisms. Vortices being ubiquitous also manifest biologically (e.g. levorotatory chemicals, helices in genetics) and the linkage of information though expressed physically in the brain, may still have components of the vortical indivension interfaces at other dimensional levels. The endpoint is the human brain trying to utilize information appropriately and maximally.

CHAPTER 25: *PSI AND ENTANGLEMENT*

The whole of science is nothing more than a refinement of everyday thinking.
Albert Einstein [184]

Psi and Its Role

Entanglement

However, another second explanation against total quantum randomness relates to Schrödinger's entanglement and the work that has followed. We recognize the relevance of entanglement and have used the Copenhagen interpretation of Physics in interpretations of these difficult to explain events.

Entanglement at the quantum level is linked with the "non-locality" of the Copenhagen Interpretation which is a subset of the entanglement we refer to. But it is an important part because it demonstrates what we are calling relative non-locality. Tethering through the interpenetrating series of dimensional realities is relevant here. METACIST (pronounced "meta-kissed" not "cyst") is a useful infinite term within Essence.

The consequence of the Copenhagen interpretation of physics [120] [64] could be the postulated role of meaning and consciousness, that spooky action at a distance, quantum weirdness, and consolidated empirically by the French Aspect research [61], and the Geneva studies [59, 60, 185]. These have shown that this entanglement can operate instantly over a great distance. Another study that said this might just be a question of timing has been refuted. [131, 186]Scientists examined relative time applying the concept of a craft going in two directions to demonstrate that this was not entanglement but just a time effect. But they failed: They weren't able to demonstrate this and this, in turn, reinforced the idea pertaining to a consciousness as an important player. [131]

We interpret entanglement as a subset in the Copenhagen Interpretation, but also it is far greater in our model because we are looking at tethering through interpenetrating realities.

Psi and rarity

Psi argues against complete quantum indeterminacy yet is often neglected in the conventional sciences despite being possibly the most relevant area. Psi demonstrates, however, the six sigma data on slight influences on random number generators and also on the global consciousness project. These explain ostensible uncertainty elements possibly having some meaningful relevance as well may be a non-randomization result as reflected by the intentional influences. We expect these influences to be rare and not profound and they are. We recognize this rarity via the model of vortical indivension. The why is because it is all connected to the original consciousness substrate.

Entanglement and psi: Are they the same?

Superficially, entanglement and psi appear to be similar, as entanglement may be the

outward manifestation of the C-substrate of the dimensions of space time. We do not regard the two as synonymous but they may be closely related. Is the global consciousness project, or the random number generator data reflecting psi or entanglement or both? Dean Radin in his book *Entangled Minds* [164] certainly implies a major link or that they are the same. Certainly, the entanglement of particles that originate in the same quantum event is the outward manifestation of the connection between the various substrates evoked by w the C substrate, or even the transfinite substrate impacting down to the 4 dimensions of 3S-1t space-time that we experience. Entanglement is not easily understood by physicists. This is so because it is action at a distance, it's non-locality, it is quantum weirdness, it's a spooky effect, and it is merely the surface manifestation of what we are talking about. It might even be the epiphenomenon, so to say. Historically, perhaps we have been looking at it absolutely upside down from the bottom up trying to apply materialistic science. Everything that we see material may, paradoxically, be epiphenomenal to the consciousness substrate except that STC are unified even at the top-down. The TDVP model implies that many of the aspects that we experience as material may ultimately be epiphenomenal with essence, at times, being primary. And essence is the reflection of the infinite expressed as metaconsciousness, life, extropy, metaspace, and metatime.

The rarity of psi and language

"Rare" is a relative term. Our physical communication systems apply speech. Such language has been proven to be reliable and consistent. Regular, coherent and common linguistic experience may be a more valuable evolutional criterion in our living physical 3S-1t reality. This is so because one can directly and uniformly apply the same, broadly consistent common experiences of others—though these "experiences" are still individually idiosyncratic because of their subjectivity perception, conception and expression.

What about psi below awareness?

On the other hand, we frequently do not need to *directly* apply psi in our living physical 3S-1t reality because it is a relatively unreliable, spontaneous, less predictable mechanism and therefore in common use, by comparison, psi *appears to be* rare. But it might not be rare, in fact. It may be ubiquitous, but its expression in our living 3S-1t reality experience makes it appear not to be easily and consistently apprehended in awareness in our neurological consciousness such that we can reliably go about our business just with psi but not with concepts or/ and language. "Consciousness" here is qualified to avoid the misinterpretations of its non-qualified definition. Similarly, we distinguish meaning and its relevance as fitting well into our models the infinite and consciousness. The discrete finite metadimensionality and the continuous infinite and the difficulties of the permeability (boundary, barrier, filter) between infinite metaconsciousness and meaning at 3S-1t make the situation even more complex.

Yet, we don't know what influences are occurring at other levels below neurological

conscious awareness.
Indeed, so much is automatic in terms of our functioning (cardiac, respiratory and other vegetative functions) that we take them for granted but can demonstrate them physiologically. And then there is the wealth of psychological functions, too, many of which are expressed subconsciously.
So though a speculation, it is still a distinct possibility.

Psi in everyday life
Rarity is relative to other communication in 3S-1t: The majority of the population report it subjectively [158, 187-189], and some might report their frequency of psi as overwhelmingly common though that kind of report itself might be rare. They're reporting what they are consciously aware of.

Psi expression may be a relative rarity for the ordinary person in ordinary circumstances in our current 3S-1t physical reality. But a large variety of parameters, such as milieu, circumstances and *ethicospirituomysticobiopsychofamiliogroupsociocultural* factors in our *subatomicmacrocosmoreality* expressed *electrochemically* via the nervous systems of living sentient beings in 3S-1t may produce enormous fluctuations. Given the correct circumstances of these individual-unit variations, psi might be common. We have applied some complex words here, but we're suggesting broader systems that are unified and this unification of complex systems may emphasize this point.

The relevance of psychological parameters, and our model of "individual-units" fits this. The psychological interface is enormously relevant in the frequency of psi. In TDVP, we recognize "fluctuating dimensionalities" and the major parameters are the physiological and psychological limitations of brain functioning, and the positive (and negative) transcendence of the various individual-units, such as the self, groups, ethnic identities, families, societies and cultures.

We could even postulate that those in specific helping professions who positively use psi in their everyday practice, may be more successful in their endeavors than those who do not.
Ditto for other professions, and certainly for the development of new creative ideas.

We should differentiate "psi' as a phenomenon and the data that results. Certainly psi delivered data may be rare, because there is no need for it all the time. But psi might be operating all the time though is used when there is a need or in an experimental or natural setting of inducing psi e.g. meditation, remote viewing.

Psi beyond 3S-1t
Moreover, let's go beyond 3S-1t. It is possible to at least postulate that psi is the most important afferent-central-efferent, relative non-local mechanism that exists and that psi

occurs ubiquitously at both the finite and infinite levels, though is not always expressed in individual-unit subjective reality.

In the Triadic Dimensional-Distinction Vortical Paradigm (TDVP) model, we've tried to link the occurrence of psi at the levels of the physical, psychological, life and consciousness sciences. It explains the rarity of psi, how variations may occur at spontaneous and experimental levels and the needs for a systems approach, the differences between the perceptual and the conceptual, and the roles of consciousness, metadimensionality, extropy, life and infinity.

Psi and vortical indivension
The rarity of psi fits very well the ideas of interfacing, vortical indivension, rare event theory, tethering and possibly entanglement. The explanatory "process" is called indivension, and the “content” relates to interfaces of vortices, vectors, scalars and tensors.

Applying the Calculus of Distinctions we can distinguish percepts, concepts and experiences as well as subjectivity and relative objectivity.
In TDVP, fluctuating vortical indivension utilizes the subjective experiences, the commonality of relative objectivity of “zillions” of interfacing vortices, the awareness that perceptual and conceptual phenomena are differently expressed.

Entanglement and Quantum Correlations
A complex re-think about nonlocality and psi
Let us re-examine the issue of entanglement using complex information derived from cutting edge science in the area. This argues for the relevance of entanglement, for its likely link with the relative nonlocal and that it is not synonymous with subatomic equivalent of psi: If that is so it may be that other conscits may still be relevant.

Bell, Copenhagen and beyond
In the Bell test experiments, which play an important role in understanding the nature of the Einstein–Podolsky–Rosen paradox, quantum entanglement plays the central role. The violation of Bell's inequalities rules out local hidden variable theories which attempt to restore the realism. This is in the context that definiteness of the outcome in a single measurement cannot be ensured by using a supplementary variable along with the wave function which cannot be obtained in the standard Copenhagen Interpretation of quantum mechanics in its various formulations. [120]
Support for the Copenhagen interpretation began with Freedman and Clauser[190] but the work was in a single room, and although the research was outstanding scientists still wanted to ensure that there were no loopholes relating to local explanations.
The most serious loophole is the detection loophole, which means that particles are not always detected in both wings of the experiment. It is possible to "engineer" quantum correlations (the experimental result) by letting detection be dependent on a combination

of local hidden variables and detector setting. This is a reason why the work by Nicolas Brunner and Nicolas Gisin at the University of Geneva is very relevant because it has been even harder to refute the conclusions of the outstandingly performed Aspect experiments [61]. The Geneva Bell test experiments showed that distance did not destroy the "entanglement". Light was sent in fiber optic cables over distances of 11km (1998) and then later 50 kilometers **(**2007**)** before it was analyzed. Furthermore, in 1998, Innsbruck researchers led by Anton Zeilinger with Gregor Weihs conducted an ingenious experiment that closed the "locality" loophole, improving on Aspect's of 1982 [191]. The detector was made using a quantum process to ensure that it was random. Their results violated the so-called CHSH inequality by over 30 standard deviations with the coincidence curves agreeing with those predicted by quantum theory. [90] The Gisin group [59] [60] [185] also looked for coincidence probabilities on a three three-dimensional (qutrit) system. They showed the inequality was violated when each observer measures two noncommuting observables (this may be relevant in TDVP where three dimensional measures are used as a unit in dimensionometry). Moreover, time synchronies do not explain such phenomena. [192]

What allows entanglement?

Statistically, given ideal circumstances, all of the subatomic particles like photons could exhibit entanglement. In theory, any two particles that have ever interacted, are entangled forever and this entanglement has infinite or transfinite range. In practice, however, such an entanglement is lost in the “noise” of multiple combinatorial entanglements. Therefore, the detection of an "entangled" state requires that there be something that establishes a link between the properties of the particles, such as a conservation law that must be jointly obeyed by the two particles. Moreover, after the first measurement on an entangled variable, the entanglement vanishes from the observable universe. It still remains in the mathematical representation of the system, but it only affects unobservable quantities. (Unobservable quantities, such as the complex phase, are part of the mathematical "hardware" needed to calculate observable quantities correctly.) Since the usual environment is rife with interactions, all particles are entangled in the usual expectable environment without any kind of noise extraction. In general, though, the entanglements will not be of the observable types. The minimum entanglement observed in most research given the noise that exists could be zero.

Entangled particles cannot be regarded as nonlocal per se but there may be a nonlocal relationship between some of their properties. Entanglement does not require nonlocality per se: what it rules out is the combination of locality plus realism—the notion that particles are actual "things" with innate properties of their own. Physicists sometimes prefer quasi-mystical ideas to preserve locality at the expense of realism and this approach comes closet to coherence is in arguments that quantum mechanics is a theory about our knowledge *of* the world rather than a theory *about* the world. Many physicists apply naive realism and would rather accept nonlocality, but this is not entirely true.

The role of precognition

If we accept the cogent evidence for phenomena like precognition, locality becomes untenable. Therefore, we would have no impediments to the preference for realism. In fact, the Leggett inequalities, a somewhat improved extension of the Bell inequalities [193], are frequently touted as having ruled out nonlocality and forced the acceptance of nonrealism. The Leggett inequalities (from Anthony James Leggett) are a related pair of mathematical expressions concerning the correlations of properties of entangled particles. The inequalities are exemplified in terms of relative angles of elliptical and linear polarizations. They are fulfilled by all physical theories that are based on certain non-local and realistic assumptions that may be considered to be plausible or intuitive according to common physical reasoning. [131]

The role of time

However, Leggett's assumptions in deriving those inequalities specifically ruled out the sort of backward-in-time nonlocality that consciousness and time researchers are accustomed to dealing with. [194] Therefore nonlocal, realistic theories are appropriate and supported by precognition.

The Leggett inequalities are violated by quantum mechanical theory. [131, 193 192] The results of an experimental test in 2007 by a team directed by Anton Zeilinger showed agreement with quantum mechanics rather than the Leggett inequalities for a broad class of theories. [195] The Leggett related work is probably the most important theoretical advance, though the inequality refutation doesn't quite accomplish the task of absolutely proving nonlocality though with precognition, it could be argued that it did. The Leggett–Garg inequality is always violated on the microscopic quantum mechanics scale. [193]

Revisiting nonlocality

Establishing nonlocality is based on significant supporting data. The original experiments confirmed that entangled particles violated the Bell formulas. Nevertheless, there was still an "out" for those insisting on "local realism" [196]: The experiment was slow enough that information about the detector settings could propagate from one end of the apparatus to the other long before the photon measurements could take place. This meant that a purely local process could, technically, be carrying the information the particles needed to "make up their minds" about how to be measured. There were no particular candidates for what might carry such information, but the communication was possible in principle.

Aspect refuted these local-realist ideas by randomizing the choice of detector settings on extremely short time scales. This made it such that there was no way before the measurement was complete that any light-speed-limited signal could carry information about the outcome of detector A over to detector B (or vice versa). [84] Technically, extending the causal gap to miles does nothing to make the demonstration of nonlocality more rigorous: It simply tests the QM prediction that EPR correlations don't weaken with distance which they don't.[196] But such research has been done to consolidate the previous work.

Is entanglement "observable"?

Brains have evolved to extract meaningful patterns from huge amounts of noisy data. Yet that ideal extraction may not be the state ideal for psi. Interpretations might be complicated by "observable" entanglement apparently vanishing at the first meaningful measurement "interaction" with the environment. Technically, this "observation" is not strictly true as the "measurement" is an interaction that correlates a particle state with a macroscopic state of a "measuring instrument" such that different values of some variables of interest are associated with macroscopically distinguishable states of the "instrument". This basic interaction should not be different from any other quantum interaction: This is why the so-called "quantum Zeno effect" works even though nobody's actually watching the lasers. [196]

Sifting through the entangled complexity

When an entangled particle interacts with "the environment", its state has become correlated with some jumble of $6x10^{23}$ grams of material in the "environment" that have *not* been carefully configured to amplify single-particle states to macroscopic levels. The single bit of entangled information is still there somewhere but it's buried in "zillions" of bits of noise. However, since, in principle, *every* interaction entangles the participating particles, the "environment" also contains as many bits of entanglement information as it has particles -- jumbled, disorganized and unprepared information which we don't know how to sort out or to read, and which is statistically indistinguishable from random noise. Learning to sort out that concealed information, though, might enable an organism to know something about what's going on somewhere beyond the reach of its normal senses, and so could have considerable survival value if it could be done at all. [196]

Filters, signals and psi

Entanglement can't be used to send signals, if current theory is correct. Entanglement as a mechanism for psi, even if the huge noise-filtering task is possible in principle, would be limited to things like knowing what sort of "random" events happened elsewhere, because all entanglement tells you is that *this* assortment of random particle states here correlates with *that* assortment of random particle states somewhere else. This is not valuable except for the fact that nature is full of processes that are sensitively dependent on initial conditions, so this kind of correlative information might inform us that the puma decided to go hunting on side A of the ridgeline rather than side B, or let us know whether the snowfield up the hill is two flakes below or two flakes over the critical point for avalanche instability. [196]

Leggett or Einstein?

Besides Einstein's famous "God does not play dice" objection to quantum mechanics, there was Einstein's still more fundamental objection that the moon is still there when nobody looks. If the violation of the Leggett–Garg inequality can be demonstrated on the macroscopic scale, this would challenge even this notion of realism. [196]

CHAPTER 26: *TIME AND FREE WILL*

The illusion of the passage of time arises from the confusing of the given with the real. Passage of time arises because we think of occupying different realities. In fact, we occupy only different givens. There is only one reality. [170-1]

Kurt Gödel [197]

Time Multidimensionality

Time is particularly difficult in terms of conceptualizing multidimensionality. Scientists for a century have tried to talk about time. For us to approach multidimensional time is a challenge. Yet, we can tentatively demonstrate it with mathematical evidence for 3 dimensions of time-- both algebraically, geometrically; by inseparable tethering structurally; and by origin, infinite, essence and metatime. There might be limitations to 3 dimensions specifically.

Linear Time

Our experience is of a finite time-line. We know that this moment, the present, is a singularity with 0 dimensions. Linear time involves one dimension of time reflecting the individual's past, present, and future. This involves discrete moments in time that moves forward all the time. Linearly, it involves a past, present, and a future. We can represent fluctuations suddenly in a plane with waves of time technically reflecting alternative routing and alternative directions. We can access the past very easily on the VCR, in newspapers, by memory, in movie, and possibly through retrocognitive awareness. We can access the future by logical predictions or via precognitions: With predestined precognition one cannot modify anything. The future seems to move inexorably with us having no part in our future except via learning to plan for the best options. We look at this *linear* time-line helplessly or with the serenity that we can only impact through logic our best attempts. Subjectively this linear time might be curved. This is so because we interpret subjective time differently. For example, our estimate of the duration of some dreams, may be very different from objective clock based reality. If this so we are actually each experiencing two dimensions—our own subjective one and our clock one. And everyone else is, therefore producing an infinite number of dimensions, but we're not aware of them because we experience our time as a linear though maybe wavy progression and we could argue that actually we're experiencing just our own individual world realities and should not be calling these variable rates of time different dimensions.

Absence of Choice
Without choice, however, we have one single un-modifiable direction and that linear direction of time might be curved, so we could be conceived as 2 dimensional. But with freedom of will we have a hypothesis which is difficult to test. We have different routing, different directions and waves or curvature. With the original non-choice we therefore get to 3 dimensions even individually. Even more so, collective time is a cultural phenomenon and may be measured akin to a Turing Apparatus, in this instance, a 3D- clock. That collective commonality of time we could argue would be another dimension. Yet, we cannot go beyond 3D-Euclidean space so can we in time? Our collective commonality of space, exists with our own individual collective space because we have our percepts and our concepts. We likely could not get beyond 3 dimensions by using collective time.

Estimation of the Future
We can also access the future mathematically by estimation. At a simple level, if somebody is walking 16 steps and we know how long it takes from step a to step, we can project, but only with some degree and not absolute certainty, that ¼ of the way through the individual would have e.g. completed the fourth step. However, because this produces the whole indeterminacy components in terms of velocity and space, we can make logical predictions in the future but only with some statistical likelihood.
Linear time usually might be mathematically interval or ratio in nature e.g. clocks or VCRs, or dates in newspapers, but examples of memory or precognition may not be interval but ordinal in nature[198].

Time Seriality and Infinite Regress
John Dunne [80]pointed out the paradox of such a series of moments and their timing. We could, if we were an observer outside such time, time the time accurately with a clock, and we could repeat that repetitively, until therefore we could produce an *infinite regress.* He contradicts himself arguing this is not infinite and we can understand why: This is not a continuous infinity. Dunne's infinite time dimensions appear to apply the logic of the Cantorian model of a transfinite series of numbers in finite reality which in this instance would be a discrete countable infinity. However, applying the calculus of distinctions, this is in reality is not "infinite dimensions" of extent, they are instead infinite dimensions" of content with each reality parallel or parangular to each other in a non-Euclidean existence.

This kind of model involves observers outside a box and is a theme Neppe used in his initial N-dimensional vortical paradigm [4-6, 199 4-6, 199]. It can be one way to apply infinity, but in a way it would be meaningless The absence of free-will simply produces a philosophical helplessness, a fatalism of inaction.

Dunne and Multidimensionality
Dunne's basic thesis relates to demonstrating serial reality of time. Translated into TDVP finite terminology time is occurring in discrete periods and discrete points: It is moving

from one period to another, and we can demonstrate that we can experience information pertaining to the future, in the present time. Therefore, Dunne's main hypothesis relates to the fact that time is not a moment in time, but *a single dimension of time* with it occurring in a series of discrete events. As indicated, his further examining different observers observing time from the outside transfinitely produces an Infinite Regress. However, the highest level of observer is the supreme observer. This allows Dunne to talk about multidimensional time, but it is always serial, and in fact he critiques anything pertaining to parallel times although, implying that each person lives in their own particular universe. Dunne's descriptions are esoteric and very difficult to follow even reading his book several times. The major difficulty is the mixture of science with, not even speculation, but ideas that are stated as fact, yet are clearly not facts. The other difficulty is how he defines concepts such as seriality and series.

Free Will Implies Three Finite Time Dimensions

If there is such a thing at that finite level of freedom of choice and freedom of will, this means we can actually meaningfully, at least to a limited degree, control our future. This for many, including ourselves is philosophically satisfying and a philosophical necessity. Now freedom of choice may not occur at the infinite level because time, space, and consciousness all exist as a unit and therefore ultimately the infinite regress could look similar but the "routing" to such infinity for any individual-units may be necessarily different, because we would have chosen which way to go.

However, paradoxically, if any individual has free will as opposed to predestination, the logical consequence is to posit that he is experiencing not only the second dimension of time, but necessarily the third dimension of time, as well.

Effectively, by asserting free will, you are making a choice. This is not just a parallel reality choice based in a second action linked up with time progression into the future. It is therefore not just another parallel linear time line but it is a plane because it has impacts on everything else: It changes the actions of others, be they finite animate individual-units and on finite inanimate objects. That choice therefore links up with others, producing a density, because we have our initial linear time, and our new choice which impacts on others. This creates a 3D component. Applying TDVP, we describe the variations of impacting others vortices by vortical indivension. No man is an island entire of itself! That choice necessarily has a certain curvature or planarity because of fluctuations: This reflects something that is a plane plus a line. This contrasts to absence of choice, a certain fatalism, because then the linearity (which may technically be curved one way but experienced as a single time-line) has it is its own kind of manifold—its own kind of movement through a curve—producing one reality of predestination without free-will.

Of course, again we would have an infinite regress. Technically, as Cantor would describe it we would have an "infinity of infinities" [96] at the continuous infinite level of reality. But

this would still constitute metatime.

Clock Reality and Ordinal Time

However, in 3S-1t physical standard reality, our second and third dimensions of time are logically ordinal not interval if they exist (and they do if philosophically we can make choices). In other words, if we made a different choice via free-will, then the choice went into a different direction, and we can't measure that time as interval moments of time with a clock because such a clock would be purely subjective. We can only measure the gradual directions and possibly the end-points but the exact timing is indeterminate—effectively, we cannot locate and predict the velocity (or density) of the new time experience unless we are occupying that specific dimensional clock and we cannot appreciate all three time dimensions at the same time.

Time and Consciousness and STC

At the end of those choices, consciousness manifests or may be conceived or not experienced as those extra dimensions, although time might have components of that consciousness, just as space does. If you are in a dream you are sometimes dreaming about a place and a duration of time. Is that a consciousness dimension? Or is it a time dimension? This is an example of STC in our TDVP all inseparably tethered together at a higher dimensional level but manifesting individual tentacles of one or more dimensions of space, time and consciousness that are theoretically separated by vortical indivension and manifesting for example as entanglement or psi.

Time, Minkowski, Quaternions and Imaginary Numbers

In retrospect, the idea of space-time of Minkowski[17] has been dramatically extended: TDVP may have succeeded when others did not because of the recognition of the needs for multidimensionality, extended consciousness, extropy, life, infinity, tethering, content / process (vortical indivension), origins and a supporting mathematical model as well as applications of LFAF and falsifiability, the empirical methods of science and the calculus of distinctions. The model of dimensional extrapolation impacting a fourth dimension and involving imaginary numbers compared with Minkowski's 1D imaginary time is relevant to a 3D model. Moreover, mathematically, Pythagorean and Gaussian co-ordinates would put the projected ostensible fourth dimensional point back into 3 dimensional time somewhere unless imaginary numbers are used to measure time.

Until all of these were incorporated our metaparadigm was incomplete and not justified.

Are There Other Motivations for Three Dimensional Time?

We list a few of these briefly and without comment here.

Physics: 3 dimensions of time is based on the concept of warping.

Consciousness: The unified STC demonstrates S=3. Therefore at the tethered area, T must be 3 in lower dimensional reality

Psi: If free-will exists, then time is necessarily multidimensional. Free-will reflects the

second and because of density of impacting other individual-units a third time dimension: Choice implies a further linear wave so a plane—2d. Only free will demonstrates another time dimension.

Archetypes of actual time? This could be debated both in terms of existence and implications: Memory and precognition all reflect 1 dimension. "Akashic records", if they exist, may reflect parallel or parangular time but not necessarily in non-linear dimensions.

Thought experiment: Time will be passing at different rates on the sphere and the plane. We can calculate the relativistic time distortion and establish points defining a time line for each dimensional world. Thus there are two time-lines that coincide only when the clock on the sphere is exactly in the plane. In this case, time can be represented by two lines crossing at a single point. Two lines crossing define a 2S plane. Thus time is, in this case, two dimensional, and this is a 3S, 2T reality. If not, is it in a further dimensional reality because there are more than two time solutions? (Multiple alternative realities present in each individual-unit. Terms such as "many-worlds", "many universes", "alternative realities" are not mathematical and may not imply worlds/ universes/ multiverses. The term "co-existing reality" does not imply anything beyond that. Co-existing is often referred to as within 3S-1t but can be applied to any dimensional representation and even infinite because it is not specific. But they not be co-existent hence we use "parangular".)

Relativity: Passage of time as measured by atomic clocks is ultimately tied to light speed. So if light is slowing down, so is time. This is a dance that we refer to as *Relativistic time.*

Origins: The time singularity is this moment in time. T=0.

Logic: All populations parallel to these linear dimensions reflect a third.

Alternative times reflect infinity. Seriality by infinite regress reflect infinity.

The remarkable mathematician and mystic, JHM Whiteman, supported the idea of multidimensional time. This was not only based on Eastern mysticism [200], but uniquely this scientist and polymath had more carefully documented deliberately induced subjective experiences [201] than possibly anyone else ever[202]. His complex writings examined hierarchical potential versus actuality, structures in physics, and the implications for multidimensional thinking of such subjective experiences. [78, 203-205]. Whiteman also described three levels of time [206]:

1. He used *"T",* more broadly than we use it in TDVP where we reflect passage of time. Whiteman describes this as the interior causation of a potentiality field which is set up or modified by interference with the field through a force such as gravitation or psychokinesis.Time T is more structural or spatial, a "plan" that can be accessed in the right state, potentiality from which one can read off past or future, although the plan is not completely fixed. This allows for the intervention paradox. But the "plan" is largely fixed.

2. He used *"t",* like we use it in TDVP, to reflect this moment in time but also recognizes this as passage of time. Whiteman describes this as the actualization or manifestation of a not necessarily physical space-time reality; and

3. Whiteman's third "dimension" (different from our use of dimension as space-like variables) was the term τ ("tau") and this reflected intelligible structure and means. Unlike

T, τ is mechanical and unalterable, what one might compare to collapse of a wave function once the actualisation has been triggered. But neither T nor τ are measurable: This is only possible with the actualised t as in clock-time, and so becomes measurable "passage" of time.
Interestingly, Whiteman's three variables of time, were combined with the three spatial dimensions of length, breadth and height. Of course, we draw this triadic distinction in TDVP and link the initial three dimensions of T-substrate and C-substrate with the S-substrate. Finally, Whiteman recognized the relevance of objective and subjective time, of the data on psi, of non-physicality, the laws of nature, quanta [207], hierarchies and universality. [206, 208-210]

Time Density
The "density" of that choice could be through a consciousness expressed in terms of the time. It is impacting others with the same different kinds of linearities and their own special vortical expressions in 3D reality. Free choice reflects all coming together. It ultimately expresses a 3 dimensional time in one way at the same time perceived or conceived as conscious finite experience with an extent of discrete time because it is in moments.
But also, this time consciousness can express an N-dimensional time in another because metaconsciousness reflects both conscious infinite experience because if we move to N-dimensional time the dimension beyond 3 hypothetically may not be pure time but time consciousness.
It experientially will not have any effect on the time lines that are experienced my 3S-1t individuals.

Parallel Dimensions and Universes and the Use of Parangular
The term *"parallel dimensions"* is a misnomer. They are not necessarily parallel: Indeed, they may be anything from orthogonal to parallel, at any angle—some intersect other dimensions and this is why we have intersections e.g. via vortical indivension. There is a literature on parallel universes, but *parallel universes* do not necessarily imply parallel dimensions. Parallel in this sense was initially used in an inexact manner and has just been perpetuated. It was never intended to be meant that all of the dimensions of say two universes reflect the consequence of the drawing of distinctions of two universes whose dimensions were parallel.

Parallel universes are whole sets or whole domains. In fact, parallel in the literature of Everett [211] and other people who use that to understand quantum physics, refer to it as just a stratagem because even if parallel universes exist they don't interact, and if they did they would do so in a way that we would never detect. They were using it in rather a loose manner—here's a universe and here is another one. While they may be very much alike they are not co-existent.
Our model requires interactions involving all of reality: Such interactions enhance and

diminish individuals, groups, families, societies, cultures and ethnic identities. We are never the same when interacting or meeting others and the same applies even not only to sentient beings but also to the so-called inanimate world. Everyone changes everyone and everything else.

Congruent realities may be momentary with timelines crossing. To become totally congruent would be like cloning, in effect. Two consciousnesses with the same congruent timelines would mean the same consciousness and logically, two physical should not have exactly the same consciousness.

We suggest defining a new word so we don't need to use the word parallel, an unfortunate choice of words by somebody many years ago to describe the situation where a decision or the drawing of a distinction by a conscious being causes the universe to split into "parallel universes". Similarly, the phrase, *many worlds* exists, yet using another term like angular (where angular can be anything from parallel to orthogonal) may be logical. We propose the term *parangular*, and we've used the phrase *individual-unit dimensions* to reflect that *parangularity* has subjective components.

What If We Could Appreciate 3T and Therefore 3S-3T?

A conscious entity in the rare state of being aware of the finite S3T3 so 6-D continuum would be enormously advantaged in awareness but not be in an omnipotent, omnipresent position of being aware of all of the timelines, all the pasts and futures of all individuals as this is necessarily linked with the infinite. This distinction can be drawn applying an infinite number for time and space but not for finite time.

CHAPTER 27: *THE MATHEMATICS OF TIME AND CONSCIOUSNESS*

How indeed could one think of expressing metamathematics in the mathematical systems themselves, if the latter are considered to consist of meaningless symbols which acquire some substitute of meaning only through metamathematics?

Kurt Gödel [119]

Mathematics is Needed for Paradigm Shifts

Paradigm shifts generally require mathematical modeling. Copernicus [212] challenged the geocentric worldview, demonstrating the sun, not the earth, was at the center. This allowed the movements of the planets to begin to make sense. Yet it was only when Newton formulated his laws of motion [213], providing a mathematical explanation for the planetary motion, that the new paradigm became generally accepted. This is why we emphasize mathematics in our model. We have found several explanatory concepts very useful, including quaternions.

Quaternions Historically

Quaternions [214] are a number system that extends the complex numbers. They were first described by Irish mathematician Sir William Rowan Hamilton in 1843 [215]. They have been applied to mechanics in three-dimensional space. Hamilton defined a quaternion as the quotient of two directed lines in a three-dimensional space or equivalently as the quotient of two vectors. Quaternions can also be represented as the sum of a scalar and a vector.

One common view of William Hamilton was that of a mad Irish mathematician locked in a room with food slid under the door while he worked. The quaternions to mathematicians were purely a historical note. It initially evoked great excitement but then vector analysis did a more comprehensible job, expressing the same concept Hamilton was trying to address with quaternion, they fell out of disuse.

The reason there was so much excitement in the peer or math circles back in the late 1800s and early 1900s was because quaternions were the first ever, at least if not the only, mathematical system that included a subset as a ring in the fields as algebraic rings. Both the finite and the real number, imaginary and complex numbers are identified in quaternions. A ring is defined as a set with two binary operations.

Quaternions regained some life in the computer age where they form a four-dimensional associative normed division algebra over the real numbers, and thus also form a domain. They therefore have a relevance in computer modeling.

The binary operations would link the concept to the calculus of distinctions because COD has two primary equations: 1.) ┐┐ = ┐ and **2.) ╗=.** These will be the operations that can be used to show the distinctions for the perfect ring as a part of the field of complex numbers.

Multidimensionality and Quaternions

When thinking about the various types of numbers that were appropriate as units for dimensions, we refer to multidimensional realities. Real numbers and imaginary numbers are subsets of complex numbers.

Without quaternions, in the ST matrix, we have xyz and *i:* 3 real and one imaginary. With quaternions, the quad part is because it's 4 dimensional, however it is 3 imaginary components and one real. The 3 time dimensions could be the *ijk* of the quaternion. However, we have cast the quaternion as the unit of consciousness because it is complex and simple imaginary numbers suffice as time units. Theoretically, superficially, from the time side, S space could be imaginary and T could be real. However, this will not work because the product of two quaternions is non-commutative (e.g. see Wikipedia [216])— the product of two quaternions depends on which factor is to the left of the multiplication sign and which factor is to the right. Therefore, it is unlikely we could interchange space and time with space being imaginary and time being real but we do not need to. The quaternion is like a reflection of one real and three imaginary numbers, and using that concept adapted to the TDVP model, we encounter a unique different application for the t-substrate. Quaternions are mathematically appropriate to represent consciousness units as we have six dimensions, three real and three imaginary: xyz and *ijk*. Contained within the C-substrate are complex numbers and these are expressed as quaternions. These fit in well because of the three dimensions of time (3 real space plus 3 imaginary time). The beauty is that the quaternion fits so beautifully mathematically. Applying complex number units in the form of quaternions for the C-substrate is a perfect match. 3S, 3T, 3C as the first nine mathematical dimensions are all closely linked with 3S represented by real numbers, 3T represented by imaginary numbers, and 3C is represented by complex numbers.

S and T-substrates and Mathematics of Quaternions

Though quaternions fit in the 3S-1t, they are unnecessary because 3S-1t is conceptualized as relatively objective experiential reality. Quaternions become more appropriate as we move into the subjective level.

When you really examine quaternions with the "parallel or intersecting" universes reflected by 3 dimensional time, the quaternion reflects the whole substrate for the T-substrate and effectively the substrate for the 3S-3T. What one really has is a 6

dimensional domain, and that is because quaternions allow us to have the 3S-3T embedded within the *ijk* domain. Quaternions are a mathematical tool that work well to fit the 3 dimensional C-substrate dimensionality into an overall 9D substrate that includes the 3S-1t and consciousness, as well.

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Quaternions regained some life in the computer age where they form a four-dimensional associative normed division algebra over the real numbers, and thus also form a domain. They therefore have a relevance in computer modeling.

The binary operations would link the concept to the calculus of distinctions because COD has two primary equations ┐┐ = ┐ and **2.)** ╗ **=.** These will be the operations that can be used to show the distinctions for the perfect ring as a part of the field of complex numbers.

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Quaternions are mathematically appropriate to represent consciousness units as we have six dimensions, three real and three imaginary: xyz and *ijk*. Contained within the C-substrate. Complex numbers which we apply to consciousness, fit in well because of the three dimensions of time (3 real space plus 3 imaginary time). The beauty of it is that the quaternion fits so magnificently into the core mathematics.
Applying complex number units in the form of quaternions for the C-substrate is a perfect match. 3S, 3T, 3C as the first nine mathematical dimensions are all closely linked with 3S represented by real numbers, 3T represented by imaginary numbers, and 3T represented by complex numbers.

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The priority here would be 3 dimensions of space, completely represented by the field of real numbers, and then the imaginary numbers of the complex *ijk* quaternion would

represent 3T. Therefore, space is limited to 3 Euclidean dimensions because any attempt to project orthogonally out of 3D space using a real number metric will put you right back into 3 space, and a projected imaginary 4th dimension of space does not exist in Euclidean space, but does properly represent time, as demonstrated by Minkowski and Einstein. If you portray the dimensional structure of S and T mathematically, and instead of thinking of T just in terms of 3 dimensions with *i* as the square root of minus one as the time unit, think of it as the quaternion with the *ijk*—still the same thing, but it is a way of putting it into a consistent mathematical formulation.

Dimensional Extrapolation and the STC Substrate

The processes of dimensional extrapolation and the warping of the 4D space-time continuum (3S-1t) by fundamental forces reveals additional dimensions beyond 3S-1t. Projections into the fifth and sixth dimensions are achieved successfully in the field of imaginary numbers, but when attempting to project into the seventh dimension, we encounter a problem analogous to the one that occurred when attempting to extrapolate beyond the third dimension of space. Any projection out of the sixth dimension using real or imaginary numbers will put you right back into either the field of imaginary numbers or the field of real numbers, i.e. space-time. To project into the seventh dimension, a different type of number must be employed. The type of number that works is a complex number of the form a+bi, where a and b are real numbers and i is the square root of minus one.

Notice that complex numbers contain elements of both space (real numbers) and time (imaginary numbers), just as consciousness (e.g. in mental images) contains elements of both space and time. This is completely consistent with one of the invariants of dimensional extrapolation: an n-dimensional reality contains all domains of dimensions < n.[t]

The Relativity of Dimensional Scales

At this point, it is appropriate to ask: What is the nature of each of the dimensions beyond the first four (3S-1t)? Dimensions 5 and 6 exist within the field of imaginary numbers. Since they are fully defined by, and measured with imaginary numbers, they could be called “time-like”. In fact, when we return to this from the “top-down” approach in the STC substrate, we find that we can identify elements of human experience that relate to a second and third dimension of time. Why are we not normally aware of the three dimensions of time? Even though the basic unit of measurement is the same (i) for all three, their magnitudes are very different. The first dimension of time is the one in which our experience of the instant we call “now” exists as only an instant on a vast timeline. This time dimension is occasioned by the opposing forces of gravity and universal

[t] The detailed mathematics of this process of dimensional extrapolation will be presented in the companion book [9]

expansion. These forces act over galactic and cosmic distances. The forces occasioning the other two time dimensions could speculatively be the strong and weak sub-atomic forces, which act over extremely small distances. Thus the extent of all three time dimensions (3T) are not perceptible to human senses which are fine tuned to earth-scale dimensions.

Quaternions - the STC Mathematical Link

We have seen mathematically that dimensions beyond the first six (3S-3T) have to be represented by complex numbers. It turns out that quaternions involve complex numbers of the form $a+bi+cj+dk$, where $i^2 = j^2 = k^2 = -1$ provide the perfect mathematical tool to link space, time and consciousness (S,T, and C).

STC and NC Re-translated Into Mathematics

Mathematically, we can demonstrate that as long as you are in time dimensions, measures of dimensionality can be expressed as multiples of the square root of minus one, but the minute you go beyond the 3rd time level, you have to move to complex numbers, which means it has elements of time and space.

Again STC inseparability at the tethered level is a perfect model. But, additionally, we move to the infinite or discrete potential transfinite beyond these first 9 dimensions, and this is reflected by the potential to separate S, T, or C and communicate with its own tentacles too. But given S and T require C beyond 9 dimensions, we will always have C and we need not have S and T linked to it. So our model is S3, T3, NC.

This is a key to the thinking about time being an infinite regress: It is Time-consciousness that is an infinite regress not time alone! Space may or may not be relevant and as indicated in any specific domain Space and Time may be relatively nonlocal so S=0, T=0.

C-substrate, STC and Quaternions: The Link

Therefore, consciousness or discrete meaning applies complex numbers to imaginary and real numbers representing Time T and Space S respectively. We do this by applying real 3-D S and then imaginary 3-D T and together these numbers shift into complex numbers utilizing quaternions in terms of reflecting consciousness combined with space time. Moreover, this is the mathematical demonstration that they are inseparably linked. Logically the first 9 dimensions are 3S-3T-3C. We can represent the first 9 dimensions by metric intervals of space and time, and corresponding consciousness. Beyond 9 dimensions we cannot: That is fundamentally different because of the non-representation of more than 3 dimensions of space and time. Effectively, we may have produced a mathematical 3S-3T-NC model because of the tethered linkage,

Quaternions and C-substrate

We therefore use mathematics creatively to reflect on the C-substrate proper. In the 3S-1t, C could be conceived of as unity and described in terms of real numbers, but it could be a

complex entity just as well. It could theoretically be one of the three of S, T and C substrates—yet all of them co-exist together. The appearance of consciousness in extrapolated dimensionality may be the ultimate case of the whole being greater than the sum of the parts. Moving into the C-substrate, *ijk* are all imaginary components of the quaternion, allowing for 3 imaginary components, making quaternions the link between S and T, where the quaternion is a 4-dimensional system.

One of the primary uses of the quaternion has been the rotation of computerized images in 3 dimensional space, 1 dimensional time. The potentiality of applying quaternions to more dimensions of time has been overlooked because three-D time has not been an expected or even heard of concept in the history of physics. So, when instead of interpreting the quaternion as just a way of expressing a physical rotation in 3S-1t, we can portray it as actually representing the 3 Time coordinates in the T-substrate. Consequently, it works as a link. If you look at the mathematical symbolism of it, the T-substrate is a reflection of the S-substrate. The C-Substrate is a reflection of the previous two, the S and the T. That is exactly what we have in consciousness. In mentally visioning concepts and situations, we portray a reflection of the dimensions in the S and T substrates in the multiple consciousness dimensional substrates.

Consciousness and Complex Numbers

These ideas pose a key question: Does that complex number have elements of consciousness as well? This is relevant because if we are just saying that that complex numbers involves elements of 3 sets of quaternion imaginary numbers plus 3 sets of real numbers, then the quaternion imaginary numbers are reflecting 3 D- time and the real numbers are reflecting 3D- space (or, unlikely, vice versa if it turns out they're non-commutative but as quaternions are non-commutative, it may matter). But if that is so, those complex numbers, too, reflect a whole that is more than its part if it is more than the space and time together and has consciousness, too.

We have posited this is so using mathematics. But we can also apply CoD as the measure of 3S-3T levels alone is purely theoretical as the CoD requires consciousness to perceive, conceive and experience. Additionally, we therefore never can talk about 6 D of 3S—3T, we require 3S-3T-1C and likely 3S-3T-3C at minimum so this is dimensionally higher.

3S-1t or 3S-1t-1c as our basic physical experience.

Moreover, the link of essence from the infinite to the finite is contiguous and available all the way from zero to infinity. So even 3S-1t is a misnomer: In our living reality, we might be 3S-1t-1c or even 3S-1t-nC at minimum where subjectively n can be any digit other than 0. Infinity permeates the whole structure of the substrate of the S, T, and C. So, while at the first six levels at least, you can't measure it, this doesn't mean that it isn't there. It is not going to show up in the measurement of space or the measurement of time, but it is there nonetheless. It isn't until you look at it from the top down that you can conceive of

this model.

Support for 3 Dimensions of Time and Extensions: Some Complex Speculations

1. Time as a moment is a singularity. Linear time may be planar. Free-choice is 3D finite. The moment experienced is in 0 dimensions. Linear time in an individual involves the past, present and future e.g. memory. Because of curvature or waves of time, we have, at least, planar dimensions. But what could have been (ending as one alternative being free-will = choice) provides for different parangular routings (directions). Therefore we get to at least 3 finite time dimensions because the resultant collective time is at least 2 dimensions added to the first.

2. Interestingly the poet WB Yeats, recognized gyres of time. Intriguingly, the way it was described was really vortical time, which is 3 dimensional.

3. There are an infinite number of 3-D co-existing realities. But N+1 stops at finite 3 time in the 4-D space-time continuum. By dimensional extrapolation, we can imagine a 5-D continuum, a time plane, with an infinite number of time lines contained in it, and in a 6-D continuum with an infinite number of time planes, comprising a 3-D time domain. Non-Euclidean time produces another dimension but possibly called consciousness, but pure time cannot be described beyond *ijk*

4. In his Laws of Form, Spencer Brown, pointed out that time comes in as a necessity to continue the development of the laws of form. This is interesting given that this preceded the calculus of distinctions yet Brown already conceived of multidimensional time.

5. The Non-Euclidean time and space is entirely embedded in Euclidean space. But locating numbers in curved space, we can represent any point on a curve or manifold of Euclidean space. *Conception involves imagining, conceiving and can include infinite continuity. Perception involves experiencing as discrete finite elements.*

The first 9 D of 3S, 3T and 3C may be the tools of Pythagorean Euclidean representation or any other (e.g. maybe radians or whatever other mathematical representations in Euclidean space). This we call the *potential Euclidean reality in 3S-1t conceiving*

One measurement problem is the switch in dimensionality.

Beyond 9D, the awareness transcends the perceptual and conceptual producing a potential transcendent reality moving into the transfinite which we measure by ordinal not interval variables of extent. There may also be a potential Euclidean reality, even there. Potential realities may be co-existent and intersect in one on one binary set theory. This is a simplified representation of multidimensionality in two dimensions, though.

SECTION F: THE THEORY BEHIND TDVP

CHAPTER 28: *AXIOMS THAT ARE CLOSELY RELATED*

I want to know God's thoughts; the rest are details.
Albert Einstein

Several axioms are closely linked but not directly part of the TTOOURS metaparadigm (pronounced "Tours") itself.

The Subparadigmatic Axioms

1. Postulate axiom of STC dimensions

When S,T and C manifest independently, they manifest as specific dimensions, and there are likely three fundamental dimensions of space, more than one dimension of time, and likely N-dimensions of consciousness, with N potentially infinite——these dimensions manifest from the infinite. Expression of space, time and C-substrate cannot be as single substrates except in finite theoretical modeling.

2. Axiom of STC domains

When dimensions are experienced or described with a particular pattern, this is referred to in clusters called "domains".

Our standard experiential domain in scientific realities is based on three dimensions of space and one point in time, called 3S-1t. However, based on the above axioms, there cannot be a separate 3S-1t per se in existential reality, because there is always a C for C-substrate, but it is a convenient way to conceive of this standard domain even though it must be 3S-1t-nC, with n=1 at minimum. There is always the inseparability of space, time and C-substrates.

3. Axiom of Relative Zero

In some domains, S and T may equal zero and not manifest. This constitutes relative zero. Theoretically, C-substrate can approach zero at the lowest quantal or subquantal level, where information and minimal meaning almost meet. This allows for the three dimensional axiom (STC) to always be represented in any domain e.g. $S_{0,}\ T_{0,}\ C_{n.}$

4. Axiom of Potential Life

Life in potential form always exists (*polife*), even at the Origin Event as part of this C-substrate. This life is reflected in the infinite and is closely linked in mental form with the metaconsciousness. This does not require physical life.

5. Axiom of Physical Life
Physical life in our physical earth reality (experienced in the 3S-1t-1c domain) occurs when the always existing potential for life, manifests as sufficient to fill the necessary S and T requirements. In Biology, this is perceived as a necessity fulfilled by genetics (e.g., DNA) and physiology.

6. Axiom of Interfacing of Extent and Content
Space, time and C-substrate are distinctions of extent and involve interval or ordinal metrics and are therefore potentially expressed as dimensions. Mass, force (including all forms of energy) and information are distinctions of content and not expressed as metrics except via density within 3 or more dimensions of extent, and are not of themselves dimensional.
Content interfaces closely with extent by occupying volumes defined by three or more dimensions.

Subsidiary, but Closely Related Axioms: Linked Infinite/Finite
Very closely related is the composite Axiom of unified, holistic, simultaneous existence.

7. Axiom of simultaneous existence is pertinen*t* because it directly follows from the above. Existence occurs at an N-Dimensional level simultaneously (was, is and will be). The infinite reality is time irrelevant. Time in a physical standard 3S-1t domain is a shadow expression of this infinite subreality that incorporates three dimensions of time.

8. Axiom of unified existence
Existence occurs at an N-Dimensional level as unified existence, implying a monistic paradigm. There is no separation of mind and body, nor are they the same. The base of C-, S- and T- substrate pervades all finite existence. The infinite inextricably impacts at all levels of the finite.

9. Axiom of holistic existence
Existence occurs at an N-Dimensional level as a whole. All of C-, S- and T- substrates constitute a whole pervaded by the infinite.

Together these three axioms combine to form the Axiom of unified, holistic, simultaneous existence).

Relevant But Somewhat Speculative Are the Seven Axioms of infinite-Finite Boundary Communications
10. The Axiom of Distinction Existence
The essence of existence is differentiation: Some things can be said to exist only if it has a feature or features that differentiate it in some way from the rest of reality, and there is a conscious entity drawing the distinction. This is the basis of the concept of distinction, and

the concept of extropy (negative entropy). Distinction thus involves three elements: the distinction, the background from which it is distinguished, and the conscious entity drawing the distinction. A distinction without these three elements would be meaningless.

11. Axiom of distinctions
The boundaries between finite and infinite are recognized in the calculus of distinctions and in the psychological sciences for individuals. Such a boundary can be at any systems level of the individual-unit.
Inanimate objects also require boundaries ranging from the non-living macrophysical to the subatomic to the astrophysical. These boundaries are the discrete finite differentiations of subatomic particles from each other, of atoms, of molecules, and of structures.

12. Axiom of permeability
The expression of interchange across and between infinite and finite reality varies dependent on the boundary permeability. Some factors hypothetically may assist this permeability such as dreams, meditation, hallucinogenics, temporal lobe anomalous functioning, psychosis, alleged mediumship.

13. Axiom of protection
The boundary impermeability allows protection from overwhelming incoming metaconscious input

14. Axiom of Communication Ease
It is easier communicating information chunks from the infinite to the packets of the finite than via the reverse. It may be easier initiating such communication via the finite to the infinite because one moves from the discrete to the continuous. This allows a focus to "shoot for".

15. Axiom of Communication Complexity
Communication between the finite and infinite is complicated by the need to convert to specific 3S-1t-nC in finite reality from N-S, N-T, N-C infinite reality. Therefore, theoretically, any communication at the post-mortem survival level would be complex requiring conversion of information transfer across S, T and C dimensional substrates.

16. Axiom of Top-down Communication
It is easier transmitting information from the top-down than the bottom-up. These are theoretical concepts. The infinite metaphorically includes the top-down and within the finite elements, the further the dimensional element the more the influence but the weaker overall.
However, with the infinite there is a holism so that weak impact may be translated into meaningful patterns once one reaches finite dimensionality.

Infinite

17. Axiom of metaconsciousness qualities:

The metaconscious manifests with more than neutral information knowledge. It also incorporates as part of the information meaning innumerable positive and negative values. The positive values kabballistically include examples not only the cognitive wisdom, understanding and knowing, but emotional ones such a might or courage and loving-kindness (or separately love and kindness) and volitionally as splendor or acknowledgment or glory, victory or eternity, and foundation or drive all expressed as a culminating holistic quality or kingship. These various qualities are abstractions and can be innumerable.

Finite

Clarification of axioms of relevance but not essential for this model.

18. Axiom of Individual-units

Metaconsciousness may manifest at any dimensional level existence, and there are no physical life limitations beyond 3S-1t. Individual-units express themselves subjectively as mental life implying varied levels of individuality or group existence. Because of this, the phrase *Axiom of Individual-units* is used to refer the domains of metaconscious existence which may occur individually or at the various collective levels or subcomponents (such as biological, psychological, familial, group, social, cultural, collective spiritual or mystical).

19. Axiom of Metaconscious State and Trait

Metaconscious subjective experience may manifest differently at different moments even in individual-units. This is State manifestation. A trait manifestation refers to the maintained condition over a period producing greater stability than states.

20. Axiom of Physical Reduction Valves

Our senses are constructed to narrow down our focus to the parts of finite reality we deal with (e.g., a small visual and auditory spectrum). In physiology, the nervous system acts as an information and biochemical-electrical filter, maintaining a homogeneity and preventing an overwhelming flood of data. But this also limits metaconscious wisdom, understanding and knowledge.

Scientific limitations (e.g., instruments) often begin from this limitation level, but still reflect limited information at the physical standard 3S-1t level. There are more domains of information and extropic manifestations than can be measured in our conventional 3S-1t.

21. Axiom of abstracted C-substrate dimensionality

In addition to those finite dimensions that can be interpreted within the nervous system relating to cognition, affect and volition, higher level qualities may reflect different theoretical dimensions of the C-substrate and are measurable ordinally (e.g. great compassion vs. no compassion vs. even a negation of compassion). This implies the possibility of negative C-substrate dimensions, and its fluctuations across dimensions with different states and individual-units.

Several other mathematical -physics speculative axioms exist:

22. Axiom of Three Dimensional Manifestation

Any subdomain of the universe requires three dimensions for an existential reality to exist as content within a domain. This is a dimensionometric axiom. Therefore space is assessed in three dimensions; if there are more than three dimensions, the first three are fundamental *and increase as units of three.* Time is at least three dimensional, and so is C-substrate. If there are more dimensions than 3S or 3T or 3C, they manifest in threes.

23. Axiom of Forces and Dimensional Increase

Forces allow for the manifestation of further dimensions. In S and T these forces are energetic, in C-substrate these forces are non-energetic.

24. Axiom of Holistic Continuity, Corollary to the Axiom of Origin

Einstein's relativity taught us that matter and energy are simply different aspects of the same composite essence. Similarly, the pervasiveness of consciousness throughout all space and time leads to the conclusion that space, time and consciousness are all aspects of the same composite essence. Reality consists of three domains of extent: the STC-substrate, measurable with variables of extent, three aspects of substance: matter, energy and individualized consciousness, measurable with variables of content, and three aspects of Primary Consciousness: dimensionality, substance and mind, measurable with variables of extent, content and intent, respectively. This can be expressed mathematically by the CoD expression:

$$\mathbf{R= f(S, t, m, e, c,) = \sum([\ (m/S) \urcorner\ e/t]\urcorner\ c/St)\urcorner = \sum[\ (ST) \urcorner\ C]\urcorner}$$

Where **R=** reality**, S= 3D**space**, t=** time**, m=** matter**, e=** energy**, c=** individualized consciousness and **C=** Primary Consciousness. (Note that **R** in this expression is a function of seven variables., four of extent and three of content. This expression will have to be rewritten as a function of at least twelve variables, six of extent, three of content, and at least three of intent when we show through dimensional extrapolation and the calculation of the dimensionometric metrics that there are three dimensions of space, three dimensions of time, and three or more dimensions of conscious intent.) This is a mathematical expression of the nested nature of the S and T domains within the C-substrate.

25. Axiom of mathematical dimensional reality

The first nine theoretical dimensions of reality reflect *potential Euclidean reality*: up to S3, T3, C3 because they reflect the mathematics of 3 tethered inseparable dimensional substrates in Euclidean space. This involves perceptual (experienced as discrete finite elements) reality interchanging with the conceptual (imagining, conceiving, continuous) reality. Thereafter, beyond 9D, the perceptual and conceptual are transcended, and this reflects potential non-Euclidean *transcendent reality* of ordinal variables of extent with transfinite dimensions.

26. Axiom of three dimensional space
There can only be three dimensions of space mathematically. Even what appears to be a fourth dimension can only be represented in three dimensional Euclidean space.

27. Axiom of mathematical dimensional reality
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28. Axiom of fundamental three dimensional space
There can only be three dimensions of space mathematically. Even what appears to be a fourth dimension can only be represented in three dimensional Euclidean space.

29. Axiom of fundamental multidimensional time
There is mathematical (algebraic Quaternion; geometric and logical justification for multidimensional time, likely three dimensional time.[u]

30. Axiom of consciousness
Conscious reality is continuous and infinite expressed as metaconsciousness. In the finite realm, it is expressed discretely at finite level as meaning. This meaning combined with the transcendent conscious reality is integrated and limited by the physical nervous systems of sentient beings.

[u] There is mathematical (algebraic Quaternion; geometric and logical justification for multidimensional time, likely three dimensional time. (STC inseparably tethered: As S=3, T=3; Pythagorean or other geometric representations are 3 dimensional; algebraically, quaternions imply three imaginary numbers, ijk.
Logically, a time moment = Singularity = 0D; past, present and future reflect linear time =1D; different routings proposed = s waves and distortions = curvature into a second dimension; multiple co-existent individualunits realities = infinite time, but state, finite events limited to 3 as non-Euclidean time produces another dimension possibly consciousness as it cannot be represented by quaternion imaginary numbers. Laws of form: Time comes in as a necessity to continue the development of the laws of form.

CHAPTER 29: *QUANTUM ENTANGLEMENT: A BRIEF PERSPECTIVE*

In Einstein's theory of relativity, the observer is a man who sets out in quest of truth armed with a measuring-rod.
In quantum theory he sets out with a sieve.
Sir Arthur Eddington (Astrophysicist; 1882 - 1944)

What Is It?
Quantum entanglement refers to a property of the quantum mechanical state of a system. when two or more objects in the system are linked such that the quantum state of any of them cannot be adequately described without full mention of the others, even when the individual objects are spatially separated. Quantum entanglement was the key controversy formulated in the Einstein- Podolsky- Rosen (EPR) paradox [58]. They used a thought experiment which demonstrated an apparent inconsistency in the quantum mechanics theory. Because of the relativistic light-speed limitation of information transfer, Einstein felt it was illogical and derided entanglement as "spukhafte Fernwirkung" or "spooky action at a distance". The word “entanglement” was developed by Erwin Schrödinger, who realized the importance of the concept [146] [147]. It has become the characteristic trait of quantum mechanics that enforces its entire departure from classical lines of physical thought. It led to Bohr’s “Copenhagen interpretation” of quantum mechanics.

Violating Bell’s Inequality
In 1964, John Bell demonstrated that Bohr’s quantum theory was not compatible with one of the key assumptions of deterministic science, the principle of locality [57]. He calculated an upper limit, known as Bell's inequality, on the strength of correlations, for any system obeying local realism; he showed that if Bohr was right, the limit would be violated. Bell's theorem has important implications for physics and the philosophy of science, because when the first definitive experiment was performed [61] it indicated that quantum theory must violate either the Principle of locality or counterfactual definiteness. In conjunction with the experiments verifying the quantum mechanical predictions of Bell-type systems, Bell's theorem maintains that certain quantum effects travel faster than light, and so limits the class of tenable 'hidden variable' theories to the non-local variety. Bell's Theorem is now the collective name for a family of results, all showing the impossibility of a Local Realistic interpretation of quantum mechanics. There are variants of the Theorem with different meanings of “Local Realism.”

Historically, neither John Bell nor Bell’s theorem proved the existence of quantum

entanglement. In fact, Bell [87] believed that Einstein was right. "*While imagining that I understand the position of Einstein, as regards the EPR correlations, I have very little understanding of the position of his major opponent Bohr."* Even after the Aspect experiment [61], he preferred David Bohm's idea of implicate and explicate orders, retaining Einstein's "hidden variables" position[v]. *"I think that conventional formulations of quantum theory (the Copenhagen interpretation), and of quantum field theory in particular, are unprofessionally vague and ambiguous. Professional theoretical physicists ought to be able to do better. Bohm has shown us a way".*

The Entanglement Paradox

Essentially, the term entanglement was used as an explanation of the violation of Bell's inequality, but no one knows how entanglement works. It is, however, experimentally testable, and there have been numerous tests, pioneered by Stuart Freedman and John Clauser in 1972 [190].

However, Alain Aspect's experiment in 1982 in Paris was well-controlled and designed and became the key early study of its kind. This was the first experiment using polarization analyzers with two exit channels, thus realizing the theoretical scheme in the third step of the argument for Bell's Theorem in Section 2, was performed in the early 1980s with cascade photons from laser-excited calcium atoms by Aspect, Grangier, and Roger [61]. The outcome confirmed the predictions of quantum mechanics over those of local realistic theories more dramatically than any of its predecessors — with the experimental result deviating from the upper limit in a Bell's Inequality by 40 SD. A number of physicists went to great lengths to refute it but it became recognized in the scientific community as the first rigorous experiment confirming the Copenhagen Interpretation of Quantum Mechanics. Essentially, it seems that elementary particles (quanta of energy or mass) do not exist as localized objects flying through space but are "smeared" probabilistically over all space between the source and the receiving point (eye, particle collector or photographic plate) and do not become a local physical reality until they've impacted on a receptor.

The most serious loophole is the detection loophole, which means that particles are not always detected in both wings of the experiment. It is possible to "engineer" quantum correlations (the experimental result) by letting detection be dependent on a combination of local hidden variables and detector setting. This is a reason why the work by Nicolas Brunner and Nicolas Gisin at the University of Geneva is very relevant because it has been even harder to refute the conclusions of the Aspect type experiments. The Geneva Bell test experiments showed that distance did not destroy the "entanglement". Light was sent in fiber optic cables over distances of 11km (1998) and then later 50 kilometers **(**2007**)** before it was analyzed. Furthermore, in 1998, Innsbruck researchers led by Anton Zeilinger with

[v] Albert Einstein Introductory Remarks at the Naples-Amalfi meeting, May 7, 1984.

Gregor Weihs conducted an ingenious experiment that closed the "locality" loophole, improving on Aspect's of 1982[191]. The detector was made using a quantum process to ensure that it was random. Their results violated the so-called CHSH inequality by over 30 standard deviations with the coincidence curves agreeing with those predicted by quantum theory. The Gisin group [59] also looked for coincidence probabilities on a three three-dimensional (qutrit) system. They showed the inequality was violated when each observer measures two noncommuting observables (this may be relevant in TDVP where three dimensional measures are used as a unit in dimensionometry).

The entanglement paradox has been verified experimentally respectively in tens of experiments. Quantum entanglement defies explanation for physicists who have not looked at consciousness as a consideration. Because the circumstances of such tests always seem to have at least one minor logical loophole, it is still possible to question the validity of the results but it is becoming harder and harder. [122, 217]

STC Inseparability and Entanglement

Relative inseparability
Now, if there are direct link-ups with C-substrate, space and time, it could be that these three substrates are only relatively inseparable. They are inseparable from each other only at the certain points of origin (perhaps where the metaphorical string is tied, the knot, the umbilicus) and insertion (in a closed system at the other end). This allows a finite, closed model where in between C, S and T are separated into their own dimensional fabrics.

Resolution of the dimensional fluctuation dilemma and the vortical and three D model
How does one resolve this? Resolution may well be related to STC being indeed indivisible, but only at a certain point in the dimensional fabric. Being tethered to the metaphorical umbilicus, may reflect when there is an ultimate collapse in one singular component. Effectively this is a singularity, a moment in time, space and consciousness where STC is completely inseparable. Yet it could expand markedly and when it does, though it could be tethered at an end or in any position or in multiple positions. Thus, tethering can be represented by other metaphorical components too, such as the ship being moored and the moorage being the tethered part; staples holding down a series of papers; the roots of the STC tree being common but the branches being separate; the balloons being held in hand by strings but potentially interfacing with each other; besides that umbilical linkage of baby to mother.

One could use the parallel of the strings that are playing a musical instrument that are vibrating. Indeed, this is one comprehensible metaphor in string theory where the knot would be at the umbilicus. However, the vibration is not a two dimensional planar vibration, or linear just in one direction, it has to always be three-directional. This supports the model of the vortex and the necessity of triadic representations of dimensions beyond 1

or 2. This ultimate maximum expansion point in this three dimensional vibration is expansion to a sphere: That expansion to a sphere would, in a way, reflect the center of the vortex— but not necessarily because of the necessary asymmetries (as in FLT). The string theory paradigm is apposite but a three-D paradigm, not a simple 2-D vibrating string, but 3-D vortex. Of course, in both TDVP and string theories, one does not stop at 3-D but the descriptive model in TDVP is triadic in 3-dimensional jumps at metadimensionality. (Note too that the metaphorical strings used here may be a similar metaphor to "String theory", but we are using a different vibrating string metaphor not one that relates to a miniscule tiny string as in string theory.)

Differing Metadimensionality: Hyperspace and strings versus TDVP
All of metadimensionality, we contend, is not explained by string theory, folding or other strings. Hyperspace effectively refers to a finite number of dimensions beyond 3S-1t and usually implies multiple dimensions of space, but usually one dimension of time without consciousness (although Sirag [218] has recognized this need). This is very different from TDVP which involves the finite and the infinite, but it also involves the need for multidimensional time and only 3 dimensions of finite space, and transfinite C-substrate.

So, on the one hand we have an STC tethered at its end, a singularity at an umbilicus, and at another point we have a sphere, which may or may not be symmetrical and represents part of this vortical metaphorical vibration. Further, if we have these spheres and the vortical vibration is occurring, we could theoretically also apply this to the C-substrate at that mystical or spiritual level and argue therefore that survival after bodily death, or higher level of attainments in C-substrate or meditative or dream state, all could be reflecting different variables of extent at the C-substrate level, all vibrating, yet tethered at zero points. This implies that at different dimensions or in different domains as collections of dimensions, reality is experienced differently. Therefore, it means that in one individual, there may be multiple dimensions or domains perceived or conceptualized and even for that individual-unit actualized because that is their reality—relative actualization. Moreover, circumstances might vary for an individual so that the dimensional numbers or domains may vary with circumstances or 3S-1t events.

Without implying that such states exist scientifically, we utilize a spiritual or mystical metaphor, just as we did comparison of the "umbilicus" and the "vibrations" and the "strings": An individual attaining the very high so-called spiritual levels (e.g., variably described philosophically or mystically as Samadhi or Chaya) may be fluctuating into states of consciousness that are not usually attainable equivalent to profoundly high dimensionality but always at that finite level with the potential to go higher —from N to N+1 dimensions. It may be that the ultimate mystical or spiritual level is that state achieved even at the primary receptor, infinite level which kabbalistically reflects a spiritual unification beyond yechida [219]. Each of these are ordinal metrics of extent and therefore dimensional.

CHAPTER 30: *INDIVENSION: A NECESSARY NEW CONCEPT*

Science cannot solve the ultimate mystery of nature. And that is because, in the last analysis, we ourselves are a part of the mystery that we are trying to solve.

Max Planck.

Counting Dimensions

How many dimensions are appropriate using the TDVP model?

Our standard current scientific model begins with 3S-1t. Based on C-substrate, our TDVP model requires at minimum, initially, at least 3S-1t-1C to include the C-substrate. Our model further motivates that there could be 3 dimensions of time: This makes 3S-3t-1C. Then by using complex numbers for C-substrate, we could argue that it is 3S-3T-3C (using the same linked three dimensional model for each substrate) or even N-C applying N-Dimensions in the C-substrate level of meaningful consciousness. That implies 3S-3T-NC. There might potentially be more than 3D space, or 3D time, using the principles of three dimensional incremental increases but not 3D being final for S and T.

Yet, it could also even be argued that there is only one dimension, the CST dimension but this could conform to our definition of a unified domain.

But what do we regard as a dimension in the C-substrate?

There are added dimensional considerations. The C-substrate involves meaningful apprehension and possibly meaningful perturbation of objects or events (even at the subatomic level), and a more easily qualitatively defined "consciousness" implying consciousness or awareness of events or objects and responses of influence or manipulation. Consciousness might imply not a single but numerous different but linked variables of extent. Broadly, consciousness could be linked up not only with CEV (cognition, emotion, volition) referring to consciousness at a mental level, but possibly other aspects are relevant from a mystical or spiritual or developmental point of view including modifications of Sefirot concepts such as knowledge, understanding, wisdom, kindness and loving-kindness, bravery, beauty and purity of character, pursuit of actualization, actualization, appropriate justice and honesty, transcendence of self, building blocks and planning, as well as love, intimacy, and qualities of improvement of the spiritual aspects of physicality, plus further C-substrate dimensions relating to these cognitive volitional equivalents. C-substrate might also impact time and space with time-space modifications of what in the 3S-1t domain we refer to as cause and effect. These different levels of C-substrate would require to be variables of extent, generally

measurable at the ordinal level: Qualities such as love or transcendence or valor are not absolutes but relative and have gradual ordinal measurable components. On the other hand, information is content alone, and therefore not a variable of extent. It cannot be a dimension just as mass cannot be.
This therefore fits our definition of further dimensions.
There may an indefinite or very large number of such variables, and these may not be measurable for everyone or for any specific circumstance. This means that there may be a varying number of dimensions.

We may not be able to stipulate exactly how many dimensions everyone has, or for that matter, how many every subatomic particle has (although it could be argued that that number should not fluctuate as the qualities above may reflect essential characteristics only of living organisms with consciousness as opposed to particles, packets or quanta who may have inseparable STC but no special qualities), because the number of dimensions and more specifically C-substrates could and would fluctuate dependent on the Individual-unit (e.g., individuals, families, societies, cultures, organs, bodily systems, scientific orientations) and the individual specific circumstance (e.g., meditation in humans, possibly nuclear fission subatomically). They would be relative and not absolute, giving a new appreciation of the relative aspects of perception, conception or actualization of realities and the broader role of the calculus of distinctions.

There are not a static number of dimensions
There appears to be a serious problem in regarding dimensions as static. This is illustrated by problematic situations:

- A simple, everyday, universal human experience example is dreams. Are the dimensions of dreams the same in a specific individual as during waking reality?
- An individual is in an altered state of consciousness: That person perceives a different reality in meditative states, and likely under the influence of hallucinogenics, or while in coma.
- What about alleged survival after bodily death? The problem is simply that *if* there is survival after bodily death, it must still fit our TOE model. Yet under those circumstances, what happens to space and time? It could be argued that space and time at the relative conventional experiential physical 3S-1t perceptual substrate would be translated into a post-mortem 0S-0T in that standard model domain, but at a higher dimensional level there could be link-ups with space and time, perhaps introducing concepts such as vibrations, strings, superstrings, branes or other metadimensional or hyperspace representations. This 3S-1t post-mortem perception would reflect relative non-locality, as it would appear timeless and spaceless.

The scoffer would simply ignore the data: “No dreams are relevant to physical science, only to psychology and anything that happens involves just different mechanistic

physiological processes as waking reality. We do not need to introduce a new variable of extent with a different kind of consciousness.
And who is concerned about hallucinogenics? This is purely an expression of aberrant brain function producing psychopathology. And would any serious scientist entertain the ridiculous idea of alleged survival after bodily death?" This one is more difficult, however, because a century of psychical research has produced what many who have studied the area intensely, with training, and objectively, regard as extremely cogent data supporting the hypothesis of survival. We can point (like in other consciousness research areas) statistically to six sigma data against chance [179]. But the issue at hand here, is even if one totally rejected this, we would still be faced with an imaginary theoretical idea: The individual looking in from another higher C-substrate dimension—would he experience an absence of S and T (in other words zero dimensions) in at least one of the higher C-dimensions?). We are still dealing with variables of extent and perceptual realities being interpreted conceptually however, one looks at it, and a TOE must answer the bell to this dilemma.

Entanglement and TDVP

So can TDVP explain entanglement more clearly? We believe it can. Entanglement appears a puzzle, but is a puzzle if one looks at 3 dimensions of space and 1 point in time. It makes no sense because it appears non-local: it is relatively spaceless and timeless because it cannot be expressed in our conventional 3S-1t dimensions of space and time. The solution may be to invoke higher dimensionality. By doing so, what appears incomplete can be extrapolated by dimensional extrapolation at a higher level. Suddenly, the points that are spread in what may appear a random or indeterminate manner become less random and more determinant not in 1 more dimension, but across dimensions. This requires a model to intrude across fluctuating dimensions in terms of individuals, individual-units, and *even subatomic structure*: Indivension is the process, and vortical fluctuation across dimensions is the content.

Fields have been posited by others, but the fields are generally within one dimension or one "world" framework. The fields imply inherent structure. Here one is not dealing with an inherent structure, because each and everyone of these STC tethered components, be they time, space or consciousness, or be they expressed as mass, massless, energy, or energyless, in the ST domain, have components pertaining to meaningful information in the C domain. These links are linked through the content of vortices across fluctuating dimensions.

Vortices and Spin, Indivension and Tethering

Spin

Examining the standard model of subatomic physics, every one of the subatomic particles, exhibit certain properties: far more than mass (including 0), but also charge implying energy and possibly dimensions, and also spin.

Spin, we propose, is the direct quantal link of the model of vortical movement expression. That spin can also possibly be applied to dimensional rotations. Spin and movement therefore reflect different dimensions, whether by warping rotation or some three dimensional string [220]or other hyperspace mechanism. The essence of this is the spin, and we can translate spin back to subatomic particles.

However, it is noted that the physicist's concepts of spin is rather esoteric: it is not really spin, just a name related to how all the types of subatomic particles are made up of quarks that have to have fractional spin and so forth. If there is an analogy it may be only vague or unclear one correlates the mathematics involved.

Vortical implies we now have our spin because we have curved movement. This is now translated from what is perceived or conceptualized as relative objectivity or relative subjectivity–the common descriptive experience versus the personal one.

Indivension and vortices
Indivension—individual or individual unit dimensions—has different dimensions and fluctuates: Tethering at that macro-level effectively utilizes different vortices. These are based on the rotational movement—the spin. This model links up the quantum model — the relative objectivity model —with a relative subjectivity model at a broader level.

Charge, dimensions and forces
The other component is "charge" reflecting energetic forces. If there are both negative and positive dimensions or fractional dimensions, spin could be translated into vortical rotation, and charge including 1/3 or 1/2 charge might be ultimately applied in terms of dimensionality or energy. We could possibly translate force quantal-wise in terms of charge.

CHAPTER 31: *INDIVIDUALS AND SOCIETY: A UNIFICATION OF DIFFERENT CONSCIOUSNESS MECHANISMS*

Those who have a 'why' to live, can bear with almost any how.
Viktor Frankl (1905-1997, Psychiatrist) [221]

States of Consciousness and Dimensionality

Altered states of consciousness

In fact, if that individual is at a 3S-1t moment in an altered state of consciousness, such as meditation, they might be able to achieve some of these higher consciousness attributes and transiently perceive or conceive of higher dimensionality. These may be rare events or very limited in expression. This creates temporary or unstable shifts to higher levels of dimensionality. It also may create one (of potentially several) kinds of more optimized circumstances to attain information or influence reality. This may explain how information becomes more conductive to psi acquisition or expression, making such events less rare.

Closed or open? Finite or infinite?

There is another component as well here: There is no definite requirement for STC tethering to be only (like an umbilicus) at one end, it could be tethered at both ends like the knots of a string. This model reflects again the sphere but in a hammock, effectively as a closed circuit component. This closed component may imply finite realities.

This is opposed to the open circuit component, with either one tether or zero tethers or zero tethering in 3S-1t conventional reality domain, but tethered or not tethered at different dimensions: *Relative tethering.*

This open component may imply infinite realities in each individual or individual meaningful unit of consciousness: This could be social, familial or cultural for example. We have dynamic bidirectional (and possibly multidimensional) shifts from the finite to the infinite, from the closed and open, all relative to the experient.

There might be no reason why the finite cannot also be open with a tethering only at one end at that umbilicus and the infinite be closed as these are all relative. Closed and open, finite and infinite do not directly correspond one on one to each other. We postulate that they correspond in a more complex ethicospirituobiopsychofamiliosociocultural manner.

Vortical metadimensional realities

The perceptual realities in metadimensions (discussed during this archive) are necessarily in non-Euclidian space. Moreover, the reality may interact and interface with other

individual experient realities. This is so because realities are not orthogonal or parallel. Vortices are the content that may interface: They can go in every kind of direction and not equal in size, shape or dimensionalities. We postulate they can go up, down, across, inside or outside the STC substrates.

Perception as Individual-units: The Role of the Social Sciences

Application in extended social science systems theory

We could apply an extended social science systems theory to each and every combination of ethicospirituobiopsychofamiliosociocultural reality[114]. Each of these constitute individual systems units so referring to the individual consciousness may indeed be individual systems at the social or cultural levels, for example. The use of experient here implies these different systems not necessarily an individual. We have used the term *individual-unit* for this.

Psychofamiliosociocultural model: commonality and idiosyncratic percepts or concepts

Let us add one more additional key component: The individual-units (experients) are experiencing an intensely idiosyncratic reality. This is their perception of reality, and sometimes their perceptions and interpretations of that concept, and it may not relate to the actuality of what is happening objectively. It may reflect a multiplicity of events that are happening relative to that experient, and may have some common elements with others (society or culture) or idiosyncratic realities. During physical existence, it appears very difficult to conceive of common reality at that level well beyond 3S-1t because we only experience 3S-1t and do not have the antennae / sense data to go beyond what 3S-1t is experiencing. We are in the Platonic cave with shadows.

The systems approach

Whereas it is easy to regard the biophysiopsychofamiliosocioethicosprituomysticocultural levels each as individual-units (biological, physiological, psychological, familial, social, ethical, spiritual, mystical, cultural) given that C-substrate also begins at the quantum level, we could also regard individual-units across the various levels of the physical sciences namely quantomacroastronomophysicochemicoelectrical describing the various quantal, macroreality, astronomical, physical, chemical and electrical ostensibly inanimate aspects to reality. Therefore one could talk about quantomacroastronomophysicochemicoelectricalbiopsychofamiliosocioethicosprituomysticocultural individual-units and each could be used individually or in any combinations in vortical indivension. Of course, the various qualities of consciousness such as honesty, bravery, determination, wisdom can also fit well and this is why the full term would add consciousness in the form of conscio, namely: conscioquantomacroastronomophysicochemicoelectricalbiophysiopsychofamiliosocioethicosprituomysticocultural. This is not just a ridiculous compound word. It is an expression of the various levels of reality involving vortical indivension and Individual-units. Every system is important for the individual-unit. and every system involves vortical indivension

and merging and meeting of models.

At the simplest level is the individual who exhibits different states of consciousness and given that these have different qualities, for example, during meditation, dreams, waking, dissociation.

Calculus of distinctions applied
The important component here is that there may be perceptual, conceptual, and experiential calculus of distinctions components in relation to realities, and these distinctions might fluctuate particularly at the level of the C-substrate, but also in terms of any kind of dimensionality or domain or "world" or reality experience.

Indivension: Individual-units and Dimensions
Revisiting dimensions
TDVP is a paradigm necessarily reflecting metadimensionality—more than 3S-1t exists. If CST were inseparably linked at all times, we would not have a need to postulate metadimensionality. Under those circumstances, the physicalistic materialist base of events such as death being final would be logical, and all mental or mystical processes would simply be a product of the brain and the body. Metaphorically, the atom would be very tight and indivisible. But if its particles were looser, and some were at a distance from its nucleus, the particles at a distance would have the opportunity to rotate, move and influence that central core–at the 3S-1t level they would appear linked ("*entangled*"); additionally, then the extra elements of C-substrate would be relevant. And if they were relevant, the hypothesis of a continued C-substrate free of that space and time (i.e., *relative non-locality in metadimensionality*) would be logical as well as survival after bodily death—indeed, if there were no data on survival that existed, TDVP would be compromised considerably. (This is not technically a LFAF examination, because we are discussing higher not lower dimensionalities).

There are as many dimensions as we can conceive of as it determined by consciousness. These are fragile concepts.

Indivension
It seems that there must be a way to describe all of this and it requires a new word. This word must describe the fluctuating dimensions and domains in the individual-unit or a combination of individual-units experiencing a common reality. It must allow for transitory or fluctuating experiential realities. The new word that we propose relates to Individual-unit and dimensional distinctions and domains is the compounding of the two key concepts here, individual and dimension. We propose the word indivension.

Energies and forces
There is one more aspect to this, and that is the idea of energies. We have seen how there

is a warping of space-time in relation to gravitation. Gravitation is one form of energy. In electromagnetism, electricity and magnetism could under certain circumstances, be orthogonal (for example, in the propagation of light) but may not necessarily be so; this might imply that there could be potentially a warping at 2 different directional levels implying 2 different dimensions.[w] There is no reason for orthogonality in warping and indeed if metadimensionality is non-Euclidean, orthogonality may be impossible. We have postulated these different forces relate to warping, and each force implies a new dimension. If we have C-substrate warping, then dimensional variables of extent such as love can warp realities: It could possibly influence other variables of extent and hence other dimensions, either from the C-substrate, or even (like all C-substrate dimensions), the S and T dimensions.

[w] Some scientists, though using terms like electromagnetism still, would at another level separate out electricity and magnetism because they are sometimes orthogonal—effectively when the (electrical) force moves forward, the field [like the magnetic filings] moves at right angles [right hand rule]. Separately, there is good data for a direct opposing force of the expanding universe working at the same astronomic level as gravitation.

CHAPTER 32: *FLUCTUATING DIMENSIONS*

No man is an island entire of itself
John Donne, 1572-163, Poet [222]

Fluctuations
Fluctuations occur in relation to dimensions, generally C-substrate dimensions. Fluctuating wave particles fit well into the idea of indivension. The fluctuation produces combinations of meaningful linkage of information because information is meaningful at that C substrate level, and always linked with S and T.

Vortical Indivension
In vortical indivension, The content is vortical. The process is indivension allowing fluctuating across, between and within dimensions and interfacing between them. Vortices are at a higher level than fields per se because any field theory can be reduced as one explanatory alternative to vortices. Vortices are empirically derived from nature, and mathematically justified by extension of Fermat's Last Theorem, Pythagorean interaction, and extending a modeling of General Relativity with warping beyond four dimensions. The term "indivension" was needed because an equivalent concept did not exist.

Consciousness Transfer
Meaningful information can arise via 2 mechanisms: Either the meeting points interface or entanglement occurs via the meaningful information links that existed at the inseparable STC tethering level. These may or may not be the same: Indeed, the tethering may or may not be a mechanism for entanglement. Tethering could therefore be a functional linkage implying entanglement. Effectively, the vortical indivension meeting points may also reflect a tethering.

Meaning and random fluctuations
Fluctuation seldom implies a totally random fluctuation phenomenon.
We regard dimensional fluctuations as meaningful. They may be something initiated from the bottom up by the finite animate sentient being or from the infinite either by contiguity across any finite dimension or conceptually from the top-down.

State
Dimensional fluctuations depend on the *state* of consciousness. For example, we have obtained inspirations waking up from sleep in the middle of the night with some new ideas about something we were mulling about. This could reflect a link of our metaconscious infinite linking with the finite. This could be easier to obtain in a milieu of what could at that moment be a favorable altered stated of consciousness. So, one of the components in terms of fluctuating is obviously, state.

The altered state could allow the experience of realities in the finite that otherwise one could not experience, and these could be very meaningful. The number of dimensions could fluctuate because, for example, a state is lost after waking or completing meditation.

Accessing the Metaconscious

Additionally, conceptually there may be a meeting point of the tentacles moving out from the inseparable STC tethered portion. This would usually be by design, but could be accidental leading to incidental acquisition of (psi) information: Though it seldom has a completely random element, it could be random in terms of the unexpected intersections of consciousness vortices. Much more commonly, we posit, that vortices fluctuate and meaningfully meet at specific points producing meaningful information availability at 3S-1t. So, this is fluctuating and allowing the ability to access the metaconsciousness.

Metaconsciousness and Fluctuations

Metaconsciousness can be interfaced at every dimensional level. It is conceptually more than meta-information which does contain meaning, individual-unit knowledge, wisdom or understanding. Information is a bare component which requires processing in the sentient brain to register for neurological consciousness awareness. Consciousness implies not just information coming through because it always has a meaning, and it almost always has an affect—an emotionality. It very often has an intention and relates to information or communications that have been primed, thought about, puzzled about or desired. It is not something that is just coming through because it is randomly there.

Traits

The word fluctuating may be conceptually difficult. Consequently, we apply other terms instead—varied in traits; shifting in states: Sometimes, the word *varied* instead of fluctuating works particularly in a more consistent *trait*—a trait is a maintained structure of a specific individual-unit implying a consistency of dimensionality. Otherwise, the term *shifting* allows conceptualization, particularly in these changing, sometimes oscillating *states* of consciousness.

Quality and Quantity

Movement across dimensions reflects the different state and trait fluctuations producing different *quantities* and also *qualities* of C-substrate dimensions. This is a key point: There are various levels of *elevation* of the self (individuals humans) or of any kind of individual-unit be it ethnic, cultural, groups, families or social that one can achieve. Conversely, there are also levels of *denigration*. The metaphor is the hell-heaven or good-evil dichotomy but without the heaven or hell of theology. Effectively, there are different ways in which we can access information that becomes meaningfully loaded (metainformation) and even when this is finite, the vortical indivension interfaces with the infinite knowledge.

No Man is an Island Entire of Itself

Given the infinite element there is no fixed locality and this concept of a "barrier" is very broad. It is far more than information or meaning. One can apply this at any level of Individual-Unit: individual (any object—inanimate or animate—with any sentient being), group, family, social, cultural, ethnic, theological; or psychological or psychopathological interfaces. And there can be numerous interfaces. Such a barrier/sieve/ filter /strainer/ funnel/ sponge [x] may restrict or allow permeability of influence across humans such that every man influences everyone else and the controlling factor is how much to allow. Someone who is "sensitive" (in any sense) may be overwhelmed by the amount of data coming in and may feel intense likes, dislikes or experience marked influences by another; a psychiatrist may deliberately set up a barrier in relation to such ego-boundaries to prevent being overwhelmed. The terms "empathy" and "sympathy" may metaphorically use this kind of mechanism. Such data may be neutral, positive, negative or have mixed components. The separation is part of the individuation that is necessary psychologically and physiologically for adequate living.

That information hypothetically could invariably be linked-up with intuitive wisdom, understanding, and knowledge. But it is also linked up with all the different good and bad emotional and volitional components.

The Brain and 3S-1t

The brain and nervous system also has a more obvious and less controversial function: It is linked in 3S-1t-nC with (organically based) physiological and neurological states and it also integrates psychological dynamics that may distort the information.

All of these therefore include fluctuation, which is therefore generally obtained intentionally though theoretically could occur purely by accident, as in some dreams. Fluctuating non-random information may be rare and variably meaningful.

[x] Interestingly, within a minute of writing this section, VN received the following email content: "*There are four types among students who sit before the sages: a sponge, a funnel, a strainer and a sieve." (*One commentary argues that it is the "sieve" that is best: It allows *the flour dust to pass through yet retains the fine flour".* He retains the *essence* of his studies and the ability to focus on the heart of the matter and to ignore the rest.) [223] We are more pragmatic. Horses for courses. Meaning involves intentionality and all of these characteristics can be valuable or a hindrance depending on the discrete circumstances.

CHAPTER 33*: THE BRAIN, PHYSIOLOGY AND ITS "CONSCIOUSNESS"*

The brain is a computing machine connected with a spirit.
Kurt Gödel [119]

Brain Interaction

The physiology of the brain along with the rest of the nervous system and the general physiology of the body is very precise. It is remarkable, and it allows actions. Every one of those components, be they measured at the atomic, molecular, neurotransmitters, or anatomical areas, are all linked up at any point in 3S-1t with space, time, or consciousness. The living nervous system comprises the major functional components of the vehicle used by consciousness for interaction with the physical universe.

The *purpose* of this interaction is to bring ordered patterns and meaning into a physical universe that would otherwise be chaotic tending rapidly toward maximum entropy. The *reason* for this interaction is the desire of our physical brain consciousness to perceive, conceive and actualize the reality experience itself.

The Bergsonian Filter

Henri Bergson[224] theorized about a filter of the brain where one was filtering out irrelevant or overwhelming information from other consciousness, so that the brain had it's own limitation so he perceived it in terms of a limiting brain.
In this sense, the organs of the individual physical vehicle (brain) act as filters or reduction valves to allow consciousness to focus and experience a limited amount of reality as meaningful phenomena. The body, driven by the variable cognitions, emotions and volitional elements interacts with macro-reality through physical mechanisms.

We postulate that the brain, however, is the link to higher dimensions of consciousness: It interacts subconsciously with physical reality on the quantum level and is capable of developing abilities to interact more fully with the hierarchy of physicality and consciousness through the perceptions of additional dimensions. These abilities are rare at this point in the history of our world.

The brain in this way would be like computer RAM (random active memory being used at that time). This is specific functioning that is being utilized, as opposed to the broader hard drive that is not really the brain, but all of metaconsciousness.

Windows Into Metaconsciousness

We posit that ours is an adaptive brain: a filter of overwhelming metaconsciousness impressions and an expansive brain allowing one to intrude into wider metaconsciousness

like the so-called unconscious. Our definition of consciousness has three components and it's unified.
In this context, the temporal lobe and possibly the frontal lobe are playing the roles of being "windows into the mind" [225]. By allowing these windows, one is not only perceiving the negative of the Bergsonian filter, but the positives coming though, of brain physiology.

There has to be a mechanism by which information is integrated appropriately; This means not only excluding the irrelevant (filtering is one component of that) but bringing together the relevant: That integration of information is not only bringing together into a meaningful whole all incoming perceptual information from seeing, hearing, smelling, tasting, touching, and our sense-data, but also information that is coming through from psi. It is not only perceptual reality but it is also integrating information coming through from the rest of the brain—effectively, including as one small component, conceptual reality at a conscious level. This is the function of the temporal lobe of the brain.

The Temporal Lobe
When the temporal lobe does not function properly, we talk about temporal lobe dysfunction and a variety of different possible temporal lobe systems and non-specific symptoms, and sometimes seizures result. On the other hand, that same temporal lobe is still the integrator, par excellence. Paradoxically, sometimes the ostensible malfunction of the temporal lobe allows greater experiences of other realities in metaconsciousness through psi. This has been well demonstrated in the work of Palmer and Neppe[226], [107], [227]in so-called temporal lobe epileptics or people with temporal lobe firing. The converse has been demonstrated too[106]. SP Experients have more temporal lobe symptoms. There is a phenomenological linkup here that is profound and has been well demonstrated in the work of Neppe and on subjective paranormal experients, so-called "psychics".

Neppe has been able to show that the symptoms of temporal lobe dysfunction are different from those of subjective paranormal experiences. Yet, the subjective paranormal experients have more temporal lobe systems and vise versa, and patients with temporal lobe conditions have more subjective paranormal experiences.
So, the reciprocal applies, and this is a very strong reciprocal in medicine because this is how medicine does it. A person has malaria, they have the symptoms, and you can diagnose it based on the symptoms of malaria. Then you do a blood test and then can justify the malaria. Alternatively, you can do the blood test and pick up the malaria and later on the person can develop the symptoms. So, there is this two way directionality in terms of looking at causal links as opposed to just associative links. The same thing applies here in terms of brain.

Because the temporal lobe of the brain might be a window into the mind neither confirms or denies the veridicality of that metaconsciousness. We have not used that word 'mind' either, but effectively that word mind is our metaconsciousness.

Motor psi expressions or consciousness may not be temporal but frontal lobe because this is more an executive function, it may be frontal lobe[116], [228].

Unconscious Bodily Metaconsciousness?
Depending on the developmental level, for example, humans and possibly animals, might experience part of the tethering through expressing itself in so-called intuition or bodily experiences, the "gut feeling," which may not necessarily be expressed in consciousness. This invokes, what does the neurological consciousness—higher brain functions—do? What role does the rest of the brain have? Is the brain purely a filter of information coming through from the metaconsciousness? We believe it certainly separates out self from not self.

Differentiating the Brain Consciousness or Unconsciousness from Metaconsciousness
If information is apprehended from metaconscious sources, that information needs to be registered, processed and integrated into brain function. One likely area as indicated is the great integrator of the higher brain, the temporal lobe, and for output elements, motoric influences may involve the great executive, the frontal lobe. A century of psychology has demonstrated the relevance of psychodynamics, of unconscious ego-defenses, of the complexity of the human personality, and of the admixture of consciously and unconsciously motivated human behaviors and ideations. This makes differentiating what may be metaconscious (be it the Jungian collective consciousness, or a repository archive of information, or a limited excessive different reality usually filtered by an otherwise overloaded brain) from central nervous system, particularly brain, information, very difficult, and often impossible. It is easy to assume the reductionistic base of everything arising from the brain, and it is only the contradictions (the tiny, rare events that we've noted that do not make statistical or spontaneous sense) that gives rise to wonder whether the metaconsciousness is playing a role. But the fact is that those tiny rare events are so overwhelming statistically (and for many spontaneously) that we have to take them into account if we want to practice objective science. And if they are acknowledged, it may often be impossible to differentiate a reality that cannot be authenticated but may exist, from a limited psychological or neurological brain experience. Neppe[105] has written extensively on this topic and has emphasized perspectives such as taking the whole context of the individual into account, situational information, outside validations, nontoleration of psychotropic medications and taking into account all details in uncovering this profound challenge.

Consciousness and Information
The TDVP Axiom of Tethered Origin begins at the level of consciousness not at the level of information as even the quantal interpretations of physics implies a certain meaning exists, and this data is supported by the existence of psi and the hypothesis that meaning and numinosity involve psi conducive states. If the tethering were purely space time and information, we might need to establish a threshold at which that information becomes

consciousness. As it happens, this would imply a linearity and realistically the distinctions are different: Consciousness is a distinction of extent, and has an ordinal metric, information involves a content and the metrics linked with it are consciousness. Consciousness does not begin at the cutoff point of a certain extropic state: If this were so, it would require further proposals and justification relating to this. For example, does consciousness or, for that matter, life itself, begin at conception, some time in the first trimester, or at birth. Our fundamental metaparadigm reflects that is was always there, that there is an infinite and a finite reality, and that the level of consciousness began at the very origin of all. Moreover, this is not just information, but meaningful information even at the most subatomic of levels. This is based, too, on the interpretations of physics implying a certain meaning exists, supported by psi.
It does not begin at the cutoff point of a certain extropic state, and this requires further proposals relating to this: The animate versus the inanimate begs the question of the threshold of change, how and why.

Both empiricism and logic drive the original Consciousness component.
Information remains content, consciousness involves a meaning which is an intent.
Pan-consciousness is the process with meaning as opposed to content of pan-informationism and these form part of the broader unified monism.

There are those such as Stephan Schwartz [229] who separates out an Informational Domain from the Mass-Energy Domain aspect, and Eva Lobach, who conceives of a triad of mass-energy-information. [230] While these differentiations appear logical on the surface, they may not quite fit conceptually. This is so as by applying the calculus of distinctions, mass, energy and information are classified as distinctions of content not extent. Their metrics of content are measured the extent of the consciousness distinctions, and space and time are involved with mass-energy. It is difficult or impossible to conceive of energy without space and time, and mass is converted into energy. The more fundamental measures / metrics are the extent of space-time. Similarly, information is a content of relevance, but we apply a measure of extent to it by using meaning, at which stage there is consciousness.

Also the model of consciousness can allow space and time, if necessary, to both equal the metric of relative zero at specific higher dimensionalities. This avoids the paradox of possible absence of space and time, for example, in post-mortem survival. Also, theoretically, too much information without any meaning would imply consciousness as equal to a zero metric. At the lowest levels of inanimate object, e.g. subquantal, this may be close to zero, but the ATO specifically implies consciousness existing at least minimally, even at the Origin Event.

SECTION F: THE MODELS BEHIND TDVP

CHAPTER 34: *CALCULUS OF DISTINCTIONS*

A set is a Many that allows itself to be thought of as a One.
Georg Cantor

The Axioms of Finite-Infinite Interaction

Effectively, several common-sense axiomatic assumptions may allow a perspective of transfer between finite and infinite subrealities. The axioms of barrier, penetrability between finite and infinite, the axiom of continuity of the finite and of discreteness of the finite implying quanta are relevant but again these are not key to this TDVP model but convenient explanations that we cannot prove. The conversion of the continuous metainformation source in the infinite to meaning involving infinite wisdom, understanding, and knowledge on the one side, and this conversion to meaning, however primitive, at the lowest level, at the other finite side, at the quantal level. So, there is interconvertibility with infinite metaconsciousness and finite meaning. It is not separated. The ultimate endpoint that is separated is that filter, but the filter is actually the filter between the infinite and the finite reality, and not necessarily the direct filter from outside into the brain. The two may at times be synonymous.

Self Versus Not-self

This difference is very important and very relevant because this is the differentiation from the self from the not self in the Calculus of Distinctions. This is implied in terms of infinite versus finite realities. There is also the question of separation of the self versus the collective consciousness post-mortem because here when one conceives of infinite reality, the merging of that whole space and that whole time. This theoretically would be interpreted as one real reason for difficulty in communication post-mortem with the alive individual, for example. Not only is it the shift of consciousness, but also the shift through the vacillating ego boundary component, and the shift in relation to the aspect of being able to communicate through some kind of defined, discrete, space-time-meaning barrier. The ultimate actualization and expression of reality is at the finite and not the infinite level.

TABLE 4: Distinctions and Dimensions

Table 4 is a speculative portrayal of some key concepts separating variables of content (what it contains; the "stuff") from variables of extent (the measurable elements) and related dimensions.

Level *distinctions*		

Intent	*Extent*	*Content*
Always relative, never absolute	Realty Distinctions: Observer perceptual (afferent) / conceptual (interpretive), Experiential (response)	Reality: relative objective/ common/ actual/ manifest
	Reality *domain*	Complete unit of all differential STC
density	space	Mass /
density	Space- Time	Mass / energy (*force*) / events
Density?	Meaning (consciousness) (massless/ energyless/ spinless)	Information / pattern / extropy
Warped space-time / action at a distance / Charge / magnetic flux?	Dimensionality / fields	Forces / energy
	Dimensional manifestations (vortical movement expression) Rotation	Spin / electromagnetic radiation / gravity /strong and weak forces
	Indivension produces combinations of meaningful linkage of information via entanglement and meeting points interfacing.	Fluctuating wave / particles / frequency
	Tethering produces entanglement	Dark? and existent? particle/ wave
	Reality Distinctions: Observer perceptual (afferent) / conceptual (interpretive), Experiential (response)	Reality: relative objective/ common/ actual/ manifest
	Reality Distinctions: Observer perceptual (afferent) / conceptual (interpretive), Experiential (response)	Reality: relative objective/ common/ actual/ manifest
	Exists in relative subjective context	Does not exist in absolute context
	Real number/ Imaginary number/ Complex number / *Quaternions / continuity / infinity*	Matrix / discrete phenomena / quanta
	Reality *realms* (was *domains*)	Complete unit of all differential STC (substrate)

	Metaconsciousness at higher dimensionality	Meta-information at higher spin break-through vs. neurological patterns and strange attractors
	Animate	Inanimate
	Non-orthogonal Non-Euclidean	Orthogonal Euclidean
	Is it warping or is it strings?	It is the compression of the zip (bizarre) *Is it warping or is it strings?*
	Exists in relative subjective context	Does not exist in absolute context
mathematics		
	Real number/ Imaginary number Complex number to *Quaternions/ infinity*	Space/ time / consciousness transfinity
	Non-Euclidean and Euclidean	Euclidean
		All content is three dimensional
		Space is necessarily 3 dimensional
	Time is multidimensional most likely three dimensional	
	Consciousness parallels time and space but also draws higher ordinal dimensional structure	
	Is it warping or is it strings?	*3S-1t*

Density

Distinctions of extent describe and measure space, time and consciousness. Therefore they can be reflected as different dimensions because extent variables can metrically be measured either intervally or ordinally. Distinctions of content describe and measure mass, energy and information. For example, the distinction of extent reflecting a measure of space is paralleled by the distinctions of content reflected, for example, by mass. Mass-energy or force cannot be dimensions because they are not variables of extent: We use the term, force instead of energy here, so that potentially (and speculatively) we can apply this content to consciousness (C-substrate).

This can translated into space extent only indirectly via an equation: Though mass and energy are measurable metrics, they are distinction of contents because ultimately they are

metrically measured through space-time via the *ratio of density.* Density is a mechanism measure of the amount of mass, energy or information in a given STC domain, and is therefore the mechanism to link distinctions of content to extent. Distinctions of content are related to extent through density—the amount of mass, energy or information per unit space, time or consciousness. The content is indirectly measured by an *equation* e.g. y per unit.

The relationship of extent and content is a relevant one. Logically there is no content in conceptual 0, 1 or 2 D domains, and the best way to conceive of content is via density. Extent can be reflected in dimensions. Content is conceptualized as "containing": for example in space, content is essentially mass. But mass is closely related with density (unit per volume gives density and weight) implying a mechanism linking the two (possibly an intent). Energy has components of both space and time in its content.
Time contents are events that are more than two dimensional in time because of the commonality of experience. Mathematically, we demonstrate how logical it is to reflect both 3 D time and 3D space. This allows for density measurements, necessarily as 3D experiences.

Relative density is the relative expression of content in extent. The operational definition is the amount of content per unit of metric extent.
Mass is obvious in that regard. Density differentiates the light from the heavy of the same size.
The content of energy in 3S-1t in physics is applied by flux density: the amount of energy—the amount of force—conveyed through a unit of extent per unit of extent. The flux density, for instance of a magnetic field, is a measure of the strength of the field, a density in a sense neither extent of content, but it really relates content to extent.

The analogous unit would be *intensity* of the conscious quality. The extent of consciousness is ordinal — we can measure it as the intensity, but it is more than intensity. (see how: [198])
Intensity is the quantitative extent. But there is a qualitative element. This reflects the different dimensions of consciousness. That quality difference reflects the number of dimensions, and the intensity reflects that ordinal component.
As we "ascend" the ladder in the hierarchy of dimensionality it becomes more subtle and more complex. It is very simple at the 3S-1t level, but even there not so simple, as still there are analogous terms.

Density could be regarded as the boundary variable, the third component in the distinction. Perhaps that relative component is the intent in some components of the calculus of distinctions, for example, theoretically a guiding of reality content implying an intent. Intent would be one of those boundary conditions linking content with extent but does not apply to other boundaries e.g. density. And if so, would meaning without guidance imply

that intent within the substrate? Would the same apply for density? Could extropy be a mechanism or functional explanation or a distinction of intent?

Density is, therefore, not only a spatial concept in terms of extent, but it also has a time concept, and maybe a consciousness concept. We are talking quanta but translated across STC these become qualits reflecting the composite term for qubits of space, chronits of time and conscits of consciousness. Qubits, chronits and conscits may each have their own packets or particle-wave components so still are generic terms. Perceptual reality is quantized into finite discrete wave-particle-packet components of Qualits.

We therefore have different elements that are relevant packets or waves at the STC levels. If we kept quanta, we would have to describe this purely at the quantum physical level though quanta certainly may be qubits or sometimes chronits. If there are meaningful quanta in the Copenhagen sense, they are qualits and there may or may not be separate conscits as particle/ waves like psitrons or kinetrons.

Distinctions of Intent

Content and extent are fundamental distinctions. Distinctions are relevant in consciousness, and besides extent and content, there is the intent, which might be quite different.

It may be that intent could be applied as a theological concept for "guiding" or "guided" meaning. Intent, as portrayed theologically, could imply infinite guiding, but it could also neurologically derive from the finite, for example, working though physiology and the psychology of volition. Intent would then be perceived as mechanistic and include functionality. Mathematically, depending on conceptualization, it could include mechanisms such as density translating the content of mass into the extent of space per unit, but we think that would confound the concept. Whereas intent can be a mechanism or a functional way to produce content, the converse does not apply. The use of *Intent* appears to be more controversial and less relevant than content and extent so an alternative term, which is more embracing, may be more valuable. But the concept of God is a philosophical explanation. Belief is separate from the scientific method.

Calculus of Distinctions and Set Theory

The Calculus of Distinctions has a derivation from Spencer Brown's Calculus of Form but on the other hand it has some early parallels with Georg Cantor's Set Theory [96], a great contributor in similar areas to ours. Set theory examines non-dimensional, non-consciousness *similarities*. It did not include imaginary numbers nor negatives. COD evaluates *differences*, extradimensionally, and relates to consciousness.

The conceptual relationships are extremely important in the context of the Calculus of Distinctions—there is great relevance to distinguishing percepts, concepts and experiences as well as subjectivity and relative objectivity.

An attempt to portray Space, Time and some kind of Consciousness on the Venn diagram of Set Theory (as attempted by Sirag) [231], produces an incomplete portrayal: Set Theory involves a one on one binary model and is too limiting. It was not applied to multiple dimensions, just representing them in two.
The Calculus of Distinctions goes beyond what Set Theory does in that regard. Instead of just applying binary algebras, we utilize another basic element, expressed mathematically has imaginary numbers.

CHAPTER 35: *THEOREMS*

The essence of mathematics lies in its freedom.
Georg Cantor

These concepts reflect mathematics and symbolic logic.
Besides the data discussed in this book, further justification of these theorems, lemmas, postulates and principles are in our companion book. [9]
These theorems, postulates and principles and lemmas are largely independent of each other unless otherwise stated. Refutation of any of these axioms does not refute any other axiom or theorem unless they are corollaries or lemmas.)

The Theorem of (Extra) Dimensional Extrapolation
There are invariant dimensionometric features linking S, T and C substrates. These allow extrapolation upward from one dimension to the next. The bending of an N-Dimensional reality, (e.g., a line or plane) requires the action of a force from outside that reality, implying the very real pre-existence of an (n+1) D reality.
Defining the fourth dimension as time conforms with the Principle of Dimensional Extrapolation because linear time exhibits the invariant feature that it contains an infinity of 3D realities. This is, in itself, an internal validation of the consistency of dimensions beyond 3D.

Theorem of Lower Dimensional Discontinuity (or Incompleteness)
(a converse to dimensional extrapolation). Higher" dimensional qualits ("world" experience) are expressed incompletely in lower dimensions. Most commonly this is expressed as an incomplete jigsaw puzzle in e.g., 3S-1t, where only feasibility pieces are available. This could also be called a ***theorem of discontinuity***: An N-Dimensional manifold when wrapped onto N-1 reality is reflected as discontinuous in that N-1 reality.
As Carlson states: *"any one-to-one mapping between spaces of different dimensionality must be discontinuous in that a continuous path in one space maps into a broken path in the other."* [232]
This is mathematically (dimensionometrically) proven because a continuous curve is projected as broken in a "lower" dimensions of space.
This reduction of dimensions would be the *dimensional reduction theorem* or it is called the *topology theorem.*
This could also be called the **Theorem of N-Dimensional manifold:** A manifold when mapped onto N-1 reality is reflected as discontinuous in that N-1 reality:
Manifolds continuous in dimensional M has discontinuity in <M dimensions.
Dimensions mapped onto n-1 dimensions will be discontinuous. This has been proved as a theorem in topology: *Manifolds that are continuous in N dimensions are discontinuous in*

dimensions < *N.* Consequently, traces of an object in an (n+1) -dimensional reality appear in an n-dimensional reality.
Together or separate theorem or lemma:

Theorem (Principle) of Tridimensional Warping of Reality
Warping of reality (time, space and C-substrate) occurs in three dimensional elements once one has attained three dimensions. (It can only be unidimensional if there are static systems or if time is unidimensional: Bend, warp, distort.

- *Bending* of an n-dimensional reality is the result of two opposing linear forces
- *Warping* of an n-dimensional reality is the result of two or more sets of non-parallel opposing forces. In this context, even the stretching of a zero-dimensional point into a 2-D line is a subset of warping.
- *Distortion* of an n-dimensional reality is a general term denoting any bending or warping that results in a non-Euclidean n-dimensional reality.
- In this context, even the stretching of a zero-dimensional point into a 2-D line is a subset of warping.

The time domain (T) is more dynamic and more subtle than the space domain (S), and warping of ST into C-substrate elements produces a domain more subtle than the time domain.
This implies three D for each of space and time and at least 3D for C-substrate. This applies even to 0, even in one dimension.

The Theorem of Parallel N-1 Realities and Further N-D Realities
Perceiving from the standpoint of N+1 dimensions, there are infinite parallel lines at the N dimensional level and a further N Infinite parallel lines in the N-1 dimension, Because of these parallels, the first infinity at N+1 is larger than the second at N dimensions, ad infinitum, when approaching from N-Dimensions. This can be applied in analysis of signals, electronic engineering, with light propagation, as well as in mathematics. Theologically, it could be seeing only the embroidery in reverse and producing confusion, yet in the full infinite reality, all the embroidery is visible.

Principle of Vortices Being the Ubiquitous Universal Shape
Given multidimensional systems, motion becomes spiral. Vortices are three dimensional moving shapes consistent with warping due to non-parallel forces and our proof of asymmetry using Fermat's last theorem. The FLT proof of asymmetry at the quantum and atomic level applies for all n >2 implying prevalent asymmetry in all dimensions beyond 2. The exception of the case when n= 2, explains the flat orbits of planets and moons and

the rings of Saturn, etc. The expansion of this equation beyond the FLT limits into $A^n + B^n + C^{n=} D^n$ reveals special exceptions for certain specific integer values of A, B and C where symmetry prevails. The directional nature of the forces in additional dimensions manifesting as fields, combined with the natural prevalence of asymmetry creates vortical movement in 3S-1t. Demonstration of the ubiquity of vortices is via Fermat's last theorem (FLT). Because there is proof, this is a theorem but it does not prove it is fundamental per se, hence we call it an axiom. It is also a lemma and principle following on the principle of tridimensional warping of reality.

Circle

The vortex is not only the most ubiquitous form in nature. It is also the most natural. At its most basic level the circle portrays the simplest form in the universe. Vortical forms range from raindrops, to tornados, from tree trunks to planets, stars and subatomic particles. Even the earliest form of home and sacred sites (10,000 years ago) have been found to be circular. [233]

And yet, what about the square? This exquisite form is not natural except with exceptions such as pure crystallization. Yet, the simplest squares derive from circles. The ends of two perpendicular lines drawn through the center of a circle produce a square. And yet, it is the square that symbolizes our measurements both practically and in theory. It is these angles that have allowed enormous progress. We no longer need circular homes. [233]

Pi

Fundamental to circular shapes is the concept of π (Pi). This is the transcendental number reflecting the ratio of the circumference to the diameter. The mathematics is closely related to the concept of circularity. It too, may reflect the ubiquity of the round shape and its related mathematics. Yet the geometrical mathematical relationship of the circle to the square is fraught with difficulty unless we add π as the constant. And even more so, π is abundant also in mathematics and nature even in situations not directly related to the circle. Examples abound like the probability that two integers are relatively prime (do not have common factors) is $6/\pi^2$; the same formula reflects the probability of seeing two sticks picked up at random in a large rectangular orchard without any other getting in the way is again $6/\pi^2$. Even the ratio of favorable to unfavorable tosses of needle of length d landing on a line in a plane surface rules by parallel lines d units apart is $2/\pi$. [3] Pi is also closely related to other transfinite numbers such as *e*. [233]

Lemma of Dimensional Falsification Impossibility

We cannot falsify beyond the dimensional expressions one is dealing with.

Complete verification or falsification of phenomena related to an (n+1) dimensional reality by observers in an n-dimensional reality is generally not possible because all the details of the (n+1) -D reality are not available to the observer in the N-D reality. Only incomplete pieces are accessible and the data is often not repeatable, verifiable or falsifiable, though occasionally individual components can be falsified. The existence of additional

dimensions is indicated by LFAF through extrapolation of the general theory of relativity backwards to 3S-1t. The involvement of consciousness is strongly indicated in quantum mechanics, relativity and psi research.: Prior to relativity, the observer was represented as a single point with no direct involvement, but with relativity, what the observer perceives is dependent upon his dynamic physical conditions. And at the quantum level, the experimenter is part of the experiment.
If there were no organizing factor of consciousness, the continual operation of the second law of thermodynamics would sabotage any accidental evolution of the seeds of extropic order before they could get very far. There is good evidence to show this using strong feasibility arguments. The probability of an explosion creating complex structures by pure accident is virtually zero. It is far more likely that a tornado moving through a junk yard will construct a Boeing 727 plus pilots, passengers and luggage. [9]

Lemma of Lower Dimensional Indeterminate Feasibility Assessment
All data in e D or e+g D cannot be reflected completely at e-1 D or less. This is why only incomplete pieces are accessible and the data is often not falsifiable, though individual components can be falsified. The observer is dependent upon several facets of his state.

Lemma of Open Extropic Systems
If the second law of thermodynamics operated all the time in a closed system, then extropy would be sabotaged at the consciousness level. As there is solid evidence biologically of extropic processes, this implies a system incorporating this: This can be achieved through a more open system including consciousness. (We believe this lemma to be true). Open systems may if necessary require the infinite, although not proving it. Extropy in the infinite is more than unidimensional negentropy.

Pythagorean Theorem (PT) Extension to 3 Dimensions and Applicability Beyond
For conscious beings with senses limited to the perception of 3S-1t, spatial dimensions are limited to three. Calculating the distance (the metric) between two points, the Pythagorean theorem (PT) can be applied to three spatial dimensions but not more: Extending Pythagoras into 3 dimensions is easy to visualize. But as long as one is using the same units, one cannot escape the three dimensions even though one attempts to extends it into a fourth dimension.
This is so as additional dimensions are non-real numbers: We can compute the metric of the fourth departure as described by three dimensions even in that fourth point. The fourth dimension is *necessarily represented* by an imaginary number. Minkowski used the square root of minus one as a meaningful metric in a 4 dimensional continuum. Minkowski realized that to move into the fourth dimension one needed a different kind of number otherwise one cannot escape the field of real numbers. It is not therefore just a convenience but a necessity. (Reference: Dimensionometry below).
Proof using Cartesian coordinates:
While the PT is introduced and proved in 2S, it is step-wise applicable to 3S, 4D, and

beyond in the calculation of the metric (d_S) in n-dimensional Euclidian space:
For 2 dimensions, $d_{2S}{}^{2=} dx^2 + dy^2$, where d is the distance from the origin (0,0) of a Cartesian coordinate system to a point P(x,y). This distance is commonly called the "metric". Departing orthogonally from the point P to a new point, Q(x,y,z), in 3D, the new metric, d_{3S}, the distance from the origin to Q, is calculated using the Pythagorean theorem again as:
$d_{3S}{}^{2=} d_{2S}{}^2 + z^2$
$= dx^2 + dy^2 + z^2$ for 3 D, and similarly,
$d_{4S}{}^{2=} dx^2 + dy^2 + z^2 - (ct)^2$ for 4D Minkowski space. (See Appendix.)
This, however, is a special application used to describe electrodynamics, i.e., the propagation of light. In general, we have:

$$d_{nS}{}^{2=} dx_1{}^2 + d\,x_2{}^2 + d\,x_3{}^2 + d\,x_4{}^2 + \ldots + d\,x_n{}^2$$

where the x's are the measurable Cartesian coordinates in each dimension.

The Theorem of Metadimensionality Requiring Non-integers, Imaginary or Complex Numbers

Fermat's last theorem demonstrates how asymmetry arises even at a quantum Pythagorean level. In number theory, Fermat's Last Theorem (FLT) states that no three positive integers a, b, and c can satisfy the equation $a^n + b^n = c^n$ for any integer value of n greater than two. When n= 1, $a^n + b^n = c^n$ is immediately solvable with an infinite number of integer solutions, representing the symmetric fundamental operation of addition. When n= 2, there are specific integer solutions known as Pythagorean triplets, allowing the symmetric combination of square areas. But when n= 3 or above, there are no integer solutions. This can be shown to apply to the combination of any two symmetric volumes, including quantum volumes, because the constants of shape factor out of the equation. We discuss elsewhere in book proof in *Symmetry, Dimensionometry And Asymmetry.*
The proof of FLT confirms the fact that there are no solutions for $A^n + B^n = C^n$ where n, A, B & C are integers when n >2, but, since the PT works for non-integer, imaginary and complex number A, B and C, it can be used to calculate the metric for dimensions beyond 3D. In addition, fractional values of n may have application in domains beyond 4D.
There are an infinite number of integral solutions of the Fermat equation when n= 2. (If a and b are positive integers and b >a, we can generate an infinite number of integer solutions (X,Y,Z) with (a^2+b^2, 2ab, b^2-a^2). Examples: For b= a+1 and a= 1,2,3, …, (X,Y,Z) = (3,4,5), (5,12,13), (7,24,25), … Therefore, rotational symmetry for a particle composed of two symmetric entities in a two-dimensional reality is not necessarily broken. This *may* result in symmetric flat (planar) spirals like the rings of Saturn, orbits of planets, etc. This is because as you approach the plane one has a tendency towards symmetry. Note that there are rare (but an infinite number of) solutions to the cubes when using three variables e.g., beginning ([3,4,5]= [6]). These rarities may have profound implications for subatomic particles like quarks, their usual asymmetries and may explain why elements are distributed as they are in the Periodic Table. This is an interesting area for further research.
The application of Fermat's last theorem (FLT) demonstrates how asymmetry arises at the

quantum level. In the FLT equation, n is the indicator of dimensionality, because A^2 describes an area, A^3 describes a cube, and so on. In number theory, Fermat's Last Theorem states that no three positive integers a, b, and c can satisfy the equation $a^n + b^n = c^n$ for any integer value of n greater than two. N=1 (x+y=z) is immediately solvable. as are the equations for squares but not cubes. So this introduces the asymmetry of the combination of symmetric volumes. We have tested and found that a modification of FLT also applies to three or more variables in three dimensions (with rare exceptions; e.g. those postulated below relating to quark combinations), and x or x+1 variables in x dimensions still cannot allow for an integer solution. Because we cannot have integer solutions beyond 2-D, we must factor out constants of shape or dimension forming an asymmetric object or volume or mass using the same units.
Considering Fermat's equation for each exponential integer (n) as a specific equation of interest yields solutions in 1D and 2D that provide us with a trivial real number theorem for 1D, and the Pythagorean theorem for 2D.

Theorem of Pervasive Multi-level Tridimensional Distinctions
The mathematics of triadic realities is demonstrated by Pythagoras triangular extension and in physics can be illustrated by mass-energy-C, and astrophysical, macrophysical, quantal realities, plus the rapid expansion period of the big bang, It lays the foundation for the basic and pervasive triadic nature of reality, the origin of dimensionality and extropy-entropy

CHAPTER 36: *POSTULATES AND PRINCIPLES*

In mathematics the art of proposing a question must be held of higher value than solving it.
Georg Cantor

The Postulate of Three Fold Quark Combinations
This is testable and should allow explanation using FLT. Not all N-Dimensional objects made up of two or more elementary particles are necessarily asymmetrical. If, for example, we consider three spherical particles combining to form a fourth, by the same process described above, we arrive at the equation:

$$X^3 + Y^3 + Z^3 = Q^3$$

There are an infinite number of case with (X,Y,Z,Q) all integers, e.g.,: (3,4, 5,6).

$$27 + 64 + 125 = 216$$

If the volumes of quarks are found to be integral multiples of the Planck volume that satisfy the equation $X^3 + Y^3 + Z^3 = Q^3$, we have the explanation of why quarks are only found in combinations of three, and the hadrons formed by them are symmetrical.

This mathematical demonstration explains why, even though, by Occam's razor, the most basic building blocks of physical reality are perfectly symmetrical, macro-reality is only occasionally and approximately symmetrical.

Principle of Dimensionometric Explanation of Forces Acting at a Distance
The proof of this theorem ties into the postulated rapid expansion period of the big bang, the origin of dimensionality (see Dimensionality below) and it lays the foundation for the basic and pervasive triadic nature of reality: Three dimensions are necessary and sufficient to describe any domain of N-D reality and N-1 realities have a descending infinity of existences.
Evidence of the connection of two or more objects separated by "empty" space in an nD reality, is actually evidence of the connection of the objects in an additional dimension. *What we've been calling a "field " (evidenced by action at a distance) is actually evidence of the existence of extra-dimensions.*
Demonstration: For example, the gravity wells created by massive objects in Einstein's theory of relativity, often demonstrated in two dimensions by placing a heavy spherical object on a rubber sheet, can more accurately be described geometrically by adding an extra dimension, because when a 2S object (e.g., a rectangular plane) is warped, it

becomes a 3S object. Similarly, when a 3S object is warped, it becomes a 4D object.
A clarification: Field has been relevant in discussions in other consciousness and interacting ways beyond the usual physical context. In that regard, the outstanding model of Rupert Sheldrake's morphogenetic field stands out. [18]With the CST inseparability at the point of tethering, we do not need to postulate per se, a morphogenetic field or entanglement, as the influences that occur across ostensibly unrelated information or events, is clarified by the theorem of lower dimensional incompleteness and the link translated by the theorem of dimensional extrapolation. Both models can involve mechanisms to explain previously unrelated events (either as morphogenetic fields or as indivension influences of 3S-1t.) Extradimensional extrapolation of individual-units creates links ranging from the limited immediately linked subatomic to the broader cosmic realities, and from the individual through every kind of social group. Therefore the impacts of morphogenetic fields may be secondary not primary, and some experiments devised to "demonstrate" Sheldrake's formative causation and morphogenetic fields could as easily demonstrate indivension influences (e.g., Neppe's kindling test[234]).

Principle of Non-Euclidean Dimensional Representation Approximated through Euclidean Substrates (space, time, C-substrate)
In non-Euclidean geometry, multi-dimensional manifolds (complex shapes) do not map directly onto any N-Dimensional Euclidian system. This principle of Non-Euclidean dimensional representation is approximated through Euclidean substrates (space, time, C-substrate). In his book "Relativity, the Special and the General Theory—a Clear Explanation that Anyone can Understand", Einstein [235] states that applying Gaussian coordinates in N-Dimensional space can approximate non-Euclidean problems using Euclidian substrates. Einstein demonstrated this, though focusing only on the fourth dimension, time.

Principle of Non-Euclidean Space-time 4D Continua are Actual, Not Only Perceptual and Conceptual
If, in Minkowski's four-dimensional space-time continuum, the fourth dimension unit of measurement, t, was replaced by *ict*, where *i*= the square root of minus one and c= the speed of light, then propagation of light between two reference frames in relative motion to each other could be described by the Lorentz transformations of space and time coordinates, preserving the constant speed of light with respect to both static and moving reference frames. *This principle that can be extended to N-Dimensions.*

Corollary of Pythagoras's Theorem Being Only True for Euclidean Spaces
i.e., spaces that have not been warped or bent. PT assumes dimensional orthogonality for ease of calculation. Non-Euclidean space dimensions are not "orthogonal" in the since just referred to: However, one can draw orthogonal lines that intersects at 90 degrees but both can be curved, e.g., surface of the earth.

Postulate of Indivension Tethering
The C, S and T substrate domains are inseparably tethered to each other at certain points. At other points, they are apart, like three dimensional vibrating vortical strings. This allows communications to occur across space, time and C-substrate (the metaphor of the electron rotating round a dense atomic nucleus impacting that density). C-substrate is particularly involved with that vortical type movement producing ostensible "entanglement". This tethering involves individual-units allowing a 3S-1t reality that is impacted by fluctuating metadimensional levels.

The Postulate of TOEs Requiring Infinite Reality
TOEs must by definition incorporate the stability of consistent mathematics and cannot be incomplete. Gödel's second incompleteness theorem shows that if one particular arithmetic truth system cannot prove is the consistency of the system itself. This applies to closed finite systems. If one extends this to any closed metric system then to demonstrate consistency one needs to be outside the system. [85, 86, 125] This implies a corollary of an open infinite system. It does not necessarily prove that an infinite system may be complete but LFAF is applied. The infinity may be any kind of infinity.

Rare Event Theory Postulate
C-substrate phenomena manifest in S and T as rare events that appear discontinuous, random or unexplained in 3S-1t. If one can control C-substrate events they may not be rare and this is particularly so beyond 3S-1t-1c. Rare event theory involves a mathematical conceptualization of events: So e.g., 53% vs. 50% may not be rare in the context of curvature of space (which is even more rare) but requires statistical calculations to demonstrate global presence.

Postulate that Rare Events Are Linked to Interfacing Vortices, Vectors, Scalars and Tensors
We postulate this based on the infrequency of psi and its possible occurrence when vortices, vectors, scalars and tensors interface producing meaningful apprehension or perturbation of events across or within domains.

Postulate of At Least 9 Dimensions
The warping of 6D space-time, evidenced by the existence of the fundamental forces of nature, and the Principle of Dimensional Extrapolation implies their existence. There are at least three additional dimensions, and those dimensions are the dimensions of C-substrate. ZN The general framework of our paradigm is that of an N-Dimensional continuum, where N is at least nine, based on the existence of known fundamental forces that manifest as measurable fields exhibiting different characteristics. (See Dimensionometry below).

Postulate of Dimensional Representation is Based on the Fundamental Forces of Nature

Each dimension has a fundamental force which is intimately involved with the variable of extent that allows for the dimension to occur. Bending or warping of space-time continua by the fundamental forces (the controversial "expansion of the universe" vs. gravity, electromagnetic radiation, strong and weak sub-atomic forces) indicates and reveals additional dimensions.
Space-time, or any N-Dimensional reality, is warped by universal forces.
Postulating the idea that each of the fundamental forces of nature creates dimensions beyond 3S helps us to explain and understand the reality we experience, we are justified in doing so: It is feasible, if not directly verifiable or falsifiable but there is no falsified data here. Therefore, LFAF applies. (See Dimensionometry below).

Corollary of Dimensional Warping
The warping of dimensions explains apparent action at a distance in a direct and logical manner. (See Dimensionometry below).

Corollary of Double Warping Distortions
By logical extension, distortions in more than one direction, (e.g., the orthogonal distorting forces of electromagnetic radiation) should give rise to more than one additional dimension. (See Dimensionometry below). If our hypothesis that all the fundamental forces that seem to exhibit action at a distance are actually phenomena that can be explained as effects of the warping of the mass-energy space-time continuum is true, then every directional force, like electrical charge or magnetic flux indicates a separate warping of the continuum. The propagation of radiant energy is generally thought to be caused by the alternating action of electric and magnetic fields. A moving electrical charge creates a magnetic field, and a magnetic field produces a current in a conductive medium, moving at right angles to the direction of the lines of force in the magnetic field. This is illustrated by the simple "right hand rule". If the fingers of the right hand are curled around the conducting medium, say a copper wire, then the flow of current is in the direction of the outstretched thumb, at right angles to the lines of force of the magnetic field. (e.g. there are 81,000 references to this on Google! For basics see: http://www.answers.com/topic/left-hand-rule; or see diagrams http://www.bing.com/images/search?q=electromangetism+right+angles&qpvt=electromangetism+right+angles&FORM=IGREf) In this sense, electrical and magnetic force fields are orthogonal. Thus radiant energy issues forth in straight lines from the source to infinity, but each and every line is orthogonal to the electromagnetic force field that generates it at each point along the line of propagation in the continuum. Here we have a triad of potential and actual motion with the alternating electric and magnetic fields orthogonal to each other at every point, and the motion of the resultant radiant energy orthogonal to both.

Corollary of Euclidean / Non-Euclidean Perceptual Experience
Whether a continuum is perceived as Euclidean or non-Euclidean depends upon the state

of consciousness of the observer with respect to the number of dimensions he or she perceives. This is a corollary to t the Principle of Relative Dimensionality (See Dimensionometry below).

Postulate of Non-Euclidean Spaces or Domains are Conceptual and Not Actual
The perception of a particular region depends upon the dynamic state of the observer.

Postulate of Perceived Different Dimensionalities
In two different dimensionalities or domains, each observer sees his own world as Euclidean and the other's world as non-Euclidean. Both observers are right as "the perception is the reality". (See Dimensionometry below).

Postulate of Worlds with Additional Dimensions
Inhabitants of worlds with additional dimensions would see our perceptions as limited and distorted by the extra dimensions that we call "the fundamental forces of nature". The nature of the conscious perception of reality depends upon the number of dimensions perceived. (See Dimensionometry).
It is a mistake to assume that there is a rigid set-in-stone reality out there, totally independent of the functions of consciousness.

Postulate of C-substrate Warping Additional Dimensions
If we postulate forces impacting the C-substrate as well (e.g., psitrons or kinetrons which are massless, energyless and do not obey in 3S-1t the inverse square law) then such forces could also warp dimensions.

Corollary of Postulate of C-substrate Warping Higher Dimensions
Using the paradigm of the first 3 dimensions being real integer space, the next three being imaginary number time, and the following 3 at least being complex numbers then these may involve distorting by psitrons (globally both afferent or efferent) or impact via kinetrons. (This a speculation in TDVP: Whereas there is no reason why C-substrate should not involve timeless, spaceless packets of force packets/ particles like psitrons or kinetrons or both, it is inessential to our model).

Postulate of Initial Symmetry Then Asymmetry
The initial symmetry of zero space suggests that the expansion was naturally symmetric during the rapid-expansion period of the "big bang". (This is verified empirically by COBE data.) This initial symmetry prevailed through the expansion to one and two dimensions to three dimensions, where interfacing with the Primary non-quantum Receptor Field caused matter, energy, and subsequently, asymmetry, to form. (See the proof of prevalent asymmetry using Fermat's last theorem.) (COBE= Cosmic background explorer).

Postulate of Distinction Singularity
We see the big bang as Primary Consciousness drawing a distinction within its own awareness, expanding from a zero-point dimensional singularity. (Note that "zero" is not the same as "nothing".)

Postulate of the First Distinctions
The beginning of the universe and reality as we know it was not an explosion in nothingness, but the drawing of the first distinction of self from other by an innate, pre-existing intelligence in the 3C-substrate which acted as the Primary Receptor, bringing the first quanta of matter and energy out of the big bang potential into existence in ND reality.

Postulate of Infinite Qualits in 3S-1t
Moving conceptually from zero-S to 1-S, to 2-S and to 3-S, within the STC substrates there are an infinite number of 3S-1t "qualits".

The Principle of Infinite Coexistence
The Principle of Infinite Coexistence refers to the coexistence of the infinite with the finite. It is a corollary to the converse of Gödel's incompleteness theorem where the infinite is necessarily involved in a TOE. Is it logical to postulate that infinity can interact with the finite and dimensions? Superficially, finite N-dimensionality may not imply infinity because N-dimensionality is already dealing with a finite number of N-roles But this thinking is incorrect simply because the infinite is not part of the finite. The infinite is separate from the finite. The essential part of this principle is that the infinite can interface with all dimensions at a finite level. Using the fundamental TDVP axiom, there is no logical reason why some kind of primary consciousness or primary STC cannot interface. Such a Primary Receptor of Consciousness is necessarily outside finite dimensions so infinite. There appears to be no fundamental contradiction between having N-dimensional realities which are finite and infinity because they are two different concepts which may interact in a meaningful sense. The two are logical and appropriate together.

Principle of Different Experience
In processing information and turning it into knowledge and understanding, we deal with the three defined distinction aspects of reality: *perceptual reality, conceptual reality* and *common reality*. Because of the dynamic nature of reality, these are rarely identical.

The Principle of Relative Dimensionality
The experience is referential to the dimension fabric of the experient or that dimension being examined in a thought experiment by extrapolation of dimensions.

Postulate of Perceptual Consciousness and Warping
If an N-Dimensional reality is warped by a fundamental force, the warping will be seen by a conscious entity experiencing an n+1 dimension reality as

warped or non-Euclidean. But a conscious entity whose perception is limited to n dimensions, (as we are to 3S-1t) will not be directly aware of the warping. Because the entity's perception is limited in such a way that he cannot see beyond n dimensions, he will experience his reality as Euclidean. Thus perceptual and conceptual reality are relative. A conscious being's experience is a creation of the perceptual and conceptual images in consciousness (See Dimensionometry below).

CHAPTER 37: *MAJOR MATHEMATICAL AND LOGICAL ADAPTATIONS.*

What I assert and believe to have demonstrated in this and earlier works is that following the finite there is a transfinite (which one could also call the supra-finite), that is an unbounded ascending ladder of definite modes, which by their nature are not finite but infinite, but which just like the finite can be determined by well-defined and distinguishable numbers.

Georg Cantor

Mathematicological Models used in TDVP Include or Amplify

- *Pythagorean theorem* used in demonstrating that three dimensional space being the maximum dimensional spatial metric.
- *Fermat's last theorem with 3-d or greater space* [236, 237] [2]used in reflecting asymmetry, and also demonstrating 3-d vortical realities.
- *Doctorow's Rare Event Theory* **[238]** demonstrating the rarity of apprehending or influencing information from the C-substrate to S and T substrates
- *Einsteinian general relativity* **[16]** demonstrating warped curvature of space time and extending beyond orthogonality and an extra time dimension.
- *Minkowski space [17] utilizing square root of minus one* in time dimensions (imaginary numbers) with complex numbers being used in the C-domain.
- *Theorem of dimensional extrapolation* **(moving to higher dimensions) and** *lemma of dimensional incompleteness* **(moving to lower dimensions).**
- *Gödel's incompleteness theorem in finite closed reality* [85, 86] extended to the requirements of an infinite reality for TOE to exist.
- *Cantor's set theory* [231]applied to similarities and one to one correspondences
- *Close's calculus of distinctions [7] with dimensions of extent, content and intent applied to STC,* dissimilarities and across dimensions.
- *Spencer Brown's laws of form* **[102]** from which Close's calculus of dimensions was adapted.
- *Cantor's infinite of the infinite* [96]; also Hilbert space [128] applied to infinity
- *Euclidean applications in 3-D space or below***; non-Euclidean and Gaussian mathematics in >3-D.**

- *Extension of Popperian falsifiability* [14] to include feasibility in the absence of falsification (LFAF) in science.
- *Alfred Evert's mathematical model of vortices.* [239]
- *Penrose's spinors* **[240]**
- *Riemann in his N-Dimensional manifolds* [241] and later Hilbert [128] tried to relate generalized subsets; amplified to include mathematical separation of space and time.
- *Euclidean Newtonian perspectives* delineated with the *non-Euclidean dimensionometries.*
- *Gauss and Riemann's* multidimensional manifold onto a **Euclidean** area from **non-Euclidean** perspectives.
- *Bell's inequality theorem* applied to the theories and empiricism [60, 61] of Young, Aspect [61], Wheeler [63] plus the EPR and Copenhagen interpretation [120] with Bohr debate in the consciousness context [121].
- *Real numbers (space), imaginary numbers and quaternions* [215, 242] **(time) and complex numbers (C-substrate)** applied to dimensionality.
- *Major Physicist Mathematical Applications***:** We apply the mathematical concepts derived from physicist models including Einstein (numerous) [16, 58, 63, 121, 191, 243, 244], Planck quanta [97], volume and fundamental equations, Schrödinger probabilistic wave equation [147], Heisenberg uncertainty [130]

SECTION H: THE THEORY OF EVERYTHING

CHAPTER 38: *PHILOSOPHICAL BASIS OF TDVP*

I want to know God's thoughts; the rest are details.
Albert Einstein

Monism and Dualism: A Short Perspective
Philosophy of mind is a branch of modern analytic philosophy. It studies as a central issue the mind-body problem—the relationship of the mind to the body, the nature of the mind, mental events, functions and properties, consciousness and its relationships to the physical body, including the brain.

Dualism and monism are the two major schools of thought that attempt to resolve the mind-body problem. Philosophically, Monism argues that there is unity in a given field of inquiry: For example, the universe is really just one thing, despite its apparent diverse variability. Monism argues that mind and body are not ontologically distinct entities. Dualism denotes a state of two parts, and is now used to imply some kind of existence of both mind and matter.

Both have ancient derivations. Monistic Western philosophy began 2500 years ago (Parmenides) and was later modified by the 17th century rationalist Baruch Spinoza. Dualism has ancient proponents in Plato, Aristotle and Hindu philosophy. René Descartes in the 17th century formulated an attempt at trying to find the link of mind and brain.

Continued scientific progress in physics, consciousness and neurobiology has partly clarified but not resolved some of these issues because contradictions have arisen (as discussed). This has led to continued arguments about how subjectivity, objectivity, meaning, reductionism, intentionality and neurological and psychological states and properties can be explained while applying the laws of nature. Many scientists and philosophers have apparently swept any contradictions under the carpet because the contradictions imply unthinking what they have thought and accepted before.

Monism in philosophy can be defined according to three traditional kinds:
1. Idealism, phenomenalism, or mentalistic monism holds that only mind is real. Physical reality as we experience it does not exist. Idealists, therefore, maintain that the mind is all that exists and that the external world is either mental itself, or an illusion created by the mind. Bishop Berkeley [245] developed one classical kind of Monistic Idealism. A variant is panpsychism, which view all matter as a having a mental aspect, or all objects having a unified center of experience.

2. Neutral monism argues that both the mental and the physical can be reduced to some sort of third substance, thing or energy. Neutral monists adhere to the position that there is some other, neutral substance, and that both matter and mind are properties of this unknown substance. They are two sides of the same coin.
3. Physicalism or materialism, is the overriding current scientific paradigm maintaining that only the physical is real, and that the mental or spiritual can be reduced through the physical. Materialistic monism (also called monistic materialism) conceives of the global unity of matter with "one" comprehensive cosmos and the parts produce all origins and resultant reality effects. Physicalists argue that only postulated by physical theory entities exist, and the mind will eventually be explained and reduced within these entities. Variations of physicalism include behaviorism, type identity theory, anomalous monism and functionalism.

These reductive physicalists, therefore, argue that all mental states and properties will eventually be explained by physiology. The most extreme are the eliminativists (such as Dennett [246] who maintain that certain classes of mental states do not exist e.g. some argue that there is no coherent neural base for many everyday, poorly defined psychological concepts like belief and desire, since they are. Behavior and experience should be judged by biological reductions and even pain and visual perceptions may not exist. This viewpoint is extreme and we believe irrational itself.

A more logical neurophysiological perspective is functionalist monism: the mind reflects the behavior of the brain [247, 248]. The most prominent example is the identity theory, which says that mental states are brain states. A variant is functionalism, in which states that a mental state can be whatever provides mental functionality, and this is irrespective of anatomy.

Non-reductive physicalists are separate groups who argue that although the brain is all there is to the mind, the predicates and vocabulary used in mental descriptions and explanations are indispensable, and cannot be reduced to the language and lower-level explanations of physical science.

There are many alternatives, for example, the perception of consciousness or mind as an emergent component of the physicalism. One recent attempt has been Peter Strawson's emergent physical process or Realistic Monism [249]. This is a metaphysical model because the structural features of our thought about the world, and thus about reality are defined. This has linguistic elements too as the various concepts that form an interconnected web, represent a portion our common, shared, human conceptual scheme. Conceptions of basic particulars are variously brought under general spatio-temporal concepts.

But the questions remain unanswered. For example, if consciousness is an epiphenomenon of matter, is there an evolutionary function for consciousness and is there

a meaning to life? What pertinence is there to the experience of our acts in consciousness, and is our world view purely deterministic?

Most modern philosophers of mind have adopted either materialism or neutral monism applying either a reductive or non-reductive physicalist approach. They maintain that the mind is not something separate from the body and these approaches have impacted sociobiology, computer science, evolution and neuroscience.

There is possibly a fourth kind of monism which may in part fit into the "idealism" area, namely Theological Monism.
Theological monism could support the one God view and have many manifestations in different religions but usually implying terms like unitary, eternal, unchanging, infinite, ineffable, immanent, transcendent, omnipotent, omniscient, omnipresent, omnificent, omnibenevolent, incorporeal, emanating divine reality responsible for all matter, energy, time, space, awareness and essence in this Universe. Stoics taught that there is only one substance, identified as God. One variant is *pantheism*. This monistic view describes only one Being: all ostensible aspects of reality are appearances, modes or identical with that one being. A related term is *panentheism* implying God is in all things, neither identical to, nor totally separate from all things. [250] This might imply that God is in ourselves and personal, yet allowing creation: In a way, there is a parallel with God being tethered to all through STC, but us having a separate existence too and hence free will. If one speculates that meaning involves some kind of "guiding" infinite element, and we could argue that panentheism is part of the whole tethered ATO.
Other variants exist for example some Chassidic thought argues that God is an absolute unity, constantly present with sustaining power and essence within nature, but even within Judaism such views are criticized as pantheistic. Some Jewish thought then considers God as transcending all physical, created things and as existing outside of time (eternal). Maimonides in his Guide to the Perplexed saw God as the First Cause [251].
We point this out because our TDVP concepts motivate these points: First Cause for Close's concept of Primary Receptor [7] and this infinite component transcends the finite N-Dimensions of STC substrates, and the variant of panentheism from the ATO.

We will introduce below in the TDVP philosophical basis a new kind of monism: *Unified Monism.*

Dualists adopt a non-physicalist position. This challenges the notion that the mind is a purely physical construct. There are two main kinds of dualists:

1. Substance Dualists who argue that the mind is an independently existing substance
2. Property Dualists argue that the mind is not a distinct substance. The mind constitutes a group of independent properties that emerge from but cannot be reduced to the brain.

Most consciousness researchers regard themselves as dualists because they argue there is a mind or consciousness and given their physical experience and the contradictions they have noted they cannot resolve such thought by monism. We believe we can.

Unified monism as part of the TDVP model: The Philosophical basis of TDVP
A common attitude is that if there is such a "thing" as mind which is separated from brain or body or physical substance, then this would imply the philosophical model of dualism per se. The most classical kind of dualism is René Descartes's Dualism (so-called Cartesian Dualism). In fact, the perception of existence under a single mode (monism) is sometimes understood to contradict findings such as mind being separated from body.

The most common philosophy of monism is "*materialism or physicalistic monism" and the far less common* kind of monism that argues there is nothing material and everything is in our minds, even our individual minds reflected in *"idealism monism"* e.g. as propounded by Bishop Berkeley [251] appear to contradict the idea of any separation of mind and body.

Then come ideas close to our own where there is the recognitions of mass, energy and consciousness as with a modified Spinoza philosophy where everything that exists is part of the creator [252] There is a triadic perspective recorded in mystical tradition, but our unified monism has important differences from, for example, Spinoza or Sefer Yitzirah or Vedic Mysticism. It is also quite different from any postulate that mind is a completely separate entity. Descartes felt the mind was linked through the pineal gland of the brain.

Our TDVP model provides another optional alternative explanation. TDVP does not imply any kind of separation of mind from body or brain. It does however recognize that some aspect of space-time event or identity in 3S-1t earthly domain may =0 but not necessarily be so in another "set of dimensions" (which we call "domains"). This is one example of when we use the term "relative zero".

In fact, TDVP is effectively *unified monism* where space, time and consciousness are *tethered* together. By *tethering*, they're always linked but can also exist with their own dimensional properties via a content-process we call "vortical indivension". We do not need to invoke an area of "interaction" such as the pineal. And the temporal lobe, for example, may be an area of neurological integration including metaconscious and possibly quantum conscious information with neurological consciousness but this just allows such awareness and responsiveness to be available to the living organism and brain.

It is amazing that both Neppe and Close quite independently developed the same philosophical concept, effectively referring to Unified Monism, even though it did not exist and we are only now defining this new philosophical model!

In its earliest iteration, long preceding TDVP, from two decades ago, Neppe (1996; starting formally from 1989 and informally earlier than that) had called his model *Vortex Pluralis*m because of its N-Dimensionality[199,225].However, in the early 21st century, he realized that his N-Dimensional model was clearly monistic because when applying infinity, the model transforms from a closed finite N dimensionalism plural components to an open, both finite and infinite, N-Dimensional unifying monism[6]. At that point, this N-Dimensional vortical model allowed a unification of science with empirical data, philosophy and mysticism. To this earlier model, we have now added tethering from the onset and clarified the role of consciousness. We also integrated mathematics (e.g. Close's mathematical Pythagorean, Fermat, Extrapolation and Distinction additions, and Neppe's Gödel modification and Incompleteness ideas). This philosophical position can at this time truly be described as a "Unified Monism".

The philosophical basis of Close's development of Transcendental Physics[2] is also monistic because it is based on the single a priori assumption of infinite continuity which posits that all things, including consciousness, are connected. This means reality is unitary, exemplified by when consciousness is actually included in the basic equations of science, meaning arises. Moreover, philosophically the ultimate purpose of existence is the realization of the unity of everything in Primary Consciousness[2]. This philosophical position can also be described as Unified Monism.

Dimensionally, unified monism could be interpreted as inspired by Spinoza, Sefer Yitzirah and Vedic mysticism or related to Lanza, because it has some links with all. In reality, we developed this independently and only recognized the similarities with these philosophies secondarily. We perceive consciousness as far more than an inherent part of matter and energy, for more than an extension of wave and particle dualism, turning reality into a trialism including consciousness.
Our TDVP model has created such a reformulation right there. We use, as indicated, space-time-C-substrate as a fundamental triadic building base using "consciousness" below in its broadest C-substrate sense.
Our conclusion summarizes this view: *"The views …reflect a paradigm shift. Henceforth space by itself and time by itself and consciousness by itself are doomed to fade away into mere shadows, and only a kind of <u>tethered</u> union of the three from the very beginning will preserve an independent identity."*

Unified monism implies the direct ongoing link of awareness and matter, applying the indivension process, the fluctuating dimensional vortical content, the dimensional interval and ordinal metrics, extending Einsteinian principles, interfacing scalars, vectors and tensors and recognizing the brain, metaconsciousness and meaningful realities. Unified monism can be applied to any kind of consciousness and reality.

Unified monism does not mean that consciousness is separated from matter as this implies

a form of dualism: The tethering of space-time and C-substrate does not imply mind and body are separated: The separation is a conceptual not actual distinction: The level is conceptually much earlier than mind versus brain or body. As a clarification, through the drawing of distinctions, first the distinction of self from other, and then through the drawing of distinctions in other, timelines of experienced events are created in N-Dimensional reality. This consciousness-based approach is facilitated by the introduction of a pre-arithmetic mathematical procedure for describing the reality we experience in terms of distinctions. [101]

This change in perspective to a *unifying monism* is particularly because space-time and the broadest consciousness (which we carefully define as C-substrate) were seen as *tethered* together.
This may be the key idea separating it from possibly all other previously proposed philosophical models. TDVP allows us to logically explore not only empirical data but apply mathematical principles and theorems, it does not contradict mysticism thousands of years old, and it is amazing how 500+ ideas naturally flow from this presumption.

Clarifying Monism and Dualism in Its Modern Context
Using the term “unified monism” needs another clarification. In current philosophical discussions, the term "monism" is rarely used. The two terms most used are "materialism" and "dualism", the latter often being used to mean "not materialism". The term "monism" is used in two very different ways: it can mean (i) there is only one *kind of* thing or it can mean (ii) there is only one thing. A materialist usually believes (i) together with the belief that there are many individuals of that kind; an idealist like Berkeley believes (i) together with the assumption that many such individual minds exist. These individuals are "atomistic monists".
In contrast is the mystical view (e.g. Spinoza): There is only one individual, God or Substance, and everything else, lives and moves and has its being in God. But, Spinoza rejects a God that manifests Himself as the Attributes, of which mind and matter (extension) are the only two that we humans are acquainted with. Thus Spinoza is not a monist in the sense of (i) above, since his system posits infinitely many dimensions to God's being, each dimension constituting a distinct "kind".
In the mind-body debate, the more important distinction today may be to differentiate atomism or atomic monists, where causation goes bottom-up, and holism (or holism), where causation flows top-down. Our Unified Monism clearly has the Holism element, and we use a top-down approach.
By tethering, S-, T- and C-substrate are always linked. However, they can also exist with their own dimensional properties but they always have a relative source/ other connectivity.
But unlike most monism, this is anything but a reductionism to the physical, or an epiphenomenalism of consciousness expressed by the physical, or an idealism of consciousness without physicalism, it is a true unified monism.

CHAPTER 39: *THE PHILOSOPHICAL PERSPECTIVE OF MEANING AND CONSCIOUSNESS*

General philosophy is a conceptual study, for which method is all-important.
Kurt Gödel [148]

Primary Consciousness

In TDVP, we *speculate* on the role of the Primary Receptor (also called Primary Consciousness). We have posited a period encompassing the Origin Event, possibly applying time as experienced in 3S-1t a moment before the event horizon of the Big Bang, and *speculated* that a kind of consciousness was available prior to space and time and mass and energy. This began immediately before what we're calling the Origin Event of the big bang. However, this Primary Receptor / Primary Consciousness is a philosophical idea linked with the infinite. Nevertheless, this Primary Consciousness at the Origin Event is somewhat equivalent to what others have loosely called "God" but without any theological attributions.

Philosophically, too, we illustrate below how to resolve the ostensible dilemma of the model of "unified monism" that TDVP implies if there were a primary consciousness, and we want to ensure that TDVP's philosophical perspective in its Axiom of Origin is not unexplainable using the various arguments for a higher being.

We therefore examine below the three main existing models for the existence of "God" based on origins of our universe or its continued development.

Cosmological Argument

The so-called The Cosmological Argument. Or *cosmological interpretation of theology*, postulates that God precedes all, and is the maker.

This is also called "First Cause", and argues that because the cosmos exists, it must have come from somewhere. The cosmological argument argues for the existence of a first cause, or an uncaused cause to the universe, and is often used as an argument for an unconditioned or supreme being. usually then identified as God. It is known as the argument from universal causation, or the argument from first cause, or the causal argument, or the argument for existence.

The cosmological argument recognizes infinity in that every finite and contingent being has a cause and a causal loop cannot exist. The causal chain cannot be of infinite length, therefore, some kind of primary consciousness or first cause must exist. The universe requires an explanation, and God is that explanation.

The Big Bang theory is sometimes called the Kalam Cosmological Argument. Whatever begins to exist has a cause and the universe began to exist and therefore the universe had a cause. It is an argument from contingency.
The cosmological argument implying God is not a scientifically proven cause, and does not necessarily imply religious monotheism and scientific analysis.

There are 3 basic variants to this Cosmological Arguments, all with subtle important distinctions.

in causa, the causality argument:

*in esse***,** the inessentiality argument*:* The essence argument, is like lighting a candle or liquid in a vessel. Not only does a candle produce light in a room in the first instance, but it's continued presence is necessary to continue the illumination. If the light ceases, the candle then would cease. This fundamentally argues for a continued presence of a God (the Maimonides and also Aquinas's theism) as opposed to God existing initially but having no role with ordinary people (Aristotle's deism)

in fieri, the becoming argument:

The critiques of the cosmological argument
David Hume and Paul Edwards have critiqued the cosmological argument. Their argument is the so-called Hume-Edwards principle. [253] Essentially, the notion of an infinite causal regress may be felicitous, and David Hume and later Paul Edwards have criticized the cosmological argument as who made God, and who made the thing that made God, and an infinite regress until we get to God made itself, If there are other universes the same problem applies—who made those aliens who occupied the earth? This cosmological interpretation is always an infinite regress.

Interestingly, quantum mechanics undercuts this argument because the infinite regress becomes finite, stopping with the first quanta impacting the primary receptor, which does not have a beginning in space-time. This concept of a necessary primary receptor based on the fundamental concept of quantum mechanics was developed by Close in Transcendental Physics, Chapter2: "The Final Receptor". [7]

Teleological Argument
A second "God argument" is the *Teleological Interpretation* postulated by St Thomas Aquinas. This explains functionality and causality of events over time. For example, it is posited that for evolution to have occurred and for our existence and life to have continued, one needs a meaningful interpretation. This is discussed in some detail, in the remarkable writings of Gerald Schroeder. [254-256] The problem here is the Bayesian interpretation of what is the statistical probability. This is illustrated by arguments on the "anthropic principle" [257] of, if we humans are one of the only groups in the whole universe that survived (are living), we might perceive that absolute rarity as statistically impossible, but meanwhile we don't know how statistical impossible it really is because we cannot

define a zero or null hypothesis statistic. This argument "from design" has been supported by Isaac Newton who argued that the entire cosmos was supported by the same universal laws and latterly by Robert Lanza who points out how precise and remarkable the universal constants are. However, the teleological argument cannot easily be justified universally because it would be based on Bayesian statistics and it depends on how one estimates probability of our existence coming about in a vast cosmos. There we rely extensively on Dr. Bernard Carr[257] whose detailed and definitive analysis shows how difficult it is to appreciate whether or not key areas such as the fundamental constants and the pyramidal complexities all came about by chance and we relook at the tiny variants that would have not only not allow life, but not allow existence on earth. The teleological model is one example of the feasibility model. This area is important and complex and a section immediately below has been devoted to The strong anthropic principle, the fundamental constants, extropy and TDVP. Essentially, we find that TDVP allows significant insights and is valid either way.

Ontological Argument

There is a third interpretation of creation namely the *Ontological Interpretation* of theology.

The ontological interpretation of God is exemplified from St Anselm of Canterbury in the 11th century in his Proslogion and later Aquinas who modified that version. Anselm argues that God has to be the greatest thing ever conceived. Therefore, there can be no greater aspect that can be perceived because it would be absurd that there would be anything greater than the greatest thing that was conceived as this could go on ad infinitum if there was something greater. in the 17th Century, Renee Descartes also used similar arguments. (E.g. 5th meditation) His proof demonstrates the existence of God from the idea of a supremely perfect being, arguing that if there is such a supremely perfect being that lacks existence, then there would be a triangle interiorly whose sum did not add up to 180 degrees. (Ironically, in non-Euclidean physics, this exactly is what happens). But if we conceive such a supremely perfect being then we must conclude that such a being exists. Aquinas's version proceeds from the meaning of the word "God," by definition, God is a being a greater than which cannot be conceived. Descartes' argument is grounded in two central tenets of his philosophy — the theory of innate ideas and the doctrine of clear and distinct perception.

Essentially, the critique is that this is not analyzable and therefore impossible to demonstrate perfections that may turn out to be incompatible. Moreover, to Immanuel Kant, the linguistic attribution of what "is" is relevant. In any event, this ontological interpretation is irrelevant to TDVP because the Primary Consciousness is not postulated to have any "omni" elements including Anselm's omnipotence.

If S, T, and C-substrate is existing, has existed, and will exist, and this is all outside time (t), it implies infinity, and it implies a thing that may or may not exist that is outside that box. The Spinoza perception of this quality, this thing being in all beings has been

interpreted as God and Pantheistic, but it also is not far from the fundamental existence of a consciousness within all things. And as all those things in 3S-1t certainly have space and time, there is the STC component there. Ironically, this is also so in Kabbalic Mysticism, which therefore implies consciousness-like qualities in all things. Our C-substrate goes beyond the animate to the inanimate, and also includes subatomic particles.

A New Explanation: Our Proposed Infinity Model of the Axiom of Origin.

Even if the existence of every member of a set is explained, the explanation is necessarily outside the set and the existence of that total set is not necessarily explained because it is argued that the whole chain needs to have a cause. In our TDVP model, applying the infinity of infinities of Cantor, there is no mathematical logical reason for not having an infinity of infinities. It does not matter in TDVP if one is talking about Big Bang or infinite universe theory or continuous creation of some kind of steady state theory.

Philosophically, we can best resolve the dilemma of "unified monism" that TDVP implies by arguing that the Primary Consciousness that is supported by the Calculus of Distinctions examining Consciousness itself and recognizing a pre-mathematical logical differentiation between what exists and others, can most easily be explained by arguing metadimensionally. This means that Primary Consciousness, may also be associated with Space-time extent and Mass-energy content. However, that Space-time in 3S-1t may equal zero, though not necessarily in other dimensions. This still does not resolve the philosophical arguments or explain cosmological origins, essences and becoming, but it does not require any further axioms to be invoked.
This infinity is different from the Infinite Regress of the ontological argument. This infinity is based on Dimensionometrics not on infinities in 3S—1t. The infinity that is proposed here is not a regressive infinity and given its major role just before the event horizon of the Big Bang or equivalent (even a continuity), space can equal zero and time can equal zero within those finite realities, which in any event based on an extension of our axiom of origin, all existed at the same time anyway when we view it from our linear time reality.

Importantly, primary consciousness with or without space and time being relative zero in 3S-1t earthly domain does not imply God as commonly conceived.

The TDVP Position
In TDVP, the postulate of a primary consciousness as the primary receptor alone is purely speculative, even though quantum mechanics requires a primary receptor. It is not necessary to the fundamental axiom because the fundamental axiom states that "space, time, and C-substrate are fundamentally tethered from its origin":. Therefore, if C-substrate occurs even a moment beforehand this could add in a further axiomatic requirement.

We cannot completely justify the logic of the ontological argument because we do not speculate philosophically about the powers or attributes of Primary Consciousness, other than the fact that it fills the role of primary receptor, and the infinite regress argument of a cosmology is also bothersome unless we evoke infinity and dimensions outside 3S-1t in which case it becomes relative only to that sentient being experiencing it, and equivalent to the observer outside the box looking in from above. STC (space, time, and C-substrates) tethering ab initio still requires an explanation of origin in 3S-1t. In 3S-3T, however, there is no such requirement since all events co-exist there, and thus there are no beginnings or endings, only change.

The cosmological argument challenges the nature of time, but time disappears in the Wheeler-DeWitt equation[258]. TDVP proposes more than one time dimension and relative timelessness in the 3s-3T in contrast with the Standard Earthly Domain of 3S-1t.

In the Big Bang theory all dimensions came into existence as the start of both space and time, so that it would be logical therefore in STC to have S, T, and C coming into existence at that point. If the Big Bang theory is correct, the expansion of the universe, at least initially is a logical consequence. In our model, all time (t) in past, present and future, all exists at one moment of 3T time. There is always the problem of what occurred before the Big Bang, including the scenario of the collision of so-called membranes to give the cause for the Big Bang: Where, e.g. did the membranes come from?

An alternative to the Big Bang.is infinite universe theory or continuous creation theory in its modern form was developed in 1948 by Hoyle and his colleagues. This theory, if true, does not affect TDVP's basic axiom of STC tethering.

Nevertheless, the important component is that Primary Consciousness in this model is derived directly from Close's Transcendental Physics only. In Vortex N-Dimensionalism, Neppe does not raise up the issue of any kind of primary consciousness. Close's primary consciousness is not given attributes and qualities that are necessarily defined. This primary consciousness is not necessarily omnipotent, omniscient, omnipresent. The primary consciousness certainly is not given attributes such as good, omnibenevolent, etc, because it is not necessary to assign attributes to primary consciousness in order to develop a logically consistent model.

We see no contradiction in having the whole unified monism model, S, T, and C existing before, during and after the big bang. This is so because T is timeless in the context of our 3S-1t standard domain.

The assumption taken by most philosophers, however, is that something produced the STC substrate, which would imply a certain omnificence. This postulate is an unnecessary

speculation in NDVP. Even if we revert back to the source STC-Substrate as from its origin, and ask: What produced the STC-Substrate? There is always the cosmological component of production, but the attribution of an omnipotent God is unnecessary. We could say that we don't know because I know only that I exist, as Descartes famously perceives it. But beyond that, the circularity of origins remains cosmologically, teleologically and ontologically as long as we are limited to 3S-1t. However, this is not circular using the infinite NDVP model that we are proposing and is quite justified.

TDVP and These Models

Essentially, the temporal origin of the cosmos is a mystery, and likely not scientifically soluble even with LFAF. It becomes merely philosophical. But none of these models contradict or falsify TDVP's basic TTOOURS metaparadigm (Metaparadigm of Triadic Tethered Ordered Origin Unified Relative Subjectivity.)

or the necessity of a primary non-quantum receptor Moreover, there is significant *feasibility* support for TDVP in the context of the origins of everything:

The ontological argument is irrelevant to TDVP because it implies special characters for a supreme being,

the feasibility- teleological anthropic model strongly supports TDVP in most variants and in the absence of an anthropic explanation, TDVP is not refuted by it.

The cosmological origins do not require invoking a deity per se, though supporting a Primary Consciousness which may be initially independent of Space-Time (effectively S=0 and T=O in 3S-1t) or involve the initial tethering of STC.

And our proposed infinity model is part of TDVP and allows even other options for the origin of the Universe or Cosmos but does not refute TDVP's axiom of tethered origin. Applying LFAF, and the Copenhagen interpretation of quantum mechanics, there is significant overall feasibility and no falsification.

As further clarification, one key TDVP axiom, that of "original tethering" allows also for all of the dimensions of the N-Dimensionality to have originated at the Origin Event. And because of this, anything prior to the Origin Event would be speculative indefinitely and require evoking infinity. The essential contradiction others encounter is applying 3S-1t specifically.

Assuming a linear one way time, which is not the case in TDVP, leads to necessary contradictions. But we strongly and critically motivate for multiple dimensions of time in TDVP. Once that principle is grasped, many questions become irrelevant. Essentially, we explain this all based on relative aspatial, and relative atemporal reality in the equivalent of our experiential 4 dimensional 3S-1t reality. The concept of infinity becomes extremely important here. It means conceiving beyond dimensions, outside that box to the infinite, and it can be an infinity of infinities. The concept is again a unification, a merging of the finite with the finite, and a monism in its truest terms. Hence "unified monism" is justified.

We now discuss possibly the most cogent of the *scientific* debates in the area.

The Strong Anthropic Principle, the Fundamental Constants, Extropy and TDVP

A TOE should be able to explain physical concepts such as the fundamental constants relating to the forces of physics. Does TDVP support the presence of these fundamental constants? We believe that it does, and it does so irrespective of whether the strong anthropic principle is invoked, although its invocation is more direct support for C-substrate, and in some explanations, metadimensionality, time multidimensionality and extropy.

Although the term "anthropic" derives from the Greek word for "man" [259], most of the arguments pertain to life more broadly in general (the "life principle") [257]. The simplest version is the so-called "weak anthropic principle" which is no more than a logical necessity[260]. This accepts the constants of nature as given and then shows that our existence imposes a selection effect on when (and where) we observe the Universe.

But the discussion is far more complex than that. In order for life to exist, there must be carbon and this is produced by cooking inside stars. The process takes about 10^{10} years, then supernovae, scattering the newly-baked elements throughout space, where they may eventually become part of life-evolving planets [261]**.** Since all the forms of life we can envisage require stars, this suggests that life can only exist when the Universe is aged about ten billion years. Paradoxically, the very hugeness of the Universe, which cursorily may reflect insignificance, appears to be a prerequisite to human existence.

The question arises about how to explain this life. The "Strong Anthropic Principle" points out the remarkable constants that exist and the necessary relationships between the coupling of these constants. These constants are dimensionless numbers which characterize the strengths of the four forces and other physical quantities which are necessary in order for observers to arise. Some of these relationships are remarkably "fine-tuned" and do not seem to be predicted by standard physics [257]**.** The first set of fine-tunings involve the four dimensionless coupling constants. These were taken to be $\alpha_S \sim 10$ for the strong force. $\alpha \sim 10^{-2}$ for electromagnetism, $\alpha_W \sim 10^{-10}$ for the weak force and $\alpha_G \sim 10^{-40}$ for gravity.

The data is there but the *why of their occurrence* is problematic. Carr (2007) discusses this area in possibly the most detail ever. He illustrates with particularly striking anthropic examples which include:

1. How tunings associated with the existence of stars with convective and radiative envelopes reflect a most striking coincidence because of the high power of α involved. The ultimate relationship $\alpha_G \sim 10^{20}$ is satisfied numerically but physics does not explain why this relationship should pertain.
2. Carbon is a prerequisite for our form of life. A famous anthropic tuning illustrates how

the generation of carbon in the helium-burning phase of red giant stars via the triple-alpha reaction occurs: two alpha particles first combine to form beryllium and this then combines with a third alpha particle to form
carbon. However, the beryllium would decay before interacting with another alpha particle were it not for the existence of a remarkably finely-tuned resonance in this interaction) [262]. Hoyle's paper prompted nuclear physicists to look for the resonance and they then found it as predicted anthropically!
3. The variations in oxygen and carbon production in red giant stars varies with the strength and range of the nucleon interactions. But the nuclear interaction strength must be tuned very precisely to at least 0.5% if one is to account for this [263].
4. Carr[257] points out the crucial role of eleven fine-tunings in the evolution of the Universe involving the various key steps in the history of the Big Bang. He indicates the remarkable various anthropic fine tunings
associated with each of them.

The key question therefore is why does this occur? Does this imply something beyond pure physical coincidence?

1. Teleologically, this could reflect the existence of a higher being influence who tailor-made the Universe for our benefit[257]: The theological application of the term "strong anthropic principle", would the imply that the Universe was created by a God (or Primary Receptor as in *speculative TDVP*; or Supreme Being) with the purpose of creating life. But teleology is only one of four explanations.

2. Wheeler [264] proposed that the Universe does not properly exist *until consciousness has arisen*: This Universe is described by a quantum mechanical wave-function, and impact on a receptor is required to collapse this wave-function. If consciousness collapses the wave function, once the Universe has evolved consciousness, the Big Bang could originate bringing the world into existence. [62, 63] But we do not know if consciousness really does collapse the wave function—according to Wheeler, this is far from certain.

In TDVP, C-substrate exists at the quantum level from the beginning. This means that collapsing of wave functions may not be pertinent to the veridicality of our model but the Wheeler explanation could provide an adequate mechanism for TDVP's (Axiom) of STC being tethered from the origin.
3. The third possibility invokes very many multiverses, all with different (possibly random) coupling constants. Some of these multiverses could be physical and Rees [265] points out these constants would have to be contingent on accidental features of symmetry-breaking and the initial conditions of *our* universe and would occupy a specific point in some multi-dimensional space of coupling constants to be anthropic. Alternatively later astrophysicists may determine each universe has a unique constant: In that context, there would be no room for the Anthropic Principle as any fine-tunings could be regarded as

coincidental or "worlds" could have different physical laws or different mathematical foundations where only some of these can permit anthropic relationships[266]. However, Smolin [267]speculates that it's far more likely that each universe should have properties like our own—our universe would be typical. This may imply support for the strong anthropic model. *If so, the explanations relating to TDVP apply in the Multiverse context.*

4. Carter [268] has argued that earth may be the only site of human life within our cosmological horizon may be because of the remarkable coincidence that the time for life to arise on Earth seems to have been comparable to the cosmological time. In our opinion, *this does not require any strong anthropic principle, but would imply that there is no other life anywhere else in the universe or multiverse and it introduces debates about other life in other worlds. If we are the only world in all universes or multiverses, then there is no need to find any contradiction of the fundamental constants and TDVP, though the postulate of C-substrate, although not refuted, would not be necessary.*

5. Some higher-dimensional theories expect the (so-called) constants vary in time even in our Universe as constants should be related to the variable size of the dimensions and this would be expected to change during at least part of the Universe's history and be dependent on the compaction of such dimensions. Provided this is a, This model therefore postulates varying size contexts in a relative number of dimensions.
In TDVP we postulate warping of S, T and C substrates to achieve dimensional extrapolation. This does not specifically address size and compaction, and we have not complicated our TDVP model by introducing folding as necessary (as it is in many kinds of String Theory). On the other hand, folding is not exclusionary and this would allow easy vector/ tensor movement across dimensions via indivension. Moreover, TDVP recognizes multidimensional time which means that there would be variable constants relative to the specific dimensions of time.

Therefore the fundamental constants are well explained by TDVP because metadimensionality, multidimensional time and quantum consciousness all support its existence. But the fact that these are invoked supports the strong anthropic principle as experienced in our 3S-1t domain.

Extropy, Expanding Universe and the Big Bang

We now examine Extropy in the context of the Big Bang in the light of this anthropic perspective, specific constants and priorities of a possible pervasive consciousness as this is particularly relevant to TDVP.

Carr [257] points out how the Big Bang theory explains Reeves so-called "Pyramid of Complexity", introduced by Reeves[269]. This pyramid ranges at its larger base and very early on from Quarks alone, all the way eventually through to complex life at its top in

much narrower and later time. These structures arise because processes cannot occur fast enough in an expanding Universe to maintain equilibrium. If they could then each force would always form its most stable objects (e.g. the stability would turn all nuclei into iron (applying the strong force), all atoms would be noble gases (applying the electrical force), and all matter would turn into black holes (via gravity). All variety would be lost and there would be no life. However, the disequilibrium entailed by the *rapid expansion of the Universe* prevents this. *In TDVP, the support for the expanding universe and the fundamental asymmetry that is mathematically demonstrated is pertinent.*

However, Carr (2007) argues that Reeves Pyramid of Complexity can only arise in a small subset of all the universes. The structures at the pyramid bottom (e.g. quarks, atoms) are stable and need large amounts of energy to destroy them, but those at the top (levels of life complexity) are more fragile. Carr suggests the term "complexity principle" is better than "anthropic principle" and recognizes they must be constantly maintained by exchanging energy with the outside world. These life structures must extract *information* from the world. Because the second law of thermodynamics requires that this process is inevitably accompanied by the release of entropy, the higher organization must be explained. We have called this *higher organization extropy* in TDVP. Carr points out that information extraction may allow such continued existence near that peak of the pyramid (in life forms), particularly as there is life competitiveness as a living population grows: Survival produces evolutionary mutations ultimately leading to the complex central nervous systems of humans and this further allows for greater efficiency in survival. [265, 270].

This concept of complexity is relevant in TDVP as the C-substrate allows for this: such consciousness implies acquisition of information and in *TDVP,* we could argue that the increased complexity in evolution may inevitably and rapidly lead to brain consciousness and the information needed may be possibly from the metaconsciousness level of a so-called mind. Ultimately that complexity links with life from its origin. This would be an example of the unification of the C-substrate: Quantum consciousness, neurological consciousness, metaconsciousness and life. Moreover, it still may be difficult despite the vehement argument against anything but a natural unguiding evolution to explain evolution as purely chance phenomena. Schroeder [254-256], Penrose [271], Collins [272], Lanza [273]and Laszlo [274] all recognize the difficulty with the purest evolution hypothesis.

As an aside, various terms have been loosely use in different scientific and theological endeavors. They are difficult to define, and carry specific meanings for different individuals. What is thought", "mind", "intellect", "subtle matter", "subtle energy", "soul", "intuition" or "spirit". "Consciousness" has therefore been defined carefully. Even more controversial are "physical field", "mental life", "mental energy or forces", In TDVP, we have steered clear of these terms other than consciousness, and state which we have used in the context of the state-trait dichotomy.

Also, Carr [257]further supports this view as he shows in the Big Bang theory, how the history of the Universe reveals an increasing rather than decreasing degree of organization. Without violating the second law of thermodynamics, modern physics explains that heat death can be avoided because local pockets of order exist at the expense of a global increase in entropy and, if the Universe continues to expand forever, intelligent beings may be able to delay their disintegration indefinitely[275]. *This model explains the presence of Extropy as defined in TDVP. We know order does occur, and that order is reflected in complex life. TDVP postulates that life begins initially as part of the C-substrate and the physical (genetic and physiological) characteristics need only be present for it to manifest as physical life.*

Philosophy and Meaning

Although consciousness or meaning is one of three initial inseparable triadic components, we do not regard subatomic particles, as possessing the same level of meaning as e.g. molecules, and a molecule would have less meaning than a stone. At a certain point, this increase of complexity allows sufficient DNA and physiology for the extent of complexity to become an organism. The animate is expressed as a CNS consciousness-possessing system in the first place. Extropy increases but not necessarily linearly within living systems we postulate: it may change along several dimensions and certainly STC may all be influenced. Life becomes expressed simply because the DNA encryption and physiology allows the potential for life that exists even at origin to be expressed. Consequently philosophically, there is increasingly meaningful organization, with the animate having a consciousness, however primitive in a nervous system, and the higher developed human or possibly equivalent e.g. dolphins or other animals, having greater meaningful organization in metaconsciousness. If one referred purely to the "consciousness" and meaning and guiding reality, one could argue this model is *panpsychism* but this is just one component. The complexity and changes can relate to changing any of the consciousness, space and time metrics: Space-time implies mass and energy. In the living organism (animate being) energy in the life-form is expressed through physiology, mass is produced by caloric food, and these too reflect the order of extropy already showing the multidimensional elements there.
Whereas consciousness ascribes meaning to the STC substrate ab initio, information alone would not work without complicating the model: In our opinion, the difficulty of information alone becoming consciousness has to imply its conversion at a certain threshold for consciousness. How is that attained? At what point of interaction can that occur how? In TDVP there is no contradiction or interaction. Consciousness exists from the primary receptor/ Origin Event/ big bang/ event horizon level. C-substrate is an extent, information is content. Moreover, the presence of the calculus of distinctions makes the logic behind consciousness as extent and information as content clearer.

Our infinite reality choices

These lead to imaginative and wonderful speculations. Let's just imagine, one more time.

Could it be that we utilize our brain alone as the ultimate common endpoint in terms of our unique expression of consciousness? Or is there something outside the brain, possibly in that infinite subreality that relatively objectifies some of our choices?

Could it be that such choices derive from our metaconsciousness and we translate them into discrete meaningful pieces?

Could it be then that not only some of our choices are infinite, but these choices creates a track for ourselves?

Is it possible that such a track of memories or of dreams or streams of consciousness without physical life may totally supplement or distort what we are perceiving as finite, objective reality that can be recorded for all time? It is almost like that recording is recording in a particular fabric sometimes of 3S-1t, and sometimes even a 2S-1t component where we are not seeing that depth of space perception—it's just a picture. Or maybe it's 3S-3T-NC reflecting all our time choices and all those choices of others, possible or actualized, within the fabric of the most intense weaving of meaning and extended consciousness and higher attributes like beauty and love, and courage and honor, and transcendence of self melding with a higher infinite.

Our own idiosyncratic reality? The ultimate speculation.

There is one strange, subtle, and outlandish component to objective reality. If we talk about common reality and we realize that there is a consciousness and an awareness to it, could it be that what we are perceiving as common reality in the context of objectified events that have been translated into our own perceptual, conceptual, and experiential interpretations, is, in our subjective experience, valid at the finite level. But, at the infinite level, it is a direction that we have chosen or been assigned, like a finite dream, pre-assigned to a track, a specific trace that has happened, that traces across this metacist, whole broader infinite continuous existence but along our own particular pathway. Others may experience slightly different or very diverse pathways in this broader fabric that we call reality and in the finite level multidimensional time. This would be so because we impact others and we share and interface with "zillions" of vortices. This concept has similarities to the ideas of Parallel Realities or Worlds. We in this scenario, certainly make what we reap! And this becomes just a tiny track in the Infinite Subreality.

Approaching solipsism through the infinite

Could it be that this is why we are literally making our own reality, not only at the infinite level, but also converting it to, or pervading into, or permeating through the finite level? This implies that what we are experiencing in terms of this broader objective life is our

broader, perceptual, conceptual, experiential life: This life may be far more unique then we would think when we try to objectify it and in fact, possibly throughout we could be changing tracks too—we call this free will.

But, of course, this is just a thought, just a question; and a radical though remarkable and unproven speculation. We, in effect, make our own reality at the finite level, and this creates traces at the infinite level, of one specific actualized reality in an infinite number of possibilities.

A philosophical model with some similarities is *solipsism*: only one's own mind is sure to exist and knowledge of anything outside one's own specific being is unjustified, and the external world and other beings are unknown. The speculation above is quite different though because it never denies the existence of others.

Individual traces in infinite reality

The awareness that there may be individual traces of one's physical life recorded within the infinite, raises a question that some philosophers take seriously: We have carried through an aspect of our destiny and given it's uniqueness, we're tracing a particular pattern within the infinite. This could be so and may imply an extreme level of individuation. This pattern would in its more extreme version be so subjective that we could create it just as we might have a role in creating and even controlling our dreams. Would this be a possible logical way to approach the infinite in TDVP? We have said that we do not even know what the infinite laws of nature imply, and we certainly know little about this whole unending expanse of nothingness or potential that may reflect the infinite subreality. So we cannot begin to answer such questions.

Rejecting solipsism

But personally, we cannot go this route of absolutely defining all aspects of our solipsist reality. This is not because we have scientific or mathematical justifications in favor or to the contrary. It is simply because if we did think solipsistically, in the context of our controlling reality in all its complexity and beauty, it would imply, to us, a level of arrogance that would be extreme. It would imply that we have the powers of a divinity. So, regarding ourselves as ordinary people, it is possible that we might be able to mold our existence with freedom of will and action being paramount, and moreover given our TDVP portrayal of the infinite possibilities of existence, it is not a great jump for us to postulate we may be able to create traces of our life in all forms—possibly even our thoughts and impacts on others—through the infinite. This could conceivably be like some kind of maintained dynamic memory.

Rejecting Panpsychism

Panpsychism [276]refers to the philosophical perspective that all matter has a mental aspect, or that all objects have a unified center of experience. In variants, like Whitehead's *Panexperientialism* [276], entities have the raw experience of basic awareness ("phenomenal consciousness") [277] but not higher level cognition, and in *Panprotoexperientialism* [276] all entities have non-physical properties that are precursors to any kind of phenomenal consciousness in even a latent, undeveloped form but again are lacking conscious awareness.

TDVP also does not apply Panpsychism per se. TDVP comes close because there is a pan-informationism or pan-consciousness or pan-C-substrate element with the most primitive level of "meaning' in inanimate objects or even subatomic particles. But that "meaning" is part of the tethered STC reality, not part of space or time itself. Space and time are different from each other, and so is C-substrate. They reflect discrete entities and may even have their own particles, forces and spins at that subatomic level.

The order level of meaning is very low at the level of stones or subatomically, but the informational order exists to a limited degree. We at one point were using the term "guided" but that is a potentially misconstrued term because English has no other alternative and we do not want to portray necessarily a passivity who is guided or a theological entity who does the guiding. "Meaning" is far better than "guided," or even "guiding" implying at the basic subatomic level the most basic meaning involving potentially apprehending or perturbing of objects, events or information. This is very close to information delivery, not consciousness, per se, and very different from atoms or stones acquiring metaconscious realities compared with live beings.
However, by virtue of the order component even in the subatomic levels, might this imply extropy playing a role at all levels? Entropy is demonstrably relevant for a whole closed finite thermodynamic system, but could such factors as sheer beauty of nature, or even of man built artificial structures allow a semblance of extropy beyond the linear energy equilibrium of entropy?

Meaning does not necessarily imply the deliberate continuity of finite and infinite but the term "guiding" could. Therefore "guiding" is speculative and not fundamental to TDVP. However, in TDVP the pan-information/ consciousness is just part of the bigger picture of the triadic tethered union of Space-Time and C-substrates, with their separate extensions. Consequently Unified Monism incorporates pan-informationism, but it also incorporates the pan-consciousness necessarily as meaningful information is transmitted at origin.

Meaning and purpose
Life's purpose in 3S-1t might be living to the fullest extent in finite reality. We cannot conceive of infinite, but we pervade into and from the infinite. Our function may be to improve our discrete points of present finite conscious. reality. Psychologically, we may see a hierarchy from working through psychopathology, to self-actualization to

transcendence of self. Possibly that self-transcendence is where we attain higher dimensions and the reason why there is a fluctuating number for each individual or individual-unit.

We speculate that sometimes transcending performance at that finite level could allow the interaction of these higher levels of dimensionality. This would produce a unification and an appreciation that can allow some extent of intruding into the infinite.

But, certainly, at the end of it all we do not have that overwhelming power implied by controlling not only all of our destiny, but all of the infinite itself. That would be far more than we can conceptualize, conceive, experience, or even understand. It would be like having a driver that had no clue how to manage his machine.

CHAPTER 40: *PERSPECTIVE: DISTINGUISHING CHARACTERISTICS OF TDVP VERSUS OTHER TOES.*[y, z]

The folly of mistaking a paradox for a discovery, a metaphor for a proof, a torrent of verbiage for a spring of capital truths, and oneself for an oracle, is inborn in us.

Paul Valery, 1895 (Philosopher, 1871 - 1945)

1. Essentially, TDVP is not only a TOE: it is a complete mathematical-logical, empirical paradigm for reality covering physical, biological and psychological sciences. (We do not know of any other comprehensive paradigm like this).

2. TDVP involves s a major paradigm shift because of its great scientific and philosophical implications. It can apparently be applied to all disciplines. This is unique. Some TOEs with similar bases e.g., CST or multidimensionality can be applied to some (but none to the life sciences, for example). So this is unique.

3. TDVP has demonstrable mathematical and empirical supporting data. It has a solid mathematical and logical foundation, is empirically feasible using LFAF in the physical, biological, social and consciousness sciences, it forms its own philosophical model, and is mystically compatible with some traditions (e.g., Kabbalic and Vedic). This is unique.

4. “Consciousness” is far more broadly defined (We do not know of any other comprehensive definition like this with the three elements of any of meaningful reality, brain consciousness and metaconscious). This is unique.

5. The tethering of CST from the Origin Event is unique. Mysticism sometimes perceives this but does not allow the freedom away implied in content by vortices and in process by indivension. This is unique.

6. CST being ubiquitous in all things from the subquantal thought to astrophysical may have been mystically implied, but not so rigorously defined.

7. The primary receptor with the concepts of relative infinity We do not know of any other scientific, non-mystical paradigm like this which recognizes an infinite receptor, ab initio. Of course, this is conceptually and philosophically basic to most religions.

8. The calculus of distinctions provides an important logical mathematical link of C-

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[y] TDVP: Triadic Dimensional Distinction Vortical Paradigm. TOE: Theory of everything
CST: "consciousness", space, time. 3S-3T-NC is 3 dimensions of space, 3 dimensions of time, N dimensions of "C-substrate".

[z] This perspective gives the broad bones allowing a greater insight into TDVP. The next section, 21. Tabulation of Relevant Theories of Everything’ compares them in some detail and we then discuss each model briefly.

substrate. This was developed by Dr. Close, is unique to TOEs and is necessary to allow the model to have a logical consistency particularly in applying C-substrate to dimensionality[101]. This is unique to TDVP.

9. Individual-units and indivension is a critical concept. This allows the freedom of C-substrate differences so that it becomes a new major biopsychosociobiological contribution and explains the role of the individual or group units. It also provides an adequate model for key ideas such as entanglement in relative non-locality, morphogenetic fields, quantum field theory, and aether theory or any other content model. This process provides a model explanation for parapsychological research and consciousness studies. This is unique although it has some similarities to what Carr describes as Transcendental Field Theory which in its turn links with Marshall, Smythies and Whiteman. The difference is the individual-unit existing in both state and trait contexts involving fluctuating dimensions even in individuals. *Indivension can be at any level, animate or inanimate.*

10. An explanation of life. This effectively is a new epiphany. Life, as an essential aspect of the STC substrate, has always been present and physical life is simply based on the necessary requirements of physiology and DNA. This is unique.

11. The numerous theorems particularly extradimensional extrapolations and parallels and their variants, with dimensionometrics. This is unique.

12. Vortices are an important structural element. This is unusual in this context and integrated with the first scientific dimensionometric model and mathematical demonstration. Whereas others have seen the utility of vortices, its applications across dimensions as *Transdimensional Vortices* is unique. Fundamental is curvature (as compared with Smythies tesseract).

13. The conception of the past, present and the future all existing simultaneously from the Origin Event. In another way, because everything is simultaneous in the infinite subreality ;of metatime and metaspace, this is before the Origin Event and after the end of existence too. These become infinitely synonymous.

Ultimately, at minimum there is a 3S-3T-3C reality but there may be more dimensions of time and space than 3, and almost certain it is 3S-3T-NC. Some models conceive of this using time and space alone (e.g., Hawking) but STC is unusual in science though not in mysticism.

14. Other relativistic concepts including relative zero, relative non-Euclidean space-time, relative dimensionality, and relative non-locality. These again are groundbreaking ideas, when taken together.

15. The idea of N-Dimensions varying with each individual-unit and yet impacting with infinity at any step. This is unique.

16. The definition of dimension in the context of the calculus of distinctions as variables of extent. This is unique.

17. *The strength of the TDVP model is two fold:*

Applying external validators including applying mathematicologic and empirical data.

Ensuring internal consistency of the TDVP inner construction by applying Popperian falsifiability and LFAF at the testing level, ensuring that the TTOURS metaparadigm is applicable, and then repeating the process to establish more feasibility as well as moving from certainty to speculation and empirical tests to demonstrate and support hypotheses by falsifiability or by LFAF again. This way valuable criteria are developed, some more general for all TOEs, and some unique for TDVP. The success of the model is dramatic when looked at quantitatively. As below, TDVP scores 34/34 and no other TOE besides our previous Neppe and Close models, score above 18/34.

CHAPTER 41: *TABULATION OF RELEVANT THEORIES OF EVERYTHING*

First comes thought; then organization of that thought, into ideas and plans; then transformation of those plans into reality. The beginning, as you will observe, is in your imagination.
Napoleon Hill (Author, 1883-1970)

Criteria for Consciousness or Dimensional TOEs or Related Models

Scientists and philosophers have proposed numerous theories of everything. Which do we choose for comparison? Given that a TOE necessarily must be scientifically broad and not just based on abstract concepts, we have chosen all the well-known and also some esoteric models that incorporate space and time directly and involve the finite. Occasionally, because of their fame, we have included others such as those of Gould. All are based on the fundamental laws of nature, although some focus more on the phenomenological philosophical models e.g., Lanza, Smythies. We recognize there are other philosophical and linguistic or neurophysiological or biopsychosocial TOEs but these have their own narrow range as a consequence, and do not fall in the scope of this discussion.

The criteria we have may be perceived as self-selected as they appear post-hoc. However, we cannot think of any criteria that are legitimate that we have not included and few criteria could be debated as unnecessary to a TOE when using the criteria of consciousness, dimenensionality, infinity and order. Therefore, we believe that the results as tabulated below reflect a reasonable perspective of the power, validity, value and ubiquity of the TOEs compared.

Nevertheless, the criteria derivation were sent to the developers (or with Kabbalah and Vedic mysticism, the representatives) of all available authors (15/21). Remarkably TDVP scores a full (21+13) or 34/34. This would be required for a real TOE because it cannot afford exceptions. *These results strongly motivate for the powerful breadth of TDVP as a TOE and a paradigm shift.*

Moreover, we can use a post-hoc empirical approach. If certain criteria occur commonly in several TOEs these are regarded as basic criteria to this kind of TOE. These criteria could be argued to be somewhat universal for major TOEs.
Given that we list 21 different TOEs, arbitrarily it is useful to require at least 7 in a criterion to be regarded as common. These are reflected under categories. Of those criteria scoring below 7 across the 21 different models, some should, prima facie. be regarded as required criteria, for example, paradigms. One could critique a TOE that does not have theorems so theorems are so regarded as well. We believe measures pertaining to

distinctions e.g. perceptual versus actual versus conceptual are important and we've been liberal in scoring theories that just recognize different kinds of perceptual realities as opposed to the real but is nevertheless special to our model in its full form so we are scoring it as amongst the almost unique. We have created a subtotal table (=) to score these common one. The TDVP model has unique elements and the object is to fit the laws of nature not linguistic or theoretical debates of what is universal. If it were all there, there would have been a universal TOE already. The fact is there was not. That was because certain criteria which are universal may not have been incorporated e.g. all of "consciousness", dimensions, infinity, extropy (already our models and their precedents become the only models that have this). Add in origin, tethering and life and this becomes unique though they must obey the laws of nature (which may involve recognized universal criteria). TDVP has been borne out of necessity based on the empirical needs and confirmed mathematically.

The areas that are almost unique to TDVP are:

Tethering of STC or of reality: This is unique and the major theoretical advance in TDVP because it allows an ease of explanation of information that is unparalleled.

fluctuating dimensions in different individual-units (traits reflecting differences between individuals or groups etc.) or even the same individual-unit under different circumstances (states);

across dimensions: metadimensional communication across dimensions.

Distinctions (perceptual vs. actual or real; in its full form Close's calculus of distinctions which is unique in its complete form to our TDVP model where C-substrate can be defined ordinally as dimensions[101]. COD is incorporated into Close's TP in its less complete form.

Triadic element: We debated if this like theorems and paradigms should be in the more fundamental scoring, but it involves a certain unique idea. TDVP and our earlier models (in less developed form) and Kabbalah all specifically look at the triad of space-time and consciousness as a unity. Other models such as Hoffman, uses mass-energy-consciousness / information, and this is also Spinoza type thinking. Note that this triad is only well defined in TDVP and Kabbalic mysticism; in the others it is vague only. However, the idea is quite common and occurs in 8 of 21 models.

It is interesting that in our initial prima facie examination of TOEs, we had thought that the ones that would be somewhat idiosyncratic and should not be applied to the general scoring criteria were g (Meaningful Reality of some kind), O= Origin at source, T= multidimensional time, x= Extropy or some kind of order: But these score Δ, Δ (Δ reflects the commonality of ≥10), 9 and 9 respectively! So there appears some universality to such a postulate.

Sometimes determinations for the comparisons are not clear to us, or to our referees.

Additionally, this table was sent to 14 of the 21 authors (or consultants in the context of the mystical TOEs) of this model and they did not modify any criterion, either in their own theory or that of someone else.
When uncertain, we have inserted a question mark (but still scored it as 0). Also checkmarks or positive scores do not reflect quality e.g., Indivension is a far more sophisticated concept than field for process; even more so, a string of mathematical formulae as in TDVP may have been scored the same here as just the mathematical mention of something, when in fact, there are over fifty mathematical formulae in TDVP and a metric of quantization of information would further demonstrate differences.

But Table 5 still gives a reasonable index for comparison. TDVP as expected scores a maximum. In fact, at this point, the only TOE it competes against is making itself better. However, it is somewhat tautological because the criteria we have deemed important may not be the criteria that others deem important, and models such as those of Sheldrake and Watson, are very exciting and directed towards a level of completeness that none others besides TDVP competes with: But they have their own special qualities.

There is a great difference between even the second placed older VNDP of Neppe[5] and similarly that of Close's Transcendental Physics[7] in that tethering and indivension were not delineated. And although Neppe's contained the key concepts of fluctuating dimensions and communication across distinctions, and Close's contained the calculus of distinctions and some theorems (these have been amplified), at their best these factors limited them being TOEs. This makes TDVP qualitatively profoundly superior to even the two #2s on this list, namely the original models of Neppe's VND and Close's TP. Also even eliminating the 4 idiosyncratic lists, the order does not change showing that universally, using logically derived criteria for TOEs, TDVP when referring to either "consciousness" or "dimensions" is far superior qualitatively to any other model.

The object of this exercise is to provide key features common to many and see where the TOE models differ, to understand the limitations of models and to amplify their strengths. Our models began with our preceding ideas involving VNDP and TP. They were very useful initial models, but incomplete and these tables show it. But a real TOE should fit *all* the criteria that are necessary for it to explain phenomena. With respect, based on our experiences with several hundred experts and the above tabulations and criteria, it appears that TDVP is a very solid model. If there is such a thing as universal criteria that would be useful. But the TDVP model has unique elements and the object is to fit the laws of nature, not linguistic or theoretical debates of what is universal. If it were all there, there would have been a universal TOE already. The fact is there was not. That was because certain criteria which are universal may not have been incorporated e.g. all of "consciousness", dimensions, infinity, extropy (already our models and their precedents become the only models that have this). Also concepts that are not in many TOEs may be relevant, such as initial origin, tethering and life. Because together these are unique we use

an added criterion that they must obey the laws of nature. The criteria we have deemed important may not be the criteria that others deem important but the endpoint is does it work? TDVP appears to work.

No other TOE besides our previous Neppe and Close models, score above 18/34.

Table 5. General **Specific** **Special**

au	Ti	e	m	c	I	p	M	Q	H	S	y	R	O	B	x	T	h	P	+	D	a	r	s1	d	a	f	3	u	l	q	n	N	F	Δ	C	j	s2	TO
cn	td	√	√	V	√	id	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	21	√	√	√	√	√	√	√	√	√	√	√	√	√	13	34
Ne	vn	√	-	V	√	V	√	√	√	√	√	√	-	√	-	√	√	√	√	√	√	-	17	-	√	√	-	√	√	√	√	√	-	-	-	√	8	25
Cl	tp	√	√	n	√	Fc	√	√	√	√	√	√	√	-	√	√	-	?	√	√	-	√	17	√	-	-	-	?	√	?	√	-	-	-	-	-	4	21
Ka	sh	√	-	√	√	-	√	-	√	-	√	√	√	√	√	√	√	√	√	-	-	-	15	-	√	√	?	√	-	-	-	-	-	-	-	-	3	18
Sh	fc	√	-	M	-	Fc	√	√	√	√	-	-	-	√	√	-	√	√	√	?	-	-	12	-	-	-	-	√		√	√	-	-	-	-	-	4	16
wa	te	√	-	√	?	en	√	?	√	√	√	√	√	√	√	-	?	?	√	-	√	-	12	?	-	-	-	√	√	√	-	-	-	-	-	-	3	15
Ve	uf	√	√	√	√	-	√	-	√	-	?	√	√	√	√	√	√	√	?	-	-	-	13	-	?	?	-	?	-	-	-	-	-	-	-	-	0	13
Ln	bc	√	-	-	√	-	√	√	√	-	√	√	√	√	√	-	√	?	-	-	-	-	11	-	-	?	-	√	√	-	-	-	-	-	-	-	2	13
kb	qf	√	√	Q	-	Q	√	√	√	√	-	-	-	√	-	-	-	-	√	-	-	-	9	-	-	-	-	√	-	√	-	√	-	-	-	-	3	12
sm	md	√	-	P	√	Pc	√	-	√	√	√	-	-	-	-	-	-	√	√	√	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	0	11
Ca	tf	√	√	T	-	T	√	√	√	-	?	-	-	-	-	-	-	-	-	√	√	√	10	-	-	-	-	-	-	-	-	-	-	-	-	-	0	10
ho	cr	-	√	?	-	-	√	√	√	-	√	-	√	√	-	√	?	-	-	-	√	-	9	√	-	-	-	-	-	-	-	-	-	-	-	-	1	10
wi	ko	√	-	-	√	√	√	-	-	-	-	√	√	-	√	-	√	√	-	-	√	-	9	-	-	-	-	√	-	-	-	-	-	-	-	-	1	10
Ll	Ct	√	√	-	√	-	√	√	√	-	-	√	√	-	√	-	-	-	-	-	-	-	8	√	-	-	-	√	-	-	-	-	-	-	-	-	2	10
La	ak	√	-	A	?	af	√	?	√	√	-	√	√	?	-	?	√	?	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	0	9
Sir	ch	-	√	√	√	-	√	√	-	-	-	√	-	-	-	√	-	-	-	√	-	√	9	-	-	-	-	-	-	-	-	-	-	-	-	-	0	9
Ev	em	√	√	V	-	V	√	√	-	√	√	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	0	8
Ha	mw	√	√	-	√	√	-	√	-	√	-	-	-	-	-	√	-		-	√	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	0	8
Str	mt	√	√	√	-	-	-	√	-	√	-	-	-	-	-	√	-	-	-	√	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	0	7
go	no	?	-	-	-	-	-	-	-	-	√	√	-	-	-	-	√	-	-	-	-	-	3		-	-	-	-	-	-	-	-	-	-	-	-	0	3
Ca		Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	9	9	9	9	8	8	8	7	4		4	3	3	1	Δ	6	6	5	4	2	1	1	1		

Legend
Au = Author, Ti = Title of theory of everything or equivalent
General (21 item criteria)
General criteria that should not be subject to debate in a TOE model based on frequency of application or general refereeing requirement.
+ = 3 elements: Space / Time (or Mass-energy)/ Consciousness (or Information)
a= defined as a paradigm
B = Life Sciences, biology
c == Content e.g., vortices (V), subquantal (Q), non-quantum receptor (NQ), morphogenetic fields/ formative causation (M), transcendental fields (T), phenomenal spaces (P), Akashic field (A). or (Af),
D == Dimensions beyond 3S-1T
e === Regarded as a theory of everything (generally by the author or by others)
h = history of core mystical concept over millennia
H == Human level
I === Infinity
m == Mathematics
M == Consciousness/ Mind/ Information
ph = mind-body philosophical model
p = Process to communicate: ID == Indivension or equivalent (cross dimensions, biopsychofamiliosociocultural), FC Formative causation, phenomenal consciousness (PC).
P = Psychology and social sciences
Q == Quantum level
r == Theorems/proofs
S === Structure e.g., Vortices, fields etc
y= thinking; philosophical translation defined to mind-body model
Specific hypotheses but common across several TOEs (≥9 instances) so included in the broader TOE scoring.
R = *Meaningful reality* of some kind
O = Origin at source /beginning/ Origin Event/ around the big bang or before
T == *multidimensional time*
x = *extropy*

Extra criteria *(4+9=13 items)*
These are scored as a subscore (S1) reflecting the most usual criteria for TOEs.
The following additional 13 criteria are first almost specific to TDVP and then special developed during referee feedback.
The second subscore (S2) reflects this.

Specific: Almost unique to TDVP (and so excluded from the TOE broader scoring; 4 items)

3 === *STC tethering* (a fundamental and inseparable component of space-time-C-substrate being unified, and yet being able to extend separately in their own dimensional expression).
a == *Across dimensions* (being able to communicate across metadimensions); this includes indivension, which is a specific case of communication and interfacing points or vortices across dimensions.
f == *fluctuating dimensions* (states of consciousness; variation across individual-units)
d= distinctions (minimum: perceptual and actual or conceptual).

Fundamental broad criteria: Broader TOE scoring required ≥7 theorists to list this. (Δ = in 10 or more categories.)
13 of these authors have had the opportunity to comment.

Special criteria based on feedback. *(9 items)*

u unification of models across the sciences
l Linguistic
q uniqueness
n new Generation of 100s of ideas/ postulates demonstrated,
N np explanation of consciousness mechanisms within neurophysiology
F feasibility measure
Δ triadic patterning
C dimensions of consciousness
j dimensional jumps

Models:

Bernard Carr. Transcendental Field Theory (TFT). 2008. [270]
Ed Close: Transcendental Physics (TP). Starting in 1985, parts published in Infinite Continuity 1989 and in Transcendental Physics 1999 and 2000. [7]
Alfred Evert: Typology of Aether-Motion-Pattern (AMP) [239]
Steven Jay Gould Nonoverlapping Magisteria (NOMA); 2001 [145]
Stephen Hawking: Many World interpretation. 2010. With variants going back to 1996([278]; [279]).
Don Hoffmann: CR, Conscious Realism, 2006. -2008 [280]
Kabbalic mystical model ancient reflecting Judaic tradition particularly Sefer Yitzirah. [126]
Adrian Klein / Neil Boyd: Quantum Field theory and subquantum integration approach. 2010. [45]
Chris Langan; CTMU Cognitive theoretic model of the universe. 1998. [281]
Robert Lanza: Biocentrism (BC) 2004. [273]
Ervin Laszlo The Akashic Field TOE (AK) 2009. [274]
Vernon Neppe / Ed Close: Triadic Dimensional Distinction Vortical Paradigm (TDVP)
Vernon Neppe: Vortex N-Dimensional Paradigm (VNDP or here VND). From 1989, presented 1996.

Rupert Sheldrake: The theory of formative causation. 1981. [18]
Saul-Paul Sirag: Consciousness and Hyperspace. 1993. [231]
John Smythies: Material Dualism. Smythies has modified his model considerably from 1956. [282]
String Theory (ST): Numerous individuals; including MT; 1984 Green and Schwarz used; M theory in 1998 as date but many others.
Vedic mystical model: no official name, but "unified field" ancient reflecting Eastern religious tradition
Ken Wilber: Kosmos TOE. 1995. [283]
Don Watson: enformy; TES; Theory of Enformed Systems, 1998 to 2005 (en = enformy) 2005 [284]

These comparisons largely speak for themselves. We have compared twenty one major models, namely those of Carr, Evert, Gould, Hawking, Hoffman, Kabballic mysticism, Klein and Boyd, Laszlo, Lanza, Langan, Sheldrake, Sirag, Smythies, String theorists,Vedic tradition, Watson, Wilber, and previous models by Neppe and Close. We also later comment on De La Sierra and Leibniz.

These reflect qualitative comparisons of TOEs based on 34 carefully chosen characteristics, chosen for relevance and different broad screening parameters. These were added to once our initial paper was sent to referees, so that although necessarily retrospective, because the TOEs already existed, they do incorporate a consensus of criteria. TDVP as expected scores a maximum. In fact, at this point, the only TOE it competes against is making itself better. However, it is somewhat tautological because the criteria we have deemed important may not be the criteria that others deem important. Nevertheless, the criteria derivation were sent to the developers (or with Kabbalah and Vedic mysticism, the representatives) of all available authors (15/21).

Remarkably TDVP scores a full (21+13) or 34/34. This would be required for a real TOE because it cannot afford exceptions.
Not surprisingly the older models on which TDVP were based easily come in second and third scoring highly at Neppe's Vortex N-Dimensionalism (17+8) or 25/34, and Close's Transcendental Physics (17+4) or 21/34. However, both of these model leave out key features making the combination TDVP profoundly more powerful. For example, tethering, at origin, fluctuating dimensions and triadic relevance were major breakthroughs in TDVP. Neppe's earlier model particularly could be criticized because it did not have demonstrable mathematics and theorems, and ignores the calculus of distinctions; and Close's earlier model needed to impact the biological and social sciences and needed mechanisms across dimensions.

It is interesting that models that are not scientific but mystical and have endured for millennia also score well, for example, Kabbalic (15+3) or 18/34) and Vedic Mysticism

(13+0) or 13/34 —Vedic mysticism may actually score higher than this approaching Kabbalah but it is difficult clarifying many areas). These models are particularly difficult to score because of the limitations of scientific validation and in the context of Vedic mysticism, it appears the mathematics was worked out much later.

Several remarkable TOEs follow which contain outstanding original ideas namely, Sheldrake's Morphogenetic Fields (12+4) or 16/34, Watson's TES (12+3) or 15/34, Lanza's Biocentrism (11+2) or 13/34, Langan (11+2) or 13/34, Klein and Boyd (9+3) or 12/34 and Smythies Material Dualism (11+0) or 11/34. Not far behind and also exciting models are those of Carr, Hoffman, Laszlo and Wilbur and 10/34 and those of Laszlo and Sirag (9/24) have great qualities.

These results, however, essentially and strongly motivate for the powerful breadth of TDVP as a TOE and a paradigm shift.

These qualitative results for TDVP are even more dramatic when looked at quantitatively in the TDVP context. For example, there are fifty different mathematical theorems in TDVP, yet this is the only scientific TOE that utilizes theorems (other than Carr who mentions theorems en passant).

Moreover, the fifty new definitions and concepts in TDVP were not even qualitatively measured. Other TOEs have, at most, a few new concepts yet TDVP generates nearly six hundred new ideas, some solid, some empirically based, some mathematical and logical, some speculative but with many being testable, either now or some time in the future.

The most unique aspects of TDVP is the tethering, yet allowing independence of S, T and C substrates, the fluctuating dimensions, applications of the calculus of distinctions and a workable new philosophical model called "unified monism".

CHAPTER 42: *CONTRIBUTIONS OF OTHER THEORIES OF EVERYTHING OR RELATED MODELS*

Great spirits have always found violent opposition from mediocrities. The latter cannot understand it when a man does not thoughtlessly submit to hereditary prejudices, but honestly and courageously uses his intelligence and fulfills the duty to express the results of his thought in clear form.
Albert Einstein [285]

These models are compared in some detail. We begin first with the current TDVP and the earlier Neppe and Close models. We then follow with detailed key information comparing the most similar Theories of Everything or Related Models.

The choice of these models has been based on our knowledge of the TOE area.
If we missing any that are relevant here, we have done this inadvertently.

Close and Neppe (Neppe and Close): Triadic Dimensional Distinction Vortical Paradigm (TDVP)
This has been discussed in detail above.
It is far the most comprehensive "Theory of Everything" that we know of.
It has precedent with many other TOEs individually that have similar ideas.
However, Indivension is an overriding concept as is the Calculus of Distinctions.
This has allowed mathematicologic metrics and allows all postulated tests for any "field" theories such as Sheldrake's to also apply to TDVP.
Table 5 indicates how it is complete in every major comparative category.
It also has the most precise definitions, we believe, of C-substrate (consciousness) and dimensionality and introduces Indivension.
It also is the first TOE to explain Life and for this reason alone the others fail as TOEs.
This is why TDVP involves a paradigm shift because it changes all of reality perception: It is truly groundbreaking, in that regard.
TDVP was not derived from any of these models. It was derived from first principles, and as an offshoot of the models of Close as exemplified in Transcendental Physics and of Neppe as originally in his Vortex Pluralism, which he then perceived as an all encompassing monistic paradigm and renamed it the Vortex N-Dimensional Paradigm (VNDP). However, we acknowledge particularly the genius of Saul-Paul Sirag, and a discussion specifically on complex hyperspace and spinors that VN had with him circa 2007.

Neppe: Vortex N-Dimensional Paradigm (VNDP)

This information is derived from the two key papers by Neppe on Vortices. VNDP derives from a model developed in 1989 and presented publicly first in 1996.
We have abstracted the major features. Neppe's Vortex N-Dimensionalism Paradigm (VNDP) has now been eclipsed by TDVP of Neppe and Close. However, many of the ideas are similar. The major difference is though much on vortices as described reflect Indivension, the full mechanism was not yet developed.
Additionally, VNDP did not have STC tethering per se, a mechanism for life, and did not have any of the mathematics and theorems.

In VNDP, Neppe proposes a radical, new paradigmatic shift from the current numerous mind-body theories to the Vortex N-Dimensionalism Paradigm (VNDP). This was previously called Vortex Pluralism (VP) but VND is a misnomer because the VND paradigm essentially is not pluralistic but reflects an all encompassing N-Dimensional monism, of which the mind and body dilemma is but one component. The VNDP reflects part of a grand universal design and this model obeys the laws of nature.
VNDP has two essential components namely N-Dimensionalism and the fundamental role of vortices.

N-Dimensionalism may involve three fundamental elements:

1. N-Dimensional space tending towards infinity but not necessarily like Hilbert space. This may be modeled on a gradual process of diminishing "density / mass" in infinite dimensional vortices impacting, impinging, repelling and intruding at and through specific vectors or points which can be partly conceived of using an imaginary observer. Simplistically, the paradigm of an infinite number of variably shaped and moving vortices allows the subject to experience their reality at specific defined points in an N dimensional universe,

2. Time in our usually experienced universe is one point in time. There is no reason why time should not be all encompassing as well and N-Dimensional as opposed to linear (future to past).

3. Essence is the third necessary component though the most difficult to describe. There may or may not be "energetic" elements but not limited to or different from the energies generated by space and time. There may be informational and communication elements that cannot be directly translated into space and time. And these may reflect a "conscious" awareness, responsiveness and integrated understanding. There may be linguistic elements. All of these combine into an essence of being possibly reflected in life or existence and reflecting a "conscious" kind of reality. This "essence" may be an inessential part of the model because it is not easily portrayed and it may not be an essence, per se. However, awareness, responsive and interaction of this consciousness may be more essential.

Superficially such space time elements can be perceived as non-local but the non-locality is

relative only, to the absence of experience of higher dimensions (in the sense that 6>5>4.>3 so 6 dimensions is higher than 3).

Vortices appear fundamental to nature and every area of scientific endeavor. Vortices can be regarded as circular or ovoid movement including zero (or absence) of movement. Vortices are hypothesized to occur not only within recognized dimensional frameworks e.g., our 3 dimensions of space and 1 point in time but across dimensions allowing communications between N-Dimensions of space and time. It is possible that vortices may be part of the "Essence" above involving Life, Information, Communication and Energy (LICE).

Numerous sub-hypotheses logically follow or may at least be postulated from the paradigm but are not essential to VND's validity. Consequently, their disproof or invalidation of any such hypothesis does not disprove the VNDP.

This model of VND should be evaluated using current knowledge from every known model of reality ranging from the natural scientific models ranging of conventional quantum physics, to string theory to vortex atomic theory to mathematics including rare-event theory, and holograms and calculus, to other physical sciences such as astronomy, chemistry and meteorology, to the social sciences including psychology, the unconscious, anthropology and, sociology, to the medical life sciences including genetics, and biology, physiology and anatomy. However, three major disciplines deal with extra dimensions and possibly with shapes or energies outside our earthly realm: Parapsychology, Theology and Philosophy. The last is discussed in these papers; the first two are subjects for later papers.

The difficulties of proof of information are raised. Mathematical and cosmological models of non-falsifiability exist. Some of this is not falsifiable because we can only use 3S-1t to do so and N- dimensionality makes it impossible. VNDP impacts on both the infinite and finite with existence having ultimately an infinite number of dimensions.

In developing the VNDP model, Neppe utilizes another approach: He demonstrates the fundamental ubiquity of vortices in nature in numerous different sciences. Therefore the feasibility that the vortex shape is shown and no data contradicting it is demonstrable. In its broadest form, the vortex shape range from spheres to profound elongation of the three dimensional into almost a linear appearance. Its basic components of curvature are sometimes symmetrical, sometimes asymmetrical; sometimes circular, sometimes elliptical or an arc or portion of a warped reality; the vortex may be expanding or contracting or remain the same homogeneous size like a helix. The other essential property of the vortex is movement, however, the movement can include real positive and negative and imaginary and complex numbers, as well as zero. And when perceived in multiple dimensions, an observer can perceive zero velocity in one dimension but not another.

There appears to be support from the various disciplines: Amongst these are two theories in the Physics/ mathematics domain particularly support facets of this theory namely Rare-event theory and Atomic Vortex Theory. The concepts and body of knowledge of Parapsychology are tenable. Theological frameworks such as Kabbalic mysticism are applicable. Psychological models of extended consciousness fit potentially fit this framework.
Furthermore, this model of Vortex Pluralism appears tenable in other areas as well using other natural scientific models ranging from conventional quantum physics, string theory and relativity, to astronomy, chemistry, meteorology, anthropology, theology and biology, genetics, physiology and pharmacology, and anatomy. VNDP may be the first paradigm to unify all areas of science and philosophy. However, in the original VNDP, Neppe realizes it would be extremely difficult to find formal scientific tests to test this hypothesis. This is what we have done in TDVP.

Close: Transcendental Physics
Close's *Transcendental Physics* grew out of the conviction that consciousness had to be introduced into the equations of modern physics. The basis for this was contained in Dr. Close's earlier work *Infinite Continuity*, published in 1989. Using the calculus of distinctions, adapted from George Spencer Brown's *Laws of Form* and the Copenhagen interpretation of quantum mechanics, Close's paper *the Case for the Non-Quantum Receptor*, presented at Tucson II, Toward a Science of Consciousness in 1996 became the basis for a mathematical proof by infinite descent of the necessity of a non-quantum receptor both in human consciousness and in the emergence of matter from the big bang, This proof was published in the book *Transcendental Physics*, in 1997.

Transcendental Physics was written for the informed layperson with most of the mathematics presented in appendices at the back of the book. Much of the book is historical narrative, tracing the development of the ideas of Einstein, Bohr, Schrödinger and Heisenberg and the conflict between the determinism of relativity and the basic probabilism of quantum theory. By focusing on: the importance of the observer in both relativity and quantum physics, the book reveals the indicators of a new paradigm. The aim of the author was to raise the public awareness of the emergence of a new paradigm; one that brings consciousness and deep spirituality back into science and restores a sound metaphysical basis for all scientific inquiry.

Concepts coming out of Transcendental Physics were seen to align perfectly with Dr. Neppe's Vortex N-Dimensional Paradigm (VNDP). And new concepts, including mathematical and geometrical theorems, demonstrations and proofs were motivated. The two theories were complementary; and the combination of the two is greater than the sum of their contents.

CHAPTER 43: *CONTRIBUTIONS OF PREVIOUS THEORIES OF EVERYTHING OR RELATED MODELS: KEY THEORISTS AND COMPARISONS WITH TDVP.*

Anybody who has been seriously engaged is scientific work of any kind realizes that over the entrance to the gates of the temple of science are written the words: 'Ye must have faith.' It is a quality which the scientist cannot dispense with.
Max Planck

Sheldrake's Formative Causation

Dr. Rupert Sheldrake's model [18] has not formally been perceived as a TOE. But it is a brilliant compilation of information working into a viable model to the extent that the New Scientist journal held a competition in 1983 for a model to test this theory and one of the winners was Neppe, who also devoted a full journal that he edited to Sheldrake's work. This is why we include it here.

Sheldrake postulates "Morphic (Morphogenetic) fields" within and around a morphic unit which is organizes into as characteristic structure and pattern of activity. This morphic field underlies the formation and behavior of morphic units, and can be set up by the repetition of similar acts or thoughts. A particular form will tune in via morphic resonance, into its already established specific morphic field and use the collective information through the process of morphic resonance. There is psychological archetype support from Carl Jung and using Vedic akashic records. Memory-traces are related and "non-local" in time and space.
Morphic fields are the universal database for both organic (living) and abstract (mental) forms. Ultimately, the morphic fields stabilize. Morphogenetic fields contain the information necessary to shape the exact form of a living thing and may also shape its behavior and coordination with other beings.

Sheldrake's is an example of what is currently incorrectly in our opinion, regarded as unfalsifiable because using a process akin to LFAF, it is testable.

Sheldrake proposes that the process of morphic resonance leads to stable morphic fields, which are significantly easier to tune into. In this way, simpler organic forms self-organize into more complex This model allows a different explanation for the process of evolution itself, as an addition to Darwin's evolutionary processes of selection and variation. (derived in part from http://en.wikipedia.org/wiki/Morphic_field).

Sheldrake's formative causation implies that as one learns certain patterns they become easier.

This appears initially contradicted by the decline effect we see in parapsychology, consciousness, and psychological research. However, one must take into account the whole picture. The whole picture relates to boredom, frustration, no feedback, people not being as enthusiastic. In other words, the whole methodology of the experiment has changed.

Consequently, although one sees a broader decline effect, it does not mean to say that this rules out formative causation where like a radio receiver one is tuning into a new event and one can more and more easily tune into a new event.

Applying formative causation to TDVP, vortices impact at certain points via indivension of individual-units. This impacting could be attuned to being like a radio receiver, imprinting itself. We can understand this impact because of the natural asymmetry in metadimensionality. This in and of itself limits the aspects of formative causation potentially because one would expect identical imprints and here one is seeing asymmetry. However, again one must look at the data in relation to formative causation. We are not dealing with a 100% model, not like speech communication. Instead, we are still dealing with statistically relevant rare events, although not as rare as psi because hypothetically this may involve a higher dimensionality. The higher realities, therefore, will have a broader influence on lower dimensions, such as 3S-1t, although to a lesser degree of influence on a specific event.

However, given several of these components of vortices interfacing, certainly formative causation could be useful. Effectively, indivension intersects across realities and across dimensions and these fluctuating dimensions are highly relevant. As indicated, they can occur as a *state* phenomenon within individuals or individual-units, such as small groups. such as in dreams or in some kind of mystical state or meditative state. Alternatively, they may persist as a *trait* consciousness phenomenon persistent over time at a certain dimension or collection of dimensions (domain) in metaconsciousness. One hypothetical example has been survival after bodily death, another example is of a state phenomenon such as a subjective near death experience of out of body experience.

The *content* is vortices or maybe morphogenetic fields or some kind of transcendental fields. It is the content as this is what it contains. It is not a dimensional extent, it is like mass. However, there is a process that is occurring. The process that we postulate is an advancement on one that was not worded specifically in relation to vortices, but has been around for many years in Neppe's model, and that is Indivension. Indivension also always allows movement across fluctuating dimensions.

The *process* that Sheldrake has postulated is formative causation, though asymmetries and decline effects limit formative causation, which we postulate could only be one of several possible mechanisms. Therefore, formative causation is not a necessary mechanism for our model to be true, however if formative causation is illustrated, it would be a sufficient

illustration to allow our model to be further supported by LFAF.

The NDVP model differs from Sheldrake's model in that it traces the origin of morphic fields to the N-Dimensional hierarchy of the C-substrate, and the origin of the C-substrate to the reverse event horizon of the big bang or any other kind of Origin Event. This explains why the morphic forms are vortical in nature. It also relates rare events, such as verifiable psi phenomena to the dynamics of vortical forms and multiple dimensions.

Carr Transcendental Field Theory

The models of Carr and Smythies below are based on previous models involving the earlier suggestions of C.D. Broad [286]and H.H. Price[287]. Dr. Bernard Carr is a prominent Cambridge mathematician and his 2008 model comes from a basis in cosmology and physics. It also relies on the thinking of the South African mathematician, mystic and consciousness researcher, Dr. J.H. Michael Whiteman. Like Smythies' one, it proposes the links between consciousness and higher dimensions of space-time.

Carr recognizes that physics regularly undergoes paradigm shifts and a new paradigm must assign a central role to consciousness as there are indications that this is a fundamental rather than an incidental feature of the Universe. Carr also emphasizes the ostensible difficulty reconciling fully matter and fields: "Matter usually refers to solid objects (like bricks) which are made up of atoms which themselves comprise fundamental spin-half particles called fermions (e.g., quarks and electrons). However, physics also describes the fields through which matter interacts, these corresponding to integer-spin particles called bosons (e.g., photons, gluons and gravitons). It also incorporates concepts like the quantum mechanical wave function and higher dimensions, which are very remote from the ordinary mundane reality of classical physics. He recognizes like Smythies the critical role of any sort of percept which is not associated with or derived from the ordinary physical world and therefore difficulties of terms like "mind" and 'non-physical ' stressing the link with the laws of nature. His model of 'Transcendental Field Theory' links with M-theory, in string theory and recognizes the need for a higher-dimensional model which involves fields.

The 'Universal Structure', a higher dimensional reality structure or information space, is the container of all perceptions or experiences (be they physical or non-physical). This arises in physics as a natural extension of general relativity but philosophically with 'perceptual,' 'phenomenal' or 'psychic' space. He recognizes the geometrical aspects of this theory and the limitations (as we do in TDVP) of portraying higher dimensional components into 3 spatial dimensions, citing Dr. Ian Stevenson. However, that nexus may be considerably expanded in a higher dimensional description (e.g., two lines which are disconnected in a lower-dimensional space may be connected in a higher-dimensional one). Thus, while one has a distinct identity at the level of t1, one may be connected with other consciousnesses at the level of t2. From this perspective, telepathy may be the manifestation of the higher-dimensional connection between

two people, and experiences of mystical unity may reflect some more universal connection. This also links to the notion of survival, since it is natural to associate survival space with memory space in this picture [288]. Carr's model amalgamates physical space with various types of mental space.

Dr. Carr's proposal is similar to that of Smythies, except that it places more emphasis on the relationship between the phenomenal spaces associated with different consciousnesses. He argues (like Broad) that physical and phenomenal space must be contained within a single higher-dimensional space. In Smythies' model both physical and phenomenal space are real but intersect in some way.

Like in TDVP, Carr recognizes the needs to allow for non- Riemannian metrics. He interpret this as possibly some higher-dimensional embedding space — yet the world we experience remains 4-dimensional. He suggests in Universal Structure of an extended notion of time. A multi-level time perspective relates to the problem of identity and explains how there can be many manifestations of a single unitary
consciousness. By comparison, this component has broad similarities to our postulated minimum 3 time dimensions in TDVP, and also the concepts of state and trait process of indivension with the content being vortices. Both models differ from the 'serial time' approach of J. W. Dunne [80], who also invoked an extra dimension to explain the flow of time and used this to explain precognition and applied an infinite regress of time effectively postulating N dimensions, although TDVP recognizes N-Dimensional domains which fluctuate individually.

In 'Transcendental Field Theory', Carr proposes fields more extensive than the usual physical ones (similar to Zöllner's 'transcendental physics' of 1879) [289]
Fields are combined with higher dimensions and quantum effects and he assumes all interactions can be interpreted geometrically and TFT should be able to explain the interaction not only of physical objects but also of hyperphysical (what we are calling "metadimensional") ones. It is a logical endpoint of the approaches previously proposed by Marshall, Smythies and Whiteman and Beichler, who recognized that the existence of the 5th dimension means that the mind necessarily extends beyond the brain,

Carr recognizes the relevance of this kind of model implying a true paradigm shift affecting all of science and culture. We agree.

The TDVP model differs from Carr's TFT model in that it applies Neppe's fluctuating ND vortical interactions to explain the interaction of consciousness with reality on different dimensional levels and Close's calculus of distinctions to develop the metric for the C-substrate, explaining the prevalence of the vortex as the basic form applying dimensional extrapolation. The NDVP paradigm shift also introduces extropy as a more comprehensive term, as well as indivension as a logical basis for the relative and personal nature of individual conscious

entities.

Smythies: Theory Of Material Dualism

We invited Dr. John Smythies to contribute a short précis of his excellent Material Dualism theory which serves as a philosophical model on a basis of clinical neurology and neuroscience. Smythies' model (1956 and 1994) precedes Carr's chronologically and is based from clinical neurology and neuroscience [282]; [290].

The major aspects are consciousness in the context of topological phenomenal space, use of a tesseract (effectively an orthogonal 4D cube, not therefore the curvature of a vortex). It also involves vectors and connections and it recognizes psi and individual participation in a common 3D domain but clusters of N-Dimensional consciousness models. He recognizes the great thinker, Leibniz and compares Jourdan's model. He also recognizes a variant of vortex, however (see the Ehrenhaft phenomenon described above). This offers a method of testing the theory experimentally, and it could also be used for testing the vortices in TDVP.

We quote from Smythies (personal communication, 2011) as follows.

- "Phenomenal consciousness, contra Descartes, may be observed to have a complex structure. One part contains entities (or events if time is included) i.e., visual and somatic sensations—the latter making up the 'body image' of neurology—and images, that are located and extended in phenomenal space. The other part (i.e., auditory, olfactory and gustatory sensations and images) contains entities that are located, but not extended, in phenomenal space: plus the unextended Self or 'Observer'.
- 3D phenomenal space (A) and 3D physical space (B) are different cross-sections of a higher-dimensional space. The topological model for this is a tesseract, not a cube. The human organism has a part in B—the physical body—as well as a part in A—the consciousness module as described in (I). A and B are connected by causal relations called psi-gamma (afferent) and psi-kappa (efferent). These may be represented by vectors in 4D. In our model the physical body is located in one cube of the tesseract and the consciousness module, that includes the body-image that we experience, is located in another cube of the tesseract. The psi vectors run from a point in cube A to a point in cube B. Psi normally focuses on the brain but has a penumbra that allows for clairvoyance and telepathy.
- Thus the N-Dimensional material universe has a common 3D domain (currently regarded by physics as "the" universe), as well as a number of private 3D domains called consciousness modules. The relationship between one person's consciousness module and another person's consciousness module remains to be determined.
- The currently fashionable brain-mind identity hypothesis (IT) (metaphysics masquerading as science) is impossible because it violates Leibniz's Law of the Identity of Indiscernibles. Cartesian Dualism gives an inaccurate account of phenomenal

consciousness. Material Dualism ties up a number of loose ends in the neuroscientific account of consciousness: it is just as important to give a true account of what the brain does not do, as well as of what it actually does.

In ordinary perception the Self is aware of its sensations constructed by TV-like representative mechanisms. For example the eye functions like a TV camera, the brain like the electronic mechanism used in digital TV, and the visual field in consciousness like the screen of the TV set. In the NDE state reported by Jourdan the Self leaves body-image, and vision is no longer constrained to focus on the ordinary visual field. Instead it now can focus directly on the physical world, now observed from a 5D perspective (including time) (as explained in detail by Jourdan)[291]

Klein and Boyd: Subquantum Integration Approach

Klein in Israel and Boyd [45] in the USA have motivated subquantal or other emptiness in non-local space (a database supports subquantal emptiness). Their new Subquantum Integration Approach demonstrates how they have very actively researched the literature, and very creatively substantiated their very complex model based on empirical data that is little known in general but has been demonstrated nonetheless. Effectively, in their model, the subquantum is assumed to co-existentially accommodate proto-units for matter, energy and information. Information and mass are thereby brought onto an equal ontological footing, in the subquantum domains. The basis of their model is the Nobel winning, Fractional Quantum Hall Effect. This suggests the further divisibility of the quantum domain, which was previously considered an irreducibly fundamental component of nature. Drs. Klein and Boyd provide data supporting subquantum potentials evolving in the "Prime Radiation Substrate". These result in organizing functions able to interfere with classical local determinacy chains, operating at the quantum levels of randomness inherent in space-time-like matter configurations, leading to highly complex representational patterns, linked to their phenomenal correlates in macroscopically detectable systems. Their model has significant experimental evidence.

They recognize Quantum Potential (Quantum Field Theory) as a superluminal Sub Quantum Information-carrying aether. This allows interaction with matter and physical forces at well defined Space-time positions effectively producing information content into our observable world modulating the event potential. They describe matter as an n-degree entanglement state of SQ complexity. They describe an absolute void with a lack of matter equal to a space-time sequence resulting in information in its nascent, non-aggregative form (the Sub quantum plenum). Implicated layers of increasingly subtle pre-quantum domain may be organized in complete worlds of the kind our current standard physical universe is, but ranging till its own "absolute void" as a transition state to the next implication level of reality.

The pre-quantum tenets rely upon experimentally testable assessments. Klein and Boyd assert

and upside-down epistemological approach for the primary determinism that Information structures have upon their physical counterparts.

Their views are perfectly consistent both with conventional empirical treatment of space-time defying representational variables, and their causal primacy upon Quantum implementation systems of their content, in the integral range of their polyvalent manifestation.
A defined endless time vector allows ab-initio existing inherent resonance links in any SQ subtlety domain to turn into fluxes and organization effects leading to sequential entelechial self-contended worlds. These primeval harmonic SQ resonances are the very pattern of their overarching cosmic harmony, the source of all conceivable manifestation and interconnectedness. Communication is via subquantal communication

Klein and Boyd have motivated this in their new subquantum integration approach.
This could possibly fit an additional component of our model of indivension providing a possible field using the smallest of reality elements.

The Klein-Boyd model cannot be done justice to here. If it is correct, it could possibly still fit an additional component of our model of indivension providing a possible field using the smallest of reality elements.

Evert and his Typology of Aether-Motion-Pattern
Alfred Evert has developed a Typology of Aether-Motion-Pattern[239]. Evert's ´ aether has any kind of ´granules´ assumed to be minimum small ´sub-quantum-particles´. He postulates that all aether is connected, there are no gaps within and everywhere the medium is likely ´hard´. His portrayal of the aether closely resembles vortices and so overlaps with TDVP, in that regard. Wider swinging should exist within that ´resting´ Free Aether. He postulates that the principle of intensive movement at the middle is inevitable characteristic of motions within gapless and partless aether. That motion-pattern is contrary to many motions of our experienced material world, where e.g., all wheels are moving most fast at the rim.
He postulates there is only one aether-substance and no second material-substance (like elementary- or sub-elementary-particles or any kind of substantial matter). Indeed all material, spiritual and mental appearances exclusively are different motion pattern of aether within the aether. Above this, nothing solid is wandering through space. Only the characteristic features of motion-structures are forwarded through the stationary aether (just like ´sound´ wanders through resting air).
He proposed that particle-less and gap-less aether any motion should be possible. Based on strong mutual interdependence of synchronous motions, the aether can not move unrestricted (like e.g., particles can move within gases or also previous aether-granules could move - if there would be great distances between). Within the gapless aether however only a restricted number of motion-patterns in principle can exist with compelling necessary structure-features, like upside mentioned as typology of aether-movement pattern.

The high degree of mutual interdependence is the essential reason for limited bend-ability of the aether.

Whereas the model may be brilliant, it is not easy to fully appreciate and it is difficult for us to classify in the TEO framework. Much of this is theoretical and because the ideas are very different from conventional physics, it is difficult at this point to take seriously.
However, his vortical model is well developed and it is interesting to see the ubiquity of the vortex even in a hypothetical aether.

String Theory and Dimensionalities
String theory involves another multidimensional perspective.
The series of theories is particularly complex, but have in common the theories of multidimensionalities.

Table 6: Perspective of String Theories
(from (http://www.superstringtheory.com/basics/basic5.html)

Type	*Space-time Dimensions*	*Details*
Bosonic	26	Only bosons, no fermions means only forces, no matter, with both open and closed strings. Major flaw: a particle with imaginary mass, called the *tachyon*
I	10	Supersymmetry between forces and matter, with both open and closed strings, no tachyon, group symmetry is *SO(32)*
IIA	10	Supersymmetry between forces and matter, with closed strings only, no tachyon, massless fermions spin both ways (nonchiral)
IIB	10	Supersymmetry between forces and matter, with closed strings only, no tachyon, massless fermions only spin one way (chiral)
HO	10	Supersymmetry between forces and matter, with closed strings only, no tachyon, heterotic, meaning right moving and left moving strings differ, group symmetry is *SO(32)*
HE	10	Supersymmetry between forces and matter, with closed strings only, no tachyon, heterotic, meaning right moving and left moving strings differ, group symmetry is *E8 x E8*

Some highlights of modern string theory history:
(based on Figueroa-O'Farrill)

1984—Green & Schwarz—anomaly cancellation:
After the first revolution, five perturbatively consistent superstring theories, living in a ten-Dimensional space-time.

1994 —Seiberg & Witten— supersymmetric gauge theories

1994—Hull & Townsend —string dualities.

Today: the search is for an intrinsic description of M-theory.

Initially, in the 1920s and 1930s, Polish Theodore Kaluza and Sweden's Oscar Klein's theory of 5 and later 4 dimensions existed[292]; then 26 dimensions were hypothesized, then varying string theories of 10 dimensions were suggested, then time was added making eleven –M theory[293], and recently with a second time dimension was hypothesized producing a twelfth dimension—the F-theory of Vafa circa 1997[294]. String theory supports pluralism although it has not been N-Dimensional per se.
The fundamental premise of string theory is that the basic objects in nature are not point-like, but rather string like. This requires all of gauge quantum field theory, supersymmetry and gravitation to produce a unified theory.

String theory sometimes uses parallels such as musical instruments to make it more comprehensible. In string theory, elementary particles observed in particle accelerators could be thought of as the "musical notes" or excitation modes of elementary strings. As in guitar playing, the string must be stretched under tension in order to become excited. The strings in string theory float in space-time, and are not tied down as in a guitar. Nonetheless, they have tension[295].

The string tension in string theory is denoted by the quantity 1/(2 p a'), where a' is equal to the square of the string length scale. Combining quantum gravity, the average size of a string should be extremely tiny, near the length scale of quantum gravity— the Planck length, about 10^{-33} centimeters. Current or expected particle physics technology is too large to test such sizes.[296]

String theories are classified according to loops strings – closed or not, and particle spectrum including "fermions" which require a special kind of symmetry called supersymmetry- for every boson (particle that transmits a force) there is a corresponding fermion (particle that makes up matter). Supersymmetry relates the particles that transmit forces to the particles that make up matter.
The parallels of unusual mass energy relationships with VP are drawn. [296]
We can extend this to sub-atomic physics and quantum physics with enormous periods of space emptiness in our conventional three-dimensional universe anyway, interfacing with points - sub-atomic particles - at a time level, all again with ovoid, occasionally irregular, motion implying a relativity of perception of observer which only then makes reality logical.
Already string theory is up to twelve dimensions with a variant including two dimensions of time[294]. Is there a reason why there should not be a dimension beyond the maximum number of dimensions discovered as calculations at each of the previous maximum number e.g., ten, needed another dimension, e.g., eleventh, to explain them appropriately. This should then

continue ad infinitum.

Hawking: Many-worlds Interpretation and Dimensionalities
The great contemporary physicist, Steven Hawking, and others such as Everett in 1957, support the interpretation of many worlds with an infinite universe. (MWI)
MWI is only one of several competing theories in Quantum Mechanics but if it is true it may imply immortality. Moreover, it may imply parallel universes. [266] In this regard, the Tegmark Quantum Suicide experiment can prove that the experimenter does not experience death, but that cannot be objectified to anyone else. (Higgo, 1998) However, MWI rests on several premises continued by Hawking and his co-author, physicist Leonard Mlodinow [279] where, they describe the concept of "multiverse' in their M-theory, a conglomeration of several theories, and concludes as we do that

- multi-dimensionality exists,
- everything and every time exist simultaneously, and have from the outset.

This component is similar to TDVP, but our model defines out N-D extrapolation, vortices, distinctions, three-dimensional time, the primary receptor, indivension, life and extropy. Hawking's MWI differs fundamentally because consciousness is denied (not even in their index) and their position is still in the dead end of physicalistic materialism: From this point of view, human beings are fortuitous arrangements in the debris of the expanding physical universe, brought into being by a self-organizing feature intrinsic to physical matter and energy, implying, that the belief in anything beyond the physical is fantasy. Hawking and Mlodinow[279]: "There is no way to remove the observer -- us -- from our perceptions of the world. In classical physics, the past is assumed to exist as a definite series of events, but according to quantum physics, the past, like the future, is indefinite and exists only as a spectrum of possibilities."

Our TDVP model is based, inter alia, on copious evidence demonstrating the existence of psi phenomena, but not invoking the supernatural, analyzing the evidence and logic pointing to the existence of an all encompassing, ever-existing primary form of consciousness that gives meaning to physical, psychological and mystical experience, and really explains why there is something instead of nothing.

Langan's Cognitive-Theoretic Model of the Universe (CTMU)
Christopher Langan's well-reasoned and detailed TOE is entitled the Cognitive-Theoretic Model of the Universe[281]. Our TDVP model though approached entirely differently, has some striking similarities to Langan's very sophisticated model. The similarities, however, were developed skeletally in our model before CMTU in 1998. (Dr. Neppe was first presented in 1989; and Dr. Close similarly published his then).

For example: In Langan's CTMU, he mentions how the real universe has always been theoretically treated as an object, specifically as the composite type of object known as a set. He

argues that an object or set exists in space and time, but reality does not. Tautologically, the real universe by definition contains all that is real, therefore there is no "external reality" (or space, or time) in which it can exist or have been "created". This approach is very different to our TDVP which links space and time to consciousness.

- Furthermore, Langan points out how the universe is not the sum of its parts, as these parts exist solely within a space-time manifold identified with the whole and cannot explain the manifold itself. He points out that “this rules out pluralistic explanations of reality, forcing us to seek an explanation at once monic (because nonpluralistic) and holistic (because the basic conditions for existence are embodied in the manifold, which equals the whole). Obviously, the first step towards such an explanation is to bring monism and holism into coincidence."
- Neppe called his original Vortex Dimensional Model, “Vortex Pluralism” referring to the N-Dimensions. However, within years he recognized that it was Monistic (just as Langan does) and incorporates all of reality (a whole). Therefore, we both recognize the Monistic and Whole component of existence as well.
- Langan also applies topology (containment). So do we: we apply in TDVP 3-D vortices. Langan applies Cantor's set theory; we apply a great advancement of this: Close’s calculus of distinctions allowing us to develop a mathematical model of distinctions of consciousness leading to different dimensions.
- Langan sees the cosmos as dynamic; in our Indivension model, we see dimensions as fluctuating dependent on state and individual-unit.
- Langan uses mathematical topological mapping. In TDVP, we use some 50 plus theorems, many which we developed, but essentially dimensionometry.
- Langan uses the word "God". We speak of the Origin Event and the Primary Receptor, as a non-prejudicial term.
- Langan’s CTMU recognizes the roles of zero and infinity, just as TDVP does, but TDVP uses concepts of relative zero and relative infinity.
- Langan's emphasis is different "Reality Theory". However, in TDVP, one major element is the Distinctions of Reality.
- Langan's "spirituality" is one component in our consciousness and N-Dimensionality models. He recognizes the need for some kind of meaningful intelligence in evolution.
- In TDVP, we recognize the fundamental tethering of reality at the STC level, but we go beyond that with our concept of Vortical Indivension, fluctuating dimensions and explanations of life.

But there are major differences too. Langan’s emphasis is different. He regards his Cognitive Theoretic Model of the Universe or CTMU, can be regarded as a supertautological reality-

theoretic extension of logic.

Laszlo The Akashic Field TOE

The philosopher, Ervin Laszlo has been an extremely prolific writer and an outstanding thinker. In his 2004 book, Science and the Akashic Field: An Integral Theory of Everything posits a field of information as the substance of the cosmos [274]. Much of his model derives from Sanskrit and Vedic traditions and he applies the "Akashic field" or "A-field" term for "space" and he utilizes cosmic memory refers to a universal field. Dr. Laszlo postulates a "quantum vacuum" as the fundamental energy and information-carrying field that informs the Metaverse (collectively, all universes past and present).

As in our TDVP model, László motivates conscious life-forms and informed evolution solving several problems that emerge from quantum physics, especially non-locality and quantum entanglement. In TDVP there is the initial tethering of C-substrate with S-substrates and T-substrates. Laszlo's concept of the preconditions has some similarity, but without the tethering of all reality.

Laszlo posits that our universe is so fine-tuned to the creation of systems of higher and higher orders of complexity, differentiation, and integration, that such a universe would have come about by chance is astronomically improbable. According to quantum cosmology, some 1 x 10^{500} (1 followed by five hundred zeros) universes could exist physically, but only a handful could give rise to life. Therefore our life-supporting universe brought about by a random selection from this enormous set of possible universes is a still almost impossible, but far, far more improbable than that living species would have come about by random mutations. The solution to evolution he feels requires highly harmonized and coordinated processes in all its domains.

He also applies Rudolph Steiner's models of spiritual-scientific methodology. (derived in part from http://en.wikipedia.org/wiki/Ervin_Laszlo; also http://www.huffingtonpost.com/ervin-laszlo/evolution-presupposes-des_b_537507.html).

Lanza and Biocentrism

Physician and biologist, Robert Lanza has proposed a model of *Biocentrism.* This recognizes the primacy of consciousness features in the work of Descartes, Kant, Leibniz, Berkeley, Schopenhauer, and Bergson. Dr. Lanza postulates, like Smythies does, that "space and time" are forms of sense perception rather than external physical objects. In this way there is a similarity with our model of Close's calculus of distinctions and percepts of reality. Lanza [273], like Laszlo [274] and ourselves, recognizes the extreme unlikelihood of the Cosmos arising purely by chance and the continued elements that seem to have maintained our survival on earth. Lanza and Berman have mentioned that 96 percent of the universe is comprised of dark matter and dark energy, the nature of which is a mystery, and this may imply that materialistic scientists are

ignorant of 96 percent of their subject matter including non-local manifestations of consciousness about how the universe does or does not work.
Dr. Lanza recognizes the profound implications of how exact the dozen constants in physics must be to allow the world and consciousness to exist. However, this raises the controversy of the anthropic principle. The anthropic principle states that when speculating about causes of the universe's properties, humans should take into account the conditions necessary for them to exist. If a suitable universe does not evolve intelligent life, then there would be no observers to notice that fact.
This anthropic principle can be strong or weak.
The “strong anthropic principle” recognizes that an infinite number of universes could produce every possible combination of initial properties and only those universes with exactly the correct density (or fundamental constants in this context) for forming galaxies and stars would give rise to intelligent observers such as humans [74]. Therefore, such constants could simply be a reflection of our own existence."
The "weak anthropic principle" requires no speculation on multiple universes, or on the probabilities of various different universes existing instead of the current one, because it requires only a infinite universe so that everything could potentially exist.
Debate ensues as to the relevance.
Bernard Carr and Martin Rees (1979) argued that the anthropic principle is entirely post hoc because “it has not yet been used to predict any feature of the Universe” [297].
But they point out that these “strong anthropic principles” are not vacuous or trivial arguments and these reflect how strong the relevance is to determine the remarkable exactitude of the physical constants and features of our Universe. They point out that the “weak anthropic principle” cannot just be resolved by “just a simple selection effect”.
Ernan McMullin [298] argued that "the weak Anthropic principle is trivial. and the strong Anthropic principle is indefensible." Therefore, many physicists and philosophers of science do not consider the principle to be compatible with the scientific method.
Moreover, there are other ways that such principles can be interpreted, including theologically, which muddies the waters because of the multiple interpretations of the anthropic principle.

Lanza’s model does not really recognize space-time in the way we have portrayed it, but certainly involves sense-perception. In a way there are elements of both dualism and idealism philosophically.

Lanza's theory of biocentrism has seven principles [299].

1. What we perceive as reality is a process that involves our consciousness. An "external" reality, if it existed, would by definition have to exist in space. But this is meaningless, because space and time are not absolute realities but rather tools of the human and animal mind.

2. Our external and internal perceptions are inextricably intertwined. They are different sides of the same coin and cannot be divorced from one another.

3. The behavior of subatomic particles, indeed all particles and objects, is inextricably linked to the presence of an observer. Without the presence of a conscious observer, they at best exist in an undetermined state of probability waves.

4. Without consciousness, "matter" dwells in an undetermined state of probability. Any universe that could have preceded consciousness only existed in a probability state.

5. The structure of the universe is explainable only through biocentrism. The universe is fine-tuned for life, which makes perfect sense as life creates the universe, not the other way around. The "universe" is simply the complete spatio-temporal logic of the self.

6. Time does not have a real existence outside of animal-sense perception. It is the process by which we perceive changes in the universe.

7. Space, like time, is not an object or a thing. Space is another form of our animal understanding and does not have an independent reality. We carry space and time around with us like turtles with shells. Thus, there is no absolute self-existing substrate in which physical events occur independent of life.

Laszlo and Lanza on Evolution and Reality

In a way, Laszlo and Lanza are similar. They both argue cogently for some kind of meaningful reality in the progression of our human life existence to this time. And they both recognize how remarkable and statistically infinitesimally probable it is that our universe, our earth, life and humankind exist. They both cogently argue that the more usual standard model of physics cannot explain why we live and how we humans continue to persist, not necessarily evolutionally but over a lifetime and across lives. Is there just a physical automatic mechanism that will continue irrespective? Once the switch has been put on, does it just run without any help?
On the other hand, many reductionist scientists apply physical materialism and cogently argue that these events, though apparently remarkable, are just statistical aberrations and we humans on earth are the consequences of this. They are anthropically easy to explain, and they maintain the statistics support their views, Certainly an uncontrolled natural evolution of the species is a strong possibility and would still support a physicalistic presupposition of reality. It really depends how one sets the Bayesian statistical null set and probabilities, or even if one can apply such Bayesian statistics at all to such events.

Similarly, indeed is the physicalistic model of evolution alone without any guidance sufficient to overcome the reality of the random selection of our world from the 10^{500} cosmic worlds and the appropriate evolution of man? Maybe it is. But others including Lanza and Laszlo point out the statistical illogicality of this argument. On the other hand are there exceptions to a natural but unguiding evolution? Could it be that there is a blueprint from the beginning and the rest freewheeled from there? This is how Laszlo perceives it. And Lanza points out about 200

fundamental constants. Could these be purely a complete accident without which physical reality would exist? Is it not only blind evolution, but a maintained world over billions of years with the continued grand but blind cosmos just by accident not interfering?

Where does TDVP fit this model? It agrees with Laszlo and Lanza based on the fundamental tethering of STC. If every structure, every subatomic particle, every component of reality is fundamentally tethered to a meaningful kind of consciousness, it means that decisions of the most primitive kind are being made from the beginning and will continue. It may be that that consciousness meaning guidance does freewheel at this point but the tethering of consciousness through indivension vortices across dimensions makes it more likely that reality is far more complex than 3S-1t physical existence.

Wilber: TOE Kosmos

Ken Wilber's writings are well-known in non-scientific circles and his TOE is very different from any other we discuss. Wilber's philosophy has been influenced by Madhyamaka Buddhism, particularly as articulated in the philosophy of Nagarjuna so that the Eastern religious element seen with Laszlo also applies here. He has written several book and In his latest book, A Theory of Everything, he crystallizes his several decades of model building into a reality that embraces the entire Whole of all mental-physical existence, ("Kosmos,") not just the particle-physics aspect of it. His approach relates to personal and societal development and he labels Spirit, and the progressive development of mental and physical expressions of Spirit with ever-larger concentric circles with origin in a common center representing outward, developmental, evolutionary movement and thereby solving a variety of Kosmic truths. [300] Wilber's model, we perceive, as targeted more to actualization and transcendence of self with the development of insights. His model of interweaving is similar, and of concentric circles if extended to three D could be vortices of consciousness, but there is no overt dimensionality. It may be best described as a mystical philosophy, but it does not conform to our LFAF definitions of science.

Sirag: Consciousness and Hyperspace

Theoretical Physicist, Saul-Paul Sirag recognizes multidimensionality in the hyperspace continuum, incorporates a consciousness into his model and recognizes the infinite. Although his is not a TOE, this is our homage to him.

The Kabbalic Mystical Model and Vedic Tradition

Our purpose is scientific discussion not mysticism. However, it is striking that particularly Sefer Yitzirah in Kabbalic triadic even refers effectively to the Triad of Space, Time and Consciousness. The persistence of mystical systems over thousands of years, though quite unscientific, still may support the ubiquity of the idea of tethered STC substrates.

On the one hand, to the conventional scientist steeped in physicalistic materialism, it is bad

enough for us to propose a model that radically alters their world view. But now we have dared to even mention mystical models in a scientific paper! If we did not, we would be intellectually dishonest. There is a great deal to be said for the inherent wisdom of mysticism that has survived over millennia. Is this pure superstition? Maybe. But it could be interesting how fundamental truths may have commonality across cultures. Indeed, if the TDVP model of C-substrate impacting as a meaningful reality in everything, we would expect that to correlate with mysticism.

Possibly the great 19th century psychologist, William James, (1897) expressed it best:
In psychology, physiology and medicine, whenever a debate between the mystics and the scientifics has been once and for all decided, it is the mystics who have usually proved to be right about the facts, while the scientifics had the better of it in respect to the theories. [301]

It may be intrinsically validating that much of our TDVP model fits even mystical philosophies (which incidentally, we discovered only after developing our model). If it didn't we would be concerned. It is intriguing that other than the earlier TOEs of Neppe's VNDP and Close's Transcendental Physics, Kabbalah scores highest in our Table 5 of all the TOEs. Is this coincidence or is it a meaningful coincidence? And it may be that the limitations of other mystical philosophies are just based on our ignorance of their finer points. We don't know but are open enough to wonder.

Applying the Highest Dimensions and the Mysticism Metaphor to the C-substrate
C-substrate becomes increasingly important as one goes higher and higher dimensionally at a substrate level. Applying a commonly conceived of mystical metaphor, one refers to "vibrations" which become finer and finer as the "consciousness development" becomes higher and higher. Extending this metaphoric concept, in order to have vibrations there has to be a frequency and there has to be a spatial component, Finer and finer vibrations imply therefore less relevance at a space-time level as one goes higher and higher in terms of a mystical spirituality which may here be a C-substrate higher level dimensionality (N+A dimensions instead of an earlier N-Dimensions; and starting at 3S-1t, it would be 3S-1t- 1C up to (N+A) C, Eventually, we could conceive of the extent of the space and time substrates approximating zero at the highest kind of levels of finite dimensions. Additionally, one could argue that consciousness (in C-substrate) at that level impacts on the lower dimensions but only very minimally on the more distant "lower" dimensions yet asserts that minimal impact across a very broad range of consciousness. In this way, C-substrate impacts metaphorically in an analogous way to the impacts of gravitation and the expanding universe which have tiny force impacts, but act on a very broad level. This is as opposed to the equivalent of strong subatomic forces which would impact very strongly but only over a tiny dimensional atomic neutron area in 3S-1t.

Applying this metaphor further, C-substrate could be purer possibly at those very high C-substrate dimensional levels, It has moved closer to a higher consciousness level may imply that

consciousness/C-Substrate is almost exclusive at those higher dimensional domains as S and T may equal 0 in those domains. Beyond that one would move beyond finite dimensions into the infinite and that infinite may or may not be directly accessible. Ironically, too, in these high metaphorical domains, C-Substrate at that highest level as may be negligible or in infinite terms reflect a nothingness compared with that infinite reality, and the infinite would imply potentially some kind of meaningful reality, the difference being that the guiding component is not necessarily very broad but miniscule in impacting "force": Because it is infinite and there are infinites in every dimensions, the impact could be powerful and broad. This mystically evokes again an idea of primary consciousness.

There is another component in Kabbalic Mysticism in regard to C-substrate, life and higher dimensions: What could be regarded as the "lower" tiers of creation, such as plants, are in fact loftier than the human being's own vital potential spark of divinity: The "lowlier" something is, the loftier its spiritual core. Yet in Kabbalah, humankind is the most spiritual of earthly creatures. The animal exhibits a more sophisticated vitality than the plant, and the mineral shows no outward signs of "life" at all. Yet, the sublimity of the spark of divine life in a thing is in converse relation to its manifest spirituality. Thus the mineral nourishes the vegetable, both nourish the animal, and all three sustain human life. However, only humans have the capacity to direct the vital energy themselves and they alone have free choice. The animal, vegetable or mineral conformity with the divine will is automatic and inevitable, and thus devoid of moral significance. [302].
In TDVP, C-substrate is also expressed by "meaning" in that lowest of levels, even the inanimate. Consequently, this is similar, as is the free-will element, and the concepts of the infinite.

De La Sierra: Neurophilosophy of Consciousness
Dr. Angell de la Sierra has produced a number of innovative, creative writings on research in Quantum Brain Dynamics, Process Philosophy, attractor hypotheses, psychosociocultural perspectivism mental images, spirituality, and brain sinks. This is based on the works of John Emlen and Walter Freeman. The conceptualization is complex but does not fit the fabric of a theory of everything, but we pay homage to a great thinker here.

We illustrate the complexity here: *"We can no longer say that the past has been but is no longer, while the future will come to be but is not yet."* [303]

"From the many sense-phenomenal objects and/or events in our immediate environment (including memories) only a limited number of steady states of discrete, individualized neuronal patterns (attractor basins) are set-up to respond exclusively to particular stimuli in the future. These would activate a particular set of bulbar neurons acting as a relay switch to a corresponding attractor basin uniquely coupled to different memory, emotional and physiological pattern of responses (mental state). When these signals were analyzed on the

oscilloscope screen they were found to resemble chaotic systems with 'attractor basins'. Once it was experimentally documented that there is probabilistic nature to brain dynamics," he concludes "we are forced to consider not just the fleeting moment we call present, the 'being', as it evolves or 'becomes' past in transit into a potential future, but also to predict with variable degrees of certainty its evolution into that future, the 'becoming' we may control: and free will to choose from available 'futures scenarios'. In so doing we acknowledge an involuntary shift away from the reductionist physical approach into the metaphysical 'emergence' realm of 'process' philosophy.

This thinking derives in part from Emlen, Freeman et al (1998) who point out the difficulty of evolution in explaining day to day to day changes, including cerebral plasticity, an emergent phenomenon they call the attractor hypothesis [304]. De La Sierra later built on this hypothesis in his model which effectively limits brain sinks that concentrate information.

In TDVP we see the metaphor of the nucleus (brain) and the leptons (the broader less concentrated metaconsciousness).

Whiteman's Philosophy of Space and Time

We were originally going to place the extremely complex, comprehensive and esoteric work of Prof J.H. Michael Whiteman, the late South African mathematician, mystic and musician into a single further theory of everything. Dr Whiteman had more than ten thousand subjective out of body experiences [202] and wrote thousands of pages in books analyzing reality from his own experiential perspective, as well as from his esoteric interpretations of original Eastern Mystical readings [206, 209, 210]. However, classifying Dr. Whiteman's contributions under our comparisons of "Theories of Everything" is not fully appropriate because it was never claimed to be so. Nevertheless, his major work distinguished the "physical life" and contrasted this with the supposed reality from the multitude of other "non-physical" lives that people can experience. It impacted, therefore, on several significant areas that TDVP discusses, namely the subjective and the objective; life and consciousness; and multidimensional space-time.[206] Whiteman also significantly impacted psi experiences and concepts of survival [207, 208]. His writings did not directly impact order and infinity, although they certainly implied them. Whiteman recognized that life could be very different from how we usually perceive lives at the moment, as people could experience it non-physically. His many pertinent books though esoteric, will endure, and one of the authors (VN) had the privilege to interchange ideas for many hours with this remarkable centenarian.

Gould's Nonoverlapping Magisteria (NOMA)

Stephen Jay Gould's Nonoverlapping Magisteria (NOMA) is an attempt to separate science and religion yet provide a paradigm. There are two Magisteria in the fields of science and religion, respectively. A magesterium refers to the authority of the church but Gould applies it equally to both science and religion, though overlap and "interdigitate" "along their joint border."

The content of these two realms deal with what we could classify as a fact and value distinction. Science describes via empirical verification factual information and why it work in this way; religion attributes questions of ultimate meaning and moral value. These two magisteria do not overlap, Gould proposes a fence between the two. These two magisteria do not reflect everything: For example, inquiry about art and the meaning of beauty does not fit either.

An interesting illustration is in Aristotle's physics: He named his Unmoved Mover; God, but this God was not an object of religious devotion. It served merely as the engine to crank the motion of spheres.

Watson's Theory of Enformed Systems (TES)

Psychiatrist, Don Watson's original Theory of Enformed Systems (TES) is a theory of organization itself—its origin, maintenance, and evolution. TES is founded on the posit that there exists a fundamental, conserved capacity to organize termed enformy. By logically following the implications of the posit that enformy is the fundamental, conserved capacity to organize, TES explains life and consciousness as characteristics of enformed systems. Under TES, the fundamental organizing principle is a process--enforming. Enforming, occurs without an entity, pre-exists and is fundamental to all physical phenomena. From this posit, deductions flow, e.g., enforming creates entities, and these predict, psi, life and consciousness. Enformism is the set of concepts that are based on the premise that organization itself is fundamental to everything, including matter and spirit. Enformism derives explicitly from the Theory of Enformed Systems (TES). Like spiritism, enformism holds that something non-material is fundamental to matter, but enformism is deeper than spiritism because it holds that organization per se is fundamental to everything, including "spirit." Enformism is also broader than spiritism because TES provides an internally consistent, holistic model of the "SELF". The concept of SELF is deductively derived from the enformy posit. This entity superficially resembles some renderings of "soul," but is far more useful because it's well-defined and testable. Consequently, because SELFs animate living organisms, TES eliminates the need for undefined concepts such as "soul," "spirit," or "vis vitae." There's no need for a concept of "mind," either, because the SELF performs all the operations traditionally attributed to the mind. That's why there's no "mind-body problem" in the TES world-view. Under TES, connecting, connection and interconnection consist of SELFs cohering in space-time and sharing enformation. Living, conscious organisms are animated by SELFs, which are created by the enforming process. Non-enformed systems (such as robots) are not animated by SELFs. However, as a theory of organization per se, TES does not apply only to living systems. It applies to all natural systems, animate or inanimate.

TES explains psi phenomena. If "science" is traditional materialism and "spirit" refers to traditional spiritism, a reconciliation of the two can't happen. because spiritism and materialism

are incongruous from their conceptual roots up. Applying TES, spirit and matter are conceptualized in entirely new ways.

Linguistically and emotionally, naming "something" creates the illusion of mastering the unknown. This is very common in medicine. Our beliefs reside in our theories. The ideas inherent in TES can't be interpreted in terms of any familiar world-view. humans prefer the certainty of fiction over the uncertainty of reality. TES also encompasses concepts such as wisdom: Wisdom is the set of mental attributes that allows a species to adapt to make adaptive decisions in a social context and its environments. Such a definition must (a) apply to all kinds of animals, and even plants; (b) imply that wisdom entails thinking--information-processing that organizes behaviors; (c) include abstract thought as well as sensorimotor ("concrete") thought; (d) apply effective reality testing; and (e) comprehend instinctive and acquired abilities.

Dr. Watson's TES model has some similarities to TDVP. It recognizes that a TOE must be all encompassing. It applies to psi, to life, to the animate and the inanimate. It tries to encompass both the material and the spiritual. It recognizes the origin of things. It postulates a process from the beginning. In ways, Enformy is not far from our conceptualization of a broader "consciousness" that exists from the start of the Origin Event and impacts on everything because it is fundamentally tethered to it. Also Enformy recognizes the need for organization, which TDVP also does in its concepts of Extropy.

Hoffman: Conscious Realism and Multi-User Interface Theory

Don Hoffman PhD, a cognitive psychologist, recognizes on the one hand the great number of empirical correlations linking consciousness and brain activity, particularly the experimentally induced damage or losses or stimulation data. This demonstrates how activity in brain systems with a high degree of information integration can easily be correlated with conscious experience. The problem is one of cause and effect. Some material monists postulate that such biology causes the epiphenomenon of consciousness. This has become the prevailing neurobiological viewpoint, but it is incomplete as there are areas that are not explained. These can be regarded as just incomplete information at this point, or ignored.

Effectively, Hoffman postulates the reverse. "Sentience is not a combination of brain events or computational states: how a red-sensitive neuron gives rise to the subjective feel of redness is not a whit less mysterious than how the whole brain gives rise to the entire stream of consciousness." [305]

Hoffman [280], and also later Miller [306] motivate very powerfully why correlations in the brain should not be regarded as causal reductionist correlations where consciousness or psychological functions are epiphenomena. Not only should one necessarily need to establish a causal link but it is not apparent in which direction such causality goes.

Dr. Hoffman suggests a solution to the mind-body problem is that correlations arise because consciousness creates brain activity, and indeed creates all objects and properties of the physical world. This can be conceived as a variant of monistic idealism but with some objectivity as well. Hoffman develops two theses. The multimodal user interface (MUI) theory of perception: This states that perceptual experiences do not match or approximate properties of the objective world, but instead provide a simplified, species-specific, user interface to that world. perception is a multimodal user interface [280]. A successful user interface does not, usually, match or approximate what it represents but reformats it in a user-useful manner. It simplifies, and does not match the user interface quickly informing the actions of the user and this is entirely distinct from the represented user domains. This perceptual user interface is effectively reformatted appropriately to the particular organism's niche, producing an adaptive advantage over the objective world.
Hoffman's second idea is the related Mind-Body model of Conscious Realism. This states that the objective world consists of conscious agents and their experiences. These can be mathematically modeled and empirically explored in the normal scientific manner. Whereas Hoffman's MUI theory makes no claim about the nature of the objective world, Conscious Realism does. Conscious realism proposes the answer to the question of what the universe is made of. Conscious realism asserts that the objective world, i.e., the world whose existence does not depend on the perceptions of a particular observer, consists entirely of conscious agents. It therefore is a non-physicalist monism. What exists in the objective world, independent of perceptions, is "a world of conscious agents, not a world of unconscious particles and fields" which are not themselves fundamental parts of the objective world. Consciousness is the fundamental and arises from complex interactions of unconscious matter and fields. Consciousness arises first; matter and fields depend on it for their very existence. The terms "matter" and "consciousness" function differently for the conscious realist than they do for the physicalist.

Dr Hoffman understands that physicalists' TOEs are ever incomplete because of their failure to recognize that consciousness had to be present from the beginning, although his argument for this appears to be purely heuristic. By contrast, TDVP is solidly based on the Copenhagen interpretation and the logic of infinite descent.

Hoffman realizes the links of conscious perceptions and distinguishes it from actual reality. In this way there is a similarity to a limited version of the Calculus of Distinctions. Hoffman's conscious realism with MUI construction of perceptual reality is original but his ubiquitous conscious agents seem poorly defined.

Leibniz: Topological Space, Totalities and Monads

We have mentioned the German rationalist philosopher and mathematician, Gottfried Wilhelm Leibniz (1646-1716) only briefly yet many of the ideas that he developed have created the environment for many of the scientists above [307]. He recognized that space was relative and

debated the issue with Newton. He also developed what we now call topology. We introduce him briefly here because some of the TOEs above are based on his conception of substance. He recognized something *beyond the totality of contingent things.* He also described space and time, as real only insofar as they symbolize real differences in substances, but illusions to the extent that space or time are taken as a thing in itself, or spatial/temporal relations are taken to be irreducibly exterior to substances, or extension or duration are taken to be a real or even fundamental property of substances. This is similar to Einstein's view of space and time. He referred to "monads" which means it is one, has no parts and is therefore indivisible and described how time, like space, is an illusion.

CHAPTER 44: *TDVP: A UNIFIED PARADIGM SHIFT*

The idea that everything in the world has a meaning [reason] is an exact analogue of the principle that everything has a cause, on which rests all of science.
Kurt Gödel [148]

The Paradigm Shift

The most important goal of science is a deep understanding of reality. The deeper and more complete our understanding, the better our chances of survival and growth as a species and as individuals. A review of the history of science reveals slow growth punctuated by occasional relatively sudden leaps in understanding called paradigm shifts. During the periods of slow growth the attitude is: "We know what reality is, we only have to fill in the details". But science as we know it has always been incomplete. The important paradigm shifts, like the discoveries of Newton's laws of motion, relativity and quantum physics, have occurred when, in the process of filling in the gaps, phenomena that contradicted or could not be explained by the existing paradigm were found.

New paradigms always open new vistas revealing aspects of reality that were either only dimly perceived or totally unexpected prior to the advent of the new paradigm. Overall, science moves forward most rapidly when the details of various studies and disciplines are integrated into a larger, more consistent picture.

The standard scientific physicalistic paradigm involving 3S-1t alone has not integrated relativity and quantum physics, and it does not adequately explain quantum observations and various psi phenomena. Nor does it adequately explain, some scientists argue [254, 255], an unguided evolution, and the states of order reflected in life, or the phenomenon of physical life itself. Whether the brain can fully explain all facets of "consciousness' simply as epiphenomena of underlying physiology can be strongly disputed. In the past, scientists have not associated psi phenomena with quantum phenomena, yet they both defy explanation in much the same way: They both exhibit connections over time and space without the normal physical mechanisms found in other phenomena and the rare event ostensibly anomalous behaviors invoke the possibility of a unified mechanism.

Revisiting a Key Area: Consciousness

Numerous key ideas have sprung from the TDVP model: Dimensions and Consciousness with extropy, tethering of CST, indivension, fluctuating dimensions, the varying relative components. All of these fit into our model well and we believe can be unified.

- Our approach, therefore, has been to investigate the areas of contradiction and incompleteness and the various documented phenomena that are not explained by the current paradigm. We identified one common element in these phenomena as "consciousness". Consciousness has been defined in a broad sense of encompassing three key components.
- First is brain related awareness and response, which also facilitates the processing of cognitive, affective and volitional functions (CEV) plus in humans (and possibly other animals) such higher qualities as love, courage, meaning, knowledge, understanding, wisdom, and spirituality. The physical senses, the autonomic nervous system, the central nervous system and the brain are the major functional components of the vehicle used by consciousness for interaction with the physical universe. Brain consciousness is a property of all living beings.
- Second is the extended, more collective reality from which information and knowledge could be apprehended and influenced—metaconsciousness—where the contradictions and incompleteness could be resolved and corrected by applying this new consciousness-based metadimensional paradigm which by definition therefore extends beyond 3S-1t). Extended consciousness is a property not only of all living beings but of all informational existence and knowledge.
- Third is a meaningful awareness and responsiveness in all particles or packets even at the subatomic level. This meaningful consciousness exists in everything living or dead, animate or inanimate from the subquantal to the macrophysical to the astronomical. It pervades the cosmos.

The essential element of a broader consciousness required bringing it into a broader dimensional reality with the equations describing this reality. We did this by applying a new consciousness-based mathematical tool called the calculus of distinctions. We also found that this the application of other relevant theorems revealed asymmetry in motion and the existence of additional dimensions.

The Process of Indivension: The Content of Fluctuating Vortices

There needed to be a process of interaction, interface and communication across and within these dimensions. This process we defined as "indivension'. There needed to be a content in which this process could take place, one broader than just a field in one dimension. This content involved vortices.

We applied these vortical motions in all their varied manifestations as the primary underlying form content of all reality. Vortices fluctuate across and within dimensions as individual-units (individually, or as groups, or as even subatomic units) through the process of indivension, creating an enormous web of interacting and interfacing vortices with "zillions" of other individual—unit vortices. In this way, information is shared, and meeting *points* created via vortical intersections which may appear to be vectors, scalars or tensors depending on the

dimensional interfaces. Such meeting points (in a way singularities) or vortices (3 dimensional) allow psi and entanglement to manifest at the 3S-1t level of our usual human earthly domain living. Vortices exist within the S-, T- and C-substrates therefore impacting space, time and consciousness.
We realized that the vortices need to have a fundamental link with all of Space, time and consciousness and this came about through the STC tethering that exists in all objects from the subatomic to the astronomical and from the beginning of the Origin Event, be that the Big Bang or other event.

The Unified Basis
In order to have a TOE, explanation of previously unexplained phenomena should rest in a unified theoretical basis. We have discussed 3 aspects of evidence that support the need for a new paradigm, namely

- extensions of special and general relativity using dimensional extrapolation,
- interpretations of entanglement or relative non-locality in the paradoxes of quantum mechanics, and
- consciousness research, including the solid scientific data, which has been achieved by a century of research into psi, and the numerous different ways psi can manifest in consciousness. We can already unify psi and consciousness, and that is a major step.

If these three bodies of evidence can be explained by one underlying possible unitary model, then the TDVP paradigm is indeed unified. Alternatively, it could be that each of these are independent.

Our explanation above links psi and entanglement with a meaningful reality consciousness at its tethered core, and requires dimensionality which is achieved though relativity warping of forces and manifesting by extrapolation to higher dimensions. This therefore is a unified model. The rarity of the events of relativity and quantum mechanics and the rare events of psi phenomena are all explainable within the framework of the TDVP model. This rarity is a striking similarity in the 3S-1t.

We have necessarily invoked two components to our model:

1. metadimensionality as extra dimensions explain why there is an incompleteness at the 3S-1t level, and
2. vortical indivension, because the indivension process allows for connections across fluctuating dimensional realities and fluctuating domains. These too may be, rare events.

These models allow an explanation of what appears to be entanglement at a distance.
This distance does not need to be identical on both sides because one is dealing with a 3 dimensional fundamental triadic reality in consciousness, in space, and in time, and that these

contribute to potentially higher dimensions which are almost always (unless in rare instances) asymmetrical.

The Ultimate Unification

In summary, space, time, and consciousness in the context of S, T, and C-substrates exist always together, each time. This means that any kind of quantal mechanical action, or action at any level exhibits all three of these.

We find that the integration of dimensional structure, vortical form and the drawing of distinctions and the organization of those distinctions into meaningful patterns constitute the actual nature of our reality. The patterns of vortical distinctions created by consciousness out of consciousness are tied together or tethered at the point in CST dimensionality where quantum and psi phenomena meet. We hypothesize that greater awareness of this connection, implying the integration of all phenomena, will facilitate the further development of this real theory of everything.

In the merged unification of our TDVP paradigm, we can show how entanglement originates from the tethered STC substrate and so does psi phenomena.
Psi appears to manifest precognitively and possibly retrocognitively, not only contemporaneously. This implies that extra time dimensions are required.
We have proposed a model of extending the warping of the gravitational dimensions in General Relativity to including other energetic forces and possibly C-dimensional (non-energetic or less likely different subtle energetic) forces by using dimensional extrapolation. By utilizing models of metadimensionality, the inconsistent, incomplete entanglements of 3S-1t and the rare transitory or incomplete events picked up or influenced by ostensible psi becomes more detailed or complete applying three-dimensional vortical indivension (based on Pythagorean and FLT theorem modifications).
Taken to the limits of an N-Dimensional reality, by applying a calculus of distinctions, specifically variables of extent (ordinal in C-substrate, interval metrics in S and T substrates) the next stage for a TOE must be infinity as otherwise it would be incomplete. A corollary modification of Gödel's incompleteness theorem allows for this.

Our model incorporates some key features. It logically suggests some hypotheses that may or may not be true or which have not yet been tested. The key elements of TDVP relate to STC tethering, metadimensionality, distinctions, and vortices. The first suggestive level reflected in our subtitle suggests the possibilities of N-Dimensionality, as well as order in living organisms. At the next level of speculation we tentatively suggest models of how to extrapolate dimensions, and the roles of infinity and unifying of reality. Whereas we attempt to apply mathematical and physical data, and to utilize theorems, while supporting the feasibility of the broader model, it does not prove that exact model. This is why we have separated the primary aspects of our hypothesis from secondary elements. We have used a paradigmatic shift and the

major jump in ideas flow that from it will ultimately take several hundred scientific papers to evaluate some of this data and they will still be sources for debate. Importantly, the refutation of any single concept does not refute the model, only that single concept. That becomes a building block to re-assess the status, and part of the heuristic structure of a related or modified model.

CHAPTER 45: *SOME ANSWERS TO THE PREVIOUSLY UNEXPLAINED*

The important thing is not to stop questioning.
Albert Einstein

We asked some questions at the start showing the demonstrable limitations of the standard model of 3S-1t, and how it is incompatible with the features below. Let us now re-examine these features that have challenged the standard scientific model of 3S-1t, and evaluate whether the TDVP model should allow compatibility even in those areas in which the standard model has failed.

Entanglement. This imminently fits in terms of relative non-locality and concepts pertaining to infinity.

Psi. The data for psi is overwhelming and we have shown a model for psi within TDVP.

Lower dimensional incompleteness. We have demonstrated how we need to have higher dimensions and infinity for our model to be complete. Life has been a mystery. How is occurs and why it occurs, and our model explains that too.

Evolution. Debate exists as to whether or not evolution could occur without meaning. We believe that it could not, but where did the meaning come from? It comes from the original STC tethering. Consciousness, the whole model we have drawn up relates to consciousness.

Life. The TDVP model of infinite essence includes life from the origin. It allows for an explanation of how life begins.

The Standard Physics Quantum Mechanics Model has limitations.

The Subatomic Particles and the Current Paradigm.
Can They Now Be Explained? Speculations

We amplify this though it is the most difficult challenge of all.
Possibly we have some more data here, though this is far too nebulous to explain in detail.
We know there are limitations to the conventional scientific subatomic paradigm. How would the awareness of any of consciousness, psi, extra dimensionality involve a way to explain some of these limitations. This is a deliberately broad question, and, additionally, we know that the definitions of these concepts are under dispute as well, but let's look at a broad answer.

In explaining the current subatomic fundamental standard model of quantum mechanics, the macrophysics and astrophysics may involve a contradiction before reaching the Planck's scales. Consciousness may be a link because of the infinite component, in that regard impacting at every level including the cosmologic.

We see no reason why neutrino oscillations with extra arbitrary constants and similarly, quantum chromodynamics, and symmetry and asymmetry may not have link ups with the extra-dimensional realities where there are asymmetries —this may be highly relevant.

The problem of homogeneity of isotropy is linked up with cosmic inflation, but there appear to be rules pertaining to cosmic inflation and expanding of the universe.

Different measurements of size imply that there is another component, a hypothetical consciousness. At the finite level, it might be quanta or chronits, or qualits or conscits or psitrons, or kinetrons, extra particles that might explain these differences. This is purely speculative, but it is just interesting that one can utilize such ideas to try to explain such things as asymmetry and the hierarchy problem. Conscits might be a non-measurable phenomenon because it derives form the infinite and it is relatively non-local.

The physical theory of everything unifying all the fundamental interactions of nature might have been unified by extended dimensionality by applying warping of forces producing extra-dimensionality.

Wave Particle Duality

The role of waves and particles may be insufficient. Wave particle duality is insufficient. We believe that actually we are talking about a triadic component of wave particle and meaning. How can we prove this? We postulate we can prove this with biophotons. There have been experiments involving biological psychokinetic influences, for example on plants and microcultures. One experimental test of the hypothesis that photons have three components, particle, wave and meaning (or consciousness or influence) could be demonstrated by using an experiment such as demonstrating biophoton influences. Some kind of biological influence must be shown to cause photons to behave in a different measurable fashion and this must be replicable.[aa] If this is found, it would be a groundbreaking major advance changing the whole model of quantum mechanics demonstrating its triadic not binary nature. This is already fundamental. The TDVP model postulates it requires a third element, namely meaning. *Possibly one reason is simply the bottom-up approach of particles as opposed to the top-down approach utilizing consciousness and infinity.*

[aa] Given the impacts of the so-called Experimenter Effect [308-310]on such research (this is effectively biological psychokinesis, also called bio-PK or DMILS) such replication may not be as easy as it should be. We need to also take care that setting up a control and experimental group may both generate statistically significant and demonstrate deviant responses even using a very high significance requirement but not differ from each other. But still the results of the two group may be equal and not statistically different. The classic Coover work at Stanford in the second decade of the 20th century [177] demonstrated so called contemporaneous thought transference (later called telepathy) but was not different from contemporaneous clairvoyance. Yet both groups, despite still small sample sizes were already overwhelmingly significant when re-analyzed later.

Chapter 46: *IS TDVP TRULY A THEORY OF EVERYTHING?*

For a Theory of Everything to be truly a Theory of Everything it must be feasible at every level of endeavor.
It must be scientifically feasible, even when opponents don't like the idea.
Applying LFAF, it must not be falsified and it must remain feasible in the physical, psychological, consciousness and life sciences.
It must be feasible subatomically, in macrophysical reality and cosmologically.
It must be mathematically appropriate, and it must form an appropriate theoretical model for philosophy, theology and mysticism.

Our premise is that the laws of nature should be universally applicable to to all reality.

Space, time and a broader descriptive "consciousness" (S, T and C-substrates) are fundamentally inseparably tethered from the event-horizon *(e.g., the big bang)* ***producing a unified wholeness of cosmic reality.*** *(Axiom of Origin; also called Axiom of Original Tethering or the Axiom of Tethered Origin [ATO]).*

The model that develops from this single axiom is called The Triadic Dimensional-Distinction Vortical Paradigm (TDVP) and ultimately is expressed in a metaparadigm.

TDVP impacts several speculative critical and fundamental ideas: Three dimensions of time, N-Dimensions of consciousness, cause-effect, cognition-affect-volition, ego-boundaries, free will, hyperspace, meaningful information, knowledge and awareness, understanding, wisdom and thought and their influence across and interactions with subtypes of affect and volition, life, mystical awareness, special higher qualities such as love, and causality. "Metaconsciousness", subject-object paradoxes, multidimensional time-space and numinosity, are all introduced. Relative non-locality, relative zero, relative time, relative infinity and even relative non-Euclidean mathematics facilitate the interface with our current physical universe. An ultimate end-point is the infinite interacting with the finite even prior to the Origin Event with a primary receptor. We show how warping of dimensions occurs, producing an open-closed, holistic-unified, finite-infinite universally applicable biopsychophysical reality. Ultimately, at minimum there is a 3S-3T-3C reality (implying 3 dimensions each of space, time and C-substrate) but there may be more dimensions of time and space than 3, and almost certainly it is 3S-3T-NC (implying N dimensions of C-substrate [broader consciousness])

The TDVP model is versatile, involving a process of fluctuating dimensions with indivensions, and a content mechanism with vortices, specific hypotheses or tests that have been proposed to support several other TOEs will not refute the TDVP model but provide added supporting feasibility data. *This great flexibility involving process-content across dimensions allows for the applicability of the model across numerous different disciplines and across many concepts.* ***Consequently,*** *specific hypotheses or tests that have been proposed to support several other TOEs will not refute the TDVP model but provide added supporting feasibility data.*

In the life sciences, the potential for life arises around the big bang event horizon (see

Definition section) or any Origin Event in the C-substrate. Physical life becomes actualized into reality when the correct genetic and anatomicophysiological markers evolve to sustain such existence.

The essential characteristics of TDVP are listed. There is no current TOE which fits all these criteria other than TDVP. This includes

"consciousness". This is not unique for a TOE. Models such as those of Klein, Evert, Laszlo, Smythies and Carr recognize the pre-eminence of consciousness and possibly Hoffman recognizes the pre-eminence of information.

Consciousness as conceived of in three components (Metaconscious, CNS consciousness, Meaningful reality at the quantal level) and deliberately called "C-substrate" to ensure this concept is understood as the conceptualization may be unique.

C-substrate has several subcomponents: It can be expressed in CEV: Cognition, Emotion, Volition, which have solid expressions through neurophysiology of CNS consciousness, or it can be expressed as possible metaconsciousness component qualities such as love, honor, courage, wisdom, understanding and a wide variety of qualities relating to higher attributes or it can be expressed at its most basic level (e.g. quantal) with apprehension or perturbation of objects or events.

Ultimately in the living organism, the expression of such awareness while awake in clear neurological consciousness is through the brain (CNS consciousness). However, we do not think "consciousness" can simply be explained as an epiphenomenon of physical evolution without resorting to some unexplained "self-organization". In other words, we cannot explain all aspects of consciousness and meaning and qualities such as honesty, love and courage simply based on biochemical or electrical processes in the brain. We cannot reduce consciousness to a reflex, a habit or an organismal stimulus, integration and response. There has to be a level of order to it, a level allowing separation of self from not self. Moreover, quantum physics requires that consciousness precedes the first quantum out of the big bang.

An N-Dimensional base. Such a base includes hyperspace and various string theories/ (This requirement eliminates those models that are still based on the 3S-1t standard physical paradigmatic model which explains most daily experience but does not explain the contradictory data). ND reality with N>4 is a hypothesis. However, it is strongly supported with logic, mathematics and empirical evidence.

The unification of STC substrates. The only other TOE amongst the current ones is that of Laszlo. Hoffman's uses mass-energy-information as a basic threesome though not unified inseparably.

The initial elements from the Origin Event or equivalent. This is comprehensible mystically e.g., Kabbalah and possibly Vedic philosophy and also with Laszlo, Lanza and Watson.

The unification of past, present and future. This is comprehensible mystically e.g., Kabbalah and also with Laszlo.

The integration of biology including extropy and life. The interpretation of how life actually begins is a unique part of the model and involves an explanation for life. A similar concept is implied in Watson's enformy but is not so verbalized.

Conceptual linguistic elements with order are used in Langan and Watson et al as well our TDVP model.

Multidimensional time which several have proposed but not integrated e.g., (alphabetically) Broad, Carr, Close, Dunne, possibly Hawking, Neppe and Whiteman.

The concepts of pervasive processes is frequent in the TOE model. This includes not only TDVP with vortical indivension, but Sheldrake's morphogenetic fields, Carr's TFT, Laszlo's akashic fields, and also seen in String theory, Hawking, Langan, Watson and Smythies.

The only model that moves across fluctuating dimensions is TDVP.

The tethering of STC and vortical separations allowing communications between, across and within dimensions is unique to TDVP.

Indivension relating to individual-units and communication both at a state and trait level. This integrates the social sciences and allows for a fluctuating number of dimensions. This is unique to TDVP.

The role of the infinite, and its interaction with the finite, which very few paradigms incorporate. Kabbalic and Vedic mysticism recognizes this.

The Space Substrate is at least three dimensional and represented mathematically as real numbers. The Time Substrate is posited as multidimensional and applies the imaginary numbers (as per Minkowski space). Because C-substrate is tethered with time and space, the interface is likely to be represented mathematically as complex numbers (the sum of real and imaginary numbers).

TDVP as expected scores a maximum. In fact, at this point, the only TOE it competes against is making itself better. However, it is somewhat tautological because the criteria we have deemed important may not be the criteria that others deem important. Nevertheless, the criteria derivation were sent to the developers (or with Kabbalah and Vedic mysticism, the representatives) of all available authors (15/21). Remarkably TDVP scores a full (21+13) or 34/34. This would be required for a real TOE because it cannot afford exceptions. *These results strongly motivate for the powerful breadth of TDVP as a TOE and a paradigm shift. These qualitative results are even more dramatic when looked at quantitatively. No other TOE besides our previous Neppe and Close models, score above 18/34.*

The speculative but important idea of all fundamental forces warping reality as a mechanism to extrapolate dimensions, following on an Einsteinian general relativity modification is raised.

Even more so, the greater speculation of C-substrate particularly metadimensionality reflecting extra dimensions based on metaconsciousness forces is posited.

We perceive TDVP as a critically important beginning evoking further research and demonstrating a viable mathematical and scientific theoretical framework with demonstrated feasibility through application to various fields of science, from quantum physics to the life sciences to consciousness research. From a simple axiom of the fundamental tethering of space, time and C-substrates from the Origin Event, TDVP generates about 600 different ideas.

TDVP may become a major contribution to the physical, biological, psychological and consciousness sciences, as well as to mathematics, philosophy, the philosophy of science and

impacts on the scientific linking of mysticism and spirituality TDVP pioneers the new discipline of "dimensional biopsychophysics".

We have been unable to find an area in which our TDVP model does not conform to the LFAF rule. The Triadic Dimensional-Distinction Vortical Paradigm (TDVP) truly appears to be a tenable paradigmatic shift.

The core axioms and points effectively separate out each component of our metaparadigm. This includes the necessity for infinity, for the origin of everything, for tethering associated with the absolute incontrovertible link of meaning with space-time dimensionality and the component of order as multidimensional extropy, and the need for extropy as reflected in life. We speculate this could be a mechanism or functional explanation or a distinction of intent. The same applies for density. Intent would then be meaning within the substrate.

Our metaparadigm has not altered fundamentally since we first brought it out because our ideas reflect the same model of our original TDVP concepts. However, the emphasis is a little different with added clarity about time, the infinite, the top-down approach, fluctuations, distinctions with the role of density linking content with extent.

Every one of these features are in our metaparadigm. Every axiom is fundamental but global axiomatic groups are infinity, finity and the boundary permeability contiguously and also with the top-down approaching the bottoms-up. The TDVP model cannot work without these two components. But our mixed dilemma is that consciousness and meaning alone is insufficient to imply the potential of life. Consciousness and meaning are still linked up with our S, T, C tethering and inseparability at that finite level but life becomes part of this extropy at the infinite level.
The key to it is also the linkage back to the Origin Event.

We've noted that instead of diminishing the excitement we experienced as each new version of TDVP came out, we have felt more confident that the revisions we've produced are closer and closer to reality. We've seen how the model explains one difficulty after another. It may be wrong, and it certainly be preliminary, but with respect, we think that this model explains much of psi, including its rarity more than anything else that has been proposed in the past.

A Theory of Everything requires a simple basic statement of truth that appears universally applicable.
Again, we modify Minkowski[15]:

"The views of space, time and a broad consciousness which we wish to lay before you, have sprung from the soil of experimental physics, the toil of consciousness research and the challenges of mathematics and logic, and therein lies their strength: A universality applicable

to the sciences, to mathematics, and to philosophical ideation. These views are radical, indeed, reflecting a paradigm shift. Henceforth space by itself and time by itself and consciousness by itself are doomed to fade away into mere shadows, and only a kind of tethered union of the three from the very beginning will preserve an independent identity." [15 bb]

We will go one step further and state our metaparadigm again. Clearly S, T, and C-substrates and the tethering is key from origin. But we want to also emphasize the role of dimensional distinctions, life and extropy.

Reality can be expressed within the natural laws[cc] *of the physical, psychological, biological and consciousness sciences with mathematical elaborations and involves a unified holistic reality with interweaving infinite and finite subrealities: the infinite is a continuous essence metareality (i.e., an all encompassing consciousness/information, space and time, with potential order and potential life); this (the infinite) pervades a discrete finite, cosmic subreality manifesting as a fundamentally inseparably tethered triad (originating from the Origin Event) of S, T and C-substrates (space, time and broader descriptive "consciousness") which then separate into multiple interwoven, fluctuating 3-dimensional vortices within, between and across dimensions perceived and conceptualized subjectively (relatively by individual-units) via our responsive 3S-1t experiential entropic physical subreality interpreted by our living physiological extropy. (The metaparadigm of Triadic Tethered Ordered Origin Unified Relative Subjectivity [TTOOURS]).*

Let us imagine once again: Expanding our awareness from 3S-1t-1c to include at least a limited sphere of 3-dimensional time and N-dimensional consciousness spanning the space, time and consciousness of human history, past, present and future, what do we see? We see the giants of science and spirituality upon whose shoulders we stand, and we see an integrated future Science of Reality begetting a better, more enlightened humanity. Focusing down to Earth, 2012, past the end of the long count of the Mayan calendar, and all the dire predictions, what do we see? The world has changed. Human beings have changed, reflecting a bit more clearly the extropy of the Transfinite Reality. In short, *the finite has changed, the infinite has not.*
"Humanity has never been anything but God asleep, entertaining itself with dreams of shadow and light, plus and minus, pleasure and pain! …Consciousness is, and always has been… There is no separateness. I simply recognize my original state." Ed Close, 1977 [2]

[bb] *This quotation is again adapted from* Hermann Minkowski, in his famous Cologne public lecture: 80th Assembly of German Natural Scientists and Physicians. 21 Sept 1908 *"The views of space and time which I wish to lay before you have sprung from the soil of experimental physics and therein lies their strength. They are radical. Henceforth space by itself and time by itself are doomed to fade away into mere shadows and only a kind of union of the two will preserve an independent identity.*

[cc] *We have used the term "natural laws" to refer to "the laws of nature" as is generally appreciated in the sciences. This is contrasted with the so-called "supernatural" which contradicts or goes beyond these laws of nature. We make this point because there are other uses for the term "natural law" (such as in various theological bases) and this is not our use here.*

Index using key words and phrases above

1. Wang, H. *A logical journey*. Boston: MIT Press; 1996.
2. Close, ER. *The book of atma*. New York: Libra Publishers; 1997.
3. Pappas, T. *The joy of mathematics*. San Carlos: Wide World Publishing; 1993.
4. Neppe, VM. Vortex pluralism: a new philosophical perspective. 1997. (Accessed at http://www.pni.org/philosophy/vortex_pluralism.shtml/.)
5. Neppe, VM. *Vortex n-dimensional pluralism: scientific empiricism, the heuristic approach and natural law*. In; 2003.
6. Neppe, VM. *Vortex n-dimensionalism: a philosophical–scientific paradigm and alternative to mind-body theories*. In; 2003.
7. Close, ER. *Transcendental physics*. Lincoln: I universe; 2000.
8. Neppe, VM, Close, ER. *Reality begins with consciousness: a paradigm shift that works*. Seattle: Brainvoyage.com; 2012.
9. Close, ER, Neppe, VM. *Space, time and consciousness: the tethered triad*. Seattle: Brainvoyage.com; 2012.
10. Harris, K. Collected quotes from Albert Einstein. 1995. (Accessed at http://rescomp.stanford.edu/~cheshire/EinsteinQuotes.html.)
11. Myers, FWH. *Human personality and its survival of bodily death*. London Longmans, Green and Co.; 1919.
12. Kelly, E, Kelly, E, Crabtree, A, Gauld, A, Grosso, M, Greyson, B. *Irreducible Mind: Toward a psychology for the 21st century*. Lanham, MD Rowman and Littlefield; 2007.
13. Kuhn, T. *The structure of scientific revolutions*. 1st ed. Chicago: Univ. of Chicago Press; 1962.
14. Popper, K. *Conjectures and refutations*. London: Routledge and Keagan Paul; 1972.
15. Minkowski, H. Raum und Zeit. *Physikalische Zeitschrift* 1908;10: 104–111.
16. Einstein, A. *Relativity, the special and the general theory*. 15 ed. New York: Crown Publishers; 1952.
17. Minkowski, H, Lorentz, HA, Einstein, A, Weyl, H. *The principle of relativity: a collection of original memoirs*: Dover; 1952.
18. Sheldrake, R. *A new science of life: the hypothesis of formative causation*. London: Blond and Briggs; 1981.
19. Wikipedia. Theory of everything. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Theory_of_everything.)
20. Oerter, R. *The theory of almost everything: the standard model, the unsung triumph of modern physics*. New York: Person Education; 2006.
21. Schumm, BA. *Deep down things: the breathtaking beauty of particle physics*. Baltimore: John Hopkins University Press; 2004.
22. Zee, A. *Quantum field theory in a nutshell*. Princeton: Princeton University Press; 2003.
23. Peacock, KA. *The quantum revolution*. New York: Greenwood Publishing Group; 2008.
24. Wikipedia. Planck scale. Wikipedia Foundation, Inc, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Planck_scale.)
25. Wikipedia. Cosmology. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Cosmology.)
26. Wikipedia. Dark matter. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Dark_matter.)
27. Wikipedia. Supersymmetry. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Supersymmetry.)

28. Wikipedia. Antiparticle. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Antiparticles.)
29. Wikipedia. Coupling constant. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Coupling_constant.)
30. Wikipedia. Lagrangian mechanics. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Lagrangian_mechanics.)
31. Wikipedia. Quantum chromodynamics. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Quantum_chromodynamics.)
32. Wikipedia. Standard Model. Wikipedia, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Standard_Model.)
33. Wikipedia. Matter. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Matter.)
34. Wikipedia. Antimatter. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Antimatter.)
35. Wikipedia. Assymmetry. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Asymmetry.)
36. Wikipedia. Isotropy. Wikipedia Foundation, Inc., 2011. (Accessed 201, at http://en.wikipedia.org/wiki/Isotropic.)
37. Wikipedia. Homogeneity (physics). Wikipedia Foundations, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Homogeneity_(physics).)
38. Wikipedia. Inflation (cosmology). Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Inflation_(cosmology).)
39. Wong, SS, ed. Introductory nuclear physics. 2nd ed. New York: Wiley Interscience; 1998.
40. Henley, EM, Garcia, A, eds. Subatomic Physics. 3rd ed. Singapore: World Scientific Publishing Co. Pte. Ltd.; 2007.
41. Guth, AH. *The inflationary universe*. Reading: Perseus Books; 1997.
42. Guth, AH. Eternal inflation and its implications. *J Phys A: Math Theory* 2007;40: 6811-6826.
43. Close, ER. The earth is expanding. *Telicom* 2011;24(1): 20-29.
44. Klein, A. *Email discussion* In: Personal communication to VMNeppe. Seattle and Israel; 2011.
45. Klein, A, Boyd, RN. *Toward a new subquantum integration approach to sentient reality*. In; 2010.
46. Povh, B, Scholz, C, Rith, K, Zetsche, F. *Particles and nuclei*. New York: Springer; 2008.
47. Wikipedia. Astrophysics. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Astrophysics.)
48. Wikipedia. Nuclear Physics. Wikipedia Foundations, Inc., 2011. (Accessed June 10, 2011, 2011, at http://en.wikipedia.org/wiki/Nuclear_physics.)
49. Wikipedia. Quantum field theory. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Quantum_field_theory.)
50. Wikipedia. Spontaneous symmetry breaking. Wikipedia 2011. (Accessed at http://en.wikipedia.org/wiki/Spontaneous_symmetry_breaking.)
51. Wikipedia. Physics beyond the standard model. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Beyond_the_Standard_Model.)
52. Wikipedia. Hypothetical particles. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Hypothetical_particles#Hypothetical_particles.)
53. Wikipedia. Extra dimension. Wikipedia Foundation, Inc., 2010. (Accessed 2011, at http://en.wikipedia.org/wiki/Extra_dimensions.)
54. Anastopoulos, C. *Particle or wave*. Princeton: Princeton University Press; 2008.

55. Popper, K. Autobiography. In: Schilpp, PA, ed. The Philosophy of Karl Popper, Part I. Illinois: The Open Court Publishing Company; 1974.
56. Neppe, VM, Close, ER. The incompleteness of the standard scientific model. *Dynamic Journal of Exceptional Creative Achievement* 2011, In press;1(1a).
57. Bell, JS. On the Einstein Podolsky Rosen paradox. *Physics* 1964;1: 195-200.
58. Einstein, A, Podolsky, B, Rosen, N. Can quantum-mechanical description of physical reality be considered complete? *Phys Rev* 1935;47(10): 777-780.
59. Acin, A, Chen, JL, Gisin, N, Kaszlikowski, D, et al. Coincidence bell inequality for three three-dimensional systems. *Phys Rev Lett* 2004;92(92): 250404-250408.
60. Tittel, W, Brendel, J, Zbinden, H, Gisin, N. Violation of Bell's inequalities by photons more than 10 km apart. *Physical Review Letters* 1998;81: 3563-3566.
61. Aspect, A, P., G, Roger, G. Experimental realization of Einstein-Podolsky-Rosen-Bohm Gedanken experiment: a new violation of Bell's inequalities. *Physical Review Letters* 1982;49(2): 91-94.
62. Wheeler, JA. *At home in the universe*. Woodbury, NY: American Institute of Physics; 1994.
63. Wheeler, JA. Delayed-choice experiments and the Bohr-Einstein dialogue. In: Society, AP, Britain), RSG, eds. The american philosophical society and the royal society: papers read at a meeting, June 5, 1980. Philadelphia: American Philosophical Society; 1980:9-40.
64. Anonymous. Copenhagen interpretation. Wikipedia Foundation, 2011. (Accessed 7/3/2011, 2011, at http://en.wikipedia.org/wiki/Copenhagen_interpretation.)
65. Anonymous. Quantum decoherence. Wikipedia Foundation, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Quantum_decoherence.)
66. Bohm, D. *Wholeness and the implicate order*. London: Routledge; 1980.
67. Talbot, M. *The holographic universe*. New York: Harper Collins; 1991
68. Talbot, M. *Mysticism and the new physics (revision)*. New York: Random House; 1992
69. Pribram, KH. *Brain and perception: holonomy and structure in figural processing*. New Jersey: Lawrence Erlbaum Asociates; 1991.
70. Carter, C. *Science and psychic phenomena*. 1st ed. Pittsburgh, PA: Sterlinghouse; 2012.
71. Neppe, VM. The LFAF model of feasibility in scientific method. *Dynamic Journal of Exceptional Creative Achievement* 2011, In press;1(1a).
72. Feyerabend, P. *Against method. Outline of an anarchistic theory of knowledge* London: Verso; 1975.
73. Feyerabend, P. *Science in a Free Society*. London: Verso; 1978.
74. Collins, CB, Hawking, S. Why is the universe isotropic? *Astrophysical Journal* 1973;180: 317-334.
75. Laudan, L. The demise of the demarcation problem.. In: Cohen, RS, Laudan, L, eds. Physics, Philosophy, and Psychoanalysis: Essays in Honor of Adolf GrünbaumBoston Studies in the Philosophy of Science Dordrecht: Reidel; 1983:111-127.
76. Popper, K. Replies to my critics. In: Schilpp, PA, ed. The Philosophy of Karl Popper, Part II. Illinois: The Open Court Publishing Company; 1974.
77. Popper, K. *A world of propensities* London: Thoemmes; 1990.
78. Poynton, JC. Many levels, many worlds and psi: A guide to the work of Michael Whiteman . *Proceedings Soc Psy Res* 2011;59(222): 109-139.
79. Grünbaum, A. *Geometry and chronometry in philosophical perspective*. Minnesota: Minnesota Press; 1968.
80. Dunne, JW. *An Experiment with Time*. London: Black; 1927.
81. Owen, HG. The earth is expanding and we don't know why. *New Scientist* 1983;22: 27-29.
82. Eddington, A. *The expanding universe: astronomy's 'great debate', 1900-1931*. Cambridge: Press Syndicate of the University of Cambridge; 1933.

83. Zukav, G. *The dancing Wu Li masters: An overview of the New Physics* New York City: William Morrow; 1979.
84. Wikipedia. Godel's Incompleteness Theorem. Wikipedia, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Godel%27s_Incompleteness_Theorem.)
85. Smullyan, R. *Godel's incompleteness theorems*. Oxford: Oxford University Press; 1991.
86. Berto, F. *There's something about Gödel: the complete guide to the incompleteness theorem*. New York: John Wiley and Sons; 2010.
87. Bell, JS. Bertlemann's socks and the nature of reality. *Journal de Physique Colloques* 1981;42(C2): C2-63.
88. Bell, JS. On the problem of hidden variables in quantum mechanics. *Reviews of Modern Physics* 1966;38(3): 447-452.
89. Prigogine, I, Stengers, I. *Order out of chaos*. New York: Bantam Books; 1984.
90. Gill, RD, Weihs, G, Zeilinger, A, Zukowski, M. Comment on "Exclusion of time in the theorem of Bell" by K. Hess and W. Philipp.. *Europhysics Letters* 2003;61(282–283).
91. Dosch, HG. *Beyond the nanoworld: quarks, leptons, and gauge bosons*. Wellesley: Ak Peters; 2008.
92. Brax, P. The supermoduli space of Matrix String Theory. 2011. (Accessed 2011, at http://cdsweb.cern.ch/record/411941/files/9912103.pdf.)
93. Gowers, T. *Mathematics: a brief insight*. New York: Sterling; 2010.
94. Stewart, I. *The mathematics of life*. NY: Basic Books; 2011.
95. Gariaev, PP, Friedman, MJ, Leonova- Gariaeva, EA. Crisis in life sciences. The wave genetics response. 2011. (Accessed at http://www.emergentmind.org/gariaev06.htm)
96. Cantor, G, ed. Conrtibutions to the founding of the theory of transfinite numbers. New York: Dover; 1955.
97. Anonymous. Planck scale. Wikipedia Foundation, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Planck_scale.)
98. Chalmers, DJ. Facing up to the problems of consciousness. *Journal of Consciousness Studies, University of Arizona* 1995;2(3): 200-219.
99. Chalmers, DJ. *The conscious mind: In search of a fundamental theory*. New York: Oxford University Press; 1996.
100. Brandin, V, Close, ER. *The calculus of dimensional distinction*. In: Elements of mathematical theory of intellect. Moscow: Interphysica Lab; 2003.
101. Close, ER. The Calculus of Distinctions. 2011. (Accessed at http://www.transcendentalphysics.com/1calculus.html.)
102. Brown, GS. *Laws of form*. New York: Julian Press; 1977.
103. Close, ER. *The logical basis for nd vortex theory*. In; 2010.
104. Neppe, VM. Revisiting survival 37 years later: Is the data still compelling? *Journal of Spirituality and Paranormal Studies* 2010;33(3): 123-147.
105. Neppe, VM. Phenomenological consciousness research: ensuring homogeneous data collection for present and future research on possible psi phenomena by detailing subjective descriptions, using the multi-axial a to z SEATTLE classification. *Neuroquantology* 2011;9(1): 84-105.
106. Neppe, VM. Temporal lobe symptomatology in subjective paranormal experients. *Journal of the American Society for Psychical Research* 1983;77(1): 1-29.
107. Palmer, J, Neppe, VM. Exploratory analyses of refined predictors of subjective ESP experiences and temporal Lobe Dysfunction in a neuropsychiatric population. *European Journal of Parapsychology* 2004;19: 44-65.
108. Neppe, VM. *The Psychology of Déjà Vu: Have I been Here Before?* Johannesburg: Witwatersrand University Press; 1983.

109. Blanke, O. Out of body experiences and their neural basis. *Bmj* 2004;329(7480): 1414-1415.
110. Blanke, O, Ortigue, S, Landis, T, Seeck, M. Stimulating illusory own-body perceptions. *Nature* 2002;419(6904): 269-270.
111. Persinger, MA. *Psi phenomena and temporal lobe activity: The geomagnetic factor*. In. Paper, The Parapsychological Association 31st Annual Convention, Montreal, Quebec; 1988.
112. Persinger, MA. Preadolescent religious experience enhances temporal lobe signs in normal young adults. *Percept Mot Skills* 1991;72(2): 453-454.
113. Persinger, MA. Enhanced incidence of "the sensed presence" in people who have learned to meditate: support for the right hemispheric intrusion hypothesis. *Percept Mot Skills* 1992;75(3 Pt 2): 1308-1310.
114. Neppe, VM. Neurobiology, brain reductionism and subjective experience. In: Krippner, S, Friedman, H, eds. Mysterious Minds: The Neurobiology of Psychics, Mediums and other Extraordinary People. Westport, CT: Greenwood Press and Praeger Publishers; 2009:Chapter 7, 129-150129-150150.
115. Neppe, VM. Models of the out of body experience: a new multi-etiological phenomenological approach. *Neuroquantology* 2011;9(1): 72-83.
116. Neppe, VM. Re-examining current neuroscience research controversies. *Aus J Paraps* 2008;8(2): 128-156.
117. Neppe, VM, A.T., F, eds. Déjà vu: a second look. Seattle: Brainquest Press; 2006.
118. Neppe, VM. *Déjà vu revisited*. Seattle: Brainquest Press; 2006.
119. Wang, H. *From mathematics to philosophy*. London Routledge and Kegan Paul; 1974.
120. Bohr, N. *Atomic physics and human knowledge*. Woodbridge: Ox Bow Press; 1987
121. Kumar, M. *Quantum: Einstein, Bohr and the great debate about the nature of reality*. Thriplow, Cambridge: Icon Books Ltd; 2009.
122. Anonymous. Bell test experiments. Wikipedia, 2011. (Accessed at http://en.wikipedia.org/wiki/Bell_test_experiments.)
123. Vedrai, V. Living in a quantum world. *Scientific American Magazine* 2011(6 (June)): 54-.
124. Whitehead, AN, Russell, B. *Principia Mathematica: volumes 1 to 3*. London: Cambridge University Press; 1910.
125. Anonymous. Godel's incompleteness theorem. Wikipedia Foundation, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Gödel%27s_Incompleteness_Theorem.)
126. Kaplan, A. *Sefer Yetzirah: The book of creation In theory and practice*. San Francisco, CA: Weiser Books; 1997.
127. Kaplan, A. *Sefer yetzirah: the book of creation*. New York: Samuel Weiser; 1991.
128. Close, ER. *Infinite continuity: a theory integrating relativity and quantum physics*. Los Angeles: Paradigm Press; 1990.
129. Neppe, VM, Dan, B. Déjà vu subtypes: four challenges for researchers. In: Neppe, VM, Funkhouser, AT, eds. Déjà Vu: A Second Look. Seattle: Brainquest Press; 2006:52-67.
130. Heisenberg, W. *Physics and beyond: encounters and conversations*. New York: Harper & Row; 1971.
131. Merali, Z. Physics of the divine. *Discover Magazine* 2011(3 (March)): 48-53.
132. Freeman, W. How brains make chaos in order to make sense of the world. *Behavioral and Brain Sciences* 1987;10: 161-195.
133. Morris, HM, Morris, JD. Can order come out of chaos? Vital Articles on Science/Creation, 1997. (Accessed at http://ldolphin.org/chaos.html.)
134. Anonymous. Chaos theory. Wikipedia, 2011. (Accessed at http://en.wikipedia.org/wiki/Chaos_theory.)
135. Anonymous. Butterfly effect. 2011. (Accessed at http://en.wikipedia.org/wiki/Butterfly_effect.)
136. Anonymous. Chaos theory. Wikipedia Foundation, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Chaos_theory.)

137. Neppe, VM, Palmer, J. Subjective anomalous events: perspectives for the future, voices from the past. In: Storm, L, Thalbourne, M, eds. Parapsychology in the 21st century: essays on the future of psychical research. Jefferson, NC: MacFarland; 2005:242-274.
138. Neppe, VM. Window into the mind, In: eds., : ; :.. In: Coly L, Shapin, B, eds. Man and the Paranormal. New York: Parap. Found; 1989:1-18.
139. Neppe, V. Symptomatology of temporal lobe epilepsy. *S Afr Med J,* 1981;60(23): 902-907.
140. Neppe, V. Non-epileptic symptoms of temporal lobe dysfunction.. *S Afr Med J,* 1981;60(26): 989-991.
141. Neppe, VM. Double blind studies in Medicine: perfection or imperfection? *Telicom* 2007;20(6 (Nov. - Dec)): 13-23.
142. Neppe, VM. Ethics and informed consent for double-blind studies on the acute psychotic. *Medical Psychiatric Correspondence : A Peer Reviewed Journal Model Copy* 1990;1(1): 44-45.
143. Moss, LE, Neppe, VM, Drevets, WC. Buspirone in the treatment of tardive dyskinesia. *JClin Psychopharm* 1993;13(3): 204-209.
144. Neppe, VM. High-dose buspirone in case of tardive dyskinesia. *Lancet* 1989;2(8677).
145. Gould, SJ. Nonoverlapping magisteria. *Natural History* 1997;106(March): 16-22.
146. Schrödinger, E. Discussion of probability relations between separated systems. *Proceedings of the Cambridge Philosophical Society* 1935;31(4): 555-563.
147. Schrödinger, E. Probability relations between separated systems. *Proceedings of the Cambridge Philosophical Society* 1936;32(3): 446-452.
148. Wang, H. *Reflections on Kurt Gödel*. Boston: MIT Press; 1987.
149. Cottingham, J. Cartesian Trialism,. *Mind* 1985.;94(374): 218-230.
150. Pico, RM. *Consciousness in four dimensions: biological relativity and the origins of thought*. New York: McGraw; 2002.
151. Halpern, P. *The great beyond: higher dimensions, parallel universes and the extraordinary search for a theory of everything*. Hoboken, NJ: John Wiley & Sons; 2005.
152. Hameroff, SR. Physical reality and consciousness -- introduction. 2011. (Accessed at http://cognet.mit.edu/posters/Tucson3/Hameroff.Reality.html.)
153. Whitehead, AN. *Science and the modern world*. New York: Free Press; 1953.
154. Whitehead, AN. *Process and reality*. New York: Free Press; 1978.
155. Shimony, A. On mentality, quantum mechanics and the actualization of potentialities. In: Penrose, R, ed. The large, the small and the human mind Cambridge, U.K: Cambridge University Press,; 1997:144-160.
156. Malin, S. What does quantum mechanics imply about the nature of the universe?, 2011. (Accessed at http://cognet.mit.edu/posters/TUCSON3/Malin.html.)
157. Schwartz, SA. The blind protocol and its place in consciousness research. *Explore* 2005;1(4): 284-289.
158. Neppe, VM. The incidence of subjective paranormal experience. *Program, Second South African Conference on Parapsychology* 1980.
159. Russell, P. Does our brain really create consciousness. TheHuffingtonPost.com, 2011. (Accessed at www.huffingtonpost.com/peter-russell/brain-consciousness_b_873595.html.)
160. Koestler, A. *The act of creation*. London: Penguin; 1970
161. Neppe, VM. *Six sigma protocols, survival / superpsi and meta-analysis*. In: group, Csd, ed.; 2011.
162. Ertel, S. The ball drawing test: psi from untrodden ground. In: Thalbourne, MA, Storm, L, eds. Parapsychology in the twentieth century. Jefferson: McFarland; 2005:90-123.
163. Bem, DJ, Honorton, C. Does psi exist? replicable evidence for an anomalous process of information transfer. *Psychological Bulletin* 1994;115(1): 4-18.
164. Radin, DI. *Entangled minds: extrasensory experiences in a quantum reality*. New York: Simon & Schuster (Paraview Pocket Books); 2006.

165. Storm, L, Tressoldi, PE, Di Risio, L. Meta-analysis of free-response studies, 1992–2008: assessing the noise reduction model in parapsychology. *Psychological Bulletin* 2010;136(4): 471-485.
166. Nelson, RD. Coherent consciousness and reduced randomness: correlations on september 11, 2001. *Journal of Scientific Exploration* 2002;16(4): 549-570.
167. Targ, R, Puthoff, HE. *Mind reach: scientists look at psychic ability*. New York: Delacorte Press/Eleanor Friede; 1977.
168. Jahn, RG, Dunne, BJ. The PEAR proposition. *Explore* 2007(3): 205-206; 340-341.
169. Radin, D. *The conscious universe*. New York: Harper Collins; 1997.
170. Radin, DI, Nelson, RD. Evidence for consciousness-related anomalies in random physical systems. *Foundations of Physics* 1989;19(2): 1499-1514.
171. Lobach, E. *Presentiment research: past, present, and future*. In: Charting the Future of Parapsychology, Utrecht II. Utrecht, The Netherlands; 2008:16-19.
172. Mossbridge, J, Tressoldi, P, Utts, J. Physiological anticipation of unpredictable stimuli: a meta-analysis. 2011 (under review).
173. Braud, W. Wellness implications of retroactive intentional influence: exploring an outrageous hypothesis. *Alternative Therapies in Health & Medicine* 2000;6(1): 37-48.
174. Bem, D. Feeling the future: experimental evidence for anomalous retroactive influences on cognition and affect. *Journal of Personality and Social Psychology* 2011;100(3): 1-19.
175. Dossey, L. Why are scientists afraid of Daryl Bem? *Explore* 2011;7(3): 127-137.
176. Bem, DJ, Utts, J, Johnson, W. Must psychologists change the way they analyze their data? a response to Wagenmakers, Wetzels, Borsboom, & Van der Maas (2011). *Journal of Personality and Social Psychology* 2011(In press).
177. Coover, JE. Experiments in psychical research. In: Psychical Research Monograph No 1: Stanford University Press Leland Stanford Junior University Publications 1917:641-.
178. Sheldrake, R. The "sense of being stared at" does not depend on known sensory clues. *Riv Biol* 2000;93(2): 237-257.
179. Neppe, VM. A detailed analysis of an important chess game: revisiting 'Maróczy versus Korchnoi'. *Journal Soc Psychical Research* 2007;71(3): 129-147.
180. Honorton, C, Ferrari, DC. Future telling: a meta-analysis of forced choice precognition experients, 1935-1987. *Journal of Parapsychology* 1989;53: 281-308.
181. Dunne, BJ, Jahn, RG, Nelson, RD. *Precognitive remote perception*. Princeton: Princeton Engineering Anomalies Research; 1983.
182. McClain, C. Varied readings on arizona psychic. Arizona Daily Star, 2005. (Accessed 2009, at http://web.archive.org/web/20070516045041/http://www.azstarnet.com/sn/related/57187.php.)
183. Broad, CD. *Lectures on psychical research: incorporating the Perrott lectures given in Cambridge University in 1959 and 1960*. New York: Humanities Press; 1962.
184. Einstein, A. *Physics and Reality*. http://www.kostic.niu.edu/: Monograph; 1936.
185. Marcikic, I, De Riedmatten, H, Tittel, W, Gisin, N. Distribution of time-bin entangled qubits over 50 km of optical fiber. *Physical Review Letters* 2004;93(18): 180503-180507.
186. Suarez, A, Scarani, V. Does entanglement depend on the timing of the impacts at the beam-splitters? *Physics Letters* 1997;232(390): 9-14
187. Neppe, VM. A study of the incidence of subjective paranormal experience. *Ppsych J of South Africa* 1981;2(1): 15-37.
188. Neppe, VM. The incidence of deja vu. *Parapsychological Journal of South Africa* 1983;4(2): 94-106.
189. Swiel, DJ, Neppe, VM. The incidence of subjective anomalous experience in naive subjects. *PJSA* 1986;7(1): 34-53.

190. Freedman, S, Clauser, J. Experimental test of local hidden-variable theories. *Phys Rev Lett* 1972;28(14): 938-941.
191. Weihs, G, Jennewein, T, Simon, C, Weinfurter, H, Zeilinger, A. Violation of Bell's inequality under strict Einstein locality conditions. *Phys Rev Lett* 1998;81: 5039-5043.
192. Suarez, A. Nonlocal "realistic" Leggett models can be considered refuted by the before-before experiment. *Foundations of Physics* 2008;38 583-589
193. Leggett, AJ. Nonlocal hidden-variable theories and quantum mechanics: An incompatibility theorem. *Foundations of Physics* 2003;33: 1469-1493.
194. Anonymous. Leggett–Garg inequality. Wikipedia, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Leggett%E2%80%93Garg_inequality.)
195. Gröblacher, S, Paterek, T, Kaltenbaek, R, Brukner, C, et al. An experimental test of non-local realism . *Nature* 2007(446 (19 April)): 871-875.
196. Dobyns, Y. *Entanglement interpretations and psi*. In: Closed-research-group, ed. International Discussion Closed Research Group; 2011.
197. Rucker, R. *Infinity and the Mind* Princeton, NJ: Princeton University Press.; 1995.
198. Koltko-Rivera. What is nominal ration interval? Demand Media, 2010. (Accessed at http://www.ehow.com/facts_7300954_nominal-ratio-interval_.html.)
199. Neppe, VM. *Vortex pluralism*. In: American Philosophical Association: The Society for the Anthropology of Consciousness. Seattle, WA; 1996.
200. Whiteman, JHM. *Aphorisms of spiritual method*. Gerrards Cross, U.K.: Colin Smythe; 1993.
201. Whiteman, JHM. *Induced experiences*. In: Personal communication to V M Neppe; 2004.
202. Whiteman, JHM. The scientific evaluation of the out of body experience. In: Poynton, JC, ed. Parpapsychology in South Africa. Johannesburg: SASPR; 1961.
203. Whiteman, JHM. *Philosophy of Space and Time*. London: George Allen and Unwin; 1967.
204. Whiteman, JHM. *The mystical life*. London: Faber and Faber; 1961.
205. Whiteman, JHM. *The Meaning of Life,*. Gerrards Cross, U.K.: Colin Smythe; 1986.
206. Whiteman, JHM. *Old and new evidence on the meaning of life: The dynamics of spiritual development*. Gerrards Cross, U.K.: Colin Smythe; 2000.
207. Whiteman, JHM. Quantum theory and parapsychology. *J Amer Soc Psychical Res* 1973;67: 341-360.
208. Whiteman, JHM. Parapsychology and physics. In: Wolman, BB, ed. Handbook of parapsychology. New York: Van Nostrand Reinhold; 1977.
209. Whiteman, JHM. *Old and new evidence on the meaning of life: an introduction to scientific mysticism*. Gerrards Cross: Colin Smythe; 1986.
210. Whiteman, JHM. *Old and new evidence on the meaning of life: Universal theology and life in other worlds*. Gerrards Cross, U.K.: Colin Smythe; 2006.
211. Everett, H. *The many worlds interpretation of quantum mechanics*. Princeton: Princeton University Press; 1973.
212. Wikipedia. Nicolaus Copernicus. Wikipedia, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Nicolaus_Copernicus.)
213. Wikipedia. Newton laws of motion. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Newton_laws_of_motion.)
214. Wikipedia. Quaternion. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Quaternions.)
215. Hamilton, WR. On a new species of imaginary quantities connected with a theory of quaternions. *Proceedings of the Royal Irish Academy* 1844;2: 424-434.
216. Wikipedia. Commutative property. Wikipedia Foundation, Inc., 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Noncommutative.)

217. Anonymous. Quantum entanglement. Wikipedia Foundation, 2011. (Accessed at http://en.wikipedia.org/wiki/Quantum_entanglement.)
218. Sirag, S-P. Consciousness and hyperspace. 1999. (Accessed at http://www.intuition.org/txt/sirag.htm/.)
219. Wolf, L. *Practical kabbalah*. New York: Three Rivers Press; 1999.
220. Kiritsis, E. *String theory in a nutshell*. Princeton, NJ: Princeton University Press; 2007.
221. Frankl, V. *Man's search for meaning. An Introduction to Logotherapy*. Boston: Beacon; 2004.
222. Donne, J. Meditation XVII. In: Alford, H, ed. The works of John Donne. London: John W. Parker; 1839:574-575.
223. Rosenfeld, D. Pirkei Avot (Ethics of the Fathers in the Talmud). 2011. (Accessed at http://www.torah.org/learning/pirkei-avos/chapter5-18.html.)
224. Bergson, H. Summary and conclusion. In: Matter and memory. London: George Allen and Unwin; 1911:299-332.
225. Neppe, VM. Window into the mind. In: Coly, L, Shapin, B, eds. Man and the Paranormal. New York: Parapsychological Foundation; 1989:1-18.
226. Palmer, J, Neppe, VM. A controlled analysis of subjective paranormal experiences in temporal lobe dysfunction in a neuropsychiatric population. *Journal of Parapsychology* 2003;67(1): 75-98.
227. Neppe, VM. Why parapsychology is amongst the most important of the sciences. *Australian Journal of Parapsychology* 2005;5(1): 4-22.
228. Neppe, VM. The neologism: a personal evolutionary exploration. *Telicom* 2009;22(2): 39-48.
229. Schwartz, SA, Friedman, M. *A minimal systems model to account for some experimental data on the nature and processes of consciousness*. In: Personal communication to VMNeppe. Seattle; 2011.
230. Lobach, E. *Mass, energy, Information*. In: Personal communication to VMNeppe; 2010.
231. Sirag, S-P. Consciousness—A hyperspace view. In: Mishlove, J, ed. Roots of Consciousness. Tulsa: Council Oaks; 1993:327-365.
232. Carlson, AB. Projection of n-dimensional surface to a lower dimension looks discontinuous /broken. In: Communication Systems. 2 ed. New York: McGraw-Hill; 1975:363.
233. Blatner, D. *The joy of π*. New York: Walker; 1997.
234. Neppe, VM. Lignocaine induced kindling: a research design to test the Sheldrake hypothesis. *South African Journal of Science* 1984;80(03): 105-107.
235. Einstein, A. *Relativity, the special and the general theory—a clear explanation that anyone can understand*. London: Routledge and Kegan Paul; 2001.
236. Aczel, A. *Fermat's last theorem: unlocking the secret of an ancient mathemtical problem*. New York: Four Walls Eight WIndows; 1996.
237. Kleiner, I. From Fermat to Wiles: Fermat's last theorem becomes a theorem. *Elem Math* 2000;55: 19-37.
238. Doctorow, O. Magnetic monopoles, massive neutrinos and gravitation via logical-experimental unification theory (LEUT) and Kursunglu's theory. In: Kursunglu, BN, Mintz, SL, Perlmutter, A, eds. Quantum gravity, generalized theory of gravitation, and superstring theory-based unification. New York: Kluwer Publication; 2000:89-100.
239. Evert, A. 08.19. typology of Aether-Motion-Pattern. 2010. (Accessed at http://www.evert.de/ap0819e.pdf.)
240. Penrose, R. *The road to reality: a complete guide to the laws of the universe*. San Francisco: National Books; 2007.
241. Riemann, B. On the hypotheses which lie at the bases of geometry (trans. W.K. Clifford). *Nature* 1873;8(May 1): 14-17.
242. Anonymous. Quaternion. Wikipedia Foundation, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Quaternions.)

243. Einstein, A. *The Born-Einstein Letters; Correspondence between Albert Einstein and Max Hedwig Born from 1916 to 1955*. New York: Walker; 1971.
244. Stachel, J. *Einstein's miraculous year: five papers that changed the face of physics*. Princeton: Princeton University Press; 2005.
245. Anonymous. Subjective idealism. Wikipedia Foundation, 2011. (Accessed at http://en.wikipedia.org/wiki/Berkeleyan_idealism.)
246. Dennett, DC. *The intentional stance (6th printing)*. Cambridge, Massachusetts: MIT Press,; 1996.
247. Fodor, N. Spirals unfolding. *J Clin Exp Psychopathol* 1955;16(3): 225-238.
248. Putnam, F. *Altered states: Peeling away the layers of a multiple personality*. In. The Sciences, November/December, 30-36; 1992.
249. Strawson, P. *Skepticism and naturalism* New York: Columbia University Press.; 1985.
250. Barua, A. God's Body at Work: Rāmānuja and Panentheism. *International Journal of Hindu Studies* 2010;14(1): 1-30.
251. Maimonides, M. *Guide to the Perplexed (Moreh Nebuchim)*. Chicago: U.Chicago Press; 1963 (translation from Hebrew); original circa 1150.
252. Curley, E. *The collected works of Spinoza*. Princeton: Princeton U. Press; 1985.
253. Pruss, AR. The Hume-Edwards Principle and the Cosmological Argument. *International Journal for Philosophy of Religion* 1998;43(3): 149-165.
254. Schroeder, GL. *Genesis and the big bang*. New York: Harper Collins; 1990.
255. Schroeder, GL. *The science of God: the convergence of scientific and biblical wisdom*. New York: The Free Press; 1998.
256. Schroeder, GL. *The hidden face of God: Science reveals the ultimate truth*. New York: Harper Collins; 1990.
257. Carr, B. The anthropic principle revisited. In: Carr, B, ed. universe or multiverse? Cambridge: Cambridge University Press; 2007:Ch. 5, 77-90.
258. DeWitt, BS. Quantum theory of gravity: the canonical theory. *Phys Rev* 1967;160(5): 1113-1148.
259. Barrow, JD, Tipler, FJ. *The anthropic cosmological principle*. Oxford: Oxford University Press; 1986.
260. Garrett, AJM, Coles, P. Fractional Quantum Hall Effect. Queen Mary College, London, 1993. (Accessed at http://css.sfu.ca/update/vol4/4.5-kirczenov.html.)
261. Dicke, RH. Dirac's cosmology and Mach's principle. *Nature* 1961;192: 440-441.
262. Hoyle, F. On nuclear reactions occurring in very hot stars. *Astrophysical Journal* 1954;Suppl 1: 121-146.
263. Oberhummer, H, Csoto, A, Schlattl, HS. Stellar production rates of carbon and its abundance in the universe. *Science* 2000;289: 88-90.
264. Wheeler, JA. Beyond the black hole. In: Woolf, H, ed. Some strangeness in the proportion. Reading: Addison -- Wesley; 1980:341-375.
265. Rees, MJ. *Universe of multiverse?* Cambridge: Cambridge University Press; 2007.
266. Tegmark, M. Parallel universes. *Scientific American* 2003: 30-41.
267. Smolin, L. *The life of the cosmos*. Oxford: Oxford University Press; 1997.
268. Carter, B. Anthropic arguments in fundamental physics and cosmology. In; 2001; Cambridge; 2001. p. 291-298.
269. Reeves, H. *The hour of our delight*. New York, NY: W.H. Freeman; 1991.
270. Carr, BJ. Worlds apart. can psychical research bridge the gulf between matter and mind? *Proceedings of the Society for Psychical Research* 2008;59: 1-96.
271. Penrose, SR, Hameroff, S. *Consciousness in the universe: quantum physics, evolution, brain & mind*. Cambridge: Cosmology Science Publishers; 2011.
272. Collins, FS. *The language of God*. Second ed. New York: Free Press.; 2006.

273. Lanza, R, Berman, B. *Biocentrism: how life and consciousness are the keys to understanding the true nature of the universe*. Dallas, Texas: BenBella; 2009.
274. Laszlo, E. *Science and the akashic field: an integral theory ofeverything*. Rochester, Vermont: Inner Traditions International; 2004.
275. Dyson, F. Beyond the black hole. *Reviews of Modern Physics* 1979;51(3): 447-460.
276. Anonymous. Panpsychism. Wikipedia Foundation, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Panpsychism.)
277. Anonymous. Consciousness. Wikipedia Foundation, 2011. (Accessed 2011, at http://en.wikipedia.org/wiki/Consciousness.)
278. Hawking, S, Penrose, R. *The nature of space and time*. Princeton: Princeton University Press; 1996.
279. Hawking, S, Mlodiow, L. *The grand design*. New York: Random House; 2010.
280. Hoffman, D. Conscious realism and the mind-body problem. *Mind and Matter* 2008;6(1): 87-121.
281. Langan, CM. The cognitive-theoretic model of the universe: a new kind of reality theory. 1998. (Accessed at http://www.ctmu.org/.)
282. Smythies, JR. *Analysis of perception*. London: Routledge and Kegan Paul; 1956.
283. Wilber, K. *Eye to eye: the quest for a new paradigm*. Boston: Shambhala; 1995.
284. Watson, D, Schwartz, G, Russek, L. The theory of enformed systems: a paradigm of organization and holistic systems. *Noetic Journal* 1999;2(2): 159-172.
285. Einstein, A. Creative thought. *New York Times* 1940 March 19, 1940.
286. Broad, CD. *Scientific thought*. London: Routledge & Kegan Paul; 1923.
287. Price, HH. Survival and the idea of another world. In: *Society for Psychical Research*; 1953 January: Society for Psychical Research; 1953. p. 1-24.
288. Stevenson, I, ed. Can we describe the mind? Metuchen, NJ: Scarecrow Press; 1981.
289. Zollner, JC. *Transcendental Physics*. California: Google Books; 1879 (original) (2011).
290. Smythies, JR. *The walls of Plato's cave*. Aldershot: Avebury Press; 1994.
291. Jourdan, J-P. Deadline- dernière limite. *Les Trois Orangers and Brumblay Journal of Near-Death Studies* 2006;21(4): 201-221.
292. Van der Schaar, JP. Kaluza Klein theory. 1998. (Accessed at http://www-th.phys.rug.nl/~schaar/htmlreport/node12.html.)
293. Duff, MJ. The theory formerly known as strings. *Scientific American* 1998 February:64-69.
294. Walker, G. *Here comes hypertime*. In: New Scientist; 1997.
295. Figueroa-O'Farrill, JM. String theory in a nutshell. 2003. (Accessed at http://www.strings.ph.qmw.ac.uk/WhatIs/Nutshell.html.)
296. Schwarz, P. The official string theory website: Basics. 2003 (Accessed at http://www.superstringtheory.com/basics/index.html and http://www.superstringtheory.com/forum.)
297. Carr, BJ, Rees, M. The anthropic principle and the structure of the physical world. *Nature* 1979;278(5705): 605-612.
298. McMullin, E, ed. Fine-tuning the universe? Lanham: University Press of America; 1994.
299. Lanza, R. Biocentrism (cosmology). Wikipedia, 2011. (Accessed at http://en.wikipedia.org/wiki/Biocentrism_(cosmology).)
300. Anonymous. Ken Wilber. Wikipedia Foundation, 2011. (Accessed at http://en.wikipedia.org/wiki/Ken_Wilber.)
301. James, W. *The will to believe*. New York: Longmans Green; 1897.
302. Jacobson, S. The kabbalah of nutrition. 2011. (Accessed July 2011, at http://www.chabad.org/parshah/article_cdo/aid/298378/jewish/The-Eastern-Colonists.htm.)
303. De la Sierra, AO. *An epistemontological view of reality*. North Carolina: Lulu Press; 2008.

304. Emlen, JM, Freeman, DC, Mills, A, Graham, JH. How organisms do the right thing: the attractor hypothesis. *Chaos* 1998;8(3): 726-727.
305. Pinker, S. *How the mind works*. New York: W.W. Norton & Co.; 1997.
306. Miller, G. Mistreating psychology in the decades of the brain. *Perspectives on Psychological Science* 2010;5(6): 716-743.
307. Anonymous. *Leibniz: metaphysics*. In: Internet Encyclopedia of Philosophy; 2001.
308. Rosenthal, R. *On the social psychology of the psychological experiment: The experimenter's hypothesis as unintended determinant of experimental results*. In. American Scientist, 51, 268-283; 1963.
309. Neppe, VM. The experimenter effect in medical research. *South African Medical J* 1982;62(3): 81.
310. Smith, MD. The role of the experimenter in parapsychological research. *Journal of Consciousness Studies* 2003;10(6-7): 69-84.