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UCLA research showed that dendrites are electrically active in animals that are moving around freely, generating nearly 10 times more spikes than somas.



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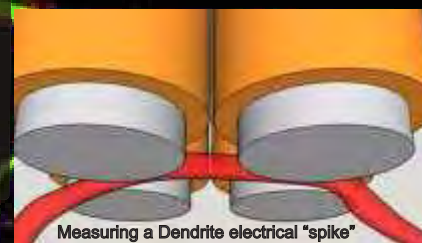
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Measuring a Dendrite electrical "spike"

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Fifty discoveries that are changing the world: Why the Triadic Dimensional Distinction Vortical Paradigm (TDVP) makes a difference.

**Vernon M. Neppe MD, PhD, FRSSAf, DPCP(ECAO), DSPE^{ab}
and Edward R. Close PhD, PA, DF(ECAO), DSPE**

Abstract:

We trace the chronological development and major findings of the Neppe-Close Triadic Dimensional Distinction Vortical Paradigm (TDVP). This allows a perspective to fifty groundbreaking discoveries that are linked with TDVP. This pioneering metaparadigm was first proposed by Neppe and Close in 2011. At that point, TDVP was still complete enough to score perfect points as a Theory of Everything. But we have amplified TDVP further since then, yet maintaining all the original ideas. TDVP is unique in several critical areas, yet, for example, no other proposed TOEs, scientifically even include the basics of extra dimensions, consciousness, infinity and mathematics.

- *The necessary axiom of origin that Space, Time and (Extent of) Consciousness always have existed together and are tethered and inseparable.*
- *Consciousness is a key component of all models. Nothing exists without some level of consciousness.*
- *Our existence involves a finite multidimensional reality.*
- *The finite is contained in the infinite.*

Building on these ideas, Neppe and Close made several groundbreaking further discoveries. Our finite existence involves specifically nine rotating dimensions ('9D spin'), even though we cannot usually experience them in our physical world of 3 spatial dimensions in a moment in time (3S-1t)- our overtly expressed physical reality experience of 3S-1t, the most familiar part of our existence as living sentient beings.

- *The atom necessarily does not just have mass and energy. In order to be stable there needs to be a third substance (gimmel) that is mass-less and energy-less that is linked in specific quantities to all subatomic particles. Without gimmel, our world would not exist.*
- *The finite involves quantized volumes. This means that we cannot reduce anything to infinitesimals as in Newtonian calculus. There is a bottom limit requiring applying a fundamental, new mathematical technique—the calculus of distinctions.*
- *We argue that this discrete quantized finite is embedded in a never-ending continuous infinite reality. This infinite component impacts and can be influenced by the finite component of the unit that makes up existence.*

The authors outline fifty major discoveries of earth-shattering significance because they change our paradigms for reality. All of these are consequences of gimmel and TRUE (Triadic Rotational Units of Equivalence) units, plus with 9-dimensional rotations in a continuous finite. These include:

- *The natural laws that exist for quantum physics and the cosmos are the same. The so-called 'quantum weirdness', described by Nobelist Richard Feynman, does not exist as quantum mechanics no longer has its own laws.*
- *Dark matter and dark energy in the cosmos correlate almost exactly with the proportions of gimmel to TRUE units. Moreover, the dark matter correlates with the nucleons (protons and electrons) and the dark energy with the electron gimmel proportions. As these dark substances do not fit into the atom in 3S-1t: they must reflect the extra-dimensional like 9D rotations.*
- *All of empirical reality is based on quantized volumetric measures. This means that all suitable Diophantine solutions must be $a^3 + b^3 + c^3 = d^3$ based on the Close Conveyance Equation applied in particle physics. Stability is required for elements and compounds to exist. Atoms would not be stable. The atomic structure as we are taught without any stabilizing third substances, gimmel, are impossible mathematically.*
- *The occurrence of events such as entanglement, tethering and psi, provide fertile awareness and explanations of moving to higher dimensions. TDVP should be applied in the relative non-locality.*

^a Vernon M. Neppe MD, PhD, Fellow Royal Society (SAF) **, DPCP (ECAO), DSPE, and Edward R. Close PhD, DPCP (ECAO), DSPE *.

^b The material in this article has been peer-reviewed.

- Every 'life element' is symmetrical and stable and fits into an atomic mathematical calculation relating to multiples of 10^8
- Hydrogen-1 appears to compensate for its absent neutron by containing extra third substance. This makes it the element with the most gimmel.
- We can predict that Silicon is an element of life based on its characteristics.
- Electron shells, valence and the Periodic Table can be better explained applying TRUE units.
- Gluons are likely non-existent. Gimmel fits and replaces gluons. Applying gluons alone the elements would fly apart.
- Individual-units and Indivension are two exceedingly important concepts in communication across, between and within dimensions and involving individual and collective approaches.
- Mathematics closely reflects the nature of reality. Math is more than just for calculations or operators.
- Gimmel and TRUE are not just theoretical concepts. They're empirically relevant as the Mass-Energy-Equivalents in TRUE units are identical with the 'normalized' results from the Large Hadron Collider.
- The philosophical model of Unified Monism (UM) is a consequence of TDVP. UM is a versatile philosophical model that can be used to explain all the many and varied mind-body dilemmas.
- Applying the philosophy of science extension of LFAF (lower dimensional feasibility, absent falsification) allows scientific evaluation of many disciplines such as evolution, cosmology, medicine and psychology as well as dimensionality, including TDVP, and psi. These then become legitimate parts of science.
- TDVP allows the unification of science and spirituality. Science previously was limited to Popperian thinking, but applying LFAF allows what is feasible to markedly extend science. Therefore, some concepts that were never proven or demonstrated in 3S-1t, become legitimate scientific study areas because
- After 8 plus years, TDVP not only remains unrefuted. In fact, with each additional discovery, the model becomes more integrated, supports more hypotheses, and therefore has a more comprehensible and stronger structure.

KEY-WORDS: 3S-1t, 9D spin, 11NCR, atomic, calculus of distinctions, calculus of dimensional distinctions, Close, consciousness, Conveyance Equation, covert, dark matter, dark energy, dimension, Diophantine, discoveries, electron, Fermat's Last Theorem, finite, discrete finite, distinction, falsifiable, feasible, gimmel, gluon, infinity, infinite continuity, Kuhn, LFAF, life elements, materialism, mathematics, metaparadigm, Neppe, neptron, neutron, origin, overt, philosophical models, Popper, proof, proton, quantum, quantized volume, quantum weirdness, quark, reality, revolution, rotation, science, silicon, speculation, spin, spirituality, TDVP, theory of everything, TOE, triadic, Triadic Dimensional Distinction Vortical Paradigm, Unified Monism, vortical.

Why TDVP is of profound significance

In this world of human experience, the authors point out that we will never truly understand the Nature of Reality until our searches for scientific and spiritual knowledge are merged into one serious, combined effort. Once this happens on a global scale, we maintain that humanity will experience an explosion of new knowledge and understanding far beyond anything experienced so far in the current era of recorded history. This is likely only the tip of the iceberg!

In this paper, we trace the chronological development and give a perspective to fifty discoveries linked with the Neppe-Close Triadic Dimensional Distinction Vortical Paradigm (TDVP). Since 1989, and even before that, both authors had been determined to find a better way to explain putting the Primary Reality of Consciousness into the equations of science.^{1; 2; 3; 4; 5; 6; 7; 8; 9} In 1996, Dr. Edward Close, mathematician, physicist and engineer, published his groundbreaking book "Transcendental Physics"¹⁰, an effort to make his previous 1990 work "Infinite Continuity" book more accessible¹¹ It reached a few more people, but still only relatively few scientists and others interested in the merging of science and spirituality. One who shared Close's vision was Dr. Vernon

Neppe, MD, PhD, and Fellow of the Royal Society (SAf). Neppe became Close's research partner since 2008. Neppe is an internationally known and published neuroscientist, psychopharmacologist, psychiatrist, behavioral neurologist, philosopher, research methodologist, systems theorist, and phenomenologist, creativity consultant, and forensic specialist. Over these many years from 2008, with Close, he pioneered the new discipline of Dimensional Biopsychophysics. He apparently applied his documented prodigious but largely previously unused early childhood mathematical skills to pioneer new TDVP work inter alia, on infinity, the transfinite, and on ordinal measures. Neppe, too, had sought a research partner to develop ideas on reality and had presented initially on "*Vortex Pluralism*" —a model he had first developed in 1989^{12;13}, and recognizing that this was monistic, he renamed the model to "*Vortex N-dimensionalism*"^{14;15}.

Together over these 9 years (late 2008 to the present), Drs Close and Neppe developed a comprehensive framework: a paradigm for the science of the future. This was first published as "*Reality Begins with Consciousness: A paradigm shift that works*" (RBC) in 2012⁹, and that was reviewed by hundreds of scientists and philosophers worldwide. Since then RBC has gone to 5 editions with major additions^{1;5;8;9}, but throughout there new model, the Neppe-Close Triadic Dimensional-Distinction Vortical Paradigm (TDVP) model remains sound. Close and Neppe or Neppe and Close have subsequently published hundreds of technical papers including introducing groundbreaking concepts in the past 4 years such as:

- The versatile, empirically proven and important concepts of 'gimmel' TRUE units.
- The unification of all the laws of nature —quantum mechanics and cosmology (and also our regular macrophysical world) all obey the same unified laws, they're not separate.
- Mathematical proof that we must exist specifically in a 9-dimensional finite rotating cosmos^c.
- The infinite continuity impacting all our finite reality (strongly applying feasible logic).
- Mathematics appearing to be part of nature, not just a method of calculations and operations.
- Certain mathematical techniques allowing a more accessible way to discovery of reality^{16;17}. In particular, Close's Calculus of Dimensional Distinctions,^{16;17} along with Close's Dimensional Extrapolation technique, have facilitated higher dimensional analyses.^{16;17}
- The game-changing role of *volume* in Quanta in the finite, being enumerated for the first time.

The Triadic Dimensional-Distinction Vortical Paradigm is a metaparadigmatic model developed equally by Drs. Vernon Neppe and Edward Close. It is based on the available broader empirical data of all the sciences (physical, biological, consciousness and psychological). It's validated in part by mathematical theorems, extending the philosophy of science idea of 'Lower Dimensional Feasibility Absent Falsification' (LFAF) to scientifically validate what is feasible and not falsified^{18;19;20} in TDVP, and applying TDVP to a new philosophical approach (as "Unified Monism"²¹). The key 2011 features of their TDVP model were initially: tethering of Space, Time and Consciousness; finite rotating dimensions; as well as a further discrete transfinite domain, and a continuous infinite, including a model of life and order, and a broader 'consciousness' concept.

To these, many extremely significant innovative and extremely important additions occurred—some listed below. However, two profound and groundbreaking findings developed over these years of collaboration. These findings are of such significance that a major reviewer of the TDVP model has

^c 'Rotation' describes the 8 rotations between dimensions 1 to 9. In quantum physics terms like 'half-spin' imply 180 degree rotations are used. So 8 rotations. 'Spin' is an alternative to 'rotation' so if half-spin = 4 full '360-degree' rotations. In 3S-1t it's illogical: 1.5 rotations. Vernon M Neppe and Edward R Close. 50 discoveries changing the world and TDVP. IQNJ. 9:2, 7-33, v3.6 17060412. 2017 9

regarded these Close-Neppe contributions as unprecedented in this twenty-first century.

- The first was that they proved that there definitely was a *finite reality that specifically exists in nine finite rotating dimensions*: This idea both revolutionizes thinking, as well as supporting a hypothesis specifically enumerated in an earlier version of their RBC book, that 9D was the logical consequence of TDVP. Therefore, this validation of a prediction on TDVP strongly supports that model.
- The second was the concept of TRUE units where they have proven that *reality has to contain a third substance, which they called 'gimmel'*. Gimmel is the third mystical letter of the Hebrew alphabet, and this gimmel substance is likely pure or part consciousness dependent on the framework of examination: For example, in the continuous infinite, gimmel is pure consciousness but this contains mass and energy. And in particle physics, gimmel is in union with every particle that exists, including electrons and the different quarks that are the major parts of the atom.

In this brief paper, we effectively list the discoveries linked with gimmel, giving a chronological perspective, as well as the source of each discovery: All these apparently groundbreaking discoveries have ultimately involved both Close and Neppe as equal authors, however, whoever is mentioned first below was the first to find the key data, and then together they were amplified. At the end of the paper, we also give a perspective of how groundbreaking the discoveries were, by relating the opinions of colleagues and the awards given to Drs Close and Neppe.

Table 1: The eleven phases of denial and acceptance of Neppe and Close (“the 11NC revolutions” or “11NCR”)

1. Initially, there is the claim “it’s too wrong to be wrong”: This is often accompanied by a condescending smile or chuckle; the alternative phrase is the derisive “it’s too false to be false”; “it’s not even wrong.”
2. then there is abject rejection, often accompanied by ridicule and name-calling: “the insults are deserved. I know, I’m an expert”;
3. then “that’s a good try, but it’s simply cannot be true”;
4. then the consensus rejects it: “it’s definitely incorrect”;
5. then it is regarded as “unlikely, but it may be mentioned as a hypothetical for completeness”: “it’s an unlikely outlier that we mention just to cover all our bases”;
6. then there is the stage of “I’m opting out: This is outside my discipline, so I don’t understand it”; or “I haven’t studied it” or perhaps the scientist evaluator says: “Let me suspend judgment”;
7. then “maybe there is something there, but I need more”;
8. then “there is some evidence... interesting”;
9. then “it appears to be proven: the evidence is cogent; but most scientists don’t accept that”;
10. then it is hailed as “it’s a new breakthrough” (even though it may have been proven much earlier);
11. then “it’s obvious: we all know that”.

Sadly, but not surprisingly, because this is the typical history of groundbreaking endeavors the Neppe-Close contributions have been almost exclusively ignored, with excuses such as “it’s too difficult”, “I’m not so trained”, and “it’s too wrong to be wrong”, or Wolfgang Pauli’s famous equivalent referring to his student Victor Weisskopf and translated as “This is not even wrong.”²² These kinds of comments reflect the onset of the typical Thomas Kuhnian progression describing how *scientific revolutions* begin with denial of what is not ‘normal science’—new, ‘unscientific’ ideas—much later, the final, fifth phase concludes with acceptance of new norms²³. This Kuhnian Revolutions model was extended in 2016 by Neppe and Close^{24; 25} into the ‘11 Neppe-Close

Revolutions model' (11NCR). 11NCR filled in gaps in and extended Kuhn's 5 stages of '1. The pre-paradigm phase; 2. Normal Science; 3. Crisis Phase; 4. Paradigm Shift; and 5. Post-revolution.' 11NCR has an emphasis on Kuhn's middle phases 2 through 4, particularly. 11NCR describes the scientists' progression in their stages of understandings of the revolutions of change—the reshaping of science—by adding several more paths along the way from Phase 3 to Phase 5, producing eleven key periods of adjustment ^{(p12) 25 26} (Table 1). Arthur Koestler summarized the situation well, and we quote here, without meaning to offend, because it's logical to be careful with new data, and even to reject the ideas, but only after thorough evaluation: "*Innovation is a two-fold threat to academic mediocrities: it endangers their oracular authority; and it evokes the deeper fear that their whole laboriously constructed intellectual edifice may collapse.*"

Let's now embark on our journey. This listing, in a way, is like a long abstract because each point could be justified through many pages. However, we cite all our data for further reference by interested readers. We know that sometimes simply stating results is uncomfortable so we encourage further study. Everything listed below is well-documented, empirically sound, and not falsified. All the data below is feasible, and if a hypothesis has been mathematically proven, we list that as that constitutes the highest level of scientific validation. In contrast, we also indicate if a concept is speculative, though often that's based on good logic, and therefore a justifiable opinion.

BUILDING FROM PRIOR KNOWLEDGE: KEY PRINCIPLES:

As a perspective, there are certain fundamental principles that we have published elsewhere, but which are key to illustrate that the findings below are based on solid, peer-reviewed, empirical research and mathematics. Many of the findings are proven mathematically, and based on the Neppe-Close Triadic Dimensional Distinction Vortical Paradigm (TDVP). ^{5; 27; 28}

The following are the key principles to the *paradigm* (the 'P' in TDVP) —actually, TDVP is an all encompassing 'metaparadigm' because it impacts multiple scientific areas and is so versatile.

1. *The most fundamental 'deep axiom' of TDVP is the 'Axiom of Origin'*: Space, Time and Consciousness (STC) are always *tethered* together: This axiom was developed in mid-2011 by Neppe and Close together while directly in discussion. Historically, this Axiom of Origin was born after eighteen months of intense working together: TDVP had arisen in its vestigial state! The *TDVP* model at that point contained the STC *triad*, STC involved *dimensions*, *vortices* were always regarded as a key mechanism with rotational movements in STC, and it was a new *paradigm*. Of course, this TDVP model at that point already contained '*consciousness*'. Tethering was conceptualized as far more than a linkage, like an arm tethered to a shoulder, an elephant to his trunk. Moreover, the recognition of the *finite and the infinite* was implied. The this Axiom of Origin involved tethered STC at the start of the discrete finite; in the infinite there was not beginning.

Following on the Axiom of Origin, several groundbreaking findings followed over the next five years.

Fundamentals

2. *We exist in a 9-dimensional rotating finite reality.* (Close and Neppe, mid to late 2013)^d Dimensions, like all terms in this discussion, have been carefully and specifically operationalized: Technically, dimensions are non-congruent, non-parallel extensions: They are *measurable* in terms of units of *extent* (CoD) such as Space, Time and (dimensional) Consciousness. Operationally, in the Euclidean framework, for convenience, dimensions are defined as orthogonal to each other and characterized in degrees of freedom. Dimensions interact together forming different ‘dimensional domains’ with specific properties³.
3. *Gimmel is a third substance besides mass and energy.* It is a content that is massless and energyless and always in union with mass and energy, just as consciousness extent is in union with space and time. (Close and Neppe, 2015; terminology Neppe and Close, 2015).
4. *Gimmel is part of all atoms.* This third form of the substance of reality is necessary for symmetric stability. Gimmel is linked with electrons in abundance—105 gimmel TRUE units to the electron, and with protons and neutrons to a much smaller degree (Table 2). These findings cannot be contrived. The mathematics provides *only* this lowest common solution. This finding is huge. (Close and Neppe, 2016)
5. *Gimmel is a necessary part of TRUE units.* The establishment of Triadic Rotational Units of Equivalence is an enormously important concept because by normalizing with Diophantine triplet equations one is able to explain the stability of atoms. This cannot be achieved by pure physical materialism of matter and energy alone, or specifically just protons, neutrons and electrons (together we’ve called these ‘*neptrons*^{29; 30}). TRUE units reset thinking in the area of Quantum Physics. TRUE units, too, involve very detailed mathematical calculations based on triadic Diophantine equations, Calculus of Dimensional Distinctions and Dimensional Extrapolation. Again, the mathematics produces not speculations here, but proofs.^{30; 31; 32; 33} TRUE unit calculations repeatedly work. We know therefore that they are soundly based mathematically. (Close and Neppe, 2016).
6. *TRUE unit calculations are empirically proven.* They are not just theoretical mathematical constructs. However, if the mass of the protons, neutrons, and electrons as demonstrated by the Large Hadron Collider data demonstrate equivalence with TRUE unit mass findings, then this becomes an empirical reality, not something purely theoretical.^{18; 19; 20; 34} This equivalence has been demonstrated. (Close and Neppe, 2016)
7. *The finite is contained in the infinite.* The finite STC is embedded in the infinite STC (Close and Neppe, 2011)
8. *The finite existence is made of discrete quantum volumes.* This is fundamental and differentiates the finite from the infinite. In the finite, we’re not dealing with reductions to points, but to quanta: finite quantities cannot be endlessly divided into extensionless points, but have limits (quanta). This contrasts with the infinite, where there is no reduction to any

^d In all of these new discoveries, we list the year that we first described our finding: This may or may not correlate with the first publication in the area. The first-mentioned scientist (Neppe or Close) refers to the initial discoverer although in all instances our work has been collaborative.

limit because the infinite continuity is limitless without beginning or end: it is a single unending unit, but contains the finite (Neppe and Close, 2016).

9. *The infinite involves continuity*. The finite and infinite are inseparable. Therefore, there is no need for a ‘link’ between the finite and infinite. The infinite permeates everything. (Neppe and Close, 2014).

The above 9 discoveries are underlined to emphasize and prioritize their importance.

Amplifications:

10. *9-dimensional mathematics*: The nine dimensions themselves are proven mathematically. Reality only works with 9 dimensions, not 8 or 5 or 4 or 10 or 26 or any other low number.)It is possible it may be exponents of $9^2=81$ or $9^3=729$.) This involves numerous proofs and replications.^{29; 30} Lower dimensions are contained (*embedded*) in the higher dimensions; the finite is contained in the infinite; the substrates of Space (S) is contained in the Time (T) Substrates which are embedded hierarchically in Consciousness (C). Therefore, S is contained in T which is in C. The exact proportions of dimensions in reality are dynamic and may fluctuate in state, and seldom are all 9 in play in experience, though they still exist. (Close and Neppe, 2013).
11. *The Cabibbo Angle*: The first and most well-known was the derivation of the Cabibbo Mixing Angle in Particle Physics (Close and Neppe, 2013; published 2014).^{35; 36; 37; 38} This was one featured finding with Calculus of Distinctions^{16; 39; 40; 41} in an article in USA Today Magazine (early 2014)⁴² (Close and Neppe, 2013)
12. *9-D replications*: Subsequently, there have been numerous replications such as a thought experiment⁴³, intrinsic angular momentum through 9 dimensions⁴⁴, extrapolation through 9 dimensions of intrinsic spin⁴⁴, and explanations of the disappearing electron cloud⁴⁵ (Close and Neppe, 2013), as well as gluons vs gimmel in 9 dimensions^{29; 46} plus Cabibbo-like explanations³⁵. (Neppe and Close, 2015)
13. *9D likely is hierarchically and dynamically made up of 3 dimensions of space, 3 of time, and 3 of consciousness*. Based on the math, and several empirical hypotheses, included quanta always being volumetric, it’s likely but unproven that the 9 dimensions consist of 3 of space (which extend far beyond our physical reality), three of Time (past-present-future is one dimension; this is best perceived in graphic 3-D), and three of ‘Consciousness- extent [C_e]. We sometimes refer to that as 3S-3T-3C: This is the postulated triad of 3-D domains: 3 of Space ‘embedded’ in 3 of Time and that in 3 of “Consciousness”.³⁰ (Close and Neppe, 2013)
14. *Communication occurs across dimensions*: This involves vortical movements. Rotations from dimensions 1 to 9, i.e. 8 rotations. This is critically important when talking of ‘half-spin’ of fermions. This allows for 8 half-rotations, i.e. 4 full rotations. No longer is half-spin a theoretical physical construct, but something pertinent across finite reality. Vortices involve rotational movements and are fundamental to reality. Hence the *Vortical* in TDVP.³⁰ (Neppe

and Close, 2016)

15. *Dynamic dimensional domains*: These dimensions and dimensional domains differ dependent on our state and traits of existence. In our current physical reality, we experience 3 physical dimensions of space in a moment in time (the present). We do not directly experience the other dimensions, though may in part experience these in altered states of consciousness.⁴⁷ (Neppe and Close, 2014)

16. *Our physical reality experience as part of our existence*: The most important dimensional domain we deal with in reality is our limited physical reality called *3S-1t*. This is our conventional scientific reality: We, as living sentient beings, experience—3 dimensions of space (length, breadth, height) (3S) and 1 moment in time (1t) (the “present”); (3 dimensions are abbreviated 3D or 3-D). Some would argue that that might be *3S-1t-1c*: Our living sentient-being reality always includes some meaningful consciousness. So our experiential reality is 3S-1t plus a tiny part of our current present ‘Consciousness’ dimensions.^{4;5} (Neppe and Close, 2011). The 9 dimensions contain (embed) our physical experiential reality of 3S-1t. Therefore, all the laws of nature still apply to our physical experience, and the presence of 9D does not contradict what’s been demonstrated in our conventional standard model of physics. The finite quantized 9D, and the infinite continuity that embeds it, allows for amplification and clarifying conundrums that appeared contradictory or misunderstood in 3S-1t. All of reality —finite in the infinite— is one unit. Our *experiencing* an overt reality while physically alive, reflects just our *3S-1t* framework, and everything is relative to that for us. But 9D reflects a hierarchy of different *relative non-local experiences* of parts of our covert existence.^{27; 48 49} Yet other altered states might involve different dimensional domains, speculative as to which: e.g. near-death experiences *speculatively* dimensions could be 5, 6, and 7; or survival after death could theoretically be part of that 9D essence like 7 to 9 or other dimensions. Even more so, we’ve argued that psi phenomena—and there is cogent empirical evidence for such experiences, as so-called ‘extrasensory perception’ in its various manifestations—is likely variably linked in that 9D essence. It will manifest, at times, by impacting 3S-1t so we live humans can experience that psi phenomenon.^{47; 50; 51; 52; 53; 54; 55; 56; 57; 58; 59; 60; 61; 62; 63; 64; 65; 66; 67; 68} Effectively, *9D is a single essence with different states*. (Neppe and Close, 2015)

17. *The 10th plus dimensions*: The 10th plus dimensions’ is another important dimensional concept is important:: This reflects the transfinite —which is discrete and extends forever: It is a postulated 10th transfinite series of dimensions, predominantly containing C-substrate qualities, with or without S and T substrates (though still linked to S and T by tethering across dimensions). The term “plus” as used in “10th plus dimensions”, mathematically is more than a plus (+). “Plus” usually implies an arithmetical addition, but “10th plus dimensions” reflects expansion of greater awareness and recognizes a broader, discrete reality. Technically, the 9 finite dimensions are incorporated —‘embedded’—in the transfinite: they are inseparable just as tethering is. In the process of *Dimensional Extrapolation* the mathematics simply runs out of numerical representation when going beyond 9-finite dimensions to the 10th plus, as it

contains everything beyond those dimensions but also contains the 9 finite dimensions, plus the transfinite. This combination of finite (9D) and transfinite is what we're calling the '*metafinite*'. The transfinite is different from the *Continuous Infinite*: The metafinite is embedded in the infinite. The infinite extends forever, impacts the finite, and vice versa. The finite and infinite are one unit —this is not a dualistic interaction.^{3; 4; 5 27; 54; 56; 68} (Close and Neppe, 2011)

18. *Tethering*: In the axiom of origin, tethering is a key idea. In TDVP, all of space, time and “consciousness” (S, T and C) are *tethered*—they are fundamentally *inseparably attached* together at one or more *roots*.⁶⁹ Even when these roots are limited to only one or a few communication source attachments of S, T and C, this still results in a *relative non-local (network) linkage* at every dimensional level. Effectively, even at the subatomic level, space, time and “consciousness” *always immediately together co-exist*, originally and eternally across space, time and meaning. Tethering is not even like traveling at light speed— it is not a wave: communication is instantaneous. Effectively, there is “immediate” relative non-local communication at every level: It is there—tethering does not need to move through space, time or meaning or “physically link”. S, T and C always remain *linked*, across, between and within *all dimensions*. The tether might be either tight (with many roots or source) or loose (more subtly connected). Even when loose, the linkage always exists, as even any ostensible separation still exhibits communication of all of the STC components. However, speculatively *differences in tethering extent* occur: it could be weak or strong: This might explain differences in communications like psi. Metaphors like “balloon on a string” or “boats moored to the pier” assist the *linkage* idea, but they *greatly mislead* because they reflect *3S-1t local space-time linkage* descriptions whereas tethering involves multidimensional relative non-local STC communications. Closer, but still just reflecting 3S-1t not 9D or the infinite, is the non-separation of a hand and a shoulder. Mass and energy are also always tethered to consciousness content as they’re measured in space and time extent.³ (Neppe and Close, 2015)
19. *Immediacy and instantaneity*: The occurrence of events such as entanglement, tethering and psi provide fertile awareness and explanations of moving to higher dimensions. This is likely and feasible but not proven mathematically.⁵⁴ (Neppe and Close, 2015)
20. *Psi and TDVP*: The critical relevance of understanding psi phenomena is ostensibly achieved by applying TDVP with relative non-locality and psi.^{47; 50; 51; 52; 53; 54; 55; 56; 57; 58; 59; 60; 61; 62; 63; 64; 65; 66; 67; 68} (Neppe and Close, 2015)
21. *Distinctions*: If something can be distinguished from anything else we’re making distinctions to any finite object, event, image or thought that is distinguishable from its surroundings. In 1990, Close published “*Infinite Continuity*”¹¹ wherein he introduced the Calculus of Distinctions, an adaptation of a form of symbolic logic, and attempted to apply it to problems in quantum physics and cosmology. The Calculus of Dimensional Distinctions (CoDD) is a direct derivation of the CoD, but involves application to dimensions specifically.^{16; 39; 40; 41}

(Close developed the CoDD approximately 2003; Neppe worked with Close further on this area from 2011 on.)

22. *The ‘calculus of distinctions’ (CoD)*^{16; 40; 41} involves a well-defined logical and mathematical operations. These involve the ‘drawing of distinctions’ which constituted the most basic concept underlying all logic and mathematics. There are three fundamental distinctions in TDVP applying Close’s ‘Calculus of Distinctions’ (CoD) spelling out ICE —distinctions of intent (impact / influence), content and extent.^{16; 40; 41} (Close and Neppe, 2011).

23. *The versatility of Gimmel TRUE units (GTUs)*: Gimmel is an extraordinarily important concept that has allowed a major advancement in TDVP. It has been the last bastion to conquer in TDVP because the ‘Extent’ in dimensions, now incorporates the content in gimmel. The amount of gimmel units is fixed with each subatomic particle.²⁹ For example, remarkably, the tiny electron is in union with 105 gimmel TRUE units (GTUs). There are also different GTUs for each of the 2 down-quarks and the one up-quark in neutrons; and again, different GTUs for the protons, which are made up of 2 up-quarks and 1 down-quark. Consequently, each of these six has a different numerical equivalence of gimmel. (Table 2). Therefore the number of ‘gimmel TRUE units’ (GTUs) in atoms made up of protons, neutrons and electrons can be calculated and vary with each element and compound (one made up of two or more elements united in specific proportions). To illustrate gimmel’s versatility, there are many articles on it ranging from the Periodic Table, to gluons, to Dark Matter and Dark energy in the cosmos, to the contents of atoms.^{31; 32; 46; 70; 71; 72; 73; 74; 75} (Close and Neppe, 2016).

- a. Intent (or impact or influence) allowing bidirectional impacts such as earthquakes, thought, prayer allowing for meaning.
- b. Content: Our content consists of Mass, Energy and a third substance called gimmel. Mass-energy (ME) can be combined into Mass-Energy-Volumetric units. All ME is linked with Gimmel necessarily. Therefore content of any substance necessarily *contains* mass—energy-gimmel. “Content” is what is contained. Imagine a container or receptacle: They contain and can be measured indirectly only through “Content Density” (content/unit extent). The density of a content distinction is measured as content (mass, energy or meaningful impact) per unit of *Volumetric Extent*. In psychiatry the parallel is the “voices are telling me to get a knife”: That’s content. The process is the auditory hallucination based on the voices. That is process or extent. There is no process without content.
- c. Extent: In CoD, extent involves measurable real, imaginary or complex numerical values, ranging from zero, discrete values to infinity, and from interval to ordinal. They can be finite, transfinite (quantized or discrete infinity) or infinite (reflecting continuous infinity). The major extent we can measure in the finite (either interally as in physical space, or ordinally in time or consciousness) is dimensions. Dimensions of extent are meaningless empirically without content. They are not theoretical constructs but allow the measurement of content.^{16; 39; 40; 41} (Close developed the CoD approximately 2003; Neppe worked with Close further on this area from 2011 on.)

24. We note that each of the 6 up-quarks and down-quarks have different Gimmel TRUE Units

(GTUs) scores. This is not only just illustrating a principle here.²⁹ It might imply that even though we ‘label’ all up-quarks and all down-quarks as the same, they are subtly different. This could then likely apply to every quantal particle. (Table 2)

25. *Relative non-locality*: The concept of *relative non-locality* is critical. There are those who like to talk of “non-local”. That non-local term is meaningless unless there is a hierarchy of non-locality. Non-locality is always relative to the position of the observer in Space, Time and Consciousness: Non-locality is experienced differently in 3S-1t compared with an altered state of consciousness, e.g. meditation that might intrude into other dimensions and very different from ostensible survival after death. We regard gimmel in certain forms as synonymous with consciousness content but this varies dependent on the relative dimensional and infinite frameworks in *relative non-locality*. One important aspect of this is how we examine events and perceive from different *frameworks with everything being relative*⁷⁶ (Neppe and Close, 2011).^{56; 57; 58; 59; 68}

Table 2: Tabulation of elementary particles including their gimmel and TRUE scores

Particle abbreviation	Elementary particle	MEV	GTUs (gimmel)	Total TRUE Units	MREV Combined score
e	electron	1	105	106	Electron =106
u1	proton	4	2	6	
u2	proton	4	4	8	
d1	proton	9	1	10	Proton= 24
u3	neutron	4	5	9	
d2	neutron	9	3	12	
d3	neutron	9	6	15	Neutron =38

TRUE= Triadic Rotational Units of Equivalence; u= up-quarks; d=down quarks; e= electron. GTUs = Gimmel TRUE units
 MEV= Mass-energy volume; MREV= Minimal rotational equivalent volumes.

26. *Quanta and a new calculus*. Max Planck discovered in 1900 with his ‘black body radiation’ research⁷⁷ that there were *quanta*⁷⁸; and Albert Einstein later applied the photoelectric effect⁷⁹. The fact that *everything is quantized* is extraordinarily important in finite reality. By contrast, whereas the infinitesimal calculus of Leibniz and Newton^{80;81} is very useful, particularly in calculations pertaining to the usual macroscopic scale phenomena, it has significant limitations based on quantal measurements because the quantum is the smallest finite amount. This means that calculations performed without a bottom limit, as exemplified by infinitesimal calculus which tends toward zero, may theoretically be useful, but in practice are approximations which do not fit the concept of the quantum. Therefore, Close and later Close and Neppe have had to develop a calculus that can be practically applied to quantized reality. Everything is discrete—all is quantized. This is the *calculus of dimensional distinctions*.^{16; 39; 40; 41} It has major applications to dimensions and the quantal reality and in TDVP. (Close and Neppe, 2016)

27. *Quantized Volume*: Extremely important is the fact that the quantum is not a singular point or linear (one-dimensional) or planar (two-dimensional), though theoretically these exist. This

point does not appear to have been recognized beforehand but is huge because of stability of particles and the fact that one cannot tend to zero. All of empirical reality is based on *volumetric measures*, and volumetric implies three-dimensional measures. This means that *all empirical mathematics must be based on cubic and three-dimensional calculations*.⁴¹ (Neppe and Close, 2016)

28. *Applications of Fermat's Last Theorem (FLT) and Close Conveyance Equation*: In 1636, Pierre de Fermat described a conundrum called 'Fermat's Last Theorem' (FLT). 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."^{82; 83; 84} FLT allows conceptualization of the natural asymmetries beyond three dimensions and mathematical calculations involving vortices. It is stated in the negative: in that, when dealing with, in this instance, *cubic calculations* (volumetric), one will not find that any solution that can involve just two addends.⁸³ This absence is huge.^e The *Close Conveyance Equation* developed by Edward Close in 2015, can be applied in particle physics, as we always require three addends. This means that all suitable Diophantine solutions must be $a^3 + b^3 + c^3 = d^3$ (which is the 'Close Conveyance Equation',^{32; 87}) and not $a^3 + b^3 = d^3$. This is extraordinarily important, because it restricts calculations and requires, based on this, possibly *a third substance*, which we are calling *gimmel*.^{82; 83; 84; 86} Given that *gimmel* is effectively at times completely just consciousness, this is the first time an equation of Consciousness has been mathematically proposed. (Close and Neppe, 2015). Note that Consciousness has many meanings and the authors have recognized four prongs of 'EPIC Consciousness'—Existential, paradigmatic, informational, and cybernetic. The paradigmatic aspects are quantized, extended (out of the brain), neurological and psychological. In this instance, we're dealing almost exclusively with extended (or higher) consciousness, which may overlap the infinite and finite, and in the *gimmel* context, with the quantized finite form. We have written extensively about this^{2; 5; 6; 7; 68; 88; 89; 90; 91; 92; 93; 94; 95; 96; 97}. (Neppe and Close, 2011-2016).

29. *Refutation of Atomic Materialism*: The general basic teaching of the atom consisting only of protons, neutrons, and electrons is impossible. Similarly, protons with two up- and one down-quarks and neutrons with two down- and one up-quark plus electrons, also becomes *mathematically impossible*.^{70; 98} This refutes the fundamental idea of *atomic materialism*.^{70; 98} It is simply mathematically impossible; it implies that there is a need for a third substance. That third substance we have called 'gimmel'.^{29; 30; 32; 33; 46; 70; 74; 99} Moreover, such quanta are not just points, but volumetric. These calculations *prove that materialism at the atomic level is refuted*. Specifically, the atom is volumetric and integral and so are the subatomic particles (electrons, protons, neutrons and quarks) and as we know them, they are mathematically unstable applying all three different procedures available:

- a. Volumetric analyses of the atom.
- b. Mass and energy of the atom.
- c. Mass-energy equivalence applying "TRUE unit equivalents" (TRUE unit) analyses.

Our data shows the atom cannot be stable unless there is an additional third substance (*gimmel*).

^e Officially, FLT was solved by Andrew Wiles in 1994^{84; 85}, though Ed Close developed a short proof in 1965 ('FLT65' and he published FLT65 in a book⁸³. 50 colleagues have examined FLT65, and there is still no official refutation to Close's solution.⁸⁶ Some tried to refute FLT65: In two instances the 'refutation' involved irrelevancies that were not part of FLT. Dr. Close produced a monograph on this.⁸⁶

Atoms, mathematically, have to be very precise: They can only be whole with the correct combinations of very specifically derived gimmel scores being added. We created a unit score for the electrons, and recognized all other structures must be quantized integers and they should be calculated by volume ('Volumetric Equivalence' or VE) applying the new Close-Neppe "*Triadic Rotational Units of Equivalence*" (TRUE) units. *Unless we incorporate gimmel in the correct quantities into the atom, mathematically atoms would just fly away*—atoms need to be stable to exist permanently: They would be unstable without a union with gimmel. In essence, this means that we cannot have, for example, half an atom or a half electron. (Neppe and Close, 2015)

30. *Gimmel and gluons*: Because the subatomic particles alone are insufficient to explain the atomic mass, there must be another component. At one point, Murray Gell-Mann tried to explain this anomaly by proposing massless gluons which somehow acted as a 'glue'.¹⁰⁰ But gluons have never been demonstrated to exist, and would only be in protons and neutrons. We have proposed that there is another third substance, gimmel, and this is in union with protons, neutrons and their quarks *plus with electrons*.²⁹ *Gimmel has specific functions of stability, and has a role in spin rotation and 9-dimensional models. Gimmel can be shown mathematically to exist.*^{30; 33} (Neppe and Close, 2015)

31. *Cosmological solutions*: We have demonstrated that it is required and has specific gimmel equivalence unit calculations based on proofs in cosmology involving *dark matter and dark energy* proportions to the cosmos is almost exactly the same as the gimmel equivalent unit proportions to 'TRUE' units (Triadic Rotational Units of Equivalence).⁷¹ These are astonishingly close correlations, but not proofs. (Neppe and Close, 2015)

32. *Dark matter and energy in the atom*. Moreover, the proportion ratio of gimmel in union with electrons to dark energy, and of the quarks in proportion in relation to protons and neutrons to dark matter, correlate very well with the demonstrate cosmological proportions of Dark Matter to Dark Energy.⁷⁰ These already hypothesized results were predicted and are strongly suggestive of some kind of causal link reflecting remarkably close correlations. But they are not proofs. (Neppe and Close, 2016)

33. *Dark matter and energy fit in 9-dimensional structures not 3S-1t*. This means, effectively, that the dark matter and dark energy could be embedded or contained in the atomic structure. However, a major problem is the high proportion -- 95.1% -- of dark matter and dark energy to the cosmos, compared with the 4.9% of the calculated matter and energy^{101; 102; 103}. This means that one has to approach the 'dark substances' at a *multi-dimensional level*. Dark matter and dark energy can be contained in the nine-dimensional atom. (Neppe and Close, 2016) The Quantal and Cosmological are linked!^{104 105} (Neppe and Close, 2016)

34. *Unifying the laws of the cosmos. The same laws of nature apply for everything from the quantum to the cosmological*: These findings are critically important: No longer do we need to apply 'quantum weirdness'¹⁰⁶ to quantum physics. The 'weirdness' might simply be a product of not taking the extra dimensions into account. (Neppe and Close, 2015).

35. *The life elements and gimmel*: We have demonstrated that every element that could be described as a 'life element' is symmetrical and stable. Remarkably, they all fit into an atomic Diophantine mathematical calculation relating to multiples of 108^3 . This is different from the non-life elements (Table 2): The non-life turn out to be asymmetrical. Therefore, one can list the properties of life-elements including their proportionately more gimmel -- always the same amount of gimmel. These are C, O, S, N, Ca, Mg.^{29; 30} We can also predict that Silicon is an element of life based on its characteristics (Close and Neppe, 2015). Additionally, there is common Hydrogen-1, the most prevalent element in the cosmos, and part of every life chemical. Hydrogen-1 also appears to compensate for its absent neutron: It contains extra third substance—gimmel (except we call it 'daled' as it might be different to the conventional gimmel) instead of that absent neutron. This means, effectively, that hydrogen contains far, far more gimmel. The most common molecule of life is water, and that contains proportionately even more gimmel than the other elements.^{29; 30} (Close and Neppe, 2015)

Table 3: Neutron^f subatomic particles with charge, MEV, GTU, TRUE and MREV score

Elementary Particle	Particle Charge ^g	MEV	GTUs Gimmel	Total TRUE Units ^h	MREV Combined Particle score
Electrons (e)	- 3	1	105	106	1,191,016
Protons (P ⁺)	+ 3	17	7	24	13,824
Neutrons (N ⁰)	0	22	16	38	54,872
Totals	0	40	128	168	(108)³

TRUE= Triadic Rotational Units of Equivalence; GTUs = Gimmel TRUE units; MEV= Mass-energy volume; MREV= Minimal rotational equivalent volumes. Gimmel = λ

36. *The special roles of the other non-life elements*. We can calculate and allocate gimmel for MEV= Mass-energy volume; GTUs = Gimmel TRUE units; TRUE = triadic rotational units of equivalence; MREV= Minimal rotational equivalent volumes; every element. We need to, because everything is triadic, with the other components being mass and energy. Predictions of stability and symmetry are pertinent.^{29; 30} (Neppe and Close, 2015) (Table 3). We can immediately see which elements are asymmetrical, for example, potassium and surprisingly phosphorus, and even what isotopes cannot exist. (Close and Neppe, 2015). Also, Iron has the largest amount of GTUs, possibly because it's a transporter of oxygen.^{29; 30; 32; 107; 108} (Neppe and Close, 2016)

37. *TRUE and 9 dimensions*: Measurements of the 'TRUE' units are integrated into this multidimensional concept—they rotate through 9 dimensions. These units of equivalence are quantized and volumetric. When we do so we discover that mathematically all the life elements are cubic multiples of 108^3 .^{29; 30} Normalization and natural units in TRUE research:

^f Neutrons: Composite term for Neutrons, Electrons and Protons the atomic components.¹⁰⁷ MEV = Mass Energy Volumetric Equivalence.

^g The numbers -3 and +3 appear unusual here: we usually talk about +1 and -1. However, everything is triadic and this is so with the triad of quarks too. Therefore, applying these calculations the numbers work out at 3 not 1 as there are 3 quarks each in protons and neutrons

^h Gimmel to TRUE is the % ratio of the gimmel to the TRUE units. We have applied some color codes here to clarify differences.

Importantly, we calculate the quantization of electrons normalized to the digit 1 (the electron without gimmel) in TRUE units. This is not only ‘normalization’, but also one of the few times fundamental constants are made natural. One can do this with all elements, and this is how we can easily establish that Carbon, Hydrogen, Oxygen, Sulfur and Nitrogen (spelling ‘CHOSeN’) are the main life-elements. Others are calcium and magnesium.^{29; 30; 107; 108; 109; 110}

38. *Electron shells and the Periodic Table*: The noble gases, He and Ne, based on their electron shells 1 and 2, demonstrably have the same proportion of gimmel as the life-elements.^{29; 30}. The positioning of electron shells has great relevance to valence. When applying TRUE units, a secondary consequence is re-establishing the rules governing the laws of the Periodic Table of the Elements e.g. the two Noble gases, Neon and Helium, superficially behave like the life-elements in their proportions of gimmel. However, they are inert with equivalent valences of 0 and so non-reactive (Close and Neppe, 2015): Valence is a criterion with the life-elements.
39. *LFAF (Lower dimensional feasibility, absent falsification)*: Importantly, in order to deal with multi-dimensional models, one has to broaden the *definitions of science*.²⁰ This is commonly already done in evolutionary theory and cosmology, and particularly in Medicine, where *falsification* is seldom as important as *feasibility* of management of cases. But it has not been so defined. Effectively, few dispute that Medicine, Cosmology and Evolution are scientific endeavors yet they are in general not amenable to Popperian techniques and in Medicine often not applicable. Also, it is likely, very applicable in psi, non-locality and dimensionality. Feasibility is far more important. LFAF changes the whole perspective on extending science to dimensions and spirituality. Popperian science has set back discovery, not the reverse because science is far more relevant than just what can be falsified.^{18; 19; 20} It also is of enormous importance in TOEs because feasibility is a legitimate empirical approach in extending one’s areas of new knowledge. A key in multidimensional studies, is that these *extra dimensions appear to be not purely mathematical operations, but feasible empirical realities*. The feasibility of this is illustrated by the correlations above. (Neppe and Close, 2011)
40. *Proof of nine finite rotating dimensions*: The same LFAF considerations are applied here to any kind of multidimensional model. Nevertheless, the mathematical derivations of 9D make these findings sometimes empirically correct, proven mathematically and falsifiable. These proofs involve the derivation of the Cabibbo angle, replication by a thought experiment⁴³, calculations of intrinsic electron spin and angular momentum.^{36; 43; 44; 45; 111; 112; 113; 114 35; 38; 115}. There are also several non-specific components, such as the ‘electron cloud’⁴⁵; ‘angular momentum and spin’⁴⁴, which have their basis in the ‘calculus of distinctions’^{16; 40; 41} and in ‘dimensional extrapolation’¹¹⁶ mathematically. Other examples are weak universality¹¹³ and the electron cloud⁴⁵. *Nine finite dimensions are proven*. They are not speculations.^{117 118} (Close and Neppe, 2013).
41. *The infinite continuity plays a critical role in our existence, and in life, and order*. The infinite is needed because without it, TDVP could not be a TOE. It could not be a TOE, because applying *Gödel’s incompleteness theorems the finite alone would be insufficient: there would*

need to be something beyond the 'finite box'; that something is the infinite continuity. ^{119; 120}

More importantly, TDVP as a model could not work: The infinite embedding the finite is needed to complete the model.

The infinite is without a beginning or end in all of STC, extending forever and yet still everything is simultaneous. It's never-ending, without end in space. And the infinite is a repository of conscious *information* containing everything in all time and all space. ^{11; 121; 122} (Neppe and Close, 2011) Moreover, whereas our finite existence is *entropic*—tending toward disorder, the continuous infinite is *ordered* (it's '*ordropic*'), tending towards order. Importantly, related to that *order* is the order that is linked with *existence*: That existence includes our physical *life* which reflects just one phase of ongoing infinite *existence* that goes on *at all times*: This means *everything including ourselves is necessarily immortal*: Though there's physical death, that does not mean an end to real existence which in the infinite goes on forever. But what happens in the finite? After physical death, instead of our physical 3S-1t, a different dimensional STC footprint might exist such as portions of domains 5 to 9. The continuous infinite envelops all of the finite space, time and consciousness extent, and a mass-energy-consciousness content. (Neppe and Close, 2011)

Speculatively, gimmel might originate in the infinite. If so, this might reflect pure consciousness at that level, yet hierarchically that still would contain mass and energy entirely embedded in the gimmel infinite consciousness. (Neppe and Close, 2014)

Gimmel is also in union with photons in the infinite continuity: We've hypothesized photons infinite gimmel GTUs. However, in the discrete (quantized) finite, the photonic state is different: photons must be in union with the *same amount* of GTUs as electrons, because of electron involvement in the photo-electric effect. ⁷⁹ (Close and Neppe, 2016)

42. *TDVP is a theory of everything that works*: Searching for a Theory of Everything (TOE) has been a task that many have attempted. However, only TDVP reaches the heights of being a legitimate TOE. This is demonstrated when carefully performed metric comparisons of the 24 major different proposed TOEs are applied. ⁵ The Neppe-Close TOE of TDVP scores a perfect 39/39 and no others besides the original Neppe Vortex N-dimensionalism at 27/39 and Close Transcendental Physics at 23/39 even score 20/39 or above. Even the conventional Standard Model of Physics (SMP) scores only 13/39. This shows the SMP might be insufficient though very useful in our physical reality.

We dislike the term 'Theory of Everything' because of its ambiguous interpretations, but currently this is the term that is used for a complete explanatory model of reality conforming to the laws of nature. TOEs should seamlessly reconcile with all the major theoretical models and authoritative sources of *all* the sciences and mathematics. However, they should *not be construed as reflecting omniscience*, instead implying application of principles. TOEs are sometimes regarded as primarily philosophical, yet the original, limited meaning was in Physics. We believe that the TOE term as used in popular literature is a misnomer. Not only does a real TOE have to explain physical reality, it also has to explain consciousness, dimensions and infinity. A TOE needs to be able to explain mathematically, empirically and

feasibly without contradiction.

We maintain that consciousness has to be included in the equations to even begin to approximate a real TOE. TDVP includes all of this. Not only does it recognize consciousness as a key, and differentiates different kinds of consciousness paradigms^{9; 56; 69; 90; 91; 93; 94; 123}. But TDVP also included infinity in it, because a TOE cannot be solved purely with the finite reality when applying the finite reality^{119; 120} as it would be incomplete.^{27; 124; 125; 126; 127; 128} Neppe and Close developed the term ‘metaparadigm’ instead. This involves the broadest paradigm impacting all sciences, mathematics and philosophy without contradiction. To achieve the level of a TOE or metaparadigm, the model must be groundbreaking with new discoveries and applications. TDVP does just that. (Neppe and Close, 2012)

43. *Individual-units and Indivension*: These are two exceedingly important concepts. (Neppe and Close, 2011). Individual-units applies Systems Theory: not only some levels of consciousness of individuals but such levels as familial, group, ethnic, cultural, social, and species-linked that could be regarded as experienced. We have listed over thirty different system levels: This reflects, not only finite groupings such as ‘ethicobiopsychofamiliosocioethnicocultural’, but could include systems levels that are largely inanimate such as ‘astronomophysicochemical’. This is important as we different individual-units experience different realities.¹²⁹ When individual-units move across, between within dimensions, the mechanism we describe is called ‘indivension’ (from individual-dimensions).¹³⁰ In this way, finite biological units move across dimensions and this also complexly relates even to the infinite. Multiple levels of individual-units manifest together, for us most overtly in individuals but at any systems levels, particularly at higher dimensions when we might lose much of our individual identity (Neppe and Close, 2011). We combine indivension with vortical movements—vortical indivension—and this allows easier communication across dimensions. We’ve even used this mechanism to explain psi communication as well as such enigmas as alternatives to the Copenhagen like interpretations of physics.^{131 52; 130} (Neppe and Close, 2011)

Projecting this information:

44. *Normalization*: A common method in mathematical physics is to ‘normalize’ formulae. It is important as complex results can be noted immediately. An example is normalizing the figures for TRUE units. We can immediately see how, given quantal units, all data on electrons, protons, neutrons and quarks, and the resultant atoms, must be integers. Normalization helps this analysis greatly.^{29; 30} Effectively they can be measured in units of equivalence. (Close and Neppe, 2016)

45. *Mathematics appears to closely reflect the nature of reality*. This hypothesis has support. Math is not just for calculating, but has a vibrant basis for reality. Our *analyses should be based on 3-dimensional cubic structures, not linearly*. Our findings have not yet been contradicted and are feasible. We can use this as tool for further hypotheses. It’s our strong impression that mathematics involves empirical knowledge; it is not just a means of calculation.^{29; 30; 31; 32; 46; 74; 107; 108; 132; 133} (Close and Neppe, 2011).

46. *Unified monism as a new philosophy.* This is the only philosophical model that can be applied to every level of mass, energy, finite, infinite, physical reality, infinite and higher dimensions. It is also the only philosophy that is secondary to science. This is a mind-brain philosophical model that could justify our regular three spatial dimensions in a moment of time experience of reality, as well as the infinite, survival after death, altered states of consciousness, and psi. This is the Neppe-Close philosophy of ‘*Unified Monism*’, incorporating their TDVP scientific and mathematical model. This is well supported and allows a different perspective from the philosophically restricted options of ‘Consciousness is derivative of Space-Time or Mass-energy’ or vice versa.²¹ When we compare UM to any other philosophical model, the most fashionable being panpsychism of Thales and Plato, or to Galen Strawson’s *Realistic Materialism* or his father’s Peter Strawson’s *Realistic Monism*, or to applying *Cartesian dualism* or *promissory dualism*, or to Spinoza’s *pantheism*, or even *panentheism*, or *transcendental materialism* of Zeno, Chryssipus and Betty, it’s no contest. UM fits all of the 29 criteria of comparison and is very versatile.²¹ (Neppe and Close, 2011).
47. *Unification of science and spirituality.*^{29; 46; 132; 133} There is likely no place to merge the physical 3S-1t experience alone with spirituality. They are quite separate as 3S-1t does not contain a consciousness symbol: Consciousness is at a higher dimensional level than Space and Time. However, the key is extending science to 9D, and also to include infinity. This can be done by amplifying feasibility. The spiritual then fits, unlike the idea of Gould’s Magisteria where science and spirituality were perceived as different categories of things¹³⁴. Given extensions of LFAF to feasibility, there is a direct consequence of TDVP being feasible with spiritual ideas because Consciousness, in its extended form, can be incorporated into a multidimensional model, and this provides a useful starting point for extended science to fit into the mystical.²¹ Searching for a possible linkage, Kabbalic mysticism has strong philosophical similarities to many of the philosophical aspects of TDVP.^{135; 136; 137; 138; 139} (Neppe and Close, 2016)
48. *Translation from theory to empiricism.* The atomic mass-energy-volumetric equivalents (MEV) in TRUE unit measures of protons, and electrons, directly correlate with the Large Hadron Collider!³⁰ This means that TRUE units are real empirically not just a theoretical construct. We can demonstrate that the electrons, protons and neutrons correlate exactly after normalization with the LHC data. The neutron particularly is an unstable particle with beta decay of about 10-15 minutes, and converts mainly to protons^{140; 141}, hence the close LHC calculations of these figures are 1836 for the proton and when corrected 1839 for the neutron applying TRUE units! This paper is in process but the math performed. The point is critically important. (Close and Neppe, 2017).
49. *Rotation (‘spin’) is through 9 dimensions:* All of the Elements of the Periodic Table are made up of stable vortical distinctions that are known as fermions, “particles” with an intrinsic angular spin of 1/2, or they are made up of combinations of fermions. We can analyze the fermions that make up the Hydrogen 1 and Hydrogen 2 atoms and Helium atoms and all other elements. We can examine their parameters of spin, charge and mass based on experimental

data. The top- and bottom-quarks and the charm- and strange-quarks are ephemeral unstable particles, so are not part of the calculations, and nor are neutrinos or any “anti-particles”.^{30; 33} (Close and Neppe, 2017). We’ve already shown this result is correct for electrons and protons, and shown provisionally that it is so for neutrons.²⁹ A new paper is in process for neutrons and where we hypothesize and demonstrate that this normalized quantization is real and empirically valid, and not just part of an operational theoretical mathematical model. Consequently, we can demonstrate such a quantization of protons and neutrons and quarks themselves, measured in unit equivalence. The question comes up *whether this is theoretical or if this is logical and actually based on empirical data*. Indeed, this is empirically based -- correlating with the Large Hadron Collider data¹⁴², in terms of protons, electrons, and quarks -- so that all of these are *real phenomena, they are not just theoretical constructs*. The difference is enormously relevant, because it demonstrates that not only are there mathematically TRUE units, but that these are real and empirically viable. (Close and Neppe, 2017)

50. *TRUE equivalence*: We specifically demonstrate in this paper the empirical need for TRUE unit equivalence. This is based on the calculation of showing how the mass of the proton and the mass of the neutron, based on the LHC data, is exactly equivalent to the mass when converted into normalized units to TRUE unit calculations. This means, effectively, that this data is real, not theoretical (Close and Neppe, 2016).

Putting these principles together:

The question arises: Are all these principles and findings legitimate? Yes. All have been carefully peer reviewed, discussed in detail, published and presented to peers, at least in broad outline. They constitute the underlying concepts behind the Triadic Dimensional Distinction Vortical Paradigm (TDVP) and the data holds together, with each piece of the feasible jigsaw supporting the other pieces. TDVP involves a detailed paradigm ever-growing model based on applying LFAF for scientific validation of the available broader empirical data of all the sciences (physical, biological, consciousness and psychological) and, furthermore, in several instances, TDVP is validated partly through mathematical theorems.^{27; 28; 48; 104; 143; 144; 145} (Both Neppe and Close, 2011-2017).

The number of peer-reviewed publications on different facets of TDVP run into the hundreds and was the basis for Edward Close and Vernon Neppe jointly being awarded the worldwide, interdisciplinary ‘Whiting Memorial Prize’ for 2016.¹⁰⁴ The fifty illustrative fundamental points above (there are many others, too) allow new and old readers of the TDVP model to specifically appreciate its main ostensibly groundbreaking concepts and also provide a chronological basis of two scientists working together for nearly a decade where based on the Neppe-Close / Close-Neppe list above, we see that both Vernon Neppe and Ed Close have equally pioneered the ideas and then further amplified the key concepts. Their interchange is like a shoe and a sock, not surprisingly because Neppe and Close had not as successfully applied their own work individually to developing their new metaparadigm (which some call a ‘Theory of Everything’).¹⁰⁴

Now that we have understood the basic fundamental advances in TDVP, we move across to looking at what is perceived by some colleagues as major advances. Based on peer-reviewed feedback almost all the statements above have changed forever models of reality. This has been so recognized

by the major experts on TDVP who've examined this work in detail, namely Dr David Stewart, and Dr Adrian Klein and also by Dr Alan Hugenot.

- Dr David Stewart, PhD, DNM. Physicist, Mathematician, extensively published author: *“I rank Dr. Edward R. Close and Dr. Vernon M. Neppe as peers of the major authors of modern physics and mathematics. I equate them with greats, such as Planck, Einstein, ... Newton.... Their work has clarified, and extended the science and mathematics that these geniuses originated ...I foresee the day when they will both be awarded other honors, such as a Nobel Prize in Physics and (equivalent in) Mathematics.”*
- Dr Adrian Klein, MDD, PhD, PhD, Israeli Dimensional Biopsychophysicist and Consciousness Researcher: *“The 21st Century's revolutionary paradigm shift”; ... “unprecedented brilliance and potentially limitless scientific and philosophical outreach ...yielding a fresh and accurate understanding of various investigation fields of Nature, and opening ... groundbreaking development perspectives for Sciences (emphatically plural!)”.*
- Dr Alan Hugenot DSc, Physicist and Engineer: *“When taken altogether, the entire work is worthy of several separate Nobel Prizes”.*
- A fourth quotation series is collective, from SCERS as a group of eight including Dr Joyce Hawkes PhD, FAAAS, biophysicist: *“...any one of these [31] areas, let alone the combination would be a very substantial reason for Drs Neppe and Close to be recipients of major prizes”.*
- There are several brief comments by seven others in seven different disciplines (first the two leading experts in their disciplines in the world namely:
 - Stan Krippner PhD: *“destined to become a classic in the literature on shifting paradigms and worldviews”*,
 - Dean Radin, PhD: *“RBC [is] in a radical multidisciplinary class by itself”*; and then five other prominent scientists:
 - Alan Bachers PhD: *“an astonishing and prodigious accomplishment!”*;
 - John Poynton PhD: *“encyclopedic ... broad exploratory paradigm for new scientific ideas”*;
 - Lance Storm PhD: *“a paradigm shift that hails in, if not, beckons for, a kind of scientific overhaul and shift in thinking”*;
 - Helmut Wautischer PhD *“will shape philosophical discourse ... a profound value to the future of humankind...masterful...”*;
 - Dr. Frank Luger (Canada) *“astonishing that you could combine deep scientific notions with mysticism”*.

Scientist Dr Stan Krippner summarized much of the above in August – September 2016, in emails to some Closed Internet groups:

“Let's imagine what would happen if someone:

- a. Proved mathematically that our reality is far more than just our experience in three dimensions of space in a moment in time (3S-1t).*
- b. Demonstrated that our finite reality was proved to be 9 finite spinning dimensions, and yet that our day-to-day physical finite experience of 3S-1t is still pertinent but just part of our experience?*
- c. Calculated the properties of a massless, energyless substance' in atoms, protons, neutrons, electrons and quarks.*

- d. Demonstrated that materialism at the atomic level is mathematically impossible;
- e. Calculated that the proportion of 'consciousness' in the most abundant cosmic elements is exactly the exact same as the proportion of dark matter plus dark energy to the cosmos;
- f. Determined that there is more functional consciousness substance in union with the elements of life than any other elements in the Periodic Table. And moreover, what would happen if these elements all have the same exact rules?
- g. Showed, even more so, that water has the most of this 'consciousness' of any molecule? And that silicon appears to be an element of life?
- h. Proposed several different ways to distinguish 'consciousness', including even the very way in which it exists?
- i. Derived the first 'equation for reality that included consciousness'?
- j. Demonstrated that Space, Time, and Consciousness (STC) are all separate, with the one not just being derivative of each other in our 3S-1t reality. Instead, STC is always in union: Argued cogently that we have gone beyond Minkowski's 1908 union of 'Space-Time' and as of 2011, we have a new union 'Space-Time-Consciousness' (STC).
- k. Developed a model that could explain all psi phenomena that could even be compatible with survival of bodily death. And would it be even more interesting if that same model was versatile enough to also fit into our reality experience of 3S-1t?
- l. Proposed a mind-brain philosophical model based on mathematics and science that could justify our regular 3S-1t experiential reality as well as the infinite, survival after death, altered states of consciousness, and psi.
- m. Developed a new paradigmatic model for reality.
- n. Suggested a method of broadening the criteria for legitimate science to also include what is feasible and not refuted?"

A colleague adds:

"Effectively, Drs. Neppe and Close have demonstrated that every one of these areas are feasible. And yet, many of their scientific colleagues have ignored the Neppe-Close work as if it didn't exist. This is not new, of course: Notable examples are the great mathematician, Georg Cantor¹⁴⁶; and the great inventor, Nikola Tesla, whose work was only recognized posthumously¹⁴⁷; even Albert Einstein suffered this fate for many years, prior to 1919¹⁴⁸. As Max Planck wrote: "*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.*"^{23 -p150} Yet Close and Neppe hope the vast Internet will make their task easier."

A historical perspective is in order:

Nevertheless, there has already been some significant recognition for these two pioneers. This historical perspective is mentioned to give a perspective on what is regarded as groundbreaking¹: "Close and Neppe have also been recognized internationally for their work: In February 2013 in Puebla, Mexico, Dr Neppe and Dr Close received the well-respected Gabino Barrera Award and medal involving the earlier version of their critically important metaparadigm. *But this time they could prove their work mathematically and extend it in paradigm shifting ways.* This preceded their proven 9 dimensions in later 2013, and was before the discovery of gimmel in 2015.

¹ From the initial Whiting Memorial Prize citation.

Ironically, therefore, their more major contributions were as yet undiscovered though they were direct results of those previous hypotheses and findings. These scientists were able to mathematically demonstrate that finite reality involves 9 spinning dimensions. They showed that all particles are in union with the third property ‘gimmel’ thought to be consciousness at least in part, that this gimmel is mass-less and energy-less and in union with mass and energy, such that every fermionic particle at the subatomic level has different properties. Moreover, the materialistic model of the atom is refuted, and the proportions of dark matter and dark energy to the cosmos, correlates exactly with the ratio of gimmel to TRUE in the equivalent cosmological elements, namely predominantly Hydrogen and also Helium. These findings suggest *the same laws of nature apply for quantum, macroscopic and cosmological levels*, something different from current thinking about ‘quantum weirdness’¹⁰⁶.

Effectively, their work goes a long way to showing that spirituality and science are linked together and that mathematics is part of the broader reality of our existence, not just a way of calculating. Moreover, gimmel is far more logical than gluons (and these might not exist as mathematically gluons were postulated by Nobelist Murray Gell Mann and exist only in the nucleons (protons and neutrons) without being linked with electrons and also being a ‘glue’ only in 3S-1t is mathematically unfeasible.”²⁹

It was in August 2016, Neppe and Close were awarded the prestigious *Whiting Memorial Award* from the ISPE. In the blurb about this: “Dr. Edward Close and Dr. Vernon Neppe were awarded the 2016 Whiting Memorial Award for “*expanding boundaries of scientific understanding*”. The Whiting Memorial Fund is a philanthropic fund administered by the International Society for Philosophical Enquiry (‘ISPE’) (www.thethousand.com) to ‘*reward individuals and groups, whose accomplishments and goals exemplify the ideals of ISPE*’. This international award is open to anyone worldwide in any discipline, and is given to a person/ persons or organization (outside or within ISPE) who typifies the ISPE ideal of “*someone who strives to benefit society in general through advanced enquiry, original research and/or creative contributions, and who has demonstrated significant progress in these endeavors.*” ISPE’s only mission is “*to attract the world’s most intellectually gifted individuals and hopefully direct their achievements for the betterment of all humankind.*” ISPE advances no political, governmental, religious, race, gender, ethnic, activist or academic agenda. “*This is what ISPE is all about: Making our world better by encouraging profound excellence*”, emphasized Stephen Levin, the ISPE President. Drs. Close and Neppe applied the empirical and theoretical findings of quantum physics, mathematical logic, philosophy, biology, psychology, and consciousness research to develop their theories, but often it has been their creative jumps into the unknown that have been most important. Hundreds of scientists worldwide have examined and approved aspects of the Neppe-Close work.” (www.tddvp.org). “They (sic) have needed to apply the empirical and theoretical findings of quantum physics, mathematical logic, philosophy, biology, psychology and consciousness research. But often it has been their creative jumps into the unknown that have been most important. Hundreds of scientists worldwide have examined aspects of the Neppe-Close work, which many have compared with an advanced multidisciplinary graduate degree which requires significant study and application. Therefore, there are only a few experts worldwide.”

Ironically, many of the key scientists of the past were deeply spiritual (e.g., Georg Cantor, Albert Einstein, Isaac Newton, Wolfgang Pauli and Max Planck), but they did not dare to introduce

consciousness into the equations of science. The time was not ripe. But few, even today, have dared to include ‘consciousness’, ‘infinity’, dimensions, and math. The current authors, Vernon Neppe and Edward Close, have done so with TDVP emphasizing these criteria and attempting to unify science, spirituality, and consciousness^{28; 48}. Even today, no scientist has refuted the fundamental aspects of the TDVP model, in fact, TDVP has been successfully amplified. Furthermore, several components are mathematically proven. (Neppe and Close, 2011).

Nevertheless, the materialistic belief system is widely taught in our educational institutions today. It scoffs at, or even ridicules, the possible existence of anything beyond our restricted physical experience and is justified by the successes of materialistic science.^{38; 99; 149; 150; 151} But those successes lie almost entirely in the realm of explaining superficial physical mechanisms, and our current physical science at least recognizes conundrums that remain unexplained, and that there are even significant contradictions in physics.^{38; 99; 149; 150; 151} If physical reality alone in our 3S-1t reality existed without anything else, there would be many incomplete areas. And, as indicated, even such a basic as the atomic model without any balancing third substance is mathematically refuted⁹⁸.

An early task for Neppe and Close has been to *extend* science. But they still regard the model of our physical experience in 3S-1t as *part* of the 9D model and therefore not refuted, just broadened. All the profound contributions of 3S-1t physics and science have never been rejected, they’re included in the 9-dimensional rotation model unless there were definite contradictions or conundrums that needed further explanation: 3S-1t has just been modified in the areas that were lacking or failing.

Close and Neppe have, by necessity, had to develop ideas because physical reductionism was failing. This led in 2011 to their changing Karl Popper’s fundamental fallibility as a requirement in science to adding feasibility.^{152; 153; 154} Suddenly deeper and ultimately much more important questions about the meaning and the purpose of manifest physical reality, life and conscious awareness, have become awarenesses that can be tackled. Those questions, of paramount importance to humanity, are within reach of meaningful analysis when consciousness is included in the equations of science. One purpose of this paper has been to show how this is and can be done: The Neppe-Close TDVP model⁵ involves major rethinking about what is feasible, practical and empirically logical. TDVP also involves serious efforts to upgrade the mathematics of the physical sciences,¹¹⁷ with the direct and indirect involvement of consciousness,⁹⁰ and incorporates the key mathematics of critically important, largely ignored, principles of Number Theory like Diophantine Equations, including Pythagorean modifications, Fermat’s Last Theorem, Close’s Conveyance Expression, Close’s Calculus of Distinctions^{11 16; 39; 41} and Close’s Dimensional Extrapolation¹¹⁸. These methods introduce the realm of mathematical proof, and move TDVP away from only feasible, empirical jigsaw pieces analyzed from the framework of our limited 3S-1t. Vernon Neppe and Edward Close recognize this has been their song to sing in this world. They regard the challenge now to continue this work, which so far has not had a penny of funding.

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