

The thirteenth conundrum: introducing an important new concept, TRUE units—Triadic Rotational Units of Equivalence.

(and including Refuting Atomic Materialism p73-83 ^a)

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Abstract

This article contains two critical and fundamental. Concepts. The thirteenth conundrum is the most developed and possibly the most important conundrum in this series. We introduce for the first time an exceedingly important new concept, namely *TRUE units—Triadic Rotational Units of Equivalence*. *‘Triadic Rotational Units of Equivalence’ (TRUE or TRUE Units)*. TRUE is extraordinarily fundamental. Even though we’re presenting only a very brief introduction for non-mathematicians on the new concepts of ‘gimmel’ and TRUE units, this work is of such importance that we’re putting it in its own section. Importantly, TRUE is an extension of the ‘Triadic Dimensional-Distinction Vortical Paradigm’ (TDVP) model, as well as part of the nine dimensional triadic concept. ¹ However, the results appear to be startling and, with respect, like TDVP itself, reflect their own paradigm shift. With the concepts of Triadic Rotational Units of Equivalence (TRUE or TRUE Units) we are able to demonstrate how consciousness is describable in the equations of quantum physics and relativity, and indeed, importantly, extend this to the discipline of Dimensional Biopsychophysics with a 9-dimensional spinning model applying three triads of 2 quarks (up and down) plus electrons. These are the most fundamental active parts of atomic structure as the proton has 2 up quarks and a down quark, and the neutron 2 down and one up, and the atom also has the third stable fermion component, the electron.

We describe the general expression ‘Conveyance Expression’ $\sum_{i=1}^n (\mathbf{X}_n)^m = \mathbf{Z}^m$. Since all stable spinning particles are shown to be symmetrical, the shape factor cancels out of the equation. Because the \mathbf{X}_n can only take on integer values, these equations are a special type of equations called ‘Diophantine Equations’. Fermat’s Last Theorem tells us that there are no integer solutions for the Conveyance Equation when $n = 2$. But there are integer solutions when $n = 3$. So, while two symmetric particles cannot combine to form a third symmetric object, three symmetric particles *can* combine to form a fourth symmetric object. This means that the Conveyance Equation $(X_1)^3 + (X_2)^3 + (X_3)^3 = Z^3$ can represent the combination of three quarks to form protons (2 up and 1 down) and neutrons (2 down and 1 up). This explains why quarks are only found in combinations of three. Other combinations are unstable and decay

^a Please see the separate extract of this important concept on Refuting Atomic Materialism. The two sections relating to Refuting Atomic Materialism are identical. That section is authored by Neppe and Close, but the findings are critical. Both articles have been adapted with abstracts. They were previously just the thirteenth component of a major series on Conundrums.

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before they can form material structures. When we analyze the elements, importantly, we have found the equations of mass and energy of the *stable fermion particles* (electrons and quarks) (e.g. neutrinos are not stable) to be incomplete without a third component. We have called that component ‘gimmel’, the third letter of the Hebrew alphabet written ג: It is a necessary new term. We can derive the various life-elements and demonstrate they are cubic multiples of 108. Water is in union with the most gimmel of any molecule.

Refuting materialism! A dramatic mathematical answer: All three “proofs” adopt the classical perspective of chemistry of the atom only being made up of certain stable particles namely electrons, protons and neutrons: Essentially, the sums of the quantized TRUE volumes of electrons, protons and neutrons form Diophantine equations, which, because mass and energy are quantized, must have integer solutions. We examine the cubes representing the total volumes, not just the number of particles ^c. The lack of integer solutions in these calculations demonstrates a basic asymmetry of the resulting atomic structures that leads to insufficient stability to sustain organic structure and life. In chemistry, we apply atomic numbers, based on the numbers of protons and electrons in elements; but we also recognize mass so we should apply equivalents of mass. There are three ways to refute atomic materialism:

The first demonstration: the numbers of particles together don't make an atom. For the life elements, where these are equal, the solution would equal $a^3+a^3+a^3=3a^3$. The cube root of $3a^3$ is $1.442n$. That therefore, is not an integer.

The second demonstration: mass and mass energy of particles also don't work. Deriving our figures by converting to electron =1 from the Jefferson Lab. Under those circumstances, then a single Neutron represents 1839, and a single Proton represents 1836. Dividing out the ‘a’ (atomic number) we have $1+p^3+n^3=(X/a)^3$, where X/a represents the mass of the atom. The resultant cube root is 2315.13843...

The third demonstration: the mass/energy of up-quarks and down-quarks produces an inequality that is unstable. Without gimmel, the Diophantine equation would then be of the form $(n*1)^3+(n*17)^3+(n*22)^3=Z^3$. But Z is a non-integer because $Z^3=15,562n^3$ and 15,562 is not a cube.

The missing link

Many physicists, including Einstein, Pauli and Hawking have dreamt of a ‘theory of everything’, but to this point their dreams have never been fulfilled. The reason is simple. You can’t have a theory of everything if you doggedly exclude a major part of ‘Reality’ from your theory. ^{2; 3; 4} That major part of Reality excluded by contemporary reductionist science is consciousness. For many years, Close and Neppe have both separately insisted that the dream of a theory of everything is never going to be realized until we find a way to put *consciousness into the equations of science*. However, Ed Close found the way to introduce consciousness equations. But such a technique is only accessible because it involves learning the whole new mathematical system of applying the Calculus of Distinctions (CoD). The inspiration came to Close in a dream in 1986, and he published it in 1989 in a book entitled “*Infinite Continuity*” ⁵. But in 1989, and even today, most people have not been willing to invest the time and considerable effort it takes to learn a whole new system of mathematical logic. Thereafter, Close wrote about it in

^c (e.g. their atomic numbers for protons and electrons as they’re equivalent in the Periodic Table; and the mass numbers [and atomic weights, which also include isotopes of those elements] approximating to neutrons less these protons).

Transcendental Physics ⁶ and later Neppe and Close have published books and articles on this topic, but still we do not find many who are educated in the fundamental and basic, but critically important, mathematical logic system of the CoD. ⁷ This has allowed an approach to many areas including the subject of this section, ‘*Triadic Rotational Units of Equivalence*’ (*TRUE or TRUE Units*).

We maintain that scientists 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, humanity will experience an explosion of new knowledge and understanding far beyond anything experienced so far in the current era of recorded history.

The TRUE implications

With the concepts of Triadic Rotational Units of Equivalence (TRUE or TRUE Units) we are able to demonstrate how consciousness is describable in the equations of quantum physics and relativity, and indeed, importantly, extend this to the discipline of Dimensional Biopsychophysics with a 9-dimensional spinning model applying three triads of 2 quarks (up and down) plus electrons. These are the most fundamental active parts of atomic structure as the proton has 2 up quarks and a down quark, and the neutron 2 down and one up, and the atom also has the third stable fermion component, the electron.

Quantization and TRUE

In TDVP, we apply quantized phenomena existing in a multi-dimensional domain. This consists of space and time, embedded in one or more additional dimensional domains. But, in conventional mathematics, there is a fiction: the fiction of dimensionless objects. This has been simply a convenient mathematical expedient prior to discovering that physical phenomena are quantized. But this is no longer appropriate. If the substance of reality is quantized, the quantum necessarily occupies a finite 3-dimensional volume, not a point. This quantum volume defines the lower limit in size, and by setting it equal to 1, we establish a standard of measurement so that all substances are measureable in integer multiples of this unit. This allows us to proceed with our new form of mathematical analysis, the ‘calculus of dimensional distinctions’ (CoDD), and treat all phenomena as finite, non-zero distinctions. Replacing the dimensionless points of the calculus of conventional mathematical physics with distinctions of finite unitary volume, the elementary particles of the physical universe must be integer multiples of these unitary volumes. We can then relate the integers of quantum reality to the integers of number theory, and explore the deep relationship between mathematics and reality.

Something or nothing?

The German polymath, Gottfried Wilhelm Leibniz stated that the most important question of all is: “*Why is there something rather than nothing?*”⁶ Current scientific thinking proceeds from the assumption that there *is something*, a something that we perceive as the physical universe.

In order to investigate this *something* that we appear to be immersed in, we measure the substances that something is made of —mass measured in energy-equivalent Mega electron volts divided by the speed of light squared (MeV/c²). We then look for consistent structures and patterns in this substance that can be described mathematically. From analyzing particle collider data, it is clear that quarks have to be made up of integer multiples of a basic energy-equivalent quantum unit of mass equal to the smallest possible elementary particle, the free electron. Setting the energy-equivalent mass of the electron (0.051 MeV) equal to unity, we can normalize the energy-equivalent masses of up-quarks and down-quarks to integer values, i.e. integer multiples of the electron mass. Elementary particles are rotating at extremely high rates of angular velocity, but because the spin velocity is limited to light speed (c) in the three dimensions of space in a moment of time (3S–1t) domain of physical observation, the minimum mass unit is also the minimum volumetric unit.

The mathematical and particle physics context

The normalization of up-quarks and down-quarks to multiples of this minimum equivalence unit, based on the electron, is consistent with Planck’s discovery that mass and energy only occur in multiples of a basic quantum unit, and Einstein’s discovery that mass and energy are two forms of the same thing, interchangeable by the mathematical relationship $E = mc^2$. This means that all physical objects are made up of combinations of these minimum units and can therefore be represented mathematically and geometrically by combinations of integer multiples of them.

The Conveyance Expression

The combination of two or more particles, e.g. protons and neutrons, made up of these equivalence units is represented mathematically by a summation of n-powers of integer distinctions, where n is the number of dimensions of the distinction. Since all stable spinning particles are shown to be symmetrical, the shape factor cancels out of the equation and the general expression for these

combinations becomes $\sum_{i=1}^n (\mathbf{X}_n)^m = \mathbf{Z}^m$, which we call the ‘Conveyance Expression’. This expression yields an infinite number of equations as \mathbf{n} , the number of dimensions, and \mathbf{m} , the number of particles take on different positive integer values. We are primarily interested in the set of equations generated by values of \mathbf{m} and \mathbf{n} between 1 and 9. Because the \mathbf{X}_n can only take on integer values, these equations are a special type of equations called ‘Diophantine Equations’.⁶

The power \mathbf{m} is equal to 3 for observations in 3 dimensions, and Fermat’s Last Theorem tells us that there are no integer solutions for the Conveyance Equation when $\mathbf{n} = 2$. But there are integer solutions when $\mathbf{n} = 3$. So, while two symmetric particles cannot combine to form a third symmetric object, three symmetric particles *can* combine to form a fourth symmetric object. This means that the Conveyance Equation $(\mathbf{X}_1)^3 + (\mathbf{X}_2)^3 + (\mathbf{X}_3)^3 = \mathbf{Z}^3$ can represent the combination of three quarks to form protons (2 up and 1 down) and neutrons (2 down and 1 up). This explains why quarks are only found in combinations of three. Other combinations are unstable and decay before they can form material structures. We find, however, that there are no integer solutions for this equation unless units of a third form of reality are included.

Distinctions

All mathematical reasoning and description is based on the conscious drawing of distinctions, as in the Calculus of Distinctions. We have combined Euclidean and hyper-dimensional geometry, requiring a nine-dimensional reality containing three forms of the basic ‘substance’ of the universe. This provides the framework for describing the elementary particles that appear to be the building blocks of the physical universe. This approach is the logical extension of the very important work started by Hermann Minkowski, Albert Einstein, Georg Cantor, Theodor Kaluza, Oskar Klein, Kurt Gödel, and others, who made significant progress explaining physical phenomena in the framework of multidimensional geometry.^{2; 8}

What is solid?

It has long been known that the appearance of *solid matter* is an illusion, in the sense that there appears to be far more empty space than substance in an atom. But now we learn that the matter of sub-atomic particles and the ‘empty’ space around them are also illusory. This is, however, consistent with quantum physics experiments that bear out the conclusion resulting from the resolution of the EPR paradox⁹ and John Bell’s inequality^{10; 11}: Experimental physicist, Alain Aspect¹² and many others^{13; 14} demonstrated ‘entanglement phenomena’. Others showed

that the particles and/or waves of the objective physical reality perceived through our senses cannot be said to exist as localized objects until they impact irreversibly on a series of receptors—these constitute a distinct observation or measurement by a conscious entity. ^{15; 16; 17}

Moving through 9 dimensions

In TDVP, we apply Dimensional Extrapolation using dimensional invariants to move beyond three dimensions of space and one of time. Within the multi-dimensional domains defined in this way, mass and energy are measures of distinctions of content. If there are other dimensions beyond the three of space and one of time that are available to our physical senses, how are they different, and do they contain additional distinctions of content? If so, how is such content different from mass and energy? We know that mass and energy are two forms of the same thing. If there are other forms, what is the basic ‘substance’ that makes up the universe? Is it necessarily a combination of mass and energy, or something else? For the sake of parsimony, let’s begin by assuming that the substance of reality, whatever it is, is multi-dimensional and uniform at the quantum level, and that mass and energy are the directly measurable forms of it in the 3S-1t domain. This allows us to relate the unitary measure of inertial mass and its energy equivalent to a unitary volume, and provides a multi-dimensional framework to explore the possibility that the ‘substance’ of reality may exist in more than two forms.

We have definitively demonstrated that finite reality is multidimensional (9 spinning dimensions \pm exponents or multiples of the 9) which means that we are required to examine this extended data. ^{7 18 19}

Consciousness and TRUE units

From the TDVP model, we argue cogently that *Consciousness is truly the missing link in the current scientific paradigm*. If this is so, even the smallest subatomic particles must in some way be tethered to consciousness. We tested this by our TRUE unit work, and our data will be published in some detail at a later time. *We simply now provide brush-strokes.*

Within the framework of the current Standard Model of particle physics, the basic concepts of quantum physics and relativity are applied to the particle collider data. These then yield numerical values of the physical characteristics of the subatomic particles perceived to be the building blocks of the observable universe.

These include photons, electrons, neutrons and protons, in units of MeV/c^2 (mega-electron volts/ square of the speed of light).^d

Analysis of these data in the framework of the mathematics and geometry of TDVP in 3S-1t provides us with a way to find the true quantum unit of measurement. The empirically measured and statistically determined inertial masses of the three most basic elementary entities believed to make up what we perceive in 3S-1t as matter, i.e. electrons, up-quarks and down-quarks, are approximately 0.51, 2.0 and 4.8 MeV/c^2 , respectively. The values for up and down quarks are derived statistically from millions of terabytes of data obtained from high-energy particle collisions engineered in specially built colliders.

When we analyze the elements, importantly, we have found the equations of mass and energy of the *stable fermion particles* (electrons and quarks) (e.g. neutrinos are not stable) to be incomplete without a third component. We have called that component ‘gimmel’, the third letter of the Hebrew alphabet written ג: It is a necessary new term. We hypothesize that mass-energy and this gimmel ‘consciousness’ are unitary major components for the stability of atoms^e, elements, molecules, and, indeed, all of our stable world and our cosmos. Gimmel is necessarily linked together to form a whole. In fact, it is part of that whole: We argue that we cannot have mass without energy because they are interconvertible, so much so that in our TRUE scoring they are together scored as a single measure. But we cannot have mass-energy without gimmel. Using this concept, nothing can exist without this third component: Like a hand without a shoulder they are more than linked; they’re entirely tethered together. Without gimmel, mathematically, the elements of the Periodic Table, including those that are crucial to life, are unstable. Because of this requirement of a third form (gimmel) for stability, i.e., in effect for there to be *something rather than nothing*, and because the minimal equivalence units are defined by applying basic relativity and quantum principles to multi-dimensional spinning elementary particles, we call them Triadic Rotational Units of Equivalence, or TRUE units.

As discussed above, to represent the elementary particles as multiples of the minimum mass/energy/volume units, we convert the collider data into integers, a process called normalization. We can then apply the Conveyance Equation. This can be applied not only for atoms, but also for the whole Periodic Table of the

^d 1 eVx is a unit of energy equivalent to $1.602176565(35) \times 10^{-19}$ J (joules), and in quantum physics is the amount of energy gained (or lost) by the charge of a single electron moved across an electric potential difference of one volt. The measure eV/c^2 is one of mass where $1 \text{ eV}/c^2 = 1.782662 \times 10^{-36}$ kg. 1 MeV= 1 million eV.

^e We’re limited in English terminology: We could refer to the life sustaining elements as “stable” but that is *relative* only to the ephemeral unstable elements or isotopes of Hadron Collider particles. Clearly, these elements can be demonstrated by applying 3S-1t measures, but we postulate it’s only because of gimmel, as well. Perhaps we should call all including TRUE units “super-stable”.

Elements. We can extend such research to molecules and even to DNA and RNA as the fundamental elements of life.

Revisiting hydrogen

Already our applications of these concepts are producing remarkable results. This is meant to be effectively an abstract of our research, which we will be presenting later in more detail. But in summary, Hydrogen (H) (Hydrogen 1, also called protium) is the most prevalent element in the universe and also fundamental to life. Hydrogen has the highest proportion of gimmel at 0.893^f This common, stable non-isotopic hydrogen is unique in not having a neutron, This would make it completely unstable without a stability component, but that extra ‘gimmel’ contribution compensates for the lacking neutron as it provides symmetry and indeed stability in its spin. We have called the extra ‘gimmel’ in hydrogen ‘daled’⁷, because instead of calculating it based on the amount of gimmel in an electron or proton, daled compensates for the lack of a neutron in hydrogen and provides stability that way. This produces the highest gimmel to TRUE score ratio of any element, not surprising because hydrogen is the most prevalent element in the universe. It may be that ‘daled’ is just another way that ‘gimmel’ expresses itself, but we need to score this extra substance because of the complete absence of a neutron: Consequently, we cannot justify it being definitely ‘gimmel’, hence we call it ‘daled’.

The key properties of life?

The elements of life

Based on our empirical knowledge of the stable elements known to support life, namely carbon, oxygen, nitrogen, sulfur, phosphorus, calcium and magnesium, we find these elements all uniquely and very strongly exhibit two properties: First, the *same* high ratio proportion of gimmel to the total TRUE unit analysis, namely 0.762.^g This gimmel ratio is higher than any of the other less essential elements for life. And second, these life stable elements can easily react with other elements forming compounds: They are not inert as their valence is not zero.

Additionally, it turns out that they all have the same number of protons, neutrons and electrons.

^f This is covered in greater detail in our forthcoming paper, but because hydrogen does not have a neutron, we have hypothesized it to be unstable without gimmel not only in the calculations of mass and energy. Even then the ratio of gimmel to TRUE is higher than any other element. However, we also needed to add gimmel instead of the neutron into our calculations. We do not know if that gimmel is the same so have used the term daled when substituting for the neutron.

^g Interestingly, two inert elements that have completed outer electron shells, helium and neon, also yield this figure of 0.762. However, we analyze valence as well in our calculations so that these would not be “elements of life.”

Silicon

Surprisingly, there is one more element that fits this stable, symmetrical profile, namely silicon. As a predictive hypothesis, theoretically and in practice, in perhaps other worlds, silicon should be a component and sustain life. Because its valence is the same as carbon, namely 4, and carbon is the key to all organic chemistry, silicon may provide alternative to carbon as a fundamental part of life. After this hypothesis was proposed, we were told by a marine biologist that it may already have been tested: certain aquatic life forms utilize silicon, yet we cannot definitively find that data. Silicon is an abundant element (eighth in cosmic abundance rank).

Inert compounds

This valence issue is important as the gimmel content, namely 0.762, is the same for two inert elements (helium and neon) (not others such as argon) as the life elements. Interestingly, in terms of the cosmos, Helium is the second most abundant element in the cosmos, and neon is fifth, with argon also very abundant (see Table 13A). But inert elements have valences of zero and therefore, though very stable are non-reactive, and therefore they do not participate in reactions requiring physical life on Earth, certainly. The inactivity of helium and neon is not pertinent for life forms, although helium is pertinent in the cosmos, as a major component.

Stability

These elements of life and the two inert elements, plus hydrogen, are far more stable than the other elements, none of which have the same numbers of neutrons, protons and electrons in their elemental properties. Consequently, we can even predict which elements with gimmel are more stable and therefore likely to maintain life. Table 13A below identifies symmetrical molecular entities that complete the Periodic Table of Building Blocks: All the life elements are components of $n(108)^3$, none are inert and all score 76.2%. The gimmel delivers stability and symmetry. There are no other elements with the same numbers of neutrons, protons and electrons others than the He, Ne, C, O, N, S, P, Ca, Mg and Si (silicon). All these calculations of TRUE volumes of the 'life elements' are 108^3 times the multiples of the atomic number.

Our table goes up to that atomic number of 14 where Silicon's atomic number is 14 and the True Volume is the 14 fold multiple 108^3 . Similarly, Calcium (atomic number 20 with $(20*108)^3$, sulfur: #16: $(16*108)^3$ and phosphorus: #15: $(15*108)^3$ as life elements, also exhibit the same properties, though they're not in Table 13A. But there are no other 'life elements'.

Of course, Table 13A also includes molecules whose total TRUE volumes are multiples of the combined atomic numbers of the atoms in the compound. Ultimately, there is even a stability of DNA and RNA and the amino acid sequences, and some of its building blocks, like OH, H₂N and CH₃ are listed.^{h i,j,k,l}

Table 13A: TRUE Units Analyses. The elements and symmetric compounds in gaps.

Compound	g Units	Total TRUE	Valence	% g Units	TRUE Volume	Comments and Abundance rank #
Hydrogen	150	168	-2+1=-1	89.3%	(1x108) ³	<i>Critical Element #1</i>
Helium	256	336	-2+2=0	76.2%	(2x108) ³	<i>Inert Element^m #2</i>
Helium Hydride HeH	384	504	+1	76.2%	(3x108) ³	<i>Super acid</i> Not naturally found
Lithium Hydride Li and H ₂	512	672	+2	76.2%	(4x108) ³	Rare in Nature Very Reactive
(He) ₂ H and HeH ₃	640	826	+3	76.2%	(5x108) ³	Produced in Nuclear Fusion
Carbon	768	1008	-2+6=4	76.2%	(6x108) ³	Organic element ⁿ #4
Nitrogen	896	1176	-2+7=5	76.2%	(7x108) ³	Life element #7
Oxygen	1024	1344	-2+8=6	76.2%	(8x108) ³	Life element #3
HO or OH ^o H ₂ N and CH ₃	1,174	1,512	-1	77.6%	(9x108) ³	Building Block of Amino Acids
Neon	1280	1680	2 - 8 + 10 = 0	76.2%	(10x108) ³	Inert element #5
H ₂ O	1,324	1,680	0	78.8%	(10x108) ³	Water
H ₄ N	1,496	1,848	+1	80.9%	(11x108) ³	Ammonium Ion

^h Valence relates to position on the Periodic Table of the Elements. E.g. The first shell has 2, then 8 etc. This differs from 'charge'.

ⁱ This is the ratio of the gimmel to the TRUE units.

^j Abundance rank of the different elements in the cosmos: Iron is #6, Sulfur is #10, Argon is #11, Calcium is #12.

^k This analysis is on Hydrogen 1, not isotopes like heavy deuterium H₂ or H₃ tritium, though these have also been analyzed.

^l Hydrogen is unique without a neutron and therefore with 'daled' vertically 7 has much more gimmel : 38 for daled (0 MEUs).

150/168 = 89.2%. Volumetrically 108³ = 1,259,712. Hydrogen is the highest gimmel proportion followed by the life-elements.

^m Gimmel : 105 for 1 electron (1 mass/energy unit MEU), 7 for 1 proton (17 MEUs), and neutrons are 16 for gimmel; 22 MEUs).

ⁿ The most common elements of life and abundant ones are all at 76.2% = C, O, N, S, P, Ca, Mg; also He, Ne inert. All + H = 108³.

^o Hydroxyl / hydroxide is OH is major component of water and building block of amino acids. H₂N is common in amino acids; CH₃ is a common organic compound radical.

Magnesium	1536	2016	$-10 + 12 = +2$	76.2%	$(12 \times 108)^3$	Life element #9
C₂H	1,686	2,184	+3	77.2%	$(13 \times 108)^3$	component of Cysteine Amino Acid
Silicon	1792	2352	$-10 + 14 = +4$	76.2%	$(14 \times 108)^3$	Postulated Life? #8

The first clue to identifying the symmetric entity that fills a given gap in the sequence of TRUE-unit volumetric symmetry is its location relative to the other symmetric forms in the Table. The compound that fills a given gap can only be formed from combinations of symmetric atoms and/or compounds that are smaller than it. For example, the $(3 \times 108)^3$ gap can only be filled by a compound entity composed of Helium [TRUE volume = $(2 \times 108)^3$] and Hydrogen or Deuterium [TRUE volume = $(1 \times 108)^3$].

While filling the gaps in the sequence of $(n \cdot 108)^3$ symmetric structures in the Periodic Table, we find that there may be two or more compounds with the exact TRUE volume to fill the gaps, increasing in number as n increases. We also discover that, after n = 9, there are symmetric compounds equal in TRUE volume to some elements. H₂O, for example, has a TRUE volume of $(10 \cdot 108)^3$, the same TRUE volume as the inert gas Neon. And because it contains 2 Hydrogens in its

structure, and a low atomic number life element, the gimmel score of water is the highest of any molecule: This is not surprising, water is fundamental to life. ^p

The quantum is necessarily integral and volumetric

As a point of interest, the numbers required for stability have to be whole numbers—integers because quantum theory is based on whole numbers, not reduction to nothing. This, as indicated, is a fundamental difference between differential calculus (in which the value of a variable can approach zero) and the calculus of distinctions (which although dealing with very small numbers as well, always recognizes the quantum, the point at which one cannot reduce further because it must remain an integer). The key component is always a volume because of a quantum not being a single point but three-dimensional. That is why we emphasize volumes, and cubic roots must be represented by integers. Existence is volumetric: it has three-dimensional relationships.

In order to calculate molecular equivalents of the TRUE totals, we have applied a mathematical cubic number, and we find that the total TRUE unit scores for these elements and for the molecules of life and even DNA and RNA are all multiples of the integer 108^3 .

The existence of gimmel explains the abundance and persistence of physical life in 3S-1t.^q But, of course, that implies a combination of mass, energy, and gimmel producing the stable TRUE structure. We postulate that Gimmel reflects a *vortical flow* of the third element. ^r The ensuing TRUE results involve calculations far beyond just 3S-1t applying the concepts of 9 dimensions to allow stability: Here reality is both *overt*—restricted 3S-1t for the experiences of living beings—and *covert*—beyond that restricted 3S-1t, involving 9 dimensions.

The number 108

The strange result of 108

Remarkably, the number ‘108’ has some ‘strange’ elements: 108 equals two basic exponents ($3^3 * 2^2$). It also reflects $6 * 18$ and eighteen is the mystical

^p Equal with hydrogen sulfide, as this contains two Hydrogens and Sulfur is equal in gimmel to Oxygen, though H₂S is a larger compound with a different outer shell and valence to oxygen. Gimmel is likely an important aspect, but not the only property that gives rise to the uniqueness of any compound.

^q Effectively, we do not have *mass and energy* as the only *contents*, just as we do not have *space and time as extents* of dimensions alone. *We always have the third component*: Space, Time and ‘extent of Consciousness’ (C_c); and mass energy and gimmel—which we postulate (and mathematically have provisionally calculated) may have links with the infinite and contain entirely ‘consciousness content’ (C_c) expressed as *specific meaning*.

^r We postulate that at the infinite continuous or quantized transfinite levels, mass-energy and space-time are contained entirely within C_c and C_e respectively, but at the 9-D level this is not so. Each is separate. The Gimmel allows for stability and symmetry in atoms and in molecules. If atoms or molecules did not also necessarily contain gimmel, they would (metaphorically) fly apart!

number ‘Chai’ for ‘life’ in Judaism. 108 is also a very special number in Hinduism, and it’s also important in Tantric and Shiva philosophy. ²⁰ Additionally, 108 is relevant in Buddhism, Jainism and Sikhism. ²⁰ There are supposedly 108 energy lines (‘nadis’), converging to form the heart ‘chakra’; and in Sanskrit, there are 54 letters each of male and female kind so making up 108. ²⁰ Even the Stonehenge monument diameter is 108 feet. ^{w 20}

In addition, 108 fold approximates the cosmological ratios of:

- the (mean) distance between the Earth and Sun / the Sun’s diameter (109.1) ^x;
- the sun’s diameter / the Earth’s diameter (107.8) ^y ; and
- the earth and moon distance / the diameter of the Moon (110.6) ^{z s}.

Where pertinent the orbits vary and so distances vary. These figures appear based on what are regarded as mean distances.

Diophantine equations

The finding of 108^3 is very likely not a random finding. These remarkable 108^3 figures in Table 13A may reflect the most fundamental minimum math equivalence once calculations of cube roots are done: There are very few Diophantine triplet equations like $(X_1)^3 + (X_2)^3 + (X_3)^3 = Z^3$ involving 3 cubic additions that produce a summation where the resulting cube root still remains an integer. The most basic example is $3^3 + 4^3 + 5^3 = 6^3$.

Adding together the mass-energy scores plus the gimmel, the combined result for protons, neutrons and electrons must likewise be cubed because these are quantized, integral (whole number) volumes. Under those circumstances, the lowest number to yield for atomic number of 1 (hydrogen) is 108 cubed. The key elements of life then become multiples of 108 cubed, and they can only be so *given their equal numbers of protons, neutrons and electrons*. However, *without gimmel those equal numbers alone in a materialistic universe would be insufficient to produce stable symmetry as their cube root of the total is never an integer as required in quantum thinking* (see p 70-73 for the simple mathematical proofs).

Speculations on particle physics

Where does gimmel fit in? If it existed, how come it has not been discovered? Scientists have been truly remarkable in recognizing a whole ‘soup’ of particles, many of which are unstable and exist temporarily ²¹: We have the

^s Stonehenge, 3 II, built about 4500 years ago, is about 33 meters in diameter or 108.3 feet. Is this pure coincidence? Why was that in feet? ^w Approximations in kilometers for these are: $1,392,000/12756 = 109.1$ (earth to sun/ sun’s diameter) ^x; $150,000,000/1392,000=107.8$ (sun/ earth diameter) ^y; $384,400/3474=110.6^z$ (earth to moon/ moon diameter). Clearly distances vary slightly because the orbits vary a little.

situation of components of this ‘soup’ variably being hidden, then detectable for a moment, or measurable. They are ephemeral and usually only detected in nuclear reactors, but even there they might not be easy to detect. For example, the very well-known new particle, the Higgs boson, is one of those ephemeral and not stable particles. Pertinent here, is that the particle soup includes even unstable quarks that therefore are not relevant in our derivations. We have ‘strange quarks’ and ‘charm quarks’, and we have ‘top’ and ‘bottom’ quarks ²², in a way possibly metaphorically parallel to the disappearing and re-appearing electron clouds we’ve alluded to. Should we be applying our 9-dimensional perspective instead of 3S-1t to understand these?

Higher dimensions

TDVP postulates that the infinite pervades all of the quantized finite. We would postulate that gimmel, if indeed it is consciousness, would possibly involve higher dimensional levels or /and, this would be the result of the infinitely continuous vortical (spin) flow necessarily pervading the finite and into, in this instance, atoms.

Gluons and gimmel

There are ‘stable’ particles that always exist: Electrons, and the up and down quarks in protons and neutrons, and photons. But almost all the rest appear to be part of the ephemeral ‘particle soup’ that we sometimes locate through Hadron Colliders or their equivalents. ²¹ But is there, maybe, a particle in that particle soup that could actually be gimmel or reflect some kind of mirror image of gimmel? We speculate that there is. *Gluons* are regarded as mass-less and energy-less particles. ²¹ They are supposedly the “glue” between the quarks, the way quarks are held together despite gluons having no energy themselves. And gimmel, too, by definition, is mass-less and energy-less too. And the flow of gimmel creates an active way for us to make the atoms containing quarks and electrons stable. Could it be that they’re one and the same, and that gluons and the family of gluons are not particles at all but part of this infinite spinning flow that is not detectable except based on mathematical calculations of stability? Could it be that this is where particle physics and that third substance, gimmel, meets? And that the glue provides the stability? And could it be that we don’t need to worry about whether or not there is or is not collapse of the quantum receptor *vis-à-vis* the various related quantum Copenhagen related ^{14; 16-18; 26} interpretations? Perhaps, if gimmel from the infinite is all-pervasive, and has always been present, the so-called observer does not need a source of interaction. He is already part of that experiment! So this might provide a solution to a fundamental quantal question.

Homeopathy and gimmel?

There is more early, but fascinating, research. We can even hypothesize that *homeopathic substances are more potent when diluted more*: This would be so as there would be more gimmel around as the water (H₂O) contains more gimmel than any other common living compound—the Hydrogen contains the most gimmel and therefore, the combination of H plus OH radicals should contain more gimmel than any other molecule we use in life on our Earth.

But why then the other substance? Homeopathy supposedly does not work without tiny amounts of the treating medication. It could be that the dilutions of the tiny amounts of these other compounds or medications may activate the proportionately more gimmel in the water to work. We've said consciousness content is specific: It is meaningful: So the diluted homeopathic 'substance' could be the focus source to absorb, utilize and manifest its own special quality or 'language' of gimmel. Could a similar mechanism be involved in alkalized ionized water? We postulate this could even involve the other phases of water described by Pollack.²³

What is gimmel?

What is that third 'substance' besides mass and energy? How should we conceptualize 'gimmel'? The answer may be simple: We need to describe a substance that is 'mass-less' and 'energy-less', and yet can apply specific, possibly directed meaningful, principles for numerous different elements and molecules. This third substance necessarily might allow symmetry and stability for elements and compounds, which as described below, would necessarily be unstable without it if they just contained the elementary non-ephemeral particles in the atom—quarks (in protons and neutrons) with electrons. This third form of everything must have had to exist even from the *finite* beginning of time (the 'Event Horizon' or the 'Big Bang' equivalent) because otherwise there would have been initial untenable instability at that stage.²⁴ It is very difficult to find another suitable candidate besides consciousness reflecting at least a component of this gimmel substance²⁵; ^{26; 27; 28}: The gluon particle has been hypothesized to fill the gap, but gluons may turn out to be gimmel.²⁵

Refuting materialism! A dramatic mathematical answer

The life sustaining and most stable elements:

We already know that gimmel can allow the extra integers in the TRUE calculations to consistently provide the unique Diophantine solutions relating to

multiples of 108^3 for the life elements (Table 13A). ^t *But why do we even need gimme!*? Surely, the remarkable fact that we have found here that the key life elements, plus He, Ne and Si all have equal numbers of electrons, protons and neutrons, is quite sufficient? The answer is extraordinarily important: No, it is not sufficient! We can demonstrate this by three easy mathematical proofs: The first relates simply to the number of particles, the second relates to measuring integer mass equivalents of electrons, protons and neutrons, after equating the electron as equivalent to 1 because quanta are necessarily integer multiples of the smallest unit. And the third relates to calculations of mass-energy applying TRUE units and therefore includes the stable fermions (quarks in protons and neutrons, plus the electrons).

All three “proofs” adopt the classical perspective of chemistry of the atom only being made up of certain stable particles namely electrons, protons and neutrons: Essentially, the sums of the quantized TRUE volumes of electrons, protons and neutrons form Diophantine equations, which, because mass and energy are quantized, must have integer solutions. In Table 13A, we examine the cubes representing the total volumes, not just the number of particles ^u. The lack of integer solutions in these calculations demonstrates a basic asymmetry of the resulting atomic structures that leads to insufficient stability to sustain organic structure and life.

In chemistry, we apply atomic numbers, based on the numbers of protons and electrons in elements; but we also recognize mass so we should apply equivalents of mass.

The first demonstration: the numbers of particles together don't make an atom.

In the first “proof” just working on atomic numbers, the “life” elements (non-isotopic, non-ionic) empirically, have chemically equal numbers of electrons, protons and neutrons. The first approach would be calculating the cubes of these combined particles based on the numbers alone of protons, electrons and neutrons: For the life elements, where these are equal, the solution would equal $a^3+a^3+a^3=3a^3$ if one was just approaching these particles based on their numbers in each element, effectively in atomic number equivalents. Based on volumetric calculations, the cube root of $3a^3$ is $1.442n$. That therefore, is not an integer which would be required, and if applying atomic numbers, such a result could refute that

^t Helium and Neon are inert elements with complete (full) outer energy shells but they also have equal protons, neutrons and electrons. These are common elements in the cosmos, but because of their non-reactivity are not regarded as elements of life.

^u (e.g. their atomic numbers for protons and electrons as they're equivalent in the Periodic Table; and the mass numbers [and atomic weights, which also include isotopes of those elements] approximating to neutrons less these protons).

our reality purely is materialistic and there is no third substance.

The second demonstration: mass and mass energy of particles also don't work.

But some might argue that it is not clear that the sum of the cubes of the number of the electrons, protons and neutrons making up the atom of an element, should necessarily add up to an integer cubed. Instead, the alternative approach is we should be adding *atomic mass equivalents*. For this alternative, applying the mass of these particles, we calculate volumetric equivalence units, applying 1 for the electron and comparing the mass data equivalence of protons and neutrons, deriving our figures by converting to electron =1 from the Jefferson Lab. Under those circumstances, then a single Neutron represents 1839, and a single Proton represents 1836. Dividing out the 'a' (atomic number) we have $1+p^3 + n^3 = (X/a)^3$, where X/a represents the mass of the atom. The resultant cube root is 2315.13843... so it is not an integer and cannot be a solution of the Diophantine equation representing elements with equal numbers of electrons, protons and neutrons: not being an integer (the only Diophantine equation with a solution where 1 is involved is the original conveyance equation $1^3 + 6^3 + 8^3 = 9^3$).^v These comments actually involve two different calculations reflecting the mass alone in kilograms (kg) and the mega electron volt (MeV) as a measure of mass energy.²⁹ However, the figures turn out almost identical.

We can further justify this approach because it involves the missing link, the third substance, 'gimmel'.^{25; 26; 27; 28} But this time, based on our data, we must include TRUE here, because we can show how essential gimmel and the consequent calculations are for the existing atomic stability, even of just hydrogen alone. Our calculations therefore incorporate TRUE units because we now know from our theoretical model and the resulting research results that they are necessary.

The third demonstration: the mass/energy of up-quarks and down-quarks produces an inequality that is unstable. It requires an extra third component (applying gimmel) for stability.

^v Neutron = $1.6749286 \times 10^{-27} \text{ kg}_{\text{SEP}}$ Proton = $1.6726231 \times 10^{-27} \text{ kg}_{\text{SEP}}$ Electron = $9.1093897 \times 10^{-31} \text{ kg}$ Electron = 0.00054386734 so $/ 0.00054386734 = 1$ for electrons. Neutron then are 1838.9113 or 1839 and cubed 6219352719; and Proton = 0.99862349_{SEP} so 1836.3799 or 1836 cubed 6188965056 = then the total for the atom is 12408831776 so cube root is 2315.138438418182. The figures are similar for Ev measures: Electron = 0.51099906 MeV so when quantized to electrons = 1, then neutron = 939.56563 MeV so when Electron =1 then neutron= 1838,6838 or 1839 again so cubed 6219352719; similarly, Proton = 938.27231 MeV_{SEP} or 1836.1529 or 1836 again so cubed 6188965056 and = then the total for the atom of Helium for example is 12408831776 so cube root is 2315.138438418182. If these have the same numbers of protons and electrons, we can add 2315.138438418182n. If not we can use the same Diophantine formula applications and because it is $e^3 = 1$; so the answer is the cube root of $[1 + (p1836)^3 + (n1839)^3]$ is \neq integer: theoretically, because of the 1, the Diophantine triplet is ostensibly very imbalanced and not an integer.

In this third demonstration, we note that electrons, protons and neutrons are rapidly spinning elementary particles which, because of quantum and relativistic limitations, have to be multiples of TRUE units. When elementary particles combine to form a new particle, the TRUE ‘volumetric equivalence’^w of the new particle will be equal to the sum of the TRUE volumes of the elementary particles (quarks and electrons). But for the new particle to be symmetrically stable, it must have a diameter equal to a whole-number multiple of the diameter of a TRUE unit. This relationship allows us to form a Diophantine equation, which is only valid for integer solutions.

Without TRUE units of gimmel, the Diophantine equation representing, for example, the Hydrogen atom would be a Fermat’s Last Theorem equation, and have no solutions. Even if one electron and one proton were drawn together by electrical charge, such an asymmetric combination would be extremely unstable, and like free quarks, would combine with other unstable particles, or decay almost instantly. Elemental atoms, formed by equal numbers of electrons, protons and neutrons, escape the ‘curse’ of Fermat’s Last Theorem, but without gimmel, their Diophantine equations also have no solutions.

Normalizing the mass/energy of up-quarks and down-quarks applying gimmel.^x For an atom to be symmetric and stable, the *volumetric equivalents* of the particles must add up to a cube. Without gimmel, the Diophantine equation would then be of the form $(n*1)^3 + (n*17)^3 + (n*22)^3 = Z^3$. But Z is a non-integer because $Z^3 = 15,562n^3$ and 15,562 is not a cube^y. This demonstrates that no atom with equal numbers of electrons, protons and neutrons can be stable: Without gimmel, all of the elements necessary for organic life would be very unstable. Since Hydrogen is the most abundant element in the universe, and organic compounds are, in fact, very stable, proof of the existence and effectiveness of gimmel is all around us.

The other elements including Hydrogen

^w. Volumetric equivalence (Close and Neppe) describes the minimal volume occupied by the most elementary of particles. This reflects the finite quantum distinction replacing the infinitesimal of Newton/Leibniz calculus. Volumetric equivalence provides the logical volumetric equivalence unit upon which to base all measurements of the substance of reality.^{76; 116} Applying concepts from the calculus of distinctions, the minimal *volume* is the ‘unitary volume of extent’, and its *content* is the ‘unitary quantity of mass and energy’.

^x The derivation of these figures is explained in greater detail in two of our forthcoming books^{30; 31}. 17 and 22 reflect normalizing statistical data because of quantization of the triad of up and down quarks respectively in protons and neutrons with electrons equaling one in volumetric equivalence. This is an entirely different calculation from the total mass or mass-energy derivations of being 1836 and 1839 times more than the electron in the second calculation as it relates to the 9-dimensional model and the third form, gimmel. The derivation specifically includes the demonstrable fermion half-spin variants—the up-quarks and the down-quarks—but does not include the entire particle ‘soup’ in the neutrons and protons.

^y The cube root of 15,562 is 24.966.... The closest integral cube root solution would be 25 from 15625.

What about the rest of the Periodic Table of the Elements that do not have equal protons and neutrons? Applying the known empirical data for all of the approximately 80 stable elements, even when combining unequal but numerically different numbers of protons (*with balanced electrons*) and neutrons in any atom, no other elements *can* produce the requisite cubic Diophantine solution because the cube root of the consequent atom cannot equal an integer. Effectively, where a and b are integers, with a representing both protons and electrons and b representing neutrons, $a^3 + a^3 + b^3 = 2a^3 + b^3 = c^3$. But c, as the cube root of $c^3 \neq$ an integer, yet for stability it must, this algebraically demonstrates that this stability without gimmel is not possible. A special case for this is Hydrogen, the element that contains the most gimmel or daled because of the absence of a neutron. With Hydrogen, $c=0$, so $a^3 + a^3 = 2a^3$ and the cube root is not an integer, in this case 1.26a. Similarly the relative mass kg figures and the relative mass energy EV figures make atoms not equivalent to integrals. In like vein, applying the mass TRUE equivalence calculations as above, the calculation is the same as above, $(n)^3 + (n*17)^3 + (n*22)^3 = Z^3$ implies Z is a non-integer. Effectively, there are very few Diophantine triplet equations, and none can work in the Periodic Table to create an integral cube root solution, unless gimmel is accounted for. ^z

The three scenarios demonstrate that the pure materialistic model must be incorrect

We have shown the three scenarios, based on atomic number cubed, atomic mass energy cubed (and ultimately the same figures for mass-energy cubed) and on volumetric equivalents using TRUE units. Essentially, applying the Diophantine solutions *we know that without gimmel there are no solutions for the totality of protons, neutrons and electrons being in the Periodic Table producing an integral atom*. These three results are consistent and have applied all three hypothesized scenarios to make the atom “whole”. This consistency amplifies the point that however one attempts to apply the mathematical derivations, *an atom still cannot be derived simply of protons, neutrons and electrons together*. These major stable subatomic particles in combination simply cannot allow the necessary requirement for the atom to exist as an integral whole. But clearly the atom needs to be a

^z The greater the neutron to proton difference, the less gimmel, because neutrons have less gimmel than protons.

whole.^{aa} *Therefore, these obvious empirically based mathematical solutions ostensibly refute the hypothesis of pure materialism: There simply must be something else besides the stable mass-energy particles of protons and neutrons and electrons, as there must be an integral volumetric solution as quanta are by definition integral and volumetric.* This can only be achieved by adding a third substance.

Our fundamental particles contain mass and energy. The third substance (which we've defined as 'gimmel') *must* be mass-less and energy-less because otherwise it would be a fundamental particle, too, that stably and always existed, and we could locate it by its mass and energy (which we cannot). This gimmel addition allows for stability because the element now demonstrates an integral solution. Particles in our real world must reflect stability, not ephemerality. In summary, *all* the elements in the Periodic Table *necessarily* need a third substance (gimmel) with a specific measure, besides their mass and energy, to provide the needed stability and symmetry for these elements. However, this substance must be mass-less and energy-less, as otherwise it would revert to the mass or energy of our fundamental particles and it would be so demonstrated, making their mass and energy greater than they are.

Alternatives to gimmel or candidates for gimmel: Other particles

So what about other particles in the atom? Are they not candidates? Photons are stable, but aren't part of the atom. And gluons may reflect an ephemeral solution because we cannot locate them, but they could turn out to be very applicable, because, as indicated, gluons may actually be reflecting, or indeed be, the completely different third substance that we call 'gimmel'. Furthermore, applying the elementary particle components of protons and neutrons, namely quarks, we still cannot produce a Diophantine solution adding the cubes of such quarks plus electrons. This is so as calculating the consequent atom is not an integer. The cube root must be quantal—an integer (Table 13A), and it is *only* when adding another derived figure, 'gimmel' as our term for that 'third substance', that the Diophantine equations work. Therefore, the gimmel figures linked with each component, namely electrons, up-quarks and down-quarks are not just arbitrary, they are specific. The resultant derivations can then be applied to

^{aa} The major components of the atom are neutrons, electrons and protons. There is no consistent term for the three though sometimes they're included in 'composite elementary particles' or 'composite fermions'. While composite these terms are not exclusive and may be incorrect. For example, there is more than just 'fermions'; and 'composite elementary particles' do not fully reflect this, because components of elementary particles exist such as quarks and a whole "particle zoo" though often ephemeral and unstable within the proton and neutron. Based on the names of the three particles, it's logical for the new name to end in 'trons'. The first letters could then contain each of the three—neutrons, electrons and protons. Neppe and Close are suggesting 'neptrons' despite the ostensible nepotism here! Neptrons or pentrons would be alternatives but the 'neutron' could also be the most logical *sounding* option.

every element in the Periodic Table providing consistent volumetric solutions. And gimmel is mathematically justified based on the quantal volumetric requirements.

What kind of consciousness could gimmel be?

Gimmel, that third ‘substance’ may not be a substance in the form we think of it, as particle or wave. Klein and Boyd in their ‘Subquantal Model’ point out substantial evidence for the SQ location of a kind of ‘information’.^{32;33} Neppe and Close *could* also apply the term ‘subquantal’ (‘SQ’) to TRUE units of gimmel, but *only if the gimmel alone* existed at the SQ level as the usual particles of Quantum Physics are, by definition, ‘quantal’.^{bb} Gimmel is that extra *content*, not limited to SQ or any 3S-1t location^{cc}: Gimmel possibly impacts *any* mass and energy like particles or waves *anywhere* in the finite 9-dimensional domains. We have calculated values for the gimmel equivalents of the stable elementary particles — the electrons, the up-quarks, and down-quarks—which make up the dynamically spinning and moving, but consistently existing, non-ephemeral, elementary particle components of the protons and neutrons. We can, and have, demonstrated a separate but specific amount for gimmel *linked* with every electron, every up-quark, and every down-quark, and by these simple measures apply Diophantine cubic equations and acquire figures for all the life-sustaining elements. And we argue based on exclusion of options that the only candidate for gimmel, at least in part, is the *content of consciousness* (C_c)

Indulgent jumps

Let’s now indulge in some purely speculative jumps: Could gimmel be different every time, possibly implying ‘meaning’ in everything? If so would all the ‘meanings’ in this gimmel content even be unique? Could gimmel reflect a finite ‘relatively non-local’³⁴ multidimensional content? Could gimmel be conveyed from the infinite substrate? Could it be that gimmel is that pure consciousness that represents an infinite consciousness that envelops and contains the infinite mass-energy components as well? Could gimmel flow from the infinite into space and time in the finite dimensions? Could this be the mechanism of how gimmel is translated as some kind of specific ‘meaning’?

^{bb} To Klein and Boyd (2015, as yet unpublished), ‘SQ’ refers to the infinite divisibility of the Quantum down far beyond the so-called Planck, Kolmogoroff or any other ‘limit’^{115;116}: There’s still ‘something’ comprised of mass/energy (matter) and ‘information’ at that SQ infinitesimal limit. But like ‘gimmel’ in TDVP⁷, for Klein, all ‘information’ levels exist even through to the cosmological. Like in TDVP, he conceptualizes the infinite expression into the quantized. But to Neppe and Close, gimmel in the finite is expressed through the Calculus of Distinctions⁷, not Newtonian infinitesimal calculus, because the finite is quantized, not technically subquantized.

^{cc} Klein uses the term ‘information’. In TDVP, we *speculate* on the relationship. It may be that ‘information’ represents a general consciousness in the infinite and that any specific unique consciousness in individuals represents ‘meaningful information’.

Moreover, could gimmel *always have been present* in some way, even in the very most basic quantum structure of finite reality? This question we can answer as it appears that, unless there have been fundamental changes in the nature of reality sometime in the past, gimmel had to be there from the beginning, because no stable particle could be formed without it: These speculations, may be fascinating philosophically, and might involve tiny pieces of a feasible jigsaw puzzle.

The Leibniz question: Something not nothing

We may well have the answer to Leibniz's question. No particle of the physical universe as it now exists could ever have formed without the third form. Thus, *there is always 'something'*, and never pure 'emptiness and nothingness'. Gimmel certainly fills the emptiness void. However, only mass and energy without gimmel cannot be the 'something of materialism' as the problem is that without that extra third substance, *instability necessarily exists*, as is clearly proven mathematically.

If consciousness is an integral part of reality, continually creating meaningful structure at the quantum level, the mathematics of TRUE units and gimmel apparently allows us to include it in our scientific paradigm. Using TRUE units to describe mass, energy and the third form, gimmel, ostensibly puts consciousness into our equations in a mathematically and logically coherent way, supporting a new paradigm as it explains previously unexplained observations and calculations, providing strong logic for continued research requiring everything to be linked with some gimmel. This is why our approach should work at the elemental level—and it does. And it should work at the molecular level—and it certainly does, even involving water, and DNA and RNA. And we can further validate this approach, by examining the cosmos. Could it be that there is a correlation with that previously unexplained component of our cosmos, dark matter and dark energy?

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