Refuting Atomic Materialism [a]

Vernon M. Neppe MD, PhD, FRSSAf and Edward R. Close PhD. [b]

Abstract

Refuting materialism! A dramatic mathematical answer:
Refuting materialism! We demonstrate three dramatic mathematical answers to demonstrate that the concept of the atom as we know it demonstrates that the materialistic model is refu 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

---

[b] Vernon M. Neppe MD, PhD, Fellow Royal Society (SAf), and Edward R. Close PhD, PE: Pacific Neuropsychiatric Institute, Seattle (pni.org) (Neppe: Director; Close: Research Associate); and Exceptional Creative Achievement Organization (Neppe: Distinguished Professor and Executive Director; Close: Distinguished Fellow). Neppe (www.vernonneppe.org/about.php) is a Neuropsychiatrist, Behavioral Neurologist, Neuroscientist, Psychopharmacologist, Psychiatrist, Phenomenologist, Epileptologist, Consciousness Researcher, Philosopher, Dimensional Biopsychophysicist, Creativity expert, Forensic specialist, and author of 600 publications, 10+ books (www.brainvoyage.com), and 2 plays. Close (www.erclosetphysics.com) is a Physicist, Mathematician, Cosmologist, Environmental Engineer and Dimensional Biopsychophysicist, and has authored 8+ books 1 and >100 articles.

[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).

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.

We discuss the necessary role of gimmel, a 'sine qua non' for existence and stability. Gimmel is that third component in union with elementary particles and with molecules. Gimmel is not part of these particles but in a necessary ubiquitous symbiotic union. [d]

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 We can demonstrate this by three easy mathematical proofs which refute atomic materialism: 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 [e]. 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.

---

[d] This abstract is an addition prepared on 2 September 2021.

[e] (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).

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 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 $1^3 + 6^3 + 8^3 = 9^3$). [f] 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.

---

[f] Neutron = $1.6749286*10^{-27}$ kg Proton = $1.6726231*10^{-27}$ kg Electron = $9.1093897*10^{-31}$ kg Electron = 0.00054386734 so / 0.00054386734 = 1 for electrons. Neutron then are 1838.9113 or 1839 and cubed 6219352719; and Proton = 0.99862349. 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.

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.

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' [g] 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.[h] For an atom to be symmetric and stable, the *volumetric equivalents* of the

---

[g].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'.

[h] 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.

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[i]. 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
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. [j]

These 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

---

[i] The cube root of 15,562 is 24.966…. The closest integral cube root solution would be 25 from 15625.
[j] The greater the neutron to proton difference, the less gimmel, because neutrons have less gimmel than protons.

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 whole.[k] *Therefore, these obvious empirically based mathematical solutions ostensibly refute the hypothesis of pure materialism: There simply <u>must</u> 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 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*

---

[k] 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 'neptron' could also be the most logical *sounding* option.

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 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'.[1] Gimmel is that extra *content*, not limited to SQ or any 3S-1t location [m]: 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

---

[1] 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 TDVP [7], for Klein, all 'information' levels exist even through to the cosmological. Like in TDVP, Klein conceptualizes the infinite expression into the quantized. But to Neppe and Close, gimmel in the finite is expressed through the Calculus of Distinctions [7], not Newtonian infinitesimal calculus, because the finite is quantized, not technically subquantized.
[m] 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'.

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'?

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?

1. Close ER, Neppe VM. Fifteen mysteries of 9 dimensions: on Triadic Rotational Units of Equivalence and new directions, Part III. *Neuroquantology* 2015;13: (4); 439-447.
2. Neppe VM, Close ER. A proposed Theory of Everything that works: How the Neppe-Close Triadic Dimensional Distinction Vortical Paradigm (TDVP) model provides a metaparadigm by applying nine-dimensional finite spin space, time and consciousness substrates and the transfinite embedded in the infinite producing a unified reality. *IQNexus Journal* 2014;16: (3); 1-54.

3. Wilber K: A theory of everything: an integral vision for business, politics, science, and spirituality. Boston: Shambhala Publications, 2000.

4. Hawking S: The theory of everything. Beverly Hills: New Millennium Press, 2007.

5. Close ER: Infinite continuity: a theory integrating relativity and quantum physics. Los Angeles: Paradigm Press, 1990.

6. Close ER: Transcendental Physics. Lincoln: I-Universe, 2000.

7. Close ER, Neppe VM. The Calculus of Distinctions: A workable mathematicologic model across dimensions and consciousness. *Dynamic International Journal of Exceptional Creative Achievement* 2012;1210: (1210); 2387 -2397.

8. Close ER, Neppe VM. The Cabibbo mixing angle and other particle physics paradoxes solved by applying the TDVP multidimensional spin model. *IQNexus Journal* 2014 14: (1); 13-50.

9. Bell JS. On the Einstein Podolsky Rosen paradox. *Physics* 1964;1: 195-200.

10. Bell JS. On the problem of hidden variables in quantum mechanics. *Reviews of Modern Physics* 1966;38: (3); 447-452.

11. Bell JS: How to teach special relativity, in *Speakable and unspeakable in quantum mechanics*. Edited by. Cambridge: Cambridge University Press. 1987. pp. 67-80.

12. Aspect A, Grangier P, Roger G. Experimental realization of Einstein-Podolsky-Rosen-Bohm Gedanken experiment: a new violation of Bell's inequalities. *Physical Review Letters* 1982;49: (2); 91-94.

13. Suarez A, Scarani V. Does entanglement depend on the timing of the impacts at the beam-splitters? *Physics Letters* 1997;232: (390); 9-14

14. Aczel AD: Entanglement: the greatest mystery in physics. New York: Four Walls Eight Windows, 2001.

15. Wheeler JA, Feynman RP. Interaction with the absorber as the mechanism of radiation. *Reviews of Modern Physics* 1945;17: (2-3); 157–161.

16. Wheeler JA: At home in the universe. Woodbury, NY: American Institute of Physics, 1994.

17. Wheeler JA: Delayed-choice experiments and the Bohr-Einstein dialogue, in *The American Philosophical Society and the Royal Society: papers read at a meeting, June 5, 1980*. Edited by APS, (UK) R. Philadelphia: American Philosophical Society. 1980. pp. 9-40.

18. Neppe VM, Close ER. The Triadic Dimensional Distinction Vortical Paradigm (TDVP): The nine-dimensional finite spin metaparadigm embedded in the infinite *Dynamic International Journal of Exceptional Creative Achievement* 2014;1401: (1401); 4001-4041.

19. Neppe VM, Close ER. The concept of relative non-locality: Theoretical implications in consciousness research. *Explore (NY): The Journal of Science and Healing* 2015;11: (2); 102-108. http://www.explorejournal.com/article/S1550-8307(14)00233-X/pdf.

20. HumanityHealingNetwork. The mystic meaning of the number 108. http://humanityhealing.net/2011/08/the-mystic-meaning-of-the-number-108/. 2011.

21. Bohr H, Nielsen HB. Hadron production from a boiling quark soup: quark model predicting particle ratios in hadronic collisions. *Nuclear Physics* 1977;B 128: (2); 275.

22. Pauli O. Six different types of quarks. http://www.ehow.com/info_8248693_six-different-types-quarks.html. 2015.

23. Pollack GH: The fourth phase of water: Beyond solid, liquid, and vapor. Springfield, OH: Ebner and Sons, 2013.

24. Neppe VM, Close ER: Reality begins with consciousness: a paradigm shift that works (5th Edition) Fifth Edition. Seattle: Brainvoyage.com, 2014.

25. Close ER, Neppe VM. Speculations on the "God matrix": The third form of reality (gimmel) and the refutation of materialism and on gluons. *World Institute for Scientific Exploration (WISE) Journal* 2015;4: (4); 3-30.

26. Neppe VM, Close ER. Key ideas: the third substance, gimmel and the God matrix. Part 1. *World Institute for Scientific Exploration (WISE) Journal* 2015;4: (4); 3-4.

27. Close ER, Neppe VM. The TRUE unit: triadic rotational units of equivalence (TRUE) and the third form of reality: gimmel; applying the conveyance equation (Part 12). *IQNexus Journal* 2015;7: (4); 55-65.

28. Close ER, Neppe VM. Introductory summary perspective on TRUE and gimmel (Part 1) in Putting consciousness into the equations of science: the third form of reality (gimmel) and the "TRUE" units (Triadic Rotational Units of Equivalence) of quantum measurement *IQNexus Journal* 2015;7: (4); 8-15.

29. Jefferson Lab. Science education: Questions and answers http://education.jlab.org/qa/particlemass_02.html. 2015.

30. Close ER, Neppe VM: Beyond Einstein: How mathematics and physics support the revolutionary Neppe-Close model. Seattle: Brainvoyage.com, In press (2015).

31. Close ER, Neppe VM: Space, time and consciousness: the tethered triad. Seattle: Brainvoyage.com, In press 2015.

32. Klein A: *The polidimensional holistic model (unpublished; based on abstract of 1993 / 1995)* in. pp. 1-32. Tel Aviv, Israel: 2012

33. Klein A: *Toward a new subquantum integration approach to sentient reality (unpublished),* in. pp. 1-40. Israel: 2010.

34. Neppe VM, Close ER. Relative non-locality - key features in consciousness research (seven part series). *Journal of Consciousness Exploration and Research* 2015;6: (2); 90-139.