A data analysis preliminarily validates the new hypothesis that the ratio of dark matter and dark energy to gimmel and TRUE units (Triadic Rotational Units of Equivalence) is 'contained' in the atom: Dark matter correlates with gimmel in the atomic nucleus and dark energy with gimmel in electrons.

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Abstract:

Neppe and Close (2015) have previously demonstrated that the proportion of combined volumetric dark matter (DM) plus dark energy (DE) in the cosmos correlates almost exactly with the proportions of 'gimmel' to 'TRUE units' in the corresponding most abundant elements in the cosmos (0.0008 difference in ratio score). Gimmel is the so-called 'third substance besides mass and energy'. Gimmel is mass-less and energy-less and without it, mathematically, all atoms would necessarily be unstable. Gimmel is calculated by applying Triadic Rotational Units of Equivalence (TRUE), a new method of quantitating atoms. This study is now extended to the atom by mathematically comparing the ratios of volumetric dark matter to dark energy with the ratios of gimmel in protons and neutrons (nucleons) compared with gimmel in electrons. Remarkably, our derivation shows that the two ratios are within 2.27% of each other. This strongly supports the research hypothesis because prior DM and DE data showed that certain other factors could be up to 3% different. This correlative result of DM and DE with gimmel in the atom may possibly imply that DM and DE exist in every atom. Specifically, these results support the hypothesis that the far more loosely bound electron may be linked with dark energy, yet dark matter may be linked with the tightly bound strong forces of the nucleon. Furthermore, DM and DE apparently do not fit volumetrically into the Standard Model of Physics, which utilizes only 3 dimensions of space in one moment in time. Instead, we propose DM and DE would fit into the finite 9-dimensional spin model (9D) previously definitively demonstrated by Close and Neppe (2014). Even more so, we've now shown DM and DE are correlated with gimmel in the atom, and gimmel is definitively conceptualized across 9D in the finite. Therefore, DM and DE should logically be fundamentally linked with 9D, too. This further supports that if DM and DE are 'contained' in the atom as this (2016) study supports, it would be relative to the 9D explanatory model: We need not look to bizarre locations in the cosmos, possibly just to the atom. And we might have located the missing 95.1% of DM and DE. The implications of these findings are huge.

Key words: 9 dimensions, 9D, Atom, Close, Cosmology, Cosmos, Cube, Daled, Dark energy, Dark matter, Electron, Gimmel,

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Terminology:

The term 'dark' in cosmology refers to something for which there is definite evidence of its existence, but which is non-luminous and cannot be accessed by our usual methodologies. When we refer to 'Dark Energy', we describe a repulsive force that counteracts gravity and causes the universe to expand at an accelerating rate. The term 'Dark Energy' is used as a convenience and based on Planck Probe calculations is thought to make up about 69% of the cosmos. Similarly, 'Dark Matter' in cosmology is a second theoretical 'dark' non-luminous term, this time an attractive force that is hypothesized to be linked with gravity. 'Dark Matter' is regarded as causing the universe to remain coherent because it stays together and is thought to constitute about 27% of the universe. Because these 'forces' are so mysterious and as yet unexplained, they may constitute the most important conundrum in all of physics. [1-3]

'Gimmel'[d] has been conceptualized and described by Close and Neppe as the 'third substance' besides the mass and energy that make up protons, neutrons and electrons. [3-17] It is mass-less and energy-less and without gimmel, mathematically, all atoms would necessarily be unstable, because we cannot have half an atom, or quarter of an electron. Everything in our finite reality is integral, quantized and volumetric, and by applying the necessary cubic measures, gimmel is calculated using a new method of quantitating atoms, Triadic Rotational Units of Equivalence (TRUE). Only a small number of equations work out, and because of this, we can calculate exact numbers of the different gimmel quantities in union with fermion particles such as electrons, up-quarks and down-quarks.

In 2015, in our previous cosmological research on gimmel, Triadic Rotational Units of Equivalence (TRUE units) and the combination of dark energy and dark matter, we (Vernon Neppe and Edward Close) postulated that there is a relationship between gimmel —that third massless, energyless substance—and dark matter and dark energy in the cosmos. [3 6] We have demonstrated that gimmel is necessary for stability of the atom. [3; 5-16] Without it, the atom would be extremely asymmetric and fly apart.

The proportion of dark matter and dark energy to the whole cosmos, based on the Planck probe data, is generally reported as 95.1%. These figures have been well substantiated over many studies. [18] The 95.1% figure calculation is complex and involves some assumptions of ratios in the cosmos [3]. Effectively, then, 'dark matter' and 'dark energy' account for far the most of the matter and energy in the entire universe.

The 'dark' components cannot be seen directly with telescopes as apparently they do not emit or absorb light or other electromagnetic radiation. Their existence and properties can only be inferred and this is what the Planck Probe mission team did, applying the standard model of cosmology. [19-22]. The terms Dark Matter and Dark Energy are *misnomers* arising from the unwarranted theoretical choice of looking at reality from a narrow materialistic point of view. Also, it should be pointed out that the location and distribution of so-called Dark Matter and Dark Energy in the universe is likely determined by some very complex relationships not delineated in this paper.

[d] Gimmel (also spelt 'gimel') is the mystical third letter of the Hebrew alphabet, appositely meaning 'bridge'.

To perform the appropriate calculations one needs to convert the data into volumetric equivalents because the 95.1% proportion is derived from linear units. This conversion yields the volumetric proportion for dark matter and dark energy of 86.01%. [3]

We developed 'Triadic Rotational Units of Equivalence' or 'TRUE' units out of necessity. We demonstrated that in order to determine the TRUE unit values of up and down quarks as parts of neutrons and protons rotating in 9-D, the smallest subatomic particle, the electron, must be allocated the unitary value of 1. (The other quarks are unstable, ephemeral particles that do not enter into the evaluation of fermions.) The TRUE values of all other particles, elements and compounds can then be calculated accordingly.

Remarkably, when one calculates the proportion of gimmel to TRUE in the cosmos, taking into account the sum of the abundant elements that are already calculated volumetrically, and using the most appropriate available figures, the ratio of gimmel to TRUE units for the equivalent elements are almost identical. The percentage is calculated to be 86.09% for volumetric ratio cosmologically, and this difference is truly remarkable. It's only a 0.08% or p = 0.0008 difference—one in 1250—when we had hypothesized that the alternative hypothesis would be acceptable if it were within 2%, a very stringent requirement. This result is 25 fold more stringent than our already very stringent requirement for acceptance of the hypothesis. (Table 1).[23]

Table 1. Broader Cosmological "Dark" Data (combining dark matter with dark energy) and Proportionate Gimmel comparisons based on cosmological abundance of elements. [3 6]

1. *Hypothesized valid* if within 2% of observed value.
2. *Volumetric (Dark* Matter [26.8%]+ Dark Energy [68.3%]) ratio to cosmology 95.1% cubed = 86.01% (Planck probe 2014 data).
3. *Gimmel to TRUE* ratio (already volumetric) of Abundant Elements Σ (volumetric) [Hydrogen 89.3% gimmel/TRUE * 0.756 abundance=67.5%] + [Helium+less abudant life elements with the same gimmel score = 76.2% * 24.4=18.59%] =86.09%.
4. *Results:* The results not only confirm hypothesis but markedly so with p <0.001 difference. The difference between proportions of Dark Matter and Dark Energy together to the ratios of cosmological gimmel =0. 08%. This result is truly remarkable!
5. *Extensions:* Articulated in this paper! Neppe VM, Close ER: A data analysis preliminarily validates the new hypothesis that the ratio of dark matter and dark energy to gimmel and TRUE units (Triadic Rotational Units of Equivalence) is 'contained' in the atom: Dark matter correlates with gimmel in the atomic nucleus and dark energy with gimmel in electrons. *IQ Nexus Journal* 8: 3; 80-100, 2016.

Effectively, we hypothesized that the ratios of gimmel to TRUE units and dark matter and energy taken together as a proportion of the cosmos should strongly correlate. Despite that 2% cutoff range to support this alternative hypothesis, we found this tiny 0.08% (or 8 in 10,000) in difference, based on the Planck probe figures. This tiny variation is almost certainly an artifact of measurement sampling error (the literature on the probe supports this). Such a profound result is unlikely to be pure speculation.

Key gimmel information:

The logic behind the elements is briefly that Hydrogen-1 (H1) constitutes 70.6% of the *total mass abundance* of all of the elements in the cosmos. The terminology is formidable in that the abundance of a chemical element is a measure of the occurrence of the element relative to all other elements in a given environment.

Abundance is measured in one of three ways: by the *mass-fraction* (the same as weight fraction); by the *mole-fraction* (fraction of atoms by numerical count, or sometimes fraction of molecules in gases); or by the *volume-fraction*. Volume-fraction is a common abundance measure in mixed gases such as planetary atmospheres, and is similar in value to molecular mole-fraction for gas mixtures at relatively low densities and pressures, and ideal gas mixtures. We are applying the most usual method of abundance values as mass-fractions. [24]

H1 is the lightest element: It actually constitutes about 91% of all the cosmos based on numbers of atoms (the mole fraction). But given the calculations based on mass and energy for dark substances, we cannot justify calculations here based on "numbers of atoms", and are using mass fractions instead) (Table 2). [24; 25] Combining the H1 mass fraction proportion of 70.57% with the gimmel to TRUE ratio of 89.28%, calculates at 63.005%.

Table 2 : Abundance of the Cosmological Elements Comparing Mass and Mole Fractions

Regular Isotope	**Gimmel % ג**	**Atomic number**	**Mass fraction in parts per million (MF)[e]**	**Equivalence % of gimmel**		**Atom fraction in parts per million**
			Mass-fraction	**(ג* MF)**		**Mole-fraction**
Hydrogen-1	89.28%	1	705,700	**63.0050**	1	909,964
Helium-4	76.19%	4	275,200		2	88,714
Oxygen-16		16	5,920		3	477
Carbon-12		12	3,032		4	326
Neon-20		20	1,548		5	100
Nitrogen-14		14	1,105		7	102
All these are life (O, C, N) and noble elements (He, Ne)	76.19%		**287971**	**2.19405**		
Iron-56	75.0%	56	1,169	0.000877	6	27
totals				**65.20781 of all %**		

The second to last column lists the abundance in the cosmos of elements. Iron and elements lower than #6 in abundance are clearly irrelevant here.

Helium is the second most abundant element by a large distance (Table 2) but in any event several of the next but less abundant elements are all life elements: The top five have the same gimmel score ratio to TRUE units, at 76.19% and make up the other 24.4% of the atmosphere (because H1 is 75.6%). Whereas Hydrogen-1 and Helium are the most abundant elements in the cosmos by far [3], Oxygen, carbon, neon and nitrogen (which comes seventh) all have the same gimmel score in the cosmos which means that this calculation can be extended beyond helium. Technically, iron is minimally more abundant than nitrogen and has slightly less gimmel to TRUE ratio but the contribution after taking into account gimmel to TRUE is 0.00088 total and moreover a gimmel difference of about 1% less (75.0% iron gimmel to 76.1% life elements). This makes the

[e] In parts per million divided by million and multiply the % figure to get to %.

difference 0.0000088 negligible beyond the number of significant figures being used). The same applies to the less abundant elements and therefore, in this instance, we do not need to consider all the elements in the Periodic Table (Table 2).

More importantly, for hydrogen, we needed to introduce another form in the 'horizontal axis' besides gimmel, called 'daled' [f] (which may or may not be the same as gimmel). The necessity for a horizontal axis calculation with hydrogen is because the hydrogen atom lacks a neutron. Without something to compensate, the atom based on the TRUE unit calculations would be symmetrically unstable. There needed to be a further flow of a gimmel type substance to compensate. While we assume it would be the same 'gimmel', we're applying it uniquely and in a different context, hence we've used the term 'daled'. Daled may or may not be equivalent to gimmel, and we refer to both collectively as 'gimmel' here. But daled is the key to the calculations below because it increases the amount of gimmel or equivalent daled effectively in the protons and neutrons potentially creating a balance of mass-energy with a much greater portion of the gimmel-like component. This is likely to be the most important part of the Hydrogen-1 element promoting stable structures in the universe.

Adding the proportionate gimmel/ TRUE scores of these elements works out to be 18.59%. The combined figure with hydrogen therefore is 86.086%. *This means that dark matter and dark energy in the cosmos correlate so closely with the figure of gimmel to TRUE units of the major elements of the cosmos, they could suggest that gimmel in some way is linked with the dark matter and the dark energy of the cosmos.* These results are so powerful they're unlikely to be coincidence. This supports the hypothesis of this third substance (gimmel) in the cosmos.

Is "Dark" in the atom?

The question comes up: Could it be that dark matter and dark energy are 'contained' within the atom itself? We use 'contained' here for convenience because English lacks an adequate term. But it is used differently from most uses. It does not mean that the atom in our conventional living experiential reality of 3 spatial dimensions must be volumetrically adequate to hold (or contain) all the dark matter and dark energy. The use of 'contained' is at a hierarchically different level of 9 spinning dimensions and if necessary extending forever to a 10^{th} plus still discrete, quantized transfinite (also called tenth dimension).

The 'container' idea is not a strange hypothesis because the nucleus of the atom contains protons and neutrons, and they are kept close together by electrical forces, probably strong electrical forces; and yet there appears to be a lot of, so to say, 'empty space', and the electrons are circulating around. If the calculation could be that dark energy would be similar to the gimmel scores of the electrons, and the dark matter similar to the gimmel scores of the nucleons—the protons and the neutrons together —then it might be that dark matter and dark energy are 'found' in the atom itself, and this is the source of cosmological 'dark' substance.

Moreover, the near light-speed vortical spin of fermions and the effects of so-called dark matter and dark energy in the rotation of spiral galaxies [1; 26 27; 28] may imply that the remarkable atomic correlation of 'gimmel', which is derived through extrapolating across a 9-dimensional spin domain. is more than just coincidental but meaningful or causally linked.

We have also previously demonstrated that the atom as we know it with just protons,

[f] Daled is also spelled 'dalet'. It is the fourth letter of the Hebrew alphabet and refers to door or poor.

neutrons and electrons cannot exist: Atomic materialism is refuted. [29] There has to be a further substance: we call this 'gimmel'. Therefore, we know that gimmel, as a 'mass-less, energy-less 'substance', exists in the atom. [29]

HYPOTHESES:

We propose that the proportions of Dark Matter correlate with gimmel in the atomic nucleus and Dark Energy with gimmel in electrons. This is an extraordinarily important issue directly linked with TRUE units and gimmel. However, in this instance, we extend our original cosmological findings, incorporating the atomic level because atoms make up our whole cosmos. [3; 5-16]

Two questions arise:

1. Can we separate the gimmel linked with dark matter from that of dark energy.
2. Can we link dark matter and dark energy with the fundamental atom?

- More specifically because dark matter is dense and involves a strong (hypothesized gravitational force) could it be linked with the gimmel in protons and neutrons (nucleons) where theoretically strong electromagnetic forces keep nucleons together.
- And could the gimmel in electrons be linked with dark energy? Again the logic is that dark energy is conceptualized almost as 'anti-gravity' with an expanding universe, and in the atomic context, parallel to how electrons rotate round the nucleons, with theoretically weak forces are involved. These concepts are based on our understanding of three dimensions of space in a moment in time without anything beyond: But 'dark matter' and 'dark energy' are misnomers, not because they are 'dark' in the sense of our usual ways of measuring them being inadequate, but because they are not truly 'matter' and 'energy' at all, because they cannot be measured as mass or force. Therefore, different rules have to be applied to dark matter and energy, than any other mass-energy.
- If so, we would expect the proportions of gimmel to electrons in proportion to the gimmel to the nucleons to be similar to the proportions of dark energy to dark matter.
- Based on the literature, it seems that there are papers where components of such calculations may vary up to 3% and we therefore proposed that if these results were within 10% the evidence would be very supportive, and if the variation was within 5% ($p<0.05$) the link would be regarded as strong and the alternative hypothesis, strongly supported.
- The data we discuss here is very much necessarily preliminary, but exciting given that it confirmed a hypothesis, and extends the ideas of gimmel, from the quantum level through to the cosmological. [30] We should then be able to apply this to the atom itself as well. This could mean Dark Matter and Dark Energy are contained in the atom.

Pertinent dark (also called 'cold') data supporting our stipulated $p<0.05$ range.

We portray first the key, well-summarized results of the Planck Probe data and the follow-ups. [18] The data underlying these ranges are based on a replication of the Planck probe data [18]. These derive originally from some tests over some years [19; 21; 22]. In essence, the Planck satellite was launched by the European Space Agency and made observations of the cosmic microwave background (CMB) for a little over 4 years, from August, 2009 until October, 2013. Preliminary results based on the first year and a quarter of operation, and released in 2013, established high confidence in the canonical Lambda-Cold Dark Matter cosmological (ΛCDM) model. This model

was dominated by dark energy (the Λ component), and had some cold dark matter (CDM). This is as opposed to ordinary matter, of which stars, planets and human beings are composed, and that 'matter' is the third most important component from a mass-energy standpoint but measured at only 4.9% of the universe, though it is easily registered because it's linked with light. We know that dark energy (68.3%) is far more than the mass-energy equivalent (26.8%) of all matter combined. Moreover, dark matter is many fold more than the ordinary matter component (only that 4.9%). 28 papers released by the Planck Consortium detail results from the entire mission, and more than three times as much data gathered.[g]

In particular the technical ranges have been delineated.

- $\Omega b*h^2 = .02226$ to within 1%.[h]
- The cold matter density is measured to be $\Omega c*h^2 = 0.1186$ with the uncertainty less than 2%;
- and with the h value substituted we have $\Omega c = .258$ reflecting similar uncertainty.[i] $\Omega b = 0.048$, with uncertainty around 3% of its value. Thus, just under 5% of the mass-energy density in the universe is in ordinary matter.

Essentially, the Planck 2015 results replicate the previously thought balance of the universe based on present-day values of the constituents. In the past, dark energy was less important, but will dominate more and more as the universe continues to expand. The dark energy works as a negative gravity and causes space to expand.[j]

These figures appear to justify calculations based on alternative hypotheses of 5% or even 10%.

METHODOLOGICAL APPROACHES:

What do we calculate?

Considering potential technical problems, it should be clear that one has to take into account volumetric mass and energy equivalence. We have these figures readily available for protons and neutrons: We have already determined the exact number of TRUE units of gimmel associated with the electrons, so we know where those fit. [7] But there is a question of how much gimmel is there in the protons and neutrons besides that which we have already calculated from empirical data in connection with the quarks that make up fermions. Is there more gimmel than just that associated with quarks? It appears that there could be, as for symmetric stability, gimmel should be present in all particles and everything comprising physical reality. But how do we determine this when it comes to protons and neutrons? This is relevant because protons and neutrons apparently contain more than just up and down quarks. We know this because quarks make up only a tiny fraction of the mass of these nucleons. Their far greater mass must be explained.

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[g] The first paper provides an overview of these results (the Planck 2015 Results I). Papers XIII and XIV describe the cosmological parameters measured and the findings on dark energy. Many additional papers examine potential departures from the canonical cosmological model and constraints on inflationary models. [18]

[h] (Ωb = the baryon (basically ordinary matter) mass-energy fraction (fraction of total-mass energy in ordinary matter) and h = H0/100. H0 is the Hubble constant which measures the expansion rate of the universe, and indirectly, its age. The best value for H0 is 67.8 kilometers/sec/Megaparsec (millions of parsecs, where 1 parsec = 3.26 light-years). H0 has an uncertainty of about 1.3% (two standard deviations). In this case h = 0.678 and the expression above becomes $\Omega b = .048$, with uncertainty around 3% of its value. Thus, just under 5% of the mass-energy density in the universe is in ordinary matter.

[i] Since the radiation density in the universe is known to be very low, the remainder of the mass-energy fraction is from dark energy, $\Omega e = 1 - .048 - .258 = 0.694$.

[j] The Planck Consortium also find the universe is topologically flat to a very high degree, with an upper limit of 1/2 of 1% deviation from flatness at large scales.

We have previously already strongly proposed a linkage of so-called gluons with quarks. [6; 31; 32] Effectively, we have postulated that the gimmel might actually be what the heuristically derived gluons actually are.[6] Could that be true? The evidence appears to be substantial. And could it be linked with other unstable particles that last only tiny fractions of a second? These are the so-called subatomic ephemeral particles, for example, the Higgs Boson. The Higgs Boson is regarded as, in some way, providing the mass, even though it's effectively ephemeral, massless, and energyless, and therefore does not permanently exist. d Since gimmel is necessarily linked with all particles, not just fermions, it is likely that these extra components reflect just another aspect of the role of gimmel in the fabric of everything. This new conceptualization of the nature of gluons, and the hypothesis that dark matter might be equivalent to gimmel in or part of the atom, if demonstrated, would support this contention. Working from what is known, i.e. the amount of gimmel in the electrons and quarks, we can potentially calculate the differences in total mass, energy and gimmel, and find a way to account for 100% of the volumetric equivalence of the atom.

The hypothesis therefore is, the proportion of gimmel to electrons to the proportion of gimmel remaining, which is in the neutrons, would be the same as the proportion of dark energy to dark matter.

The problem that one has is how to calculate this, because dark energy/dark matter can be calculated basically on the basis of angular momentum (mass, and energy), and converting that into volumetric equivalents -- or number of TRUE in the universe is the problem. This is particularly so in calculations pertaining to the elements, and the most pertinent difference between proportion of mass and number of atoms, as indicated, is one of hydrogen because it is so light. Hydrogen-1 contains 91% of the atoms of the whole ordinary universe (the 4.9% ordinary matter) (Table 2). But when examining mass, H1 constitutes a far lower proportion, only about 63%, of the total equivalent mass. These figures would vary markedly in terms of different calculations, so we must decide what is appropriate. We could also apply Mass Energy Volumetric equivalents, which would make the H1 figure about 67%. [7] Logically, we must measure the mass of each of the elements because we're dealing with concepts pertaining to mass, energy and gimmel, and not numbers of atoms. But our expectation would be that there is an error range in our comparative calculations.

Also, essentially, we cannot estimate the amount of dark matter/dark energy that would be in the neutron, or the amount of gimmel total besides the fermions. However, we can calculate it based on the remaining proportion: We know the exact figure for the electrons, so 100% minus the % gimmel score in union with electrons, which is 105 gimmel TRUE units per electron, allows us a close approximation.

But in this paper, we will first apply the known, and we have figures for gimmel in the fermions—the gimmel and daled linked with quarks in neutrons and protons, and the gimmel in electrons. [7] If we find that these figures are way off, we can then go to the next stage of examining 100% minus the electron gimmel for the nucleons, and postulating what can explain the difference. This is a particularly logical first choice as our original study examined the proportions of gimmel in TRUE units and was based on fermionic particles [7 6], and our Conveyance Equation for calculating such gimmel allocations was based on fermions, not bosons or any other stable or unstable particle. [7]

These figures are therefore estimates, but the hypothesis and the preliminary results, as indicated below, should show a closeness of gimmel in the electrons proportionate to TRUE units

based on cosmological atomic data. Even within 10% of what we would expect would be very good. The remainder, then, is the dark matter (less the 4.9% of matter that is ordinary matter).

RESULTS: The tables below indicate the key data.

Table 3A Oxygen or He or H2 or N or C Ratio of gimmel to TRUE is 76.19%.

Particle	Mass/Energy	ג	Total TRUE
8e	8	840	848
$8P^{+}$	136	56	192
$8N^{0}$	176	128	304
Total nucleons	**312**	**184**	**496**
Totals	**320**	**1,024**	**1,344**

Oxygen 16 has 8 electrons, protons and neutrons. Fundamentally that ratio of 320/ 1024 is the 76.19% the same as for other life elements, here Carbon, Nitrogen and inert elements Helium and Neon and even Deuterium. Essentially important here is the gimmel ratio of the protons and electrons / total gimmel. 184 / 496 = 37.1%. We contrast this with the 840/848 of the electron, which is 99.06% gimmel and characteristic for all elements. The electron always has 105 times the units of gimmel to its mass. Oxygen is used as an example here, but effectively, we're dealing with the same proportions. We will ultimately be able to unitize any life element like oxygen, carbon or nitrogen or inert noble gas like helium, by dividing by the number of protons or neutrons to get a basic unit like deuterium. This simplifies calculations. [7]

Daled and the special case of Hydrogen-1, the common hydrogen we know.

We now examine Hydrogen 1 (Protium; H1). H1 is the only element that does not have a neutron. Instead, when applying TRUE unit analysis, it appears to compensate by having an extra third substance which is massless and energyless. We could call this gimmel (or ג). In effect, we've applied the term 'gimmel' to describe the 'third component equivalent' that is mass-less and energy-less. But this 'gimmel' concept is not in union with electrons or with quarks. Instead, it replaces (and compensates in volumetric symmetry for) the missing completely absent neutron in a unique situation, the case of the Hydrogen 1 atom (H1). Is this still reflecting that same third substance, gimmel? In case it is something different, we've called it 'daled' ד.

Daled may or may not turn out to be just a form of 'gimmel', but it contributes enormously to the proportion of that third substance in H1. Without applying the daled here, the TRUE unit score in H1, would be much lower. The well-known absence of a neutron in H1 has been ignored in conventional atomic physics. However, we regard it as of profound relevance: The relatively enormous amount of gimmel/ daled TRUE quantum units necessary to compensate has been carefully calculated. This is not performed without thought: It had to be done because without it H1 would have been volumetrically unstable. Without this 'daled', because of the consequent H1 instability and a profound asymmetry in the calculation of its volume, the H1 would then fly apart. In contrast, once the 'daled units are added in TRUE analysis, to replace the absent neutron, H1 becomes stable and symmetrical again.

Moreover, the 'gimmel- daled': TRUE ratio in H1 becomes enormous at 89.28%. This is far the highest figure for any element, and empirically may be the reason for the major implication: H1 is likely the most prevalent element in the cosmos, and also the most important element in chemical reactions. For convenience, we're still calling the gimmel-daled combination 'gimmel' in this paper, but we're always referring to 'gimmel-daled' as soon as H1 is involved (each of the other isotopes of Hydrogen, such as H2, called Deuterium or 'heavy hydrogen' and the very rare H3, have a neutron).

Effectively, H1 contains more gimmel (which we postulate might be some form of consciousness) than anything else. Again, we non-prejudicially apply the term 'gimmel' in our calculations below, to include daled—if you want, we could call it G-D which strangely may be an acronym for a divinity, as well! We also apply the term 'gimmel', in this and all instances, to argue that we are not directly saying that gimmel is pure or part consciousness. However, we maintain the 'consciousness' concept at the quantal level and likely beyond, could be a useful, viable and possibly the only appropriate postulate (Table 3B).

Table 3B: TRUE-Unit Analysis for Hydrogen 1 (Protium).

Particle	Mass/Energy	ג	Total TRUE
e	1	105	106
P^+	17	7	24
Daled ד	0	38	38
Total nucleons	**17**	**45**	**62**
Totals	**18**	**150**	**168**

Calculation 1: H1 Daled 150 of gimmel to only 18 of mass energy in the H1 atom so the ratio is 89.28%. But we're interested in separating the nucleons here, not the total because we're looking at ratios. This result is particularly relevant given that Hydrogen is by far the most abundant element in the cosmos. In Table 2 we can see that 91% of all atoms in the cosmos are Hydrogen-1. But for the purposes we're studying here, we deal with mass and energy not molar equivalents. This is so as this is the measure we're calculating because we deal with dark 'matter' and dark 'energy'. Instead of 76.19% in life elements and in H2 (heavy Hydrogen isotope, Deuterium) (Table 3C), H1 has 89.28% gimmel/ TRUE ratio, but this is a total, and again, we must separate the electrons from the nucleons in every element in our calculations.

Table 3C: Hydrogen 2 (Deuterium; H2).

H2 is equivalent to heavy hydrogen because it has a neutron.

Particle	Mass/Energy	ג	Total TRUE
E -	1	105	106
P+	17	7	24
N 0	22	16	38
Total nucleons	**39**	**23**	**62**
Totals	**40**	**128**	**168**

More telling, instead of the 37.1% maximum for the life elements all of which contain neutrons, H1 because of its daled instead of a neutron has 45/ 62 = 72.6% even in the nucleons (protons in this case because there's no neutron). And that extra quantity truly counts because H1 is so abundant.

We have shown that H2 (Hydrogen-2 or deuterium a relatively rare hydrogen isotope, just because it reflects a life-element in all scores, but has one of each so calculating is easier. Remarkably, H2 has the same gimmel to TRUE ratio of any of the life elements (O, C, N, S, Mg, Ca and even Si) plus the two inert noble gases (helium and neon) is 76.2%: All the life elements C, O, N, S, Mg, Ca have this same ratio. He and Ne are non-reactive in this context because of their 0 valence. (Gimmel is abbreviated with the Hebrew letter, ג)

Let's now calculate: First we briefly look at the number of atoms as opposed to the mass of each element. So for example, in Table 2, looking at number of atoms per milion for He, O, N, C, Ne, then:

I. The incorrect approach as this is based on parts per million:

The electron score is the same: e =105 of 106 total TRUE.

Additionally, for the protons and neutrons of the abundant Helium, Oxygen, Carbon and Neon, the amount is the 37.1% but, for example, with each neutron (16 TRUE gimmel units and proton (at 7 gimmel units)=so (7+16)= 23. In proportion to the Total TRUE of (24+38)=62 the gimmel proportion is ***37.1%*.**

This would be the same for the correct mass calculation below, but the difference is the molar (number of atoms) quantity that it is only 9% based on the total (lower because H1 is 91% so 100-9%) and so the molar number overall would be only 37.1% * 9% and so equals ***3.34%.***

But we don't count atoms: this is flawed as we should not be using numbers of atoms, instead mass-energy with dark matter and energy. So, the 90.99% molar component of atoms or parts per million would be incorrectly applied (in this instance).

II. The necessary exclusion showing irrelevance of Fe using even mass fractions.

We must now examine whether any of the other non-life or non-noble elements play a role. Iron (Fe) is sixth in abundance but its contribution turns out to be so negligible, it does not even fit significant figure calculations. Fe has a gimmel to TRUE ratio is 3392/4520 = 0.7504 = 75.04% so slightly lower. But this is all negligible in difference because of its infrequency (0.00169) of even the mass total (Table 2) making up 0.00088 of the total contribution. *Again, this is a stark contrast with the H1 —Hydrogen (Protium).* Based on mass: H1 is 70.57 * 89.28% = 63.00% gimmel. This means that H1 at 0.63 is about 700 fold more in TRUE score than Fe. Similarly, aluminum and argon are tiny, and the rest of the elements in the top 20 are elements of life or isotopes and they play no role.

III. The main molar calculations: *The correct approach by applying mass*

Mass fractions: We correctly apply here the mass-fraction of mass in parts per million into account. H1 is then 70.57% (Table 2). The main remaining elements of *relevance* are mainly Helium, but also O and C and Ne. These all show the same numbers of Protons =Neutrons =Electrons with a combined mass fraction total of **29.43% mass-fraction score** (as opposed to the incorrect 9.01% molar H1 abundance score and 9% of the remaining key elements.

We do not here analyze total gimmel to TRUE as with hydrogen 1: 89.28%.7057= 63.00

Similarly 76.19% gimmel score of He (and O, C, Ne) * 29.43 = 21.66% overall gimmel of the elements. **Instead we still apply mass-fraction figures overall but then we must separately analyze overall gimmel score of electrons and nucleons.**

Hydrogen 1: H1 Daled 150 of gimmel to 18 so 89.28% total for nucleons and electrons but that total is for proportion cosmologically of H1 but not separating nucleons and electrons. *This is combined with 70.57% of the mass fraction.* The daled makes a big scoring difference. Note we refer to nucleons, but the actual contribution is the gimmel in fermions (quarks) plus the daled contribution from H1 not technically the whole protons plus neutrons.

Mass fraction of H1= 70.57% ……. 1A

Mass fraction of He and others =(100 –the 70.57 of H1) = ***29.43% … 1B***

Nucleon contributions: In this instance, the main nucleon calculation is H1 because of ג.

H1 ……45 ג / 62 total (Table 3B) =72.58% of 70.57 (1A)= 51.21%… 2A

He …... 23 ג / 62 total (Table 3C) =37.1% of 29.43 (1B) = 10.92% … 2B

Total nucleon contributions: (2A+2B) = 62.13%…… 2C

Interestingly, the mass fraction versus the incorrectly applied molar fractions, increase this figure from 3.71% to 10.89% because hydrogen is so light.

Electron scores of gimmel:

H1 based on total electrons 105 gimmel to 1 of mass * 1A …***70.57%***…… 3A.

He+ based on total electrons 105 gimmel to 1 of mass. * 1B 29.43%…… 3B.

Total 2A + 2B is 100% * 105/106= 99.06%…… 3C

(So for H1 and all else: 105 of 106 to electrons == 99.06%)

Proportion: Nucleon Gimmel / Electrons = (2C/3C)= 62.10/99.06= 62.69% …4A

Dark matter and dark energy ratios

Dark Matter [M= 26.8%] and Dark Energy [E= 68.3%]) figures in cosmology = 95.1% …5A

When cubed = 86.01% (Planck probe 2014 data), but individually cubing these results:

Dark matter cubed =M^3 = 19.25%……5B

Dark energy cubed = E^3 = 31.86% ……5C

Total is 51.11% (irrelevant here; but important in cosmological calculations)

Ratio Dark matter / Dark energy = M^3 / E^3 = 19.25%/ 31.86% =60.42% ……5D

The gimmel in union with nucleons correlates with Dark Matter; while gimmel in union with electrons correlates with Dark Energy. But our analysis, ultimately, involves the ratio of Dark Matter: Dark Energy :: Nucleon gimmel: Electron gimmel.

This dark matter/ dark energy ratio is **60.42%** is compared when applying volumetric mass energy equivalents to Nucleons/ electron gimmel its **62.68%**

Nucleons/ Electrons Gimmel less Difference (4A) Volumetric Dark matter/ Dark energy (5D) = 62.69% - 60.42% = 2.27% …… 6A

Nucleons are hypothesized to reflect Dark Matter; and Electrons reflect Dark Energy. In this calculation based on proportions they accurately reflect what they've been proposed to reflect. Many ratios tend to have a strong central tendency, therefore a difference of under 10% would not

be uncommon. Yet a difference of only 2.27%, when one of the original variations was 3%, is still remarkable, particularly given the one-tailed nature of the analysis here, and the expectation of a 10% range being acceptable. Nevertheless, as expected, the strength of this evidence, in contrast to the extremely small 0.0008 difference in cosmological proportions, is less powerful[23] (Table 4).

Table 4. Summary of atomic ratios of dark matter (DM) related to gimmel in nucleons and dark energy (DE) linked with gimmel

- ***Research Hypothesis:*** **<**(5%-10%) given the Planck data proportions variation of DE and DM.
- ***Volumetric (Dark*** Matter [26.8% [3]] = 19.25%) / (Dark Energy [68.3%[3] = 31.86%]).
    - *Consequently this 'dark matter/ dark energy ratio* =**60.42%**
- ***Gimmel to TRUE*** ratio (already volumetric) of (volumetric proportions) of Abundant Elements (Σ [Hydrogen abundance=70.57%] + [Helium+less abudant life elements = 29.43%]) in (nucleons [protons, neutrons, daled]=62.10%) / (electron gimmel =99.06%).
    - *Consequently this 'gimmel/TRUE' ratio* = **62.69%**.
- ***Results****:* The difference between the proportions of (Dark Matter to Dark Energy) to the ratios of (nucleon gimmel[linked with quarks and daled] to electron gimmel) is remarkably close: 60.42% to 62.69%. The results not only confirm the research hypothesis but markedly so with only a **2.27%** difference, far closer than even the research hypothesis limit.
- ***Proposals:*** Dark matter and dark energy may be 'contained' in the atom. This can be explained only by applying a multidimensional model, like 9 dimensional spin, not our experiential reality of length, breadth, height in a moment in time ('3S-1t').
- ***Publication:*** This paper Neppe VM, Close ER: A data analysis preliminarily validates the new hypothesis that the dark matter and dark energy is contained in the atom: Dark matter correlates with gimmel in the atomic nucleus and dark energy with gimmel in electrons. *IQ Nexus Journal* 7: 3; 80-100, 2016.

DISCUSSION:

Perspective of the results and feasibility issues:

Ratio of nucleons to electrons:

Whereas we have determined the exact amount of gimmel in electrons as the only option, the protons and neutrons have more than just the fermions, named quarks. We know there is more because the atomic mass of nucleons—the protons and neutrons—differs by orders of magnitude from the sum of the masses of just the quarks involved. One can speculate which other particles with mass and energy might exist in the nucleons and how they might explain the extra mass. But a better explanation may be that gimmel plays this role. In the standard model, gluons are believed to act as a 'glue' holding the quarks together, [6; 31-34] and in spite of the fact that they are massless when detected outside the atom in LHC collider data, they are thought to somehow contribute to the total mass when in the atom. [35 36; 37] Similarly, in the standard model, the ephemeral Higgs Boson is thought to be indirectly responsible for mass. In contrast, our analyses emphasize rotationally stable triads of up and down quarks in the protons and neutrons, and we propose that the role of the ephemeral top and bottom, charm and strange quarks and other members of the 'particle zoo', are not as pertinent because they don't appear to participate in the structure of stable atoms and exist for tiny fractions of picoseconds.

Why fermions only?

Our approach applies quantum units (TRUE) of gimmel for fermions only (quarks and electrons in this instance as the stable forms) plus daled so that the comparisons are for dark matter with fermion gimmel scores. It does not appear to be necessary to use all of the theoretical particles of the standard model in the nucleons. That would be extraordinarily difficult to do because these other components, based on current particle physics, are these ephemeral, unstable particles. Our analysis is based on known stable atomic data.

Other variations in the data:

The numerical percentage ratios we've applied in this article, are not precisely correct because we have not included every form of mass and energy in the universe, e.g. 'plasma' is not included. Also, the percentages of relative abundances are only estimates. However, as indicated, by the time we get below the element ranked number 5 in abundance (neon), to the sixth, namely iron, the impact is so miniscule that not having included every known element is not significant. Nevertheless, we have shown a finding that is very close now at the cosmological level for all of dark components: cosmos to gimmel: TRUE. Now we demonstrate that 'dark components' might be in the atom. The search might have ended.

Precision and accuracy of the resultant data:

We've hypothesized that proton-neutron gimmel is equivalent to dark matter so that should be 60.42% if an exact match were obtained when compared to dark energy which is hypothesized to be equivalent to the third form (gimmel) in electrons. We know the results have some marginal error, but the very narrow ratio difference of <2.5% (!) here affirms the original alternative one-tailed hypotheses which allowed for 5% to 10% variation, given that some Planck probe figures contain measurement errors of 3%, 2% and 1% for different derivations.

The estimated relative abundances of elements based on Mass Fraction and Mole Fraction, are shown in Table 2. Fortunately, the exact figures for atomic mass, and atomic number and the numbers of protons, neutrons and electrons, are well known, eliminating one potential source of uncertainty in the results. However, there are even other ways of conceptualizing this data, for example, ultimately deriving Mass-Energy-Volumetric Equivalence—MEV. Consequently, such calculations, in turn, create more room for variations allowing for a further range, too. And there is a variation in the range of these derived figures.

We have at least been able to work, rather logically here with the mass fraction proportions. And we're fortunate that the exact figures for atomic mass, and atomic number and the numbers of protons, neutrons and electrons, have already been derived. That takes away one source of variance.

Predefining the target research before calculation:

We decided on one method of calculation at the start and even then, before the calculations began, we realized the optimal way to calculate gimmel in the nucleons was from our direct derivations with gimmel in union with quarks, because the other method of subtracting from electron associated gimmel turns out to be problematic because of the huge contribution of daled in the most abundant H1. However, it may imply that our original work just involving gimmel

scores linked with quarks is correct as those figures are based on quark gimmel scores and on daled, and these all pan out.

Moreover, because of the need for symmetry and stability to allow atomic particles to exist as opposed to just flying apart, there are very few options applying Diophantine mathematics: Everything must be integral, and consequently volumetric scores other than those linked with quarks and electrons might be impossible to derive. There is at this point only one reasonable mathematical solution based on the elements of life and noble gases (He and Ne) all exhibiting TRUE unit scores of cubic multiples of 108. Therefore, we must work with gimmel and try to understand how well gimmel fits our data—and we can see that it does. Therefore we must explore how feasible such comparisons of dark matter and dark energy are.

Optimally, we would like to have begun with definitive gimmel data on everything in the proton and neutron but that does not exist, and it might not, because it may only be a requirement of links to quarks. And in examining our methodology prior to our calculations, a simple subtraction of known data, namely the gimmel scores in union with electrons, might have been logical. But as discussed below, that is fraught with its own new difficulties, and speculations.

Cosmology:

We have already mathematically demonstrated the remarkable result that there is an almost exact correlation of the proportion of Dark Matter plus Dark Energy in the Cosmos (based on the latest Planck probe data) [19-22] and the proportion of Gimmel to TRUE units—this is at the less than 1 in 1250 level! Is it possible that these correlations could be coincidental, that they may not be linked causally? Effectively, we have shown that in the cosmos, gimmel and TRUE unit scores in the elements when applied in the correct ratios of their abundance in the cosmos, correlate so strongly with dark matter and dark energy *as a unit* that it would be difficult attributing these results to coincidence.

Next, we ask: "Could gimmel (applying TRUE unit data) as a mass-less, energy-less component in the atom be correlated separately with

- dark matter as the gimmel content in the quarks of protons (and including the daled content in the absent neutron in H1)?
- dark energy as the gimmel component of electrons?

If so, this means that dark matter and the dark energy has been 'under our noses all the time' and is contained in every atom in the cosmos, despite the fact that our logic would say "how do they fit?" We endeavor to shed more light on these tough questions below.

Tentative but pertinent:

Our mathematical result is still preliminary based on our best available figures, but the equivalence, with a remarkably low difference of less than one in forty, is still very striking, particularly as some of the cosmological data has ranges of error even higher than that -- 0.025%! We applied a pre-defined one-tailed hypothesis where we expected dark energy to be logically positively linked with electrons, and dark matter positively with nucleons. This correlation should have worked out and it does.

The profound mystery:

Our hypothesis was based on the postulation that if indeed TRUE units are appropriate at the atomic level, they should be at the elemental level, as well, plus at the molecular level and

indeed all the way through to the cosmological levels. Our results, indeed, might provide the beginnings of a solution to the challenge of what dark matter and dark energy are, and where they are located. It is one of the most profound mysteries of the universe, and one that has been regarded as unsolvable in the current scientific paradigm. [1; 2; 20; 38]

Interpretations:

These figures are far closer than we expected even with prior confidence that the results would support our hypothesis. The data, therefore, strongly suggests that the results obtained, are meaningful. The implications of these findings are critically important, both in terms of extensions and conceptualizations of findings in quantum physics. The information is also cogently relevant to the broader speculative ideas pertaining to the fundamental nature of reality: *For example, our results likely mean that there are the same laws of nature at the quantal and cosmological level, and presumably therefore at the macroscopic level too.* Previously there were different ideas for quantum physics ("quantum weirdness"), which seemed illogical and were unexplained even by Richard Feynman. [39; 40] Now there are the same laws of nature for everything in the finite reality.

Revisiting gimmel

We don't know exactly what Gimmel is. We *postulate* that gimmel is linked with a unitary 'broader consciousness'. We *speculate that* gimmel might exist as a *continuous infinite* vortical flow of more than just a 'consciousness' content: Embedded within this consciousness 'container' would be other *infinite continuity* properties equivalent to mass and energy content. We postulate that when presenting in the quantized finite reality, gimmel *manifests differently* for every chemical—atoms, molecules, or even components of the cosmos: Everything has its unique 'cosmic fingerprint'. This is also based on our work with gimmel and up and down quarks where each of these six subatomic particles (2 up and 1 down in the proton; 2 down and 1 up in the neutron) has a different gimmel score. [6 7] We could speculate that gimmel, therefore, could possibly apply to *meaningful specific* information (a *targeted* consciousness) as opposed to the general components.

Communications occur across all the nine dimensions, as well as in the still quantized transfinite. Those interfaces are across, between and within dimensions, involving a mechanism called 'indivension' translated through intersections of vortices, scalar, vector and tensor components. [41-43] This implies different levels: Some regard these as 'vibrational', referring to the different frequencies of movements, but then those 'vibrational resonances' would be multidimensional and manifesting relative to a particular framework, like 3S-1t. [44] We speculate that gimmel and daled reflect the same property, but they might turn out to be different (hence, their different names). Further lengthy papers will discuss these complex concepts. They're pertinent here because the nature of gimmel might say something on the nature of dark matter and energy or the union of gimmel with them.

Furthermore, the fact, that gimmel and TRUE units, necessarily are part of the 9-dimensional spin that makes up our finite reality, means that we could and possibly should apply the same principles of 9D spin to dark matter and dark energy in this analysis.

An important speculation: Is gimmel 'dark'?

This leads to a key question: Is dark matter and dark energy, actually gimmel itself? The dilemma here is difficult, because gimmel, by definition, is a third mass-less, energy-less

substance. And in the current scientific paradigm, dark matter and dark energy, correctly or incorrectly are regarded as some unknown kind of matter and energy respectively.

How could something non-energetic without matter —gimmel—be part of dark matter and dark energy as they are defined in terms of the angular momentum of galaxies, and thought to depend on mass and energy components? By contrast, gimmel by definition, in our experiential reality, is mass-less and energy-less. The two appear different surely? Additionally, we have proposed that gimmel may constitute, at least in part, some kind of 'consciousness'. This 'consciousness' concept of gimmel could be applied as an argument by exclusion: What else could it be? Does that make it even further from the concepts of 'dark matter or dark energy'?

However, there is another aspect: These concepts are defined in a *different*, possibly *relative* kind of way. The dark 'energy' effectively allows for an expansion of the cosmos, a drawing apart energetically; and the dark 'matter' for a contraction of the cosmos whereby everything is pulled together. The implication is two different *forces*—strong and weak?

Moreover, the definition of gimmel as mass-less and energy-less is relative to our usual physical reality of three dimensions of space and a moment in time. And the mass-energy equivalence of the physical, certainly has a relevance in consciousness at higher dimensions.

As one progresses in dimensional domain, these differences are not static, but dynamic. Furthermore, we have proposed that mass-energy is totally 'contained' within gimmel, per our hypotheses, in the infinite and transfinite. [6] Effectively, at that highest of levels, mass and energy are inside that 'container receptacle' of gimmel. The three—mass and energy and likely a kind of consciousness—do not differ and are not independent of each other from the framework of that infinite level because mass and energy totally are contained in the consciousnss. [45-51]

Dark energy and dark matter and the atom:

Despite data showing that certain factors can be up to 3% different in dark matter and dark energy alone, our derivation shows that the two results are within 2.28% of each other. This correlative result may possibly imply that dark matter and dark energy exist in the atom, and that the far more loosely bound electron, may involve dark energy; yet dark matter may involve the tightly bound strong forces of the nucleon. The implications are huge including possibly definitively explaining and locating dark matter and dark energy. We do not need to look to the cosmos, possibly just to the atom. If so, we might have 'located' the missing 95.1% of dark substance.

Importantly then, 'dark matter' and 'dark energy' are not matter and energy at all, because they are not measurable as mass or force. Dark matter and dark energy appear to be misnomers that come from the materialistic assumption that matter and energy is all there is, and the discovery of the necessary existence of gimmel changes this forever.

Another complex conundrum: How does it fit?

We may ask: *"How does all this Dark Matter and Dark Energy that supposedly make up 95.1% of the cosmos fit into atoms?"* The atomic matter including baryonic and leptonic matter and composed of electrons, protons and neutrons constitute only 4.9% of the cosmos.

Because this appears to be a legitimate question, it is important that its origin and answer are clearly understood. The answer is that the question is based on a misnomer and a logical misconception. It involves both a *category error* [52]*, in which the dark matter and dark energy* are presented as if they belong to the known categories of mass and energy, when they might not

possibly have that property *and a mathematical conceptual error*: Gimmel, and, if we are correct, consequently, dark matter and dark energy are categorically different than the matter and energy we weigh and measure in 3S-1t. The mathematical conceptual error arises when one confuses the integer values derived from LHC collider data [53] for the masses of the quarks with volume. These integer values are mathematically linear, so their sums must be cubed to obtain the volumes that result from the quark combinations that form the larger symmetric particles we call protons and neutrons. The confusion arises from not recognizing that there is a finite amount of mass and energy that can occupy the minimum relativistically restricted volume specifically relative to 3S-1t ("3 dimensions of space in a moment in time.") The error is about *"the amount of mass and energy fitting into a certain restricted size in 3 dimensions of space in a moment in time."*

The Close-Neppe 'TRUE units' were calculated and validated mathematically on the basis of applying relativistic and quantum mechanical principles to units of relative rotational equivalence through nine dimensions (9D). [7; 10 6]. This is a logical extension of Einstein and Minkowski's work in a paradigm of four dimensions. [54 55] TRUE units apply mass-energy-equivalents-volume (MEV). TRUE does not just include matter and energy, but it necessitates 'gimmel' as a third substance, because otherwise there would be no stability for atoms composed of three quarks. [6]

We recognize that the measurable mass of a proton is about 938 times, and the neutron about 940 times the unitary TRUE mass (which we determined by normalizing particle collider data and using the electron mass as the base unit by setting it equal to unity). However, this is not an issue in determining gimmel mass energy ratios because linear quantum units must be cubed to represent volumetric equivalents in 3 dimensions. [6]

Moreover, the concepts of 'dark matter' and 'dark energy' are not truly matter and energy in the sense that we know them: Neither should be so named, or perhaps we could refer to them possibly as *"matter and energy behaviors relative to the 3S-1t context only."* The 'matter' and 'energy' terms are misnomers, and the 'dark' indicates the stubborn difficulty of locating them in space. We propose here that this is possibly, because *"dark matter' and 'dark energy' are not just in space, but also in extended time, space and consciousness, as in the Neppe-Close TDVP model"* [43; 56]. 'Dark matter' and 'dark energy' reflect somewhat contradictory concepts of substance and forces thought to reflect something linked with contraction and expansion, for example, of the universe. They've been proposed to be linked with gravitation. [2; 3; 38] If they're present in the atom, it might hypothetically have something to do with so-called 'weak' and 'strong' *forces* (possibly 'electro' strong and weak).

- The strong forces would be reflected in the proton and neutron staying together; and
- The weak force is proposed as the reason the electrons are bound more loosely to the atom.

But in TDVP, we explain these 'forces' in terms of stable rotational symmetry created by the presence of gimmel and/or daled. Therefore, the question of "how *the 95,1% of* 'dark matter' and 'dark energy' *fit into 4.9% of mass and energy that is measurable in the cosmos becomes one of demonstrating how the fundamental forces of the physical universe are explained in terms of relative motion in a 9-D reality.* It is important to point out that, if TDVP is a valid paradigm, we are not dealing with just the portion of reality perceived through our physical senses, we're dealing with a finite 9-dimensional spin reality and beyond, most of which is not directly detectable. And when we do detect it, it's like putting pieces into a jigsaw puzzle to ensure its feasibility in our '3S-1t' (length-breadth-height in a moment in time). [57-59] Instead, it's a case of "*can the overwhelming contraction forces that do not get detected by conventional mass or*

energy techniques be assumed to have a location associated with the atom?"

Ironically, this is the same question we can ask with gimmel. Gimmel is neither mass, nor energy, but it is a third content substance, and yet in one form, a necessary part of the atom. 'Dark matter' and 'dark energy' are not extents of measures, they too involve 'distinctions of content'. [27; 60] Effectively, we can understand these distinctions by a new kind of mathematical logic developed by Close with a later Neppe assist, called the calculus of distinctions. [27; 60] We could possibly proceed similarly with the Higgs Boson. [61; 62] The Higgs Boson created great interest because it supposedly was an ephemeral mass-less, energy-less substance that was possibly controlling all mass and energy in atoms. Is the Higgs Boson also actually gimmel or daled? Does it fit into the atom of three dimensions of space? Likely not. But, like gimmel, it very significantly impacts our reality, possibly again across higher dimensions.

The implications of these findings are huge on another account, namely the need for a multidimensional model. We postulate that 'dark matter' and 'dark energy' would not fit into the Standard Model of Physics of 3 dimensions of space in a moment in time. Instead, they would fit into our 9 dimensional spin model, Additionally, as gimmel is conceptualized across 9D in the finite, and if gimmel is in union with 'dark matter' and 'dark energy', then these two, DM and DE, should also be applied relative to the 9D spin context. Gimmel, daled, dark matter, dark energy, ephemeral subatomic particles all require the scientific acceptance of the existence of a higher dimensional reality: They simply cannot fit into our experiential 3S-1t. We suggest that all that cannot be accommodated in the 'extent dimensions of 3S-1t', because this is only part of reality. We posit that we need to go to multidimensional measures of extent applying further dimensional domains —and we know mathematically that there are 9-dimensions (9D). [28; 63-65]

And moreover we must differentiate 'content, such as mass and energy, which can be more directly measured by their extent in space and time. This is contrasted with the components of gimmel, daled, dark matter, and dark energy. They can be only be measured indirectly from secondary physical effects like angular momentum and variations in mass and energy density. These indirect effects can allow measures of extent of 'space, time and consciousness' to be applied more easily. Importantly, these extensions of relativistic multi-dimensional quantum analysis arise naturally from the fundamental principles of the calculus of distinctions. [27; 60]

In that context, we have proposed that what is an extent in space or time in our experiential living reality of the 3S-1t dimensional domains, becomes instantaneous in higher dimensions because of the relative non-locality. [66 44] Some findings in physics and consciousness research simply do not fit into 3S-1t, and this is why we introduced relative non-locality. One tell-tale sign of non-locality is *immediacy* —availability immediately or instantaneously in space-time-consciousness higher dimensional domains. [67] In essence, the misnomers 'dark matter' and 'dark energy' simply do not fit into the limited cubic 'box' of 3S-1t. They are outside the box. They should be limitless in a finite and transfinite reality. And with that, comes consciousness.

We postulate that 'dark matter' and 'dark energy' fit into 9D. In fact, gimmel is conceptualized across 9D in the finite. If gimmel is in union with 'dark matter' and 'dark energy' then these two should also be applied in the 9D spin context.

Even more so, if gimmel is synonymous with 'dark matter' and 'dark energy' then it must be that they are part of the 9 dimensional finite fabric. This leads to another big question: *Are 'dark matter' and 'dark energy' in union with gimmel, or are they gimmel themselves?* Therefore, this calculation derivation might be particularly important, and another paradigm shift, for this reason. It may explain not only a major conundrum of physics, namely the location of 'dark

matter' and 'dark energy', but explains a proposal using relative concepts and applying a fundamental part of physics to 9D. Dark matter and dark energy are 'located' within 9D but not in 3S-1t.

Is gimmel in union in nucleons with more than just quarks?

Another implication of this kind of work is that there might be more to gimmel than just links with the fermions and quarks. This constitutes grounds for a separate study, but is unlikely to add significantly to the results of the analysis presented here, given the very close results and the fact that the 2.27% difference is *lower* for the dark matter to dark energy ratio than for the gimmel or daled calculations, which apparently reflect purely fermion related differences and do not ostensibly incorporate these other transient, ephemeral subatomic particles in the relative to 3S-1t.

If there were more gimmel in other subatomic particles, for example, in 'gluons' (if they were not gimmel which we've hypothesized [6]) or other ephemeral particles, then the next step could be subtracting electron gimmel from the 100% total. This, superficially in any event, would appear logical. Nevertheless, the proportions in the nucleons might be more than just the quark figures of 3S-1t. Applying 9D spin, we could then explain the particle soup including the Higgs Boson: All of these could actually be types of gimmel which meaningfully impact mass and energy even though they reflect a hypothesized pure consciousness. This is a worthy speculation to explore. It is as yet unproven and could be studied separately.

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