A Theory and Metatheory of Atemporal Primacy

Revising and extending the paradigm of science with macro-ontology and epistemics

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ABSTRACT: This thesis—on macro-ontology, physics, logic, and metalogical principles—presents the findings, results, theorems, and metatheory that correct long-standing defects and deficiencies of current standard model (SM) physics and cosmology. It eliminates artificial SM anomalies, paradoxes, logical fallacies, absurdities, and conflicts with reality (and the findings of plasma physics, astronomy, and ontology). New theorems and metatheorems eliminate the illogic maintaining distortions of post-Einsteinian SM physics, its wildly speculative conjectures, and the unrealistic assumptions (generally accepted as facts). By resolving misconceptions and misinterpretations of observed phenomena and data, this thesis exposes the common failure to recognize the severe lack of adequate metatheory (of science, ontology, and mathematics). These results also prove that the failure to realize the difference between theorems, hypotheses, conjectures, opinions, beliefs, and metatheory prevents progress to better physics and STEM education. Thus, this thesis enables resolution of a long-standing lack of effectively logical congruence of physics, psychology, cognitive science, and philosophy, especially ontology. So, the facts and proofs presented here enable a new era of discovery, creativity, and technological progress.

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I dedicate this to Tara, Jason, Elen and, in memorium, to my parents, grandparents, other family members, friends, mentors, allies, and to all sons, daughters, and parents of all generations.

INTRODUCTION

It is now possible to begin a new, more effective era of science by correcting the errors of the prevailing paradigm and theorems of current theoretical physics and cosmology.

That is so because the current 'standard model' (SM) of physics and cosmology is as deficient as its paradigm. So, the modern SM depends on ever more strained, even absurd violations of the basics of real scientific endeavor. For example, the 'Big Bang' conjecture (on how the universe 'began') depends on the following deficiencies and issues:

A_d – our currently fractional 'view' of detectable universal phenomena (reality/being)

I_A – Now, consider the invalid tautology of a pseudo-science that relies on belief in the infallible 'truth' of theorems based on thinking that the universe is only about 14 billion light-years in diameter, as if Earth is at its center. Of course, unscientific (invalid) SM tautology now considers challenging evidence (anomalies)[1] of astronomy as an excuse to add to the ever-growing collection of new conjectures (guesses/excuses) to turn into settled 'scientific fact' (by the process of chronic neurolinguistic fossilization). Clearly though, if NASA's James Webb space telescope shows us a universe 100 or 1000 times larger, typical excuses for cosmological absurdity will be much harder to dream up and support. That is so because the 'Big Bang' conjecture depends on the SM assumption about the size and age of the universe which, so far, seemed to support the validity of SM physics (including the relativity theorems, etc.). Yet, if we see 100 or 1000 times more universe, then there's no good reason to doubt that a telescope on the 'dark side' of the moon might let us see much more of universal totality. Fortunately, even seeing 100 times more universe will explode current SM absurdities & notions about time, space, energy, reality, and cosmic ontology, *i.e.*, holontology. For example, if the SM quantum mechanical (QM) renormalizations & new hypotheses are off by a little bit, that's considered good enough for validation. But, if the whole of current SM cosmology is off by 2 or more orders of magnitude, that can't be swept under the rug of popular confusion, at least, not forever.

B_d – acceptance of Einstein's metaphorical "geometry" of a 'space-time' "continuum"

I_B – Einstein admitted that extraterrestrial transmission of electromagnetic waves (of energy) requires a conductive medium. He also said that "time is motion" (an incorrect definition).[2] He was uselessly apologetic for confusing people about time (with metaphors about curvy geometry, space-time, gravity, relativity, etc.).

Now, we can admit that what most of us usually call "time" is measurement of our perceptions and beliefs about the ever-changing state of the universal moment of being. So, now is also a good time to quit thinking of "space" as anything other than our perception of an expression/embodiment of dimensionality, a subsidiary principle and property of the metalogical principle we call form. Likewise, we can and should drop the dual-absurdity of thinking and acting as if (1) the universal 'field' of energy is made of curvable nothingness inexplicably combined with chronic fictions about time, and (2) that everything inexplicably (thus unprovably) exploded from nothing before anything (including time) existed. In fact, since early in the development of QM, it was assumed that the 'pure' vacuum (AKA 'non-empty space') is full of energy.

Estimates (and wild educated guesses) of "the Planck energy density" of vary, up to ±10^113 J/m^3, which seemed to "closely fit" the impedance of "space-time" ($c^3/G \approx 4 \times 10^{35}$) "implied by" QM and the general relativity theorems.[3] Of course, QM statistics and guess work

help support current conjectures about 'dark' energy/matter.[4] Yet, the speculators all seem to ignore the equally colossal difference between the 'force of gravity' and the 10^{39} times greater EM force.[5]

The best explanation may be that, if the 'gravitational' effect of cosmic energy operates at the galactic and intergalactic scales, the ultra-powerful electro-magnetic force of the magneto-dielectric field (of energy) must cause effects proportional to its colossally greater force. So, by comparison, gravitational field-effects are infinitesimally tiny. Yet, that makes a 'gravity' dominated (a) SM cosmology, (b) the SM QM on which it relies, (c) the Einsteinian & post-Einsteinian theorems & conjectures about reality, and (d) the current paradigm of physics, mathematics, and society as defective and ridiculous as a 'real' continuum of theoretical yet curvy 'space-time' of nonEuclidian geometry.

We also need to recall that QM estimates & approximations are of assumed phenomena, quantities, properties, processes, and effects – sometimes 'renormalized' with 'educated' guesswork & inexact and/or misinterpreted observational data – calculated separately without understanding the actuality of the whole field of interacting phenomena (at all scales). For a more extensive explanation, see the Results section, below.

C_d – the incomplete & partially flawed theory of quantum mechanics (QM)

I_C – The issues & deficiencies mentioned above confirm the general deficiency of current SM QM. Thus, even the greatest pioneers of post-Einsteinian physics, QM theorems, and hypotheses have refuted key elements of their work now taken for granted as scientifically fudged "renormalized" fact.[6] All such admissions are too numerous to list here, but any truly scientific body of theory is necessarily incomplete and/or essentially erroneous. That is so because our perceptions, conceptions, and current knowledge of the universe's infinite totality are always limited. Yet, despite academic lip service, the famous gurus, disciples, and evangelists of current SM doctrine talk & act as if their favorite hypotheses and unproven theorems are unquestionable absolute truths of universal reality.[7] Thus, pandemic intellectual & ethical corruption has and still is retarding real progress.

D_d – refusal to consider all the findings of state-of-the-art plasma physics

I_D – The exponentially expanding ocean of evidence, proofs, and disproofs provided by astronomers and plasma physicists, their experiments, and simulations[8] makes it obvious that the critiques above & below (of regressive 'SM' corruption) are all valid. The fact that a current majority of corrupt and/or ignorant people, students, and physicists refuse to face the facts confirms the validity of this critique, and the timeliness of this remedial thesis.

E_d – refusal to acknowledge the logical fallacies & absurdities of SM cosmology*

I_E – Clearly, the new 'Old Guard' perpetuating obsolete SM conjectures have convinced even proficient astronomers that accurate observations (disproving the basics of current SM cosmology & physics)[9] must be wrong, or – despite decades of failed excuses – that they must be explained away by the creation of new, more exotic conjectures (to protect the SM status quo). Recall that the pseudo-science of studying 'early' cosmic phenomena after a causeless explosion of nothingness (before energy, matter, time, etc.) is a colossal logical fallacy, the most extreme violation of the principles of real science and, thus, proof of ethical & intellectual corruption. Now, that diagnosis might seem untrue, if the perpetrators had ever honestly, openly considered, studied, analyzed, and reviewed the evidence of astronomy, plasma physics, and valid ontology. Yet, they did not, and still refuse to even begin to think about an alternative to obsolete SM assumptions, theorems, etc.

* Absurd SM illogic: Expecting sane adults to believe that imperfect theorists can understand, know about, and study what happened before and just after time, place, energy, and matter existed (then exploded for no reason) is clearly a symptom of psychopathic illogic. Further, modern SM cosmology requires ignoring the fact that real science can only deal with what is knowable or detectable/visible, and with what can be confirmed by evidence, from repeatable experiments, or by verified evidence that has stood the tests of time (a long time). However, logically, valid scientific theory is also falsifiable, enabling real progress to new, better theory, for the sake of greater knowledge, better understanding of reality, and better results. Yet, modern SM cosmologists keep refusing to admit and denounce their logical fallacies, while refusing to re-examine the defective assumptions they require. Thus, modern SM cosmology has become as unfalsifiable as the long gone, geocentric Ptolemaic paradigm of cosmology, or any other superstitious dogma based on delusional misinterpretation of observed phenomena.

  NOTE: More on SM cosmology is presented, below.

F_d – historically pandemic resistance to reconsideration and upgrading of deficient paradigms[10]

I_F – Thomas Kuhn's book[11] on scientific paradigm upgrades dealt with part of the issue, not the whole, and not the whole of the root cause. The spiritual pioneers and wisdom traditions of all time have tried to cure us of our inherent tendency to fear and resist real change – even for the better – especially systemic change. They failed. So, the modern SM paradigm of QM physics & cosmology was as vulnerable to corruption and subversion as the geocentric Ptolemaic SM and the Galilean-Newtonian-Cartesian clockwork paradigm that followed. For more history of scientific subversion, corruption, and social regression, see Lerner(91)[12] and Monterey(2017-2020, preprint draft)[13].

G_d – chronic human quirks & egoic defects in the SM STEM arena, etc.**

I_G – Kuhn, Lerner, Monterey, other contemporary observers, and their predecessors studied, diagnosed, and documented the vast spectrum of psychopathies and regressive behaviors displayed up to today.[14] Nothing in any available scientific literature can or does contradict their findings. Ordinary human animals who choose to study and/or practice scientific disciplines are as vulnerable to mental and ethical defects, weakness, 'normalized' neurosis/psychosis, and corruption as any other member of modern society. In fact, modern students of science are not only not trained to become saintly, but virtually forced to become amoral and/or anti-ethical supporters of the status quo. So, saintliness and sustainable ethical integrity are normally obstacles to winning tenure, optimal grant-funding, awards, fame, etc.

** Human defects: Since the derailing of mathematics (after Riemann)[15] and the exponential increase of an 'anything goes' approach to maths, physics, and anti-theistic cosmology (aggravated by a long decline and decay of ontology and much of modern philosophy) civilization and its piracy paradigm rewarded its compliant 'thought leaders' with ever more god-like status, fame, and almost unquestionable 'authority' status. Yet, no amount of acclaim, fame, money, and/or status enables or sustains a perfectly saintly or godly ego. So, clearly, the big egos of the modern SM scientism arena are as fallible and corruptible as any other person trained to become a generally respected social power-broker (or media pop-star).

The following sections extend the theorems, metatheorems, proofs, explanations, and implications introduced above. The Results and Discussion section provide definitive, unconditional proof of the primacy of atemporal causality, evolutionary co-emergence, and the infinity of psychophysical being (reality, *i.e.*, the universe).

RESULTS

This is an evolutionary work of holotrophic[16] holontology (the study and science of the whole of being/reality). Reductive dissection only studies and describes parts and processes that cannot be understood fully without understanding the whole. That can seem daunting or simply impossible. So, the problems, issues, and work introduced above may be more effectively considered with a humble, and possibly humorous, yet direct analogy, given below.

To understand the situation more easily, we can compare the way of universal being to the life of a frog, and the results of the two approaches to science. First, we assess the well-known materialistic reductionist methods and results of modern SM physics. However, for simplicity and clarity, the analogy will only deal with mathematical 'particle' physics. Yet, to be fair, we must remember that its objective is gaining greater knowledge for better descriptions and explanations of partially observed phenomena, mathematical objects, quantities, and related/presumed properties.

For example, to gain more knowledge about the frog, the reductionist first blows it up. Then, after observing the results and parts (as much as possible), the remaining parts are studied. Mathematics are then used to help study, record, and communicate the findings. Hypotheses or conjectures may then be created, tentative theorems as well. Then, to test the hypotheses and/or theorems, the smaller parts of the exploded frog are also blown up, individually, in separate "experiments"; and the process is then repeated. The method continues, until (a) there are no more parts to blow up, or (b) funding is insufficient, or (c) lack of satisfaction becomes pandemic, enabling evolution to next-level science and a new standard model (SM) of reality (universal being and/or its nature).

On the other hand, the holistic approach seeks greater understanding. The purpose is not just to gain more quantitative data, more knowledge of mechanistic processes, and better mathematical approximations & estimates. So, a holistic scientist observes the frog and its way of living, which includes its way of interacting with the rest of the universe, its habitat, other creatures, and so on. Eventually, enough insight enables deductive and intuitive generation of hypotheses and tentative theorems about the actual elements of a frog's life and all involved, within it, with it, and beyond.

Hence, in that second example, we see that gradually gaining greater understanding of reality includes and enables consideration of more than just "material" parts, processes, quantities, and better approximations & estimates for the sake of more impressive maths. In other words, the purpose of a truly holistic, ontological approach to understanding the universe includes developing greater understanding of being as a whole, and actualities, not just approximations and more exotic theory. It also makes it easier not to get so lost in the maths and modeling, misinterpreting observations and data, and trying to make the universe fit deficient theory becomes ever easier and more likely.

Holistic ontology requires searching deeply, extensively, for natural principles that enable universal phenomena, like life, and mental phenomena. Those are emergent expressions of being's wholeness (not of mechanical processes or accidents). Yet, clearly, they exist and function because of nonphysical principles. Yet, the materialistic paradigm of current SM QM and cosmology limits the ability to face the fact that – like mentality – physicality is an

immaterial principle. That tends to prevent logical thinking and theory. For example, assuming and acting as if the universe "began" as an explosion of timeless nothingness (which somehow begat everything) prevents admitting that all phenomena, events, and effects have causes. All embodied, physical phenomena that exist and change are enabled because causality, the principle, exists.

All events, duration, and change also require the principle of primality and the actuality of primacy. Yet, being nonphysical, principles cannot change. However, since principles are intrinsic enabling elements of being, they clearly existed as co-emergent expressions of the nature of universal being. So, for the existence of any form of fuel or energy, for any explosion of any element (or any reactant), there must first be enabling principles.

In other words, nature's enabling principles always preceded any event or process of becoming. So, the principles that enable the universe – and all its "physical" and "mental" phenomena and potentials – are the prime expression of primacy. Thus, being changeless enablers and prerequisites, principles – especially beingness, causality, form, structure, integrity, functionality, activity, and luminosity – were always the necessary and sufficient cause of all phenomena. So, clearly, a causeless 'Big Bang' beginning of everything from nothing was as unnecessary as it was impossible.

However, that perfectly logical truth may seem too simple and too logical to be viable. After all, despite baffling illogicality, fallacies are now generally acceptable symptoms of scientistic SM rhetoric. So, we can extend and expand our consideration of the reality by cross-checking the claims, theorems, and metatheorems mentioned above. For example, to best support this thesis, the SM deficiencies and related issues given in the Introduction are more fully exposed and analyzed below.

First though, we can pierce and sever the root of possibly obscurative objections to new metatheory and theory that explain the interdependent expressions and embodiments of physicality, mentality, energy, form, structure, functionality, and semiotic transmissivity. Mechanistic materialism's defensive reaction to and rejection of scientific study of natural mental phenomena intrinsic to the actuality of universal being/reality confirms its basic invalidity, inferiority, and negativity. We can see that obsessively expressed by academics and SM theorists who talk and act as if thinking about physical phenomena while refusing to face and consider expressions and embodiments of mentality (the principle).

Clearly, they refuse to examine the vast realm of nonphysical mental phenomena and the principles enabling minds, thoughts, investigation, analysis, information, mathematics, and communication. Thus, anti-theistic materialists posing as scientists refuse to examine the nature of everything that enables science, knowledge, wisdom, logic, maths, and them. Yet, they pretend to investigate, analyze, and understand what was (and is) beyond or before physical energy, activity, detectability, visibility, and beingness. Of course, all that is far beyond the capabilities and limits of valid scientific praxis.

So, we can clearly see such illogic, regressive foolishness, and incompetence expressing neither intellectual nor ethical integrity. Quite the opposite, the current SM arena of QM physics and pseudo-scientific SM cosmology is like a dysfunctional septic tank devoted to maintenance and expansion of its capacity for holding ever more mental excrement and indigestible absurdities

(excess SM anomalies, etc.). Now, we can consider the results of real scientific investigation, examination, and testing of the nonphysical elements enabling the totality of universal being.

As implied in the Introduction (A_d), our currently fractional 'view' of detectable universal phenomena (the cosmos, the 'field' of being) supports both metatheory and theory of the atemporal primacy (of nature's enabling principles). We can start with the alternative to an initial explosion of nothingness. As shown above, physicality is one of the principles of being that enable what we call physical phenomena, including the luminal energy of the magneto-dielectric field of the cosmos. We can also see that all 'physical' explosions require energy, fuel, and reactants. Now, we can ask 5 sensible questions to start finding scientifically valid answers about the cosmos, its oceanic 'field' of energy, its subfields, us, and the nature of being (reality).

Q1: For example, even if we imagine a pre-physical hyper-energy field of fluctuating proto-particles (the proposed quasi-material ocean of 'quantum floam' [17] conjecture) what could cause it to condense into or emerge from a tiny ball of explosive energy equal to universal totality?

A_{Q1} :: Imagination, intuition, and logic (or sanity) are clearly necessary for considering Q1 (question one), but for the best answer we also need effective deductive, inductive, and inferential logic. Consider this, if we want to prove the existence of a virtually infinite, hyper-dimensional ocean of 'quantum floam' (nonphysical yet foamy quasi-fluid, hyper-frequency hyper-energy 'field' of oscillating proto-particles) we need to find what could cause it to emerge from or condense into a ball. Yet, we should also be able to explain how it came to be, and when, and why it may still seem to exist. However, that implies many other issues that SM QM/cosmology fail to explain or even consider.

For example, saying that gravity caused a collapse of a previous state of universal being is insufficient, because the understanding and theory of gravity remain incomplete and problematic. Confirming a prior cosmic collapse would also require evidence and knowledge of its scale (and other factors), which would require knowledge of the size of this universe (which is impossible).

That is confirmed by the detection of segments of vast currents of plasmas that contain many galaxies, galaxy clusters, galactic super-clusters, etc., moving at many kilometers per second. Some of those super-colossal currents extend into or out of 'our' currently observable/detectable bubble of universal magneto-dielectric field phenomena, across vast fractions of its now ≈93 billion light-year diameter. So, obviously, there must be many other and, possibly, much more colossal currents flowing through the virtually infinite expanse of the cosmic whole. Yet, even today, most SM scientism gurus and PR flaks talk as if the universe is only ≈14 billion years 'old' (with an ≈14 billion light-year diameter). Of course, to make the new, inconvenient observations and data fit their assumptions and misinterpretations, they keep modifying their pop-SM gumbo of 'new particles' deficient theorems, hypotheses, conjectures, and shibboleths (erroneous notions popularly accepted as fact).

Clearly, not seeing the previous body of cosmological theorems, hypotheses, and basic assumptions being disproven by increasingly voluminous evidence of reality, the loyal guardians of the pop-scientism SM (and its unrealistic paradigm) chose to make the increasingly inconvenient observations of actual phenomena fit their favorite shibboleths. However, rather than always making up weirder new excuses for failed theorems and the obsolete SM of QM cosmology, the professional and academic SM guardians might have chosen to reconsider the foundation of their ever more inadequate SM world-view. They also chose not

to re-examine and revise their personal SM mind-set and subconscious bias, presumptions, fears, and unscientific desires.

Thus, modern protectors of the new geocentric SM of cosmology and anti-theistic mystification of pop-scientism now almost never mention hypothetical quantum floam. After all, if fluidic theory becomes thinkable and discussible, that could lead to a neo-Aetheric theory of the magneto-dielectric field of cosmic energy regimes. Nor do we see pop-SM gurus and their defenders considering and discussing the G force having vanishingly less power than the EM force. Yet, that obviously gives it a proportionally greater role in affecting and shaping the forms, structures, and currents we see in the magneto-dielectric field of universal phenomena. After all, understanding that requires only the basics of EM and plasma physics. Again, admitting and considering that would make the modern SM QM physics & pseudo-cosmology seem as ridiculous and obsolete as they really are.

For example, like 'auroral' solar plasma filaments and our man-made EM currents, cosmic plasma currents and filaments have cathodes and anodes, and bidirectional flow. So, ultra-colossal currents of cosmic plasma prove the reality of cosmic circuits that may be unknowably huge. Yet, such currents probably flow at the velocities already observed. Hence, imagining (a) 'dark' energy/matter, (b) causeless expansion of nonphysical space (and/or geometric 'space-time'), and (c) 'gravitational lensing' are as unnecessary as a Big Bang beginning, Black Holes, and particles with magical properties that make SM theory seem necessary and sufficient, as is (without any causes, not even causality, etc.).[18] On the other hand, just taking the estimated Planckian E_d (energy density) of hyper-luminal regimes into account, we can think of observed effects doing what they do because of principles that enable and govern EM force and plasma phenomena. We can also then intuit, infer, and deduce the actual causes and "first" principles enabling it all.

For example, why keep maintaining the fiction of an explosion of nothing that keeps accelerating its expansion of curvy geometry, while trying to make the gravitational effect (of a hyper-tiny particle with magical powers)[19] the cosmic prime mover? Instead, why not quit ignoring the immensely more powerful EM forces and actual E_d of the hyper-luminal field filling ±95% of the cosmos, and include them in its observed ciruitry?[20] Doing that enables realistic thinking about real phenomena, processes, and causes. For instance, instead of an ever-accelerating explosion of everything before there was anything to blow up, we can accept the fact that IFF – if and only if – there was a beginning, then the forms, structures, functions, and principles enabling them must have been pre-existing potentials of being and its nature.

Yet, what could enable the energy that energized the whole of the universal field and all its subfields? Is it what still enables the existence and constant transformation of all 'physical' things and events?

Consider this: The self-evident expressions and embodiments of nature's quasi-fractality, integrity, functionality, and relativity let us extrapolate from what we can see and know now. So, other than energy's enabling principles, spin and the other elementary forms of motion (that enable and 'animate' all things and beings) can be considered the precursors of all subsequent energetic phenomena. In other words, the causes of all forms and effects (forces) of energy are the nature of being and its fundamental principles and modes of being, especially functionality and motility.

Now, recall that, incorrectly, Einstein said that time is really motion; and that, like energy, motion is a mode of activity and motility (subsidiary principles of functionality). So, what we call "time" is really the ever-changing state of universal being, enabled by, expressing, and embodying its fundamental metalogical principles (which, due to their intrinsic nature and potentials, can never change).[21]

So, instead of imagining expansion of 'space' and a continuum of nonsensical curvy geometry to account for observed frequencies of red & blue colors, etc., why not admit that detectible/visible light exists as field-effects of the spinning whole of the magneto-dielectric regime of being? We can then understand the other attributes and phenomena of cosmic creation (emergent presence) as expressing/embodying the nature of the eight (8) radiant-vibratory pressure gradients of luminal energy interacting with the ninth/zeroth ($9^{th}/0^{th}$) regime of hyper-high frequency energy and meta-energy domains. Hence, as Walter Russell and Nikola Tesla intuited (nearly 100 years ago),[22] there seem to be just 8 possible 'electron shells' and 'valence electrons' and 8 'periods' of subluminal elements.

Oddly, SM physicists and chemists talk about 'electrons' as if they are really tiny, electrified planets or moons, but also as if they can fill their 'shells' or leave them empty. Naturally, the realities, observations, and data make more sense for energy density gradients, caused by resonant energy dynamics and the properties of vorticity, vortical motion, vibration, flow, turbulence, and radiation pressure. Likewise, the axial centers of high-energy galaxies are ultra-high & hyper-high-energy, hyper-compressive vortices of ultra-high energy plasmas and hyper-plasmas, not exotic spherical 'singularities' ("Black Holes") that relate to no real causes or natural principles.

Yes, it is fair to ask, "where does the power come from?"

The combined forces (radiation pressure, rotatory velocities, ultra-high energy cyclotron radiation, oscillatory motions, EM forces, etc.) of a galaxy's many billions of stars, plasmas, and hyper-plasma currents are sufficiently necessary causes of the ultra-high energy magneto-dielectric field-effects. So, among others, we 'see' axial vortices (AKA 'jets') many billions of light-years long,[23] phenomena misperceived and misinterpreted as being caused by super-massive 'collapsed stars' (Black Holes).

Yes, instead of all that energy and 'matter' disappearing into a spooky ball of SM QM mystery,[24] some ultra-high velocity, ultra-high energy plasmas are re-compressed into the hyper-luminal, hyper-plasma regimes (commonly called 'dark energy & matter'). Some of that energy is then re-emitted as axial 'jets' (contra-rotatory double-vortices of ultra-high energy plasmas sheathing double-vortices of hyper-plasma). In other words, the galaxies' central vortices recycle most of the energy they ingest (absorb). That keeps the field of hyper-plasma energized, which keeps the 4% of the universe we can detect (±95% plasmas and ±5% sub-luminal energy AKA matter)[25] going, flowing, spinning, vibrating, pulsing, glowing, etc.

However, even with existing plasma physics theory (& proofs),[26] we can see all stars as 'White Holes'[27] empowered from within, and from their local and extra-galactic fields of plasmas & hyper-plasmas (and their magneto-dielectric currents). Also, thanks to nature's preference for expressions & embodiments of quasi-fractality (the metalogical principle),[28] we see similar (not identical) morphic, structural, functional phenomena visible (and/or detectable) scales of magneto-dielectric field-effects. Yes, slower, lower energy phenomena are sustained as emergent field-effects of the hyper-plasma & meta-energy regimes.[29]

Q2: Yet, what could cause any presumed/imagined, quasi/proto-physical, pre-atomic SM QM precursors to be available, either omni-presently (as a vast pre-physical expanse), or as a tiny ball in the center of an infinite pre-physical field of absolute non-being?[30]

A_{Q2} :: We can answer that scientifically by first asking why or how any subatomic forms, structures, and functions could suddenly exist without any enabling principles, before the universe (reality/being) and its nature existed. Obviously, if we want truly scientific knowledge of reality,[31] we must admit that such questions and issues exist far beyond the scope of

'normal' materialistic physics, QM, and valid cosmology.[32] Yet, such issues are proper for the domain of viable, non-dichotomous ontology, not for SM QM mathematics.[33] For example, 'physical' universal phenomena clearly require the enabling complex of intrinsic principles of being in order to have any durably persistent forms, structures, functions, and semiotic potentials.[34] Therefore, we can dispense with the nonsensical shibboleths, excuses, absurdities, and pretenses of SM cosmologists and their SM QM supporters.[35]

Clearly, everything (including pre-existent particles, if any)[36] could not be an expanding explosion of pre-universal nothingness which, itself, could not exist without enabling principles. The SM gurus of pop-scientism cannot have it both ways. They can either admit that immaterial (non-physical) principles – like physicality, form, structure, functionality, and mentality – are primordial enablers of universal phenomena, or deny and refuse to accept the reality of being and its nature. Yet, refusing realism in favor of SM pseudo-science equals refusing to accept the basis of being, mind, thought, science, and personal existence. Thus, it's either science or bamboozlement.[37]

Q3: However, if they were available, what pre-temporal process could cause 'proto-ionic' pre-physical and/or sub-ionic proto-particles to suddenly appear – out of nothingness, nowhere, nowhen – in a tiny, hyper-dense 'ball' (or bomb), then to interact and explode in some as yet unknown or unknowable way?[38]

A_{Q3} :: As shown in the previous answers, there is no way that SM QM cosmologists can answer that question. Why not? Because they clearly don't care about ontology, realism, logic, intellectual integrity, and valid scientific theory.[39] So, they keep spouting more SM shibboleths, spooky maths,[40] and excuses for their ever-expanding universe of silly absurdities and anomalies.[41]

Q4: If there was an initial explosion of a little ball of all proto-physical energy and/or infinite potential in the center of an infinite expanse of nothingness, what caused the separate existence (or separation)[42] of infinite nonbeing and a relatively tiny ball of particulate beingness?

A_{Q4} :: As implied in the answers above, the question and subject issues are not only deliberately ignored by SM cosmologists and 'bleeding-edge' QM conjecturists,[43] SM status and status quo requires fiercely repressing any urge to admit the importance of such questions and issues. In fact, even the best of plasma physicists and astronomers are failing to fully question and resolve the SM cosmology conundrums.[44] More importantly no other scientists seem ready to admit the infinitely colossal foolishness of believing or acting as if – once upon a time, for no reason at all – a universe that might be ±9 trillion LY in diameter first appeared as an infinitesimal dot that then grew into a hyper-hot sphere "the size of a peach" that exploded.[45] Yet, if you'll believe that, you believe that heat and explosions can exist without and before there was anything to cause and enable either.[46]

Q5: Yet, if that (separation of nonbeing and being or a sudden appearance of being in an impossible center of nonbeing) did happen, then how could SM QM/cosmology discover the cause and the prerequisite processes?

A_{Q5} :: As proven above, as is, the SM status quo does not permit logical, rational, scientific thought or communication about its deficiencies, absurdities, unruly anomalies, and obsolete mysteries. On the other hand, next-level SM science could include valid, viable holontology (ontology as if the whole of being's nature matters).[47] Also, in transition, honest scientists are

free to start thinking about the realities of being, its nature, and the primal metalogical principles that enable all other phenomena.[48]

Now, we can ask what all the above questions and answers tell us (if anything); and "why do enabling principles exist, and how do they enable being, things, habitats, creatures, and minds?"

Of course, the answer to that question depends on the reader's willingness to consider what exists beyond the limits and deficiencies of the current SM paradigm of science and civilization. Yet, as the concluding sentence of the answer to Q4 makes clear, not facing facts and realities is a normalized symptom of mental deficiency (at best). The alternative, accepting the necessary primacy of nature's enabling principles, enables a more realistic perspective on the basics of life, science, and society.

Thus, we can now resolve obstructive, status quo dichotomies and artificial anomalies using effective logic, viable ontology, and real cosmology. For example, all physical and non-physical things have form, structure, and functionality; and those metalogical principles of being also apply to principles, like physicality, mentality, integrity, and so on. Clearly, even if a nonphysical thing's functionality is invisible, undetectable, unknown, or intellectually unknowable, being a unit or form of being must have a function, however subtle or obscure. So, we can safely say that principles are the necessarily sufficient and primal cause of all subsidiary things, events, and processes that depend on form, structure, and functionality. We can also be sure that they are inseparable and interactively interdependent, even as phenomena of non-physical meta-energy. In other words, even though we can say that principles and other non-physical things have no material form or structure, nothing can be more functional than principles that enable all things, events, and processes. Hence, we can be sure that nature's enabling metalogical principles possess meta-functionality, proto-activity, and sustaining meta-energy, all enabled by intrinsic integrity.

Naturally, primal integrity enables the actual primacy of any event or thing that precedes any other event or sequence of events. It also enables the integrity and reliability of all other things that develop and persist, including their causes. That truth clearly applies to numbers, mathematics, logic, science, proof, information, knowledge, wisdom, awareness, and cosmic unity. For example, regardless of the human language used, a symbol for 2 represents duality (the principle), and all things and events that embody and/or express 2-ness. Yet, duality and unity are inseparably interdependent principles. So, like simplicity and complexity, both 1-ness and 2-ness express absolute identity, natural individuality, and intrinsic integrity in the unity and relativity of their morphic-structural logic and functional potentials.

Obviously, asking which came first or claiming that one 'happened' before the other is an example of severely limited intelligence, not good science. Principles, like numbers and realities they express or represent, are clearly necessary metalogical elements of being, intrinsic to its nature, presence, modes, and processes. How and why it all exists, and for how long, are not questions answerable by physicists, astronomers, and mathematicians. So, accepting the primacy of enabling metalogical principles of being enables resolution of the severely harmful, artificial separation of life's most basic realities, its physical and nonphysical necessities. Rejecting or denying that theorem equals denying the possibility of a new era of science, STEM education, and saner society. For, clearly, obsessively dualistic, illogically materialistic thinking

maintains an anti-ethical, anti-theological cultural paradigm, at the root of civilization's worst problem (divisive self-delusion and mass-deception).

DISCUSSION

The prime point of this thesis involves the apparently triple-dilemma of the current SM status quo and its neurolinguistic paradigm:

D_1 = an accidental Big Bang beginning of multidimensional geometric space-time vs. non-dualistic creation & atemporal causation of cosmic energy phenomena

D_2 = causeless, theoretical particles that magically cause all physical & mental phenomena vs. non-dualistic energy phenomena & intrinsic causal principles

D_3 = materialistic scientism & mechanism vs. religion/psychology & mind/spirit

Now, as shown above, those 3 dilemmas plaguing science and society call for very complex analysis and discussion of the basics, pros, and cons. So, it seems best to start with the most troubling issues that prompt bitter yet fruitless arguments. Yet, bear in mind that this approach respects Einstein's view on the importance of making everything "as simple as possible, but not too simple."

So, the bones of contention in D_1, D_2, and D_3 are most simply resolved by eliminating invalid assumptions. Obviously, a dilemma caused by misconceptions or inadequate theorems (contradicting reality or viable theory) is a problem caused by failure to recognize fallacies, an illusory dilemma. Thus, we can simplify the difficult complications by deconstructing and deconflicting the basic contradictions.

For example, D_1 is a resolvable conflict of incompatible paradigms and values (caused by the self-limiting SM "domain of discourse")[49] maintained by current SM minds, assumptions, beliefs, and dogmas. For instance, accepting the SM Big Bang hypothesis as settled scientific fact requires blind faith and belief in an unproven and undetectably causeless beginning of physical energy phenomena and particles of matter, and that they became the immeasurably large universe (that seems to keep expanding at an ever-accelerating rate). Yet, assumptions, notions, beliefs, opinions (about unknowable and undetectable processes), and models of them are neither scientific facts nor unquestionably absolute truths.
The illogical notions about Einstein's hypothetical geometry of 4D 'space-time' were already proven invalid (above, in the Results). Space is a concept, a perceptual artifact, and a psychophysical attribute of dimensionality (a subsidiary principle of nature's metalogical principle of form), all logically and visibly provable facts. Likewise, as shown here above, 'time' is a fuzzy concept and a perceptual illusion caused by limited human mentality.[50]

Therefore, we can admit that the current SM thinking about reality relies on defective basic assumptions and misinterpretations of data. And, without a viable foundation of valid basics, no belief system or theoretical paradigm can ever produce good results (without major upgrades). As is, SM QM cosmology retards its domain of discourse and the common scope of thinkability and discussability. Therefore, arguments relying on erroneous SM assumptions and beliefs – denying the causal primacy of enabling, atemporal principles of nature – are all inherently baseless, invalid, false (wrong).

D_2 is also a resolvable conflict of incompatible paradigms and values (caused by the SM's self-limiting "domain of discourse"). First, like economics, the arena of SM science and scientism has no standard of ethical values. The SM was subverted into a devolutionary stratagem to support the devolutionary commercialization of science, scientism, and the corrupt sociocultural paradigm of kleptocratic technopoly.[51] Again, believing in a tiny, uncaused particle of matter that can cause the gravity-effect in an immeasurable expanse of curvy (yet empty) geometric 'space-time' (with no medium for energetic transmission of light, etc.) is proof of an irrational obsession, not reality.

For example, the now famous 'Higgs boson' – the anti-theological SM "God particle"[52] – is the ultimate excuse for ignoring inconvenient realities discovered by astronomers, plasma physicists, and amateur scientific experimentalists.[53] So, despite having no excuse for their belief in causeless (accidentally existing) particles with causeless, sourceless powers, the fans of the Higgs maths particle, etc., feel no shame for saying and acting as if they resolved all the mysteries of the SM QM version of reality. So, they also feel free to invent other magical particles, like 'the inflaton' (that out-does the God-like Higgs gluon, causing ongoing acceleration of the expansion of empty/curvy geometry of a mathematical 'space-time' continuum).

Evidently, that is because they are the socioeconomically acceptable experts, approved by their grant-funders, colleagues, the media, and a totally corrupted society. Proof of that is visible in the almost total lack of media coverage devoted to realistic alternatives to the obsolete SM narrative. In fact, the current SM is like insisting that the universe is like the fictional Wonderland of Alice (and the Mad Hatter's tea party). In reality, the situation is now more like the fable of *The Emperor's New Clothes*.

In problem D_3 we see cause and solution embedded in the problem. Materialistic science and pop-scientism are a result of and reaction to deficiencies and defects of antique theologies, dogmas, and religions. Authoritarian tyranny, corruption, the plagues, and other culturally corrosive catastrophes were also major factors in the Medieval 'matter vs. spirit' and science vs. religion dichotomies. They were aggravated by the ongoing aftermath and by increasingly suppressive theological determinism, then by increasingly anti-theistic Newtonian-Cartesian determinism. Modern society's schizoid irrationality was also turbo-charged by the results of exotic 18th century mathematicians.[54]

So, the schisms between science and religion, physics and psychology, and between beliefs about matter and mind grew. Then, gradually, the difference between pure science and applied science was obscured. The difference between their purposes and aims were mostly forgotten or ignored. The difference between true scientists and scientific technologists was obscured, then became virtually unrecognizable by most people of all social strata.

Clearly, more extensive support for those responses to the illusory dilemmas of modern science and society are beyond the scope of this thesis. However, more extensive accounts of the history of modern SM mathematics and physics, and the sociolinguistic dimension of the chronic problems, are documented in my other papers and preprint manuscripts (accessible online).[55]

However, we can now consider the most likely objections to the new ideas, theorems, and metatheorems presented in this thesis. The most controversial may be the idea that the universe

needed no beginning, no time, no impossible big bang, and no expansion. Yet, the only reason for an objection to that is due to not realizing that the issue belongs to the fields of logic and ontology, not QM physics and SM cosmology.

For example, the "principle of permanence" (POP),[56] an example of subsidiary logic, expresses the nature, potentials, and functionality of immutability, the meta-logical principle enabling nature's 'constants' and the constancy of other unchangeable nonphysical phenomena (*i.e.*, principles, symbols, numbers, etc.). In complex mathematics, the POP also enables proofs, especially of the certainty that a formula good for ordinary trigonometry and algebra will also work for doing algebraic geometry with complex values and 'imaginary' numbers.[57] However, unlike masters of logic and realistic ontology, 'masters' of mainstream SM physics (QM, etc.) and multidimensional Riemannian geometry seem unaware of the POP (and its essential necessity and importance), or else they simply choose to ignore it.

Clearly though, there is no good excuse for an SM guru ignoring the one natural principle that enables and guarantees constancy and, thus, the primacy of enabling principles. Obviously, being unaware of the POP is equally unhelpful and worse. However, as already explained, the paradigm of reductionistic SM particle physics and its cosmological paradigm have no terms, methods, or funding to enable R&D of logic and ontology.

Thus, most of the practitioners of QM physics and SM cosmology have little or no knowledge, skill, or interest in pioneering new ontological praxis. Worse still, the socioeconomics of SM science and scientism incentivize active resistance to R&D of valid logic, ontology, next-level theory, and a new metatheory of science. Hence, current SM theorists feel no shame for spouting and perpetuating illogical absurdities about impossibilities.
Now, technically, the best response to objections based on astronomical data, high-energy experiments (at CERN, etc.), and computer modeling includes facts and references in the following section (with Notes & Works Cited). Still, logical holontology can reconfirm and summarize those facts and results. Briefly, the reason for not abandoning the SM misinterpretation of "red shift" (as proof of expansion & validation of Hubble's constant) is deliberate ignorance of contradictory findings and data. For example, Halton Arp, one of the greatest astronomers of all time, found and realized why red/blue shifted light coming from high-energy cosmic sources (galaxies, quasars, etc.) are field-effects of their velocities, rotation, 'local' interactions (energetic, etc.).

A more potent response is confirmed by the common SM ignorance of the obvious causes and effects of local galactic field rotation. A whole galaxy (all of it) spins at the same velocity, from its central vortex to the edges of its outer arms (and beyond). Clearly, galaxies, their babies ('quasars'),[58] and their neighbors are magneto-dielectric field-effects of the plasma currents and hyper-plasma (equaling ±99% of the cosmos) in which they seem to spin and drift.[59] Gravity (at 10×10^{-38} less force than EM field-effects) is clearly not the only cause of all that motion.[60] If that were untrue, stars further from a galaxy's central vortex would move at lower velocities than those nearer the center. Yet, that is clearly not what happens in any galaxy. Those realities confirm the other magneto-dielectric field-effects allegedly caused by 'dark energy' & 'dark matter' (hyper-plasma).

Together, all those cosmic realities confirm the existence and power of the hyper-luminal regimes, the intergalactic and interstellar medium, and its potent interactions with luminal &

sub-luminal forms of energy (plasmas, elements, etc.). That fact confirms and explains the cause of 'anomalous' blue/red shifts, and the phenomenon mistakenly called "gravitational lensing" (around stars, etc.). Actually, the transmission vectors (AKA rays) of spheroidal emanations of 'light' (propagating across LYs of interpenetrating, interacting magneto-dielectric fields of dynamic plasma & hyper-plasma) gain and lose energy along the way. Naturally, 'rays' and double-helical 'twisted-pair filaments' of plasma also react to and interact with strong field forces between their sources and us.

We now know that similar field-effects accelerate EM current flow and high-energy plasmas that move through the sun's magneto-dielectric field (its 'heliosphere'), toward the galaxy's interstellar field. We also observe the effect of Earth's EM field 'bending' solar energy ('light') around it. In other words, the super-colossally more powerful forces of the magneto-dielectric medium of cosmic reality are perfectly sufficient to cause larger-scale 'lensing' of long-distance luminal vectors (rays).

So, that complex response (and the related implications) adequately eliminates the basis of most of the misconceptions and unnecessary anomalies of post-Einsteinian SM QM cosmology. It also enables an introduction to a few important predictions of future discoveries and greater progress of science, technology, and quality of life on Earth:

Prediction 1: Within 7 years, all forms of 'matter, will be understood as integral, inseparable field-effects (of the field of being). The inter-active interdependence of all forms, forces, and effects of energy will be accepted as the reason for accepting the theory of macro-ontology and metatheory of holontology. Then, what seem to be mysterious or anomalous phenomena caused by "dark" energy and matter will be accepted as field-effects of the fluidic medium of hyper-luminal hyper-energy. For example, the effects of the hyper-energetic medium upon galactic & extra-galactic energy flows, forms of nebulae, galactic jets, quasars, plasmoid 'star' formation in galactic (and extra-galactic) plasma filaments, and groups, clusters, and super-clusters of galaxies flowing along with ultra-colossal currents of plasmas and hyper-plasma will all be seen as enabled and sustained by the mutually interdependent interaction of magneto-dielectric forces at all scales (from sub-micro- to macro-).

Prediction 2: Thus, the primacy and causal potency of all the enabling metalogical principles of nature will be accepted as the necessary and sufficient precursors of all phenomena. So, this work, related works of science, and the results of related R&D will be verified, confirmed, and generally accepted as valid within 7 years. That will be seen (at least by ethical observers) as necessary to save civilization and us.

Prediction 3: When this work and holontology in general are accepted, and key corrections of the SM paradigm of science are permitted, then physics, etc., will be seen as subsidiary sub-disciplines of holontology. Cosmology will be replaced by non-dichotomous, non-dualistic, non-disintegrative, non-commercial, uncorrupt macro-ontology. That will enable rapid advancement of STEM education and ever-accelerating development of vastly superior technologies. For example, when researchers and engineers no longer limit themselves to thinking only what seems to support absurdly obsolete hypotheses of a stagnate yet dominant SM QM domain of discourse, they can work on naturalistic plasma fusion reactor technology. They would also then be able to discover or understand how to construct next-gen magneto-dielectric unipolar generators and ultra-high voltage, UHF rotating EM multi-field generators

that directly tap Earth's magneto-dielectric subfield and the omnipresent field of hyper-energy.

Prediction 4: Adoption and use of the theorems and metatheorems of holontology, will accelerate the progress of mathematics, physics, and energy/power systems R&D to a 'revolutionary' next-level state-of-the-art, globally. That will happen because no other systemic change will be sufficient to save us from our worst habits, games, and insanities (and because we prefer pleasure, satisfaction, and wellness to pain, dystopian atrocities, and excess suffering).

Prediction 5: As general knowledge and understanding of the terms and basics of this macro-ontological theory and metatheory grow, the chronic conflicts maintained by current SM theory, theology, and philosophy will be resolved. That will happen because the next SM science and scientists will stick to what can be studied and known, leaving the rest to religions, the arts, and creators of fantasies. That will happen because the next SM paradigm of real science will be easily recognized and appreciated for providing ideal interpretation and optimal explanations of universal phenomena and data.
Note: All 5 predictions imply the possibility of the huge number of new benefits now impossible while ±97% of us remain confused about the nature of reality, being, life, energy, and science. For example, if you understand the nature of reality, pseudo-authorities will then be unable to bamboozle you into wasting time and money on them and their schemes. When we understand the actual basics of being, we can optimize all our activities, projects, technologies, and our quality of life. General understanding of the actual nature of life will enable the rapid cessation or reversal of what degrades or destroys it. When most of us understand the actual nature of energy, we can minimize our use and waste of electricity, power, technology, productivity, and creativity. When most of us really understand the nature of science then civilization can evolve and progress beyond its ever-accelerating rush into a global ecocidal dystopia.

Now, the purpose and scope of this thesis are too limited to provide more extensive discussion of the basis of the new theorems and new metatheory presented here.[61] Yet, in closing, it seems wise to analyze the two (2) kinds of tautologies:[62]

T_1 – In science and mathematics, tautologies support metatheorems and proven results (of observation and/or verification) necessary for viable metatheory. They are useful for a meta-language documenting metalogical principles and explaining valid metatheory.[63] Of course, that means that such linguistic constructs must accord with actual realities of universal phenomena, whether physical or mental, ecological or ontological.

T_2 – The most common tautologies are fallacious, used for erroneous explanations, often with deliberately or unconsciously specious reasoning (seemingly plausible, but wrong). For example, despite having no viable foundation of metatheory, SM cosmologists and QM physicists use their incomplete collection of theorems, hypotheses, and conjectures (about their tiny knowledge of universal reality) as proof that their collection of inexplicably uncaused material particles cause everything else, including mental phenomena, accidentally. For instance, gurus and guardians of the current SM want you to believe in their circular logic, without asking:

"So, how does a sub-sub-atomic particle of material (or an explosion artifact, like a 'Higgs boson')[64] get the power to act like magical glue, accidentally, all of a sudden or whatever?"

Of course, the 'experts' never talk about where such an amazing power came from, nor how or why it was installed in just one tiny particle of stuff that blew up once upon a time. That would be as unscientific as pontificating on how and why a boundless universe accidentally exploded out of a magical tennis ball (that got hyper-hot in its first peta-miniscule fraction of a moment), for no reason. Yet, they clearly like the sound of "God particle" (as if that can make it more mystical or all-powerful, unquestionable, like a wonder drug, or a magic bullet). SM SMEs also love talking as if they understand how "information" exists in accidental 'material' stuff (without minds, communication, and enabling principles of mentality and semiotic transmissivity).[65] Now, they even like to say that they've solved the mystery of life.

Why? Because they found the luminous glow of ethanolamine (a component of phospholipids) out there in a bunch of other interstellar stuff.[66] However, they fail to explain what makes prions, virions, and viroids so different from mitochondria, bacteria, and other living beings.[67] Yet, when pressed they claim belief in and respect for the standards of truly scientific methodology.

However, we can now see the dominant SM story as a thinly veiled complex of invalid tautologies and illogical absurdities trying to cloak fallacies, fantasy, and/or fiction with 'sciency' rhetoric and defective mythifications. So, the chronic psychosocial deficiency that maintains its grip on so many civilized minds (and media outlets) is an example of the corruption of STEM education. Of course, that was enabled by the subversion of the SM paradigms of physics, ontology, maths, and society.[68]

We can correct that problem and enable our best odds of enjoying a future worth experiencing. Of course, we can keep letting it all slide, and suffer speedier decline into ecocidal dystopia. The choice is ours, and the results really are up to us, individually, all ±7.8 billion of us (going on 8+ billions).

NOTES & CITATIONS

Disclaimer: Most current SM claims, conjectures, and falsehoods are either unfit for citation or super-numerously broadcast/webcast via popular mainstream media outlets.

[1] It is not only the obviously challenging phenomena that SM QM physics turns into anomalies. For example, the SM notion that galactic and extra-galactic nebulae exist in a medium-less (non-energetic field) ignores the fact that their shapes look and move like fluid-dynamical phenomena because – like clouds in a sky – they are formed as fluid-dynamic field-effects of fluidic processes. Clearly, on its own, being $\approx 10 \times 10^{-38}$ weaker than the EM force of plasma and similarly weaker than the hyper-plasma ('dark energy') field's Planck $E_d \approx 10\text{^}113$ J/m^3, the gravitational effect is not a sufficient cause of nebular plasma forms and motions. Also, despite ever-more discoveries of more 'unexpected' "mysteries" in this solar system and beyond, SM fans and gurus repeat its obsolete dogmas and bogus tautologies* (while ignoring reality's disproofs of the fundamental assumptions, theorems, and predictions of SM QM cosmology). They ignore well-proven plasma physics that describe, explain, and predict such seemingly mysterious discoveries (of magneto-dielectric field-effects).

* Tautologies are self-verifying systems of claims or maxims. The only valid use of self-verified maxims, circular rhetoric, or meta-axioms is in explanations of metatheorems based on natural or logically verified realities. Otherwise, illogical tautologies and anomalies are symptoms of deficient understanding or knowledge, or else of defective thinking and/or methods.

[2] In the introduction to his book on Einstein's theorems of relativity and gravitation, "?", physicist Arthur Eddington quotes Einstein's comment on time, from an interview in Berlin, published in "paper", in 1907. Einstein's admission about the medium (or field) of cosmic energy was published in ?, ?. So, he was not totally stupid.

[3] The key concepts to consider are (a) "closely fit" and (b) "space-time" and (c) "implied by" that prove the essentially speculative nature of the reductionist approach. In other words, it relies on mathematical statistical data to upgrade current estimates and approximations of particulate conjectures about current theoretical models that never fit the whole of reality. That approach also requires missing and ignoring discoveries and evidence beyond its current limits. So, being committed to dissecting smaller and smaller parts (conjectural mathematical objects) while stumbling around in the dark, it can never provide better knowledge and understanding of the whole of reality.

[4] As implied above, in note 3, stumbling around in the darkness of SM QM reductionism—looking for particles and magical properties to validate it—is unscientific. So, refusing to see rapidly proliferating anomalies and absurdities as good reasons for rethinking the basic assumptions of SM QM is not science. Thus, accepting the reality and potency of undetectable stuff that constitutes ±95% of universal reality, while calling it "dark" (and refusing to reconsider the basis of current SM QM) is either foolish or insane or worse.

[5] All well-educated electrical engineers and honest plasma physicists know that the theoretical 'gravitational force' is approximately 10×10^{38} weaker than the EM force (an effect of magneto-dielectric interaction). Yet, evidently, most are afraid to blow-the-whistle on the gurus of SM QM dogma and myth.

[6] Einstein's worries about QM were turned into critiques by, among others, Feynman and Dirac, the inventors of quantum chromo-dynamics. Their criticisms of the lack of progress to valid data, proof, and better theory is still routinely ignored by the professionals and academics paid for doing whatever it takes to keep the SM charade going. For extensive reporting on the problem (but not solutions), see "Unzicker's Real Physics" videos @ Youtube.com/

[7] The most famous violaters, possibly Stephen Hawking and Roger Penrose, are now eclipsed by TV evangelists of pop-scientism. Neil Degrasse-Tyson won out over Michio Kaku, both now demoted to 'has been' status. An ever-growing horde of copy-cat pop-scientism hacks are riding their coattails (and/or the gravy train) all over media cyber-space. Of course, print media 'zines echo and amplify the PC SM QM dogma approved by SM gurus and the corporate media giants.

[8] Almost daily, new reports and articles on astronomical and astrophysical discoveries turn proofs of real science into mysterious new anomalies of SM QM cosmology. For example, despite decades of discovery of exo-planets and ever-mounting evidence of our solar system, comets, and asteroids disproving all the basic assumptions, theorems, conjectures, and dogmas of the obsolete SM. Yet, instead of reconsidering the basics, PC SM pros, academics, and fans keep trying to find new ways to make uncooperative realities fit their favorite set of fictions.

[9] There are three major proofs of the intimidation, subversion, and SM corruption of most astronomers:

1 – The results of Halton Arp's groundbreaking work on galaxies, quasars, and the 'red-shift = expansion' (RSE) problem got him black-balled (as an enemy of the PC SM QM cult & its status quo stagnation).

2 – Edwin Hubble's own doubts and concerns about the RSE conjecture were resolved by Arp's results, but PC SM astronomers have always ignored them.

3 – No astronomers who publish peer-reviewed papers and articles on the vast ever-growing ocean of anomalies disproving QM cosmology, SM planetary science & astrophysics are challenging the

erroneous basic assumptions. They just keep expressing their astonishment that unexpected discoveries fail to fit the expectations required by obsolete SM dogma.

Of course, all of that is maintainable by ignoring the results of plasma physicists and superior theorists who challenge the PC SM status quo.

[10] Habitual human obsession with normative behavior and compliant conformity may come from hundreds of thousands of generations of animalistic enculturation. Dr. B.F. Skinner's experiments with 'operant conditioning' proved that animals and humans can be programmed with reward, punishment, and psychosocial manipulation. Anyone who ever tried to get a friend to give up a bad habit knows how much we resist change, even for the better. There are too many common examples to list here. Yet, the historic mass-acceptance of the 'flat Earth' nonsense and the geocentric universe dogma may be the best pseudo-scientific examples of persistent mass-delusion. Of course, the history of civilizations is littered with physical and social remnants of cultures destroyed or ruined by pandemic authoritarian personality disorder and addictive mass-psychosis (in the Left, Middle, and Right segments
of the sociopolitical spectrum of irrationally compliant conformity).

[11] Kuhn, Daniel, *The Structure of Scientific Revolutions*, 1962, 1st edtn., , Univ. of Chicago Press. Kuhn's work exposed the subversive power of normative social dynamics, incentivized conservatism, and other regressive psychosocial forces. They cause the habitual to status quo subversion and perversion of new scientific paradigms. The goal is to protect the normalized corruption of psychopathic social systems, norms, and activities.

[12] Lerner, Eric J., *The Big Bang Never Happened: A startling refutation of the dominant theory of the origin of the universe*, 1991, Times Books, Random House, Inc. A concise yet truly realistic history of the evolution and devolution of 'standard model' paradigms is just one of the many great results of Lerner's work. However, though his refutation shows that 'the Big Bang theory' is invalid, Lerner provided no generally acceptable alternative. In fact, neither Lerner nor any other plasma physicist fully explains why a Big Bang beginning was impossible, nor how universal energy should exist and enable everything else. Still, as Kuhn explained, none of this matters to the 'normal scientists' who cannot think 'outside The Box' of their self-obsoleting SM.

[13] Monterey, Michael Lucas, various titles, posted online @ ORCID.org, Researchgate.net, Academia.com, and MichaelLucasMonterey.com

[14] Note 10, above, covers the basics. Yet, it helps to recall that our greatest pioneers of science and sociocultural evolution all sought to cure the tragic afflictions that cause pandemic cultural illness, war, crime, habitat destruction, and socioeconomic decline, and ruin.

[15] Monterey, Michael Lucas, *RH, Metatheory, and Proof* (preprint draft), 2017 to 2021, posted online (re: note 13, above). The unhitching of mathematics from rational science began before him, but Bernhard Riemann found the best way to extend mathematical abstraction into a new realm of infinitely imaginary geometries of purely mental forms, models, and systems. He could also be seen as the first pioneering mathematician showing that playing with his new discoveries could be more rewarding than

[16] Holotrophic scientific disciplines and praxis trend toward wholeness or more fully descriptive, explanatory accuracy. Holontology refers to holistic ontology, *i.e.*, the science and study of being-as-a-whole. So, to be most effective, holontology requires all-inclusive, interdisciplinary research and practice. Yet, the universe constantly changes and evolves, and none of us can master all sciences in a lifetime. So, holontology requires ongoing evolutionary development of its methods and theory, even of its metatheory. However, the basis of holontology's metatheory, its paradigm, provides a reliably realistic foundation of metalogical principles (enabling all forms of being). Thus, other sciences, including mathematics, may be seen as subdisciplines of holontology.

[17] Quantum 'floam' was a conjectural excuse for not being able to explain quasi-fluid-dynamical phenomena (seen at the boundary layer between the luminal and hyper-luminal regimes of energetic field-effects) without talking about an "aetheric" medium of EM waves. In the beginning of 'the crisis' in SM particle physics it was obvious that a semi-physical and/or purely geometrical, omni-dimensional ocean of fluctuating, emerging & self-annihilating, electrons and positrons (etc.) must be like a quasi-fluidic foam of bubbles consantly oozing out of nothingness. It seemed it must have a quantum mechanical description, despite the inexplicability of the existence of any smaller, causal 'particles' that cause matter, space, time, and other misconceptions of SM dogma (accidentally, causelessly).

[18] The basic flaw in the current SM paradigm that prevents progress to a higher level of realism is the pandemic refusal to realistically face the facts of causality and actuality. On the other hand, for its greater validity and explanatory power, holontology integrates the essential role of enabling principles, enabling the integration of cognitive science, psychology, philosophy, cosmology, physics, physiology, ecology, sociology, and mathematics. In other words, trying to find a satisfactory unified theory of everything, but only studying, thinking about, and talking about 4 subsidiary micro-scale magneto-dielectric field-effects, while ignoring the actualities of ≈99% of the universe* is ridiculous.

> * Approximately 5% of the cosmos is detectable (energy & 'matter'), and ±95% of that is plasma. So, even without considering the vast realm of non-physical phenomena that enable being, let's do the math. The SM says ±95% of universal being ('dark energy' & 'dark matter') is mysteriously inexplicable by SM QM cosmology. Yet, SM gurus and fans refuse to consider the actualities of ±95% of the directly detectable ±5% of everything. So, that limits the SM view to less than 5% of 5% (*i.e.*, ±0.0025% or 2.5×10^{-4}) of reality: $100\% - 0.0025\% = 99.9975\%$ of the universe (ignored or unknown). So, SM QM cosmologists base their dominant expert status and authority on knowing something about much less than a tiny fraction of 1% of the whole of reality.

[19] Despite being an inexplicably causeless result of an impossible explosion of pre-existent nothingness, the now fairly famous 'Higgs boson' (affectionately called the gluon or, more proudly) AKA the "God particle" seems to be so sanctified because QM maths (normalized statitics) makes it seem the one and only exotic particle that has the super-natural power to make everything else more or less sticky, *i.e.*, causing gravitational waves in the 4D geometry of absolutely empty (yet curvy) nothingness. How or why it could come to be and get such an essential supernatural power is of no interest or concern to the devoted disciples and commercially successful evangelists of Higgsian SM QM cosmology. Of course, they also ignore the fact that luminal EM forces of the universe's magneto-dielectric field are 10^{39} times stronger than the gravitational field-effects. So, Higgsianism is simply another example of selective inattention and deliberate ignorance or denial of reality to keep current SM QM myth, mysticism, and dogma going for as long as possible, no matter what.

[20] For decades, the increasingly more detailed and ever larger 'picture' of the detectable cosmos mapped by radio astronomy has displayed field-effects (EM plasma currents, filaments, galaxies, etc.) that we may as well call what they are: cosmic magneto-dielectric circuits. Yet, SM fanatics seem determined to ignore 2 key facts:

1 - magnetic and electric phenomena are always simultaneously interdependent, and

2 - EM transmission, current flow, waves, etc., always involve interdependent (a) dielectric, (b) conductive, (c) resistive enabling elements,* and (d) fields of energetic emanations, all existing as subsidiary magneto-dielectric field-effects.

Despite the self-evident reality, the SM QM paradigm still excludes the existence of the enabling cosmic field of magneto-dielectric energy, and the intrinsic principles that enable it, its sub-fields, and all subsidiary field-effects.

> * In this case, "elements" refers to the necessary energetic properties and functionalities that enable EM phenomena (*i.e.*, current, voltage, waves, vectorial transmission, etc.).

[21] The changelessness of principles is mentioned because there is now so much general confusion – about chaos, physics, and cosmology – that most of us have no way to understand what keeps the constancy of natural processes reliably constant. Also, thanks to SM QM nonsense and shibboleths, even most honest scientists are afraid to think about and discuss the fact that science, mathematics, natural 'laws' and processes can only exist as persistent phenomena (or trends) because of unchanging enabling principles. Of course, that is only possible because non-physical phenomena have no transient, impermanent constituents subject to change. In other words, if a thing does not exist as a physical object or process, no existential physical force or process can change it. Yet, obviously, physical events, processes, and objects need principles enabling their persistence, duration, and beingness.

[22] Russell, Walter, *A New Concept of the Universe*, 1st edtn. 1953, 1989, publ. Univ. of Science & Philosophy. Now, I do not wish to imply that Russell's insights and theorems were complete or completely accurate, but his intuition was superior to most of what now poses as cosmology. Also, it may not seem obvious that Nikola Tesla concurred with Russell's intuitive insights on the nature of the elements and the field of magneto-dielectric energy. However, sufficient study of their works reveals no conflict in their published views on the realities of energy.

[23] Not only do the central vortex vectors of high-energy galaxies extend in straight lines for many billions of light-years, some penetrate several seemingly distant galaxies along their common axial vector. Saying that such galaxies are "seemingly distant" emphasizes their interdependent connectedness. Also, for several decades, axial alignment of galaxies and their plasmoid ejecta (AKA 'quasars') has been observed. Now, recall that a galaxy's whole whirlpool of stars, plasmas, etc., spins at the same rate, from the center on out. Clearly, a galaxy's sub-field of hyper-plasma is spinning with it, from its equatorial ecliptic on out to as far as its central axial vortex extends. So, several galaxies (etc.) spinning around one multi-billion-LY vortical axis are showing us the true nature of the hyper-energetic medium of the cosmos.

[24] The nothingness of empty spacetime geometry can only have black magic holes.

[25] Galaxies are not the only cosmic energy recycling centers. Yet, a fluid mechanical relationship of luminal and hyper-energy regimes ensures interdependent sustainability. So, the basic magneto-dielectric circuit of energetic flow is outward, from the 'inner' source of physical forms, and back inward, from the omnidirectional field of luminal field-effects (detectable cosmic phenomena). That falsifies the Newtonian theorem of entropy and conservation of energy limiting generation of power that can sustain ongoing "work" (and universal existence).

[26] The only phenomena and processes not explainable with existing plasma physics, fluid dynamics, and EM theory are the interactions of hyper-plasma and luminal energy phenomena (and astrophysical processes).

[27] Of course, the notion of holes in a purely mathematical universe of fictions is absurd. Yet, as stated above (in note 25), the notion of "white holes" in a hyper-luminal medium of hyper-energy is much more realistic than black balls of nothingness that suck stuff into inexplicable yet unquestionable QM limbo.

[28] Quasi-fractality is clearly one of nature's basic metalogical principles enabling the many similar yet not identical morpho-structural patterns we see everywhere in the luminal & subluminal regime of magneto-dielectric phenomena. Fractal logic is the purely mathematical correlate that enables exactly identical self-similar patterns of form & structure, conceptually, graphically, and visibly. Nature's neither requires nor enables such formal precision for her complex, ever-changing sculpting of actual cosmic phenomena, in the elemental realm and beyond.

[29] The reality of an energetic form, element, molecule, object, or event is determined by its natural properties, possibilities, limits, and potentials; those are all enabled by intrinsic natural principles, the elements of nature's resultant rules, habits, ways, and means. Hence, we can admit that all energetic

processes, events, and forms are enabled by nature's non-physical (yet intrinsic) metalogical principles of being.

Now, recall that all actual phenomena require energy, and that all constituent cosmic phenomena constantly change (due to the enabling principles). Thus, since principles are actual yet changeless, we can accept them as the interdependent elemental precursors of physical things, processes, and events. So, we can safely say that principles exist in the proto-energetic, extremely subtle realm of meta-energy; and that enables and sustains the most elemental ways of energy.

For example, consider how the constantly changing regime of energetic phenomena could emerge from an infinity of formless meta-energy. How? Nature's metalogical principles enabled and expressed life's urge to become and evolve. Less subtle hyper-energy modes could then precipitate in the vast expanse, causing interactive perturbations, oscillations, fluctuations, turbulence, reactions, and rotation, spin. Thus, spin, vortical motion, and turbulence could cause variance of velocities, motion, activity, and increasing stratification, then precipitation of luminal proto-elements.

Still, we should recall that no energetic phenomena or element is an isolated, non-dependent, non-interactive object (or particle) in the complex ensemble of cosmic events.

[30] Current gurus and disciples of pop-SM scientism ignore the difficult questions and illogical absurdities; and s they happily assure us that the unknown totality of the cosmos emerged from a sphere the size of an average peach. Of course, that has nothing to do with reality or logic.

[31] Scientifically valid knowledge and viable theory are the results of the effective use of appropriate methods. Trying to acquire more useful knowledge about universal totality with QM statistical models and ever wilder conjectures, while ignoring non-physical, logical, meta-logical, and qualitative realities is not science. Trying to convince everybody that making up more excuses for exponentially proliferating anomalies (universal evidence that SM QM cosmology is wrong about more than 99% of reality) is evidence of scientistic fallacy, not scientific facts and effective methods.

[32] Until now, there has never been a viable basis of valid cosmology. If there was ever a theoretically durable cosmology, it would have been congruent with a valid foundation of universal ontology and natural meta-logical principles. This thesis is the first presentation of the role of enabling principles, meta-energy, and hyper-luminal energy regimes in the triphasic emanation of universal totality.

[33] It helps to bear in mind that SM QM is really a statistical mathematical approach to developing approximations and models of theoretical probabilities (that may or may not relate to the realities of cosmic actuality). So, as long as SM QM hypotheses, assumptions, and beliefs are more important than understanding why the cosmos refuses to confirm SM QM predictions, there is no way to prove or confirm the validity of a SM QM conjecture about reality.

[34] Gurus, fanatic disciples, and True Believer fans of SM QM physics (as is) love talking about all kinds of exotic fantastic conjectures, fictions, and popular notions, but not thinking about what it takes to sustain even those products of illogical mentation. So, naturally, they fail to notice their own lack of viable mental consistency, enabled by the principles that govern reality (even its illusions and delusional phenomena).

[35] Anyone who insists on supporting and defending a deficient SM paradigm based on increasingly deficient theory, illogical fallacies, and deliberate ignorance is irrelevant to useful work and discussion.

[36] So far, the Big Bang gang proposes a theoretical proto-hydrogen ion (or its sub-ionic constituents) as the hyper-compressed particles that inexplicably came to exist in a sphere like a hyper-hot tennis ball of cosmic totality that suddenly exploded. Yet, they clearly fail to care about thinking about any non-optional prerequisites (actual natural principles and magneto-dielectric field-effects), and where those might come from (before anything and everything existed).

[37] In other words, when non-pioneering nerds of pop-SM QM cosmology talk like they know all about the beginning of the universe 'once upon a time' they are using fairy tale illogic to bamboozle

gullible people into believing them (and supporting their subversion of science for money and/or bogus status).

[38] Talking as if any kind of particles can suddenly exist and explode (or be involved in a fission to fusion implosion-explosion event) without any knowledge of prior processes and a definite cause is anti-scientific. So, using unscientific speculative hunches or notions to 'justify' retarding and subverting real scientific progress just keeps adding to the general confusion and obscuration (of reality).

[39] Clearly, such severe criticism may seem overly harsh. However, even the seemingly unintentional or normalized subversions and perversions of science (and the perceptions of it) require ingrained intellectual dishonesty and anti-ethical personal commitment (to retarding real progress beyond the current SM paradigm of science and society).

[40] Shibboleths are erroneous notions, assumptions, or opinions popularly accepted as facts or truths. So, mainstream SM physics requires virtually mystical mathematical excuses, almost like magical spells that keep the public from snapping out of their trance-like enchantment.

[41] The current SM paradigm, like its mental model of the universe, is like an ever-expanding balloon of erroneous hunches, opinions, and speculative fantasies. To prevent popping it (or sudden, disastrous deflation), the gurus, disciples, and fans of current SM QM faux-cosmology must keep finding mathematical exotica to 'patch' and 'upgrade' their increasingly bloated bubble of anomalies. That keeps the public (and themselves) mystified and bamboozled, so far.

[42] Now, the current SM's own well-established rules of scientific praxis prohibit research, experiment, and testing that involves undetectable, untestable, phenomena. That is especially true in the case of physical sciences, even current SM QM. So, nonphysical phenomena or objects proper to ontology or psychology are outside the scope of valid physics and physics theory. Therefore, possibilities, probabilities, issues, and questions about a hypothetical combination or separation of pre-existent being and nonbeing are outside the scope of SM QM physics and mathematics.

[43] Calling the gurus & disciples of the current SM 'bleeding-edge' QM conjecturists relates them to the hypesters who promote incomplete or shoddy new high-tech projects. It also labels those who present and promote [unproven or unprovable] speculative conjectures (AKA hunches or sci-fi fantasies) as proven or provable scientific theorems.

[44] So far, the best of the successors of Nobel laureate Hannes Alfven have yet to ask and answer the essential questions about being and reality. So, plasma cosmology suffers from some of the same limitations that retard the current SM arena's progress. This thesis shows why and how the inadequate paradigm, theory, thinking, and language derived from the current SM of modern society limits the progress of plasma physics, astronomy, cosmology, ontology, etc.

[45] According to an article by Tim Childers, posted at livescience.com, 2019, "researchers at Kenyon College, MIT, and Netherland's Leiden University simulated the critical transition between cosmic inflation and the Big Bang" as if those events really happened, for no reason, and as if it began when only 'dark energy' had existed (without any physical stuff to move or wiggle or spin).

Yet, the article celebrates their absurdly unscientific project and results as if it proves current SM faux-cosmology and explains the whole of reality. Of course, there was no mention of any question or explanation of root causes of the undefined processes of becoming, inflating, exploding, and nonstop expansion. However, the team dreamed up a new hypothetical particle (the new "inflaton") to make their project and results (and the current SM faux-cosmology) seem to be respectable science.

So, now, the 'age' of their SM universe is still stuck at 13.8 billion years. So, clearly, immeasurable, invisible, pre-temporal, undefined 'dark energy' and a 'new' particle with the super-natural power (to cause magical inflation of pre-physical formlessness) is the excuse for believing in the Big Bang (without the need for inconvenient questions).

Still, the team's paper was accepted for publication in Physical Review Letters* and received serious consideration by their colleagues. In related articles similar unquestioned nonsense is republished as if the unexplainable SM assumptions are all as divinely true as the Words of God. For example (at space.com, 23 Nov., 2015), we find Paul Sutter's dead serious claim that all the stuff in the universe was initially crammed into a trillions K° hot ball "the size of a peach."

All similar pronouncements are likewise unexplained, but always excused, allegedly because impossible physical processes are subjects of "metaphysics" not physics. Yet, if that is so, then why pretend that simulations of impossible or unknowable, undetectable, untestable, and immeasurable [supposedly] physical events have anything to do with real science and real physics?

Again, please recall that real physics can only work with what is detectable, measurable, testable, physically real phenomena. Therefore, clearly, the new Old Guard of the new old paradigm of post-Einsteinian SM QM pseudo-cosmology is actually anti-scientific mystification of pseudo-scientific dogma supporting an atheistic pseudo-religion.

* Nguyen, R, van de Vis, Sfakianakis, Giblin, and Kaiser, *Nonlinear Dynamics of Preheating after Multifield Inflation with Nominal Couplings*, Phys. Rev. Lett., vol. 123, 171301, publ. 25 Oct., 2019

[46] The SMEs of Big Bang cosmology want everyone to accept their faith in the existence of virtually infinite pre-universal heat, expandability, super-normal motion, and pre-normal explosiveness because they say that their mathematical models of what seem to be the most likely probabilities of how the universe could suddenly be born 13.8 billion years ago.

However, all the 'reasons' for believing in the possibility of pre-universal, pre-normal, and super-normal (*i.e.*, super-natural) processes and phenomena are based on assumptions about their favorite mathematical model of reality. Unfortunately, as shown here above, that model is based on knowing a little bit about a tiny fraction of 1% of the universe while ignoring the rest. So, they may as well believe that the cosmos was dreamed up by Maha-Vishnu or created by a super-natural coyote and his friend (a raven), or by the Judeo-Christian God (AKA YHVH or Jehovah (AKA Jah or Allah)). However, this theory of holontology accepts all principles and potentials of being as intrinsic.

[47] Obviously, the whole of being and the totality of reality do not really matter to the gurus, disciples, and fans of Big Bang pseuo-cosmology.

[48] All things, events, processes, and the totality of being (the universe) each possess and require a nature. Clearly, the elements of a thing's (or being's) nature enable and determine the qualities, attributes, properties, potentials, and morphological, structural, functional, and durable realities characteristic of it and/or its type or species. That is as true of nonphysical forms of being as of any phenomenon with physical form, structure, functioning, and trans-physical identity. So, we can admit that principles are the nonphysical elements of nature's potency, constancy, and evolutionary creativity, and of two (2) classes of natural logic:

A. Primal metalogical enabling principles of being, and

B. Resultant subordinate logical enabling principles

Class A principles enable the existence, constancy, and potency of each other and of all Class B principles. That fact of being's nature enables what we call its laws, constants, modes, potentials, possibilities, limits, and impossibilities. These facts and related theorems and metatheory will be more fully presented and explained in other works in progress (on the theory and metatheory of holontology).

[49] In the ontology of science, a domain or "universe" of discourse is the conceptual framework of reference, thinkability, and discussion of a discipline's current state of development. So, like current theoretical paradigms and typical values of belief systems, a domain of discourse exists in the minds of its participants. Thus, the quality of a domain of discourse is only as good as the dominant average of the quality of the most and least competent mind involved. Sadly, the current SM keeps a vast majority of its true believers' minds bamboozled by systemic denial and ever more desperate yet useless attempts to fix it with ever wilder speculative modeling, magical particles, and

misinterpretation of the exponentially increasing discoveries of universal reality that disprove the basis of it (the current SM paradigm).

[50] The term "fuzzy" refers to the various confusing notions about 'time' normally taken for granted or ignored by SM QM 'physicists' and pseudo-cosmologists. Like money, though it does not equal it, time is a figment of a belief system. As mentioned earlier, even Einstein was confused about time, saying that he thought it is motion.

So, without bearing in mind that what we fuzzily think of as time is a perceptual-conceptual construct, we easily ignore the fact that "it" is an illusory artifact of socially limited consciousness (of change). Hence, that habitual ignorance of the constantly changing presence of universal being makes it easy to misunderstand everything related to it, i.e., all physical and nonphysical phenomena. Naturally, ignoring the basic realities of being and human mentality also makes it easy to misinterpret data and observed phenomena, then to try to make up new ways to make reality conform to and confirm inadequate/obsolete theory.

[51] The "corrupt sociocultural paradigm of kleptocratic technopoly" refers to the fact that civilization's dominant collection of accepted/approved beliefs, assumptions, shibboleths, opinions, facts, and fictions enabled and ensured the decline into pandemic corruption, government by and for ultra-rich exploiters, and their economy of, by, and for consumerism and more technological automation of neo-feudal technocracy. Clearly, most SM 'scientists' are in it for the money and lost without major grant funding and the required approval. So, the paradigms of kleptocratic civilization and current SM scientism are inseparable, interdependent, semi-interactive, and mostly mutually supportive.

[52] In the popular mainstream media, there are too many references to the bosonic star of the now Higgsian zoo of mathematical particles calling it "the God particle" to list them all here. So, this note suffices to point out the wildly sensational hoop-lah and hubris required to call a theoretical artifact of SM QM speculation a particle with divinely magic power or even almost divine power to do anything. Likewise, claiming that it must exist and do what Higgsians say it does because of their maths, the SM, and their non-scientific assumptions are good enough reveals vastly defective mentality and grotesquely deficient ethical integrity.

[53] The real science of universal energy phenomena can be practiced at home, without ever bigger (multi-billion $USD) super-collider facilities that waste countless gigawatts of [expensive] electricity, heat, etc. In fact, the only real excuse for CERN's existence and budget is the on-going deficiency and self-obsolescence of the current SM paradigm. Yet, many SM QM gurus, disciples, and techies keep getting funds, publicity, and social status for continuing the useless search for more exotic excuses. For a nice, very concise, relatively explanatory critique of the absurdities of current SM pseudo-cosmology, see "Michael Clarage: [on] Solar Gamma Rays – Not so Muck" @ http://

[54] Bernhard Riemann's work was the turning point, from proto- to post-imaginary mystification of mathematics and science. We can safely say that, earlier, the brilliant developments and erroneous assumptions of Leonhard Euler paved the way for Riemann to open the flood gates of irrational enthusiasm for scientismication of all fields of knowledge. Yet, without Riemann's extremely impressive extension of imaginary maths into an infinity of reified non-Euclidian geometries of purely conceptual dimensions, topologies, and mathematical 'spaces' we would have no ridiculous mysteries and normalized shibboleths of current SM QM pseudo-cosmology and mystified physics. For extensive detail and history of the problem, see *RH, Metatheory, and Proof* (a preprint draft of the paper) posted @ MichaelLucasMonterey.com/metamaths also at ORCID, researchgate.net, academia.com, and linked elsewhere.

[55] The paper posted & linked in Note 54, above, features a section on the historic socio-linguisitic roots of the current state of confusion afflicting modern science, society, and civilization. However, a more expansive version is a chapter of the forthcoming book, *Civilization or Dystopia* (posted as a preprint draft), linked at my website.

[56] Obviously, the only universal phenomena that do not and cannot change are the principles that

enable the existence, nature, potentials, and limitations of all other kinds of phenomena. The "principle of permanence" (POP) is a verified mathematical principle that makes valid formulas and equations suitable for ordinary algebra, and trigonometry also effective for use in analytic algebraic (non-Euclidian) geometry using complex values and variables including 'imaginary' numbers. However, as proven is *RH, Metatheory, and Proof* (mentioned above), the POP works for mathematics because it is an expression of the principle of immutability, a subsidiary principle and property of the primal metalogical principle of functionality. Thus, clearly, the changeless reliability of nature's intrinsic enabling principles makes the transient regimes of physical and purely energetic phenomena reliably compliant to their determining intrinsic principles, properties, possibilities, and limits.

[57] In mathematics, "complex value" refers to a term that includes symbolic ("imaginary") numbers – such as $\boldsymbol{i}$ (or $\boldsymbol{i}^2 = -1$) $\times$ $\boldsymbol{n}$ (a "real" or ordinary number) – enabling operations and results representing variables and/or phenomena too complex for ordinary numbers, values, and methods.

[58] Extending the Nobel prize winning plasma physics of Hannes Alfven, Halton Arp, Anthony Perrat,* and others realized that 'quasars' (quasi-stellar radio sources) must be huge, ultra-dense, super-energetic plasma spheroids that form in the dual double-helical vortices (of plasma & hyper-plasma) that flow around galaxies' axial vectors. As their spin and the roiling flow of their internal currents and filaments (of plasma) slow down, they expand, and may become increasingly oblate, then toroidal, becoming new galaxies. That explains the 'surprising' recent discovery of four (4) galaxies aligned along a straight axial vector extending across billions of light-years. In other words, those galaxies (and their motions) are field-effects of the single, fluidic, rotating sub-field of magneto-dielectric energy & hyper-energy that enables them.

> * Perrat, plasma physicist and author (of ?), used EM plasma theory to create automated CGI animations that simulate the formation of nebulae, galaxies, and other cosmic plasma phenomena. Also see the Primer Fields videos, but remember that the explanations & beliefs of Mr. LaPoint provide no hint of root causes.

[59] Clearly, relative to a galaxy's spinning sub-field of hyper-luminal hyper-plasma, its stars and luminal plasma phenomena are not moving at all. Likewise, the galaxies, galaxy clusters, and super-clusters of galaxies that seem to move in cosmic currents are moved by and go with the flow of the magneto-dielectric currents that cause and sustain them. So, the velocities observed and measured belong to the whole sub-fields of the cosmic currents (of plasmas, galaxies, etc.) caused, enabled, and governed by the principles, dynamics, and forces of the whole field of being that enables and sustains them.

[60] A more extensive explanation of gravity will be included in another paper on the holotrophic (ontological) theory and metatheory of energy and natural principles. However, to summarize, we can safely say that what we see as the force and effects of 'gravity' show that it is clearly a very minor side-effect of the complex interactions within, of, and with the magneto-dielectric field and subfields of universal energy.

[61] Actually, a large part of the basis of any good theory or metatheory is sustained by the definitions of the terms which enable and support the system of ideas, concepts, facts, truths, and proofs that validate its current viability (its temporarily adequate usefulness). So, the definitions of terms in Appendix A, and the history of the linguistic problem (re: the current SM paradigm) given in Appendix B, provide a good deal of the basics of the next SM paradigm, metatheory, and theory of universal being, energy, and enabling principles.

[62] The issue of tautologies is mentioned here because most logicians, mathematicians, theorists, and linguists seem unaware of the fact that in [the science of science and] metamathematics and metatheory in general, tautologies are permissable and/or necessary. That is so because the linguistics of most (if not all) human sociocultural paradigms cause paradoxical conceptualizations of various phenomena. So, metatheoretic tautologies permit the use of maxims and/or axioms to

define or describe enabling factors or elements of theorems and metatheorems. Put more simply, a valid tautology describes or explains a fact or truth of being and/or reality. These facts and terms are defined or supported by the contents of articles available at Wikipedia (.org).

[63] A metatheorem may be temporarily viable for further research and results, yet not absolutely valid. A metatheorem or metatheory is valid only by being ideally congruent with the phenomena or realities it defines. That enables optimum explainability, which confirms the validity of a metatheorem or metatheory.

[64] Of course, Higgs (and his disciples and fans) don't want you to ask that because they don't. That would be as unscientific as imaginary particles with imaginary supernatural powers. Thus, they have no answer nor an explanation, but also no shame, no mental integrity, and no humility.

[65] Stephen Hawking and some other SM pioneers (almost as famous as Hawking) enjoyed wild flights of fancy over the notion that information might exist in empty SM QM geometry (without even 1 single mind or even a hint of a necessarily enabling precursor). That may be because of the [speculative & unprovable] mindless information hypothesis being a pseudo-scientific excuse for wilder speculations about 'time travel' and teleportation through Black Holes in empty yet spooky QM geometry.

[66] This refers to the announcement that made headlines in the popular pop-sci media. It is so anti-scientific and atrociously absurd, yet so broadly webcast, it neither needs nor deserves a formal citation of the original report. If you want to read the articles or the original paper, just use your favorite search engine.

[67] So far, like matter, the natures of viroids, virionic, and prionic forms of being are neither well-understood nor fully defined. In fact, the mainstream QM SM paradigm fiercely maintains its deliberate ignorance and auto-autistic confusion, perhaps, to prevent knowing how or where to begin studying the difference between molecular automata (prions, etc.) and living organisms. Yet, macro-ontology can and does enable more than enough understanding to define and explain the differences, etc. For instance, all sub-cellular forms of being, from prions up to mitochondria, express modes of intentionality, exhibiting varying degrees of responsiveness. The degrees of intrinsic intelligence, purposiveness, and responsiveness of the sub-cellular entities is determined by their morpho-structural simplicity/complexity and inherent functionality. So—among other principles—form, structure, functionality, simplicity, and complexity are metalogical principles that enable and determine the capabilities, limitations, and potentials of sub-cellular entities.

[68] A substantially comprehensive summary of the history of the subversion of science and society is provided in Appendix B, on the sociolinguistic dimension of the problem.

APPENDIX A

Terms & Definitions

"A mathematical problem should be difficult…to entice us, yet not completely inaccessible, lest it mock at our efforts. It should be…a guide-post on the mazy paths to hidden truths, and ultimately a reminder of our pleasure in the successful solution." – David Hilbert

Hilbert was obviously right about that, and it rings true for any other branch of science. Yet, as in maths, almost all "standard model" (SM) educators and practitioners of physics and astronomy seem to be having too much fun on their mazy paths, avoiding the scary heights and depths. So, realities remain hidden by ever more mystifying SM hypotheses and illusions, while the theories of the sciences remain unified. So, the difference between pure science (and maths)

and the popularized, commercialized, technically practical disciplines is mostly ignored.

Unfortunately, general ignorance of the history of science and maths, and of epistemics, semiotics, and the history of language and philosophy aggravate the problem. So, hopefully, this introduction to the definitions of terms enabling explanation and proof (of the theory and metatheory of post-modern ontology) help solve the problem and unify the theories of science, for a more realistic SM of pure science.

First, ending the pandemic deficiencies of semantics, ontology, culture, and institutional ethics calls for an extensive paradigm upgrade. So, remember that languages embody and express inherent biases, based on their dominant sociocultural paradigms. The languages of mathematicians and physicists exemplify and maintain that ancient norm.

Increasingly, the exotic language of pop-star quantum mechanics (QM) became the anti-theistic Word of a SM god. Nietzche grew ever more horrified, but Hilbert, Gödel, and Einstein were confused, eventually baffled, and gave up on their projects. So, a unitive post-modern SM requires previously absent knowledge, the concepts, words, and shared meanings necessary for effective thought and communication about the nature of being and reality. That requires a shared context, the definitions of all the key terms.

Next generation (next-gen) proofs also require some redefinitions of various terms and re-interpretations of some concepts and theorems central to the foundations of mathematical logic, nature's metalogical principles. Clearly, better theory and viable metatheory require better concepts and terms, and upgrades of other ones. Reasons and examples accompany the definitions and redefinitions listed below.

Hence, the following list covers the core logic of a) a next-gen SM of science and society, b) the context and basics of essential metatheory, and c) of the next SM sociocultural paradigm. Redefinition of the key terms and principles of ontology and its enabling domain of discourse is meant to evaporate the fog of normalized confusion and materialistic rhetoric. Yet, the nature of the subject (being and its nature) transcends the domains of the physical sciences. Therefore, for the sake of unification, some terms and definitions reflect that reality.

However, using English to consider principles of a future paradigm requires a new way of thinking about communication and reality. For example, consideration of Einstein's new way of describing reality required courageous openness, willingness to question the basis of socially accepted ideas about reality (and religion), and unusually great mental effort. New metatheory poses a similar challenge, calling for equal or greater openness, courage, and commitment.

Ideally, next-gen thinking, investigation, discovery, and communication will foster more integration of the sciences and their theories, for more satisfying results. Now, for the sake of that aim, the following terms and definitions are listed in approximate order of significance.

Being: The universe (all phenomena) and being are not separate events. Being is the essential expression of actuality, the most essential enabling principle of its nature. Being's nature is a) its intrinsic metalogical principles, b) the subsidiary enabling principles (such as physicality, etc.), c) its qualities, d) its properties, and e) the processes that enable it (being). What exists is being; and what is not a part or form or process of being does not exist.

For example, nonphysical qualities and enabling principles are actual elements of being, so they exist. Thoughts, assumptions, theories, fantasies, dreams, illusions, and delusions exist (as nonphysical phenomena), but not the unrealities perceived or believed.

A very important quality of being is its liveliness, energy, and action. By considering the whole of reality (the cosmos) as the field of being—not a dark volume of emptiness and mostly mysterious energy/matter—we can understand its liveliness as all pervading.

Science: Science is study, investigation, experimental and/or theoretical work. It is also testing and verification, performed for the sake of discovery and understanding. When other purposes are the prime motives, the work should be understood as and called either applied science or commercial science.

Before it was modernized, science was called natural philosophy. However, the prime motive for the new definitions (listed below) was prompted by realization that popular assumptions and misconceptions of and about science and nature have infiltrated nearly all domains of discourse.

For example, the Quine-Putnam indispensability thesis (QPIT) is important for the development of better metatheory of metamathematics and next-gen mathematics (maths). It relies on the assumption that maths is indispensable to science. Yet, the authors claim that we can rely on valid theories of science. If so, then, because we believe in current theories of science, we should also believe in the indispensability of mathematics (maths). However, like any other scientific theory, the QPIT is disputable and falsifiable.

Now, maths is a science and a semiotic system (a language). Therefore, it can also be a scientific toolset for doing technical work, or for proving or disproving any kind of theorem. For example, to disprove the QPIT we need only 1 example of science that does not depend on maths. For instance, philology is a science, an investigative discipline performed for the sake of discovery and understanding. So, we can use philology to test the QPIT.

Philology requires studies of language, culture, and history. However, maths may be part of a culture and its linguistic paradigm, but not necessarily required to do the research and new theory of philology. The best example though, from Riemann via Hilbert, is maths itself. Consider this, instead of using many complicated mathematical operations and exotic symbology, Riemann preferred explaining "the ideas" required for a theorem or proof. Clearly, that may sometimes seem more difficult. Yet, any principles, phenomena, or processes we understand well enough can be proven and explained without using symbolic values (numbers) and the semiotics of maths. So, that falsifies the QPIT.

QED, yet, mathematics is a logical language and a way of understanding realities. Thus, using ordinary language to study and describe mathematical realities is a valid use of the concepts, logic, and methods of mathematical thought and theory. So, obviously, both modern maths and current SM science suffer from some inherent linguistic, theoretical, and logical deficiencies, paradoxes, and absurdities.

Therefore, a prime aim and use of real science is discovering or recognizing and correcting current SM deficiencies, paradoxes, and absurdities that prevent or limit progress and better results. Trying to deny or ignore discoveries and better theory to cover up or disguise (or excuse) obsolete theory and inadequate results is anti-scientific.

Anomaly: An anomaly is something that exists despite the inherent deficiencies of a current SM theory and its sociolinguistic paradigm (the conceptual context of current thinking and discussion about existence, etc.). Clearly, at best, theories are composed of ideas, beliefs, assumptions, facts, and truths represented by words, nomenclature (the names of observed phenomena only partially described by current theory). So, obviously, the whole duration of a natural phenomenon (and its ever-changing totality) can never be fully described by a theory, which is why all valid scientific theories are falsifiable.

Anomalies are like landmarks, revealing blind-spots, misconceptions, misperceptions, misinterpretations, and boundaries. They limit a society's paradigm and its mental territory, its institutionalized world-view. So, anomalies can reveal weaknesses, inadequacies, and fallacies built into languages, maths, and incomplete theories about being (and its nature).

The exceptions to those truths are holonomic metatheorems based on understanding of basic principles of existence, or upon the whole basis of a logical system, such as a language or game, or maths, geometry, software, and so on.

Axiology: Axiology is the little-known, under-appreciated, and under-developed science of value and values. It may seem odd to include axiology in a paper on ontology and physics, but not doing so would be a mistake. In fact, not understanding the true nature of value helped subvert modern society, economics and, thus, also physics and maths (etc.).

For example, deficient axiology fostered and maintains chronic deficiency of ethics and intellectual responsibility. Even the discipline of axiology itself suffered from over-technicality and the pandemic penchant for valuing quantitative materialism and sciencey rhetoric (maybe to gain more credibility?). So, it now fails to 'work' outside the social silos of a tiny minority of academics.

To foster a better, truly holistic, holonomic, and truly progressive evolution of science, we need bio-ethical axiology. If we achieve that, as an essential element of macro-ontology and holontology (the science, theory, and holotrophic metatheory of being-as-a-whole), then the next-gen SM could be a wonderful support for a new era of STEM education (and global sanity). Of course, failing at that would permit more deficient evaluation and proportionally tragic results.

Ontology: Ontology was hijacked and subverted by medieval Western theologians and, most recently by sophists and technologists. It once was and still should be the scientific study of the realities and totality of being.

However, the ontology of modern, classical, and post-classical philosophy were as limited as the socially approved knowledge of the times. This era of civilization and science needs post-modern ontology. To be sustainably viable, it must consider and address the actual whole of being. It must also be as evolutionary as universal being, a holotrophic macro-ontology: holontology (ontology as if the whole of reality matters).

Naturally, being-as-a-whole is the only all-inclusive, all-encompassing reality (the universe, and its meta-energetic, metalogical nature). Therefore, all other sciences (and branches of philosophy) are subordinate subsidiaries of holontology. Of course, nobody can know everything about everything, but we can and should understand the basics.

Phenomena: A phenomenon (*pl. phenomena*) may be physical and/or only virtual. It can be a thing, being, or event. It may exist in/as a form, an object, a process, an event as a group or set. So, principles, concepts, and other nonphysical entities are actual virtual phenomena.

For example, universal presence (of being) expresses and embodies itself as phenomena. They are enabled and characterized by their innate principles and properties that determine their nature and potentials. Each apparent expression of being is a distinct yet ever-changing form of presence. So, although properties of transient phenomena and conditions may change, the nonphysical phenomena we can call intrinsic enabling principles remain reliably constant.

The relativity and interdependence of principles and forms of being enforce the interdependent relativity of all phenomena. Whether virtual or overt, the individual identity or entityhood of a phenomenon is a subsidiary aspect or element of the wholeness of being. So, a sentient being's perceptions are always of a psychophysical phenomenon or phenomena, yet not all phenomena are simply perceptual.

Theoretically, the existence of the universe and other phenomena (events, etc.) require no perception, nor individual perceivers. Yet, phenomena are compound results of dependent

origination and transformative interaction. However, the intrinsic metalogical principles of nature are exceptional, essentially atemporal attributes of being (as a whole). So, being neither transient nor separate from the universal nature of being, its metalogical enabling principles enable the presence and awareness of phenomena, mentality, and minds.

Nothingness: For viable macro-ontology and meta-ontology, nothingness is an important logical principle. Yet, its actuality does not exist in any nondependent or physical way. As nonbeing, "nothingness" means that which does not or cannot exist. As a condition of absence or lack, nothingness is knowable only relative to something or everything that exists.

Obviously, what does exist is everything, the totality of what exists, the universe. So, even what seems to be empty 'space' is indirectly detectable hyper-energy that enables, interacts, and moves with ordinary plasma, cosmic currents, galaxies, atoms, etc. Therefore, nothingness and all symbolic representations of it are things that exist only as psycholinguistic or psychophysical phenomena.

Principles: Principles enable natural phenomena, including other principles. They can also enable the existence and expression of new principles that were only pre-existent potentials of an enabling principle or ensemble of enabling/governing principles. So, though principles are immaterial (nonphysical) phenomena, they have morphic, structural, functional, and actual priority over all the mental/semiotic/physical phenomena they enable and sustain.

For example, though no other existential phenomena can have priority over a universe of all possibilities, potentials, and actualities, we can admit that it and all its virtual and material actualities are enabled and governed by its intrinsic metalogical principles, the most irreducibly elemental constituents and properties of its nature.

Remember, the word "principle" comes from *principium* and *princep*, for first, primary. Unlike other universal phenomena, principles are the most primal, primordial enabling elements of the universe. They enable the properties, qualities, and potentials of physicality and energetic phenomena. So, our perceptions and sensations of solidity and forces are actually of embodiments and/or expressions of nature's enabling principles.

However, a principle is either a purely nöetic (virtual or metaphysical) entity, or else a nonphysical element of logic or metalogical meta-energy. So, primal principles enable the beginning, foundation, and existence of everything. The primality and immutability of principles ensures that.

As elements of being, its most primal principles are generative elements of universal phenomena, the universe, and its infinite totality. Different kinds of principles enable the existence and interactions of beings and other universal phenomena, including the logical and metalogical principles and modes of nature. Being's intrinsic creativity is an example of a primal generative principle, enabling and being enabled by the other basic principles of being, like physicality and mentality. So, we can understand the realities of psychophysical energy and matter as complex results of the principles of nature's logic.

However, consider the prime dilemma of modern SM science. Some physicists believe that there is information—independent of any mind or mentality—in seemingly mechanical (non-living) phenomena, elementary particles or in 'dark' phenomena. Yet, they offer no explanation of how or why information could be present without mentality and semiotics.

In fact, materialists offer no explanatory information about mind, and a satisfactory definition of "matter" has been missing for nearly a century. Yet, mentality is the fundamental principle that enables our creativity, intelligence, awareness, thought, and communication—as integral, universally pervasive potentials of being.

Activity: Activity is a naturally generative, functional principle of being. Without it there would be no action or interaction, no vortical spin, thus no energy (no 'big bang' or matter), and no universe. Activity is the virtual nature and essence of energy. Energy is the expression of activity, enabling interaction, motion, and so on. Activity, its properties, functions, and expressions (*i.e.*, action, forces, etc.) are indivisible and inseparably interdependent.

The nature of activity is intrinsic to all physical and meta-energetic phenomena, either implicitly or explicitly. The principle of activity enables functionality, functioning, transience, evolutionary change, motion, flow, spin, and all the other expressions and necessities of being. Being depends on the meta-energy of activity. Physical forms. actions, communication, and intelligence would be impossible without energy and its enabling principle, activity. It is essential for all actual and virtual interactions, functions, operations, and results.

Science and thermonuclear implosion-explosion events prove that interaction is the most ubiquitous, pervasively universal expression of activity. In fact, no energy or action happens in isolation, apart from simultaneous interactions. So, we can best understand energy and being (the cosmos) as the momentary (yet ongoing) interaction that enables and sustains all phenomena (the whole of reality).

We can also see and understand activity as having very subtle, subtle, and overt (and/or extreme) expressions in all domains and levels of being (from the 'sub-quantum' and nöetic to the somatic and cosmic scales). Clearly, the liveliness of being, life, science, and maths would be impossible without activity. So, understanding it is essential for macro-ontology, holontology, and a viable SM of physics (etc.).

Relativity: Universal integrity enables and sustains the logical relativity of all principles, phenomena, and potentials. Without relativity the whole of being would lack integrity, symmetry, asymmetry, nondual polarity, complexity, simplicity, and other complementary relations required for being, life, awareness, consciousness, and science.

The distinct relativities of overt phenomena (we think of as physical) are expressions of actual relativity (of the essential principles that enable and sustain them).

Plato was relatively correct, in principle. Nonphysical and mental phenomena are more real than all the ever-changing phenomena we perceive and think of as purely physical. Yet, conversely, science and maths are retarded by the idea that governing principles, symbols, numbers, functions, and their potentials are purely mental fabrications, unrelated to being and the enabling primal principles of its nature. However, mathematical symbols, protocols, and operations are natural, logical, psychophysical phenomena, relative to everything else.

For example, all phenomena—including mathematical expressions and the realities they represent—are as inseparably interdependent as the principles of physicality, mentality, and the other nonphysical principles that enable and sustain them. In fact, the whole of being, the totality of absolute reality, is nondual, neither purely physical nor only virtual/illusory.

Literally, essentially, and indeed, all beings and other phenomena are enabled by and/or with virtuality, physicality, and mentality. Our dichotomies and anomalies are artifacts and defects of human languages, sociocultural conditioning, and normal modes of thought, not defects of natural relativity (which is constantly perfect). Therefore, fully understanding the metalogical principle of relativity is essentially important to the theory, metatheory, and understanding of being, science, maths, and proof.

Virtuality: One of the metalogical principles enabling and sustaining phenomena that exist beyond materiality and physical interaction is virtuality. Fundamental principles, such as logic, mentality, personality, and materiality (physicality) are virtual yet actual elements of being.

Just as water is not *in* or *behind* ice, data and metadata are not *in* or *beyond* the semiotic representations used for transmitting or computing with them. Similarly, mental or virtual phenomena and principles are not *in* or *over* or *beyond* any forms we normally think of as physical. Thanks to the metalogical principles of form, structure, integrity, physicality, and dimensionality, we can use the concepts of dimensionality to help us think about reality. So, we can think of various domains and levels of form as dimensions or spaces, but they are virtual mental constructs. Hence, we can understand virtual objects of nature's meta-logic as pervading space (and all other phenomena), while being of a different order of being.

Physicist David Bohm saw the universe as holonomic, having implicate and explicate orders of being. Bohm missed seeing physical phenomena as embodiments and expressions of the meta-physical principles required for being what (and as) they are. Hence, domains of meta-energetic and nöetic (cognitive or psychophysical) phenomena are virtual modes of being.

Holontology theory and metatheory provide a good deal more descriptive and suggestive explanations than all the fantastic pronouncements about "dark" stuff and 'God' particles (causeless, accidental, mindlessly purposeless cosmic glue). Bohm's holonomic hypotheses was inspiring, but offered incomplete explanations of what modern science knew about what was detectable (via technology of the 1970s). However, we all live, interact, talk, and think by virtue of enabling metalogic and nonphysical governing principles, knowable as such. Theorems and equations are linguistic and semiotic expressions and results of the actual elements of nature, metalogical principles.

So, nobody will ever discover a subatomic particle that generates, governs, and sustains awareness and the principles enabling and governing universal phenomena. Clearly, looking for physical causes of nonphysical causes and principles governing physical, psychophysical, and mental realities is worse than useless.

Infinity: Universal totality, the ever-changing wholeness of being, is the original, all-inclusive expression and embodiment of infinity. Except for principles, the actual conditions of universal phenomena (and beings) are constantly transient, making them both transfinite and infinite.

The logical identity and psychophysical or metaphysical actuality of principles, ideas, and virtual numbers are constantly definite yet boundlessly immaterial, thus changeless, thus infinite. That can be understood as an integral microcosmic expression of the dyadic relativity of all finite identities and all infinities. The interdependent relativity of principles, forms, structures, functions, relations, entities, and interactions enable all finite and infinite forms of existential phenomena.

So, we can think of and represent universal being and its actual totality—enabling and enabled by its infinity of integral metalogical principles—as the ultimate infinite set that includes itself, and the transfinite null set, {0}.

Dimensionality: Dimensionality, the principle, is a subsidiary property and aspect of the interplay of form, structure, functionality, physicality, and mentality. Of course, that fact of being is enabled by relativity and integrity, which enable and sustain our perceptions and conceptions of dimensionality's properties (space, distance, depth, up, down, etc.).

Dimensionality enables the development and use of psychophysical and purely mental conceptual constructs for the sake of thought and communication. Unfortunately, careless use and abuse of the term "dimensions" (in physics and maths) caused and perpetuates an

unfortunate state of general confusion. For example, dimensions do not exist in any pre-existent, concretely physical, independently real way.

The use of the term "dimension" in maths has a strictly mathematical definition that makes it convenient for thinking about various mathematical objects and results. Yet, dimensionality, the principle, enables perceiving, describing, and interacting with phenomena enabled primarily by form and structure. So, the popular notion of 3D "space" mistakes perceptions and misconceptions as realities of the field of being and its attributes of dimensionality.

Likewise, believing in a curvy 'space-time' geometry is caused by misunderstanding the principles of dimensionality, physicality, activity, and reality. For example, at well beyond 90 billion lightyears in diameter, the cosmos is either infinite or so inconceivably vast that it can be considered boundlessly infinite, without up and down, inside and outside, no height, width, or depth. Only dimensionality, the nonphysical principle, enables perceptions and ideas about any kind of space.

So, we may as well believe that the universal regime of hyper-luminal energy enabling, infusing, and affecting galaxies and all other energy phenomena is spinning along with everything in it, not curving through a nonexistent continuum of magical QM maths. Also, 'space' in a room and empty 'outer' space are mental phenomena enabled by our senses, social conditioning, and a principle and property of form, dimensionality.

If the universe had an actual dimension, then it would be the all-inclusive infinity of its field of being, life, and energy, enabled by integral metalogical principles. The mathematical 4th dimension in QM's probabalistic-statistical maths (and post-Einsteinian hypotheses and notions), an extra dimension, is a useful fiction that tricks almost nobody into believing it represents a self-existent yet totally illogical, accidental physical thing. However, it should be no surprise that both QM and mathematical 'dimensions' are enabled by truly real and reliable enabling principles. (see defs., Principles & Logic)

Integrity: Integrity, the structural principle and fact, enables and sustains primal unity and identity, the unique individuality of each entity and thing, and of the universe. The expression or embodiment of integrity depends on other metalogical principles, mainly actuality, reality, identity, form, structure, functionality, relativity, reciprocity, regularity, and permanence.

Obviously, beings, forms, structures, functions, and systems would be unsustainable without integrity. The formal, structural, and functional logic of maths, its results and proofs would be impossible without integrity. In fact, without integrity, there could be no logical principle of permanence to ensure that viable functions and formulas that work with integers also work with complex numbers in analytic algebraic geometry. The constant nature and properties of numbers, equations, formulas, algorithms, and graphs all depend on integrity that sustains the principles governing them and their potentials.

The logical integrity of arithmetic is an expression of the natural integrity of the metalogical principles of being itself. For example, integrity enables the primality, relativity, and the identities of 1, 2, 3, and all the other primal numbers. Integrity also enables and sustains the complementary relativity of simplicity, complexity, symmetry, and asymmetry seen in the relationship of the primal and nonprimal numbers. Integrity enables and sustains the interdependence of all phenomena and potentials, including truth, falsehood, reality, and unreality.

So, truth, reality, and proof are characterized by integrity. Unreality and untruth lack the logical and actual integrity of natural congruency. Logical integrity ensures the reliability of the nature of maths and the nature of life, making it a fundamental essential of proof.

Physicality: Like mentality, physicality is a natural metalogical principle that enables the embodiments, expressions, properties, and qualities of its nature and potentials. In fact, the primal metalogical principles that enable physicality (and its properties) are what enable its forms, functions, effects, and our perceptions of them.

Because the nature and actuality of physicality and the other metalogical principles of nature were neither recognized nor considered, most modern scientists have lacked a generally accepted definition and explanation of physical matter for decades.

However, some scientific pioneers and visionaries of ancient times were close to understanding matter. As expressions of principles, enabling, governing and sustaining the various forms of matter, energy, and nature's processes, some early thinkers intuited the nonphysical source, yet they failed to realize optimal understanding. Free of confusion about physicality and mentality, nothing restricts perception, conception, and realization of the inseparability and interdependence of the expressions and embodiments of physicality and mentality. Embodied and/or expressed in dyadic actualization of primal creativity, life and cosmic phenomena are enabled and sustained as integral expressions and embodiments of being and its magneto-dielectric 'field' of energy and enabling principles.

Energy, thought, information, communication, bodies, and the activity of living beings require physicality, yet it is enabled and sustained by the meta-energy enabling the metalogical principles of nature. Otherwise, there could be no action or motion, nothing to move, no time to move anything, no elements, no explosions, no DNA & RNA, no bodies, nothing to serve as media for communication or the encoding of information by intelligent beings and their minds. Without the meta-energy and metalogical principles of physicality there would be no plasma, no stars, no galaxies, no fuel, and no physical properties to sustain them.

All phenomena contain at least the essence of physicality, the integral potentials of being, form, structure, and function. They enable the existence, properties, qualities, and potentials of integrity, dimensionality, energy, and force. So, instead of believing in partial descriptions, as if they were realities, we can and should follow the example of the ancient Buddhist sages. They saw elemental energy and 'matter' as psychophysical phenomena. Instead of believing in solid, permanent particles of stuff, and settling for an inscrutable equation ($E = mc^2$), they understood the psychophysical constituents of existence as solidity, cohesion, motility, temperature, and color. Of course, those five subsidiary principles and properties make things perceivable. Yet, no things, bodies, and beings would be knowable without the universal enabling principles and presence of awareness.

In other words, we can think of "atomic" energy phenomena simply as energetic events or processes expressing the principles and properties of the objects of perception we experience (by virtue of our senses and cognitive functions).

However, from the impossible perspective of a mindless, purely mechanistic universal field of magic energy, without pre-existent principles (like physicality and mentality), there could only be an infinite wholeness of totally formless no-thing-ness [*sic*], without forces, objects, parts, bodies, and places; and no beings, no minds, no logic, no principles, and no processes, anywhere. So, clearly, forms, elements, things, places, biomes, organisms, and conscious selves would all be impossible in a cosmos without physicality and the other enabling metalogical principles of nature.

Mentality: Like physicality, mentality is a functional principle intrinsic to natural metalogic, yet subsidiary to primal principles. Natural functional logic and mentality are prerequisites of intelligence, of thought, communication, semiotics, maths, and other expressions of the potentials of practical logic and the more primal principles of existence.

The reality of mentality as an intrinsic principle of universal being is proven by the presence of mathematicians and readers. If mentality were not an intrinsic universal principle, at least virtually, as potential, then maths, writing, reading, mathematicians, writers, and readers would be nonexistent. If that were the case, information could not exist.

Because of mentality, some beings with natural bodies and minds can dream and remember or imagine a fictional universe with only purely mechanical entities. AI-enhanced supercomputer systems are mechanized expressions of our mentality, but they have none of their own. To simulate intelligence, mindless computers require prior invention and initial programming. Their sets of instructions are created by natural beings who embody and express the properties and potentials of intrinsic mentality.

Energy: Very few modern theorists achieved Michael Faraday's understanding of the magneto-dielectric nature of energy. Des Cartes and Newton never came close. So, their followers and successors were led astray.

Now, we know that magneto-dielectricity (*MDE*∞) and its electromagnetic forces (EMF and/or F_{EM}) are more than $10^{39}(\pm)$* times stronger than **g**, the 'force of gravity' (a by-product and field-effect of energy, hyper-energy, and meta-energy). In fact, some bright SM QM 'physicists' say that the highest mode of magneto-dielectric hyper-energy (AKA 'zero-point' energy, ZPE) is $\pm10^{113}$ greater than the free energy of massy local fields and massive elemental matter.

Yet, like matter, energy is an emanation and expression of the intrinsic principles of actuality, causality, potentiality, activity, motility, reciprocity, and magneto-dielectric relativity. So, naturally, the enabling principles and properties of energy are enabled by the universal metalogical principles of being, form, structure, functionality, actuality, activity, causality, vitality, expressivity, permittivity, susceptibility, transmittivity, receptivity, potentiality, and potency (etc.).

From ancient times, observers with great awareness realized that the life force (our essential bio-energy and mental activity) are expressions of energy and power they called prana, la, chi, ki, or whatever. We can think of its highest level of activity as meta-energy. We can be sure of that because change and motion are modes of energy expressing the nature of activity, its essential enabling metalogical principle. For example, our thoughts and modes of mental activity change and cause effects and changes in our local field of being. Yet, mental/emotional activity is not only mediated by physiological, electrochemical interactions of our cells. Our local field of being and identity is pervaded by all the EM forces and magneto-dielectric field phenomena of being, including all the EM emanations of every cell, every mitochondrian [*sic*], every microbe, and every viroid/virion, every molecule (RNA-DNA, etc.), and every 'atom' of matter in and on and around our bodies are all emanating energy at their own characteristic intensities, frequencies, and modes of vibratory activity.

Of course, whether we notice it or not, each of those embodiments of being and their energetic field-effects are always changing, causing new changes in our personal psychophysical fields of being and experience. In other words, our minds and bodies are complex, nondual phenomena of the field of being and its energy, at every level and mode of interaction (from the 'subatomic' on up/out to the macrocosm) and intelligence.

The primal properties of energy (its magneto-dielectric field effects and electromagnetic forces) are functionality, motility, fluidity, effectivity, relativity, reciprocity, interdependent interactivity, transmittivity, resistivity, capacitance, inductance, permanence, multiphasic presence, transfinite duration, power, force, radiant emanation, vibratory motion, axial/vectorial vortical flow, and momentum.

Naturally, all those properties are principles, enabled by other intrinsic principles, like

directionality, locality, physicality, unity, duality, totality, and the other principles necessary for universal being and life. For example, all the principles and properties of energy enable and animate living beings, even viroids, virions, and prions. So, composite beings live as long as their intrinsic energy level remains sufficiently above the minimum required. (see def. of Life)

A more microscopic example of the nature of energy can be seen at the laminar boundary layer of toroidal superconducting cryogenic storage coils. The nearly complete lack of counter-electrical resistivity enables almost perfectly unimpeded plasmonic flow of energy within and around the toroidal field of flow. However, the cryogenic environment is slightly less than perfect. So, tornado-like microscopic double-helical vortices arise, persist, and dissipate, intermittently in the transition layer boundary between the singular, toroidal flow of electronic fluid and the surrounding bath of super-fluid liquid helium.

Hence, the apparently empty core of the nanoscopic tornados forming and dissipating in the almost turbulence free transition layer are actually full of the pure hyper-energy/matter exchanged at and with the invisible $\{MDE^{\infty},E_{EMF}\}$ boundary. Those high-energy phenomena exhibit characteristics that help us understand the cryogenic and near-cryogenic, ultra- and hyper-high energy states of the extra-planetary domains of the cosmic $\{MDE^{\infty},E_{EMF}\}$ field.

In other words, the microcosmic vortices we see in the cryogenic domain of toroidal superconducting (energy storage) devices, demonstrate the same intrinsic principles that enable and govern the axial vortices at the center of galaxies, hurricanes, tornados, lightning, and the twisted-pair filaments that cause polar auroras and intergalactic currents of plasmas and hyper-plasma. So, we can see that the super-massive energy-density (mass) at the heart of a galaxy's axial, double-helical vortical flow is due to the radiant *MDE* & E_{em} forces, flow, and pressure gradients caused and sustained by all the spinning stars (plasmoids) and plasma currents (rotating around its hyper-plasmoid core).

That theorem is supported by the universal fact that the furthest reaches of galaxy's spiral 'arms' (clouds & currents) of stars move at the same velocity (rate of rotation) as the inner-most boundary of the eye of the galactic hurricane. So, all the suns' positions relative to the galaxy's central quadruple-vortex remain relatively fixed. Thus, the core energy density can be calculated per…

Eq. #?. $E_{Gc} = \mathbf{n}_S\sqrt{E_S(E_{EMF})} \bullet 10^{\pm 39}(\mathbf{g}\sqrt[3]{m})v\pi r^4 \cong D_E \because$

$$E_{Gc} \equiv E_{PH} = E_{U^{\infty}} \approx 10^{\pm 113}\pi^4 + 10^{\pm 39} = \pm 10^{\pm 152} > \mathbf{g}$$

In other words, the energy density (D_E) of the galactic core (E_{Gc}) equals the number of local stars times the square root of the stars' radiant energy times the quantity of elemental energy phenomena times the scalar product of the EM force times gravity times the cube root of galactic mass, times its rotational velocity times pi times the 4th power of the radius.

That is so because all galactic subfields (of plasma, stars, etc.) spin as a single $\{MDE^{\infty},E_{EMF}\}$ phenomenon, energizing their axial cores (etc.). Thus, we have the approximate luminal energy density equal to $10^{\pm 39}(\mathbf{g}\sqrt[3]{m})v\pi r^4$ at a galaxy's core. However, bear in mind that spiral galaxies have quadruple laminar vortices, caused by their bidirectional double-helical vortical flow of hyper-plasma (E_{PH}) within and around their 2 bidirectional double-helical vortices of $\{MDE^{\infty},E_{EMF}\}$ flow.

So, per QED & SED theory, since the relative energy density of E_{PH} is $10^{\pm 113}$ times greater than that of 'normal' E_{EM} density (and EM force is $10^{\pm 39}$ greater than **g**), the apparent mass and energy of the exact center of a galactic vortex is virtually infinite, equivalent to $\mathbf{E}(\mathbf{m}) \approx \mathbf{g}(\pm 10^{\pm 152})$, at the least.

That explains the apparent existence of a super-massive 'object' (without detectable luminal mode energy) at a galaxy's core. Also, a galaxy's local hyper-plasmonic field is moving with

and within the galactic spin of luminal $\{MDE^{\infty},E_{EMF}\}$ phenomena, and vice versa. So, they are inseparably interdependent, interactive, modal domains of universal energy (E_U) and universal being/actuality ($\mathbf{U}_A$).

That explains the existence and detection of ultra-colossal jets, colossal "bulbs" of ultra-high-energy gas, and plasmonic currents that emanate from the galactic core (somewhat like magneto-dielectric lines of force in a spinning semi-spheroidal field AKA a magnetosphere). Naturally, despite the SM ignorance, all magnetic and electrical field flow are inseparably interdependent field-effects. Thus, as the intrinsic principles of being enable and sustain $\mathbf{U}_A$ (the cosmos), so does the pure energy that enables its field of magneto-dielectric and elemental energy phenomena, $\{MDE^{\infty},E_{EMF}\}$, enabled and sustained by E_U (including the enabling meta-energy and hyper-luminal hyper-plasma).

Therefore, if there are any spheroidal 'objects' at the centers of galaxies, they must be ultra-colossal multimodal hyper-plasmoids caused by the plasmonic "pinch" process, not by gravitationally collapsed super-stars. That eliminates the need for reifying (thingifying) conceptual objects and artifacts of abstract maths and statistics, the inexplicably confusing singularities, like black holes (and big bangs of nothing before beingness began). (see defs., Particles, QM, and SM)

Still, we should remember that many galaxies move within galaxy clusters within super-clusters, and that they move within ultra-colossal currents of plasma. Some flow across more than half the diameter of the detectable field of universal energy. Obviously, like any other EM circuit, those currents begin at cathodic sources, and flow toward anodic terminals.

Clearly, those ultra-colossal currents and their contents are interactive effects of their surrounding hyper-luminal E_{PH} medium. Also, recall that the detectable region of being must be moving with the rotation of the whole field, but at a rate undetectable from within it. Yet, we can accept cosmic spin, hyper-viscosity, and turbulence as the source of energy released by field-effects (as 'background' microwaves, cosmic rays, galaxies, stars, plasmas, etc.). Hence, equation (#2?) is only good for finding approximate energy density of galactic cores (relative to the local subfield of a galaxy). To precisely calculate the absolute energy density of a galactic core requires including the velocity of the galaxy's motion in or relative to the others in a cluster and, also, to the field external to the plasma current carrying them toward its terminus, and its actual velocity of spin around the cosmic axis of rotation.

So, clearly, we should acknowledge the energy and velocity of the plasmonic currents moving the galaxies, stars, nebulae, and the field. Ideally, if we could, the equation would include the actual energy (and velocity) of the field spinning around the universal axis, as

Eq. #?. $E_{vr} = E_{PH} \equiv \mathbf{g} \bullet \pm 10^{\pm 152}(E_U\infty)$

That final scalar dot product includes infinite universal energy, $\mathbf{E}_U\infty$, because it is immeasurable, yet also because it is infinitely generative, enabling, and sustains the totality of $\mathbf{U}_A$ (universal actuality and its magneto-dielectric field of phenomena and meta-phenomena). Now, though meta-energy and nonphysical phenomena (principles, etc.) are not and cannot be directly sustained by luminal and hyper-luminal energy, clearly, they are as inseparably interdependent as the relativity of being and nonbeing (nothingness).

Now, per SM notions, 'gravity' is acceleration. Thus, we can infer and partially deduce the relative energy of cosmic rotatory velocity, much the same way we can see, infer, and partially deduce the presence and activity of the galactic and intergalactic E_{PH} field (AKA 'dark' energy/matter). However, even if the Webb Space Telescope shows us 10 or 20 times more of the $E_U\infty$ field (beyond the $\pm$93 billion LY diameter sphere of field-effects detectable now), unless it shows us the cosmic axis, we will have no measure of its size. Also remember that real

scientific method requires measurable and/or provable phenomena. Therefore, even if we get to see the cosmic axis, there is no guarantee that we will ever see its periphery, if there is one. Regardless, the nature and qualities of being and energy are much more interesting than quantities and absurdities. In fact, there is no way to disprove Buddha's theorem:

> The cosmos and its worlds are dreams within a dream (of a primordially beginningless, thus endless and infinitely vast mind).

Still, the field of being expresses and embodies intrinsic metalogical principles enabling, empowering, and sustaining us and the rest of the cosmos. So, in principle, pure energy is the pure expression and essence of activity and interactivity, enabled by metalogical relativity, reciprocity, vitality, and the power of presence. So, as Einstein intuited, energy and matter are fundamental, interdependent enabling expressions of cosmic reality (actuality, form, structure, functionality, interaction, and presence).

So, instead of imagining a ridiculous 'continuum' of curvaceous yet nonphysical 'space-time', we can now see the hyper-luminal field of being as an ocean of hyper-fluid, enabled and sustained by integral, elemental, metalogical principles, energy, and power, enabling and enabled by being's meta-energy. Of course, they are expressions of the purest, subtlest form of energy, metalogical meta-energy. (see defs., Energy, Time, & Space)

Einstein also realized that there is a cosmic 'medium', like an actual or virtual gas, that enables energetic field-phenomena, such as transmission of emanations and emissions of energetic phenomena. However, he was confused in thinking that "time is motion." That defective over-simplification confuses too many of us.

How? Not only because time is a mental fiction, but also because Einstein failed to mention that motion is an expression of energy. He also failed to say what kind of medium enables it (energy, including hyper-energy & meta-energy). So, clearly, Einstein misunderstood motion, energy, and the field. He was also either confused about enabling principles or else simply ignored them. Sadly, his SM QM successors were equally confused, and/or worse.

A better way to think of the varied frequencies, flow regimes, and pressure gradients of the $E_U\infty$ field is by analogy with a) dense oceanic salt water, b) an upper-layer of fresh water, c) Earth's atmosphere, d) the Sun's heliosphere, and e) the interstellar & intergalactic regimes & regions of energy (**E**). In that analogy, the ocean and less salty water symbolize the domains of 'slow' luminal and subluminal energy phenomena, where complex turbulent phenomena and interactions create the characteristic substances, elements, frequencies, flow regimes, and pressure gradients.

The air of Earth's atmosphere is much less dense, less viscous, more active, more subject to turbulence but of lower-order pressure gradients. The energetic field of the heliosphere, beyond Earth's magnetosphere seems much less dense, more energetic, yet seemingly less turbulent. The galactic interstellar and intergalactic regions seem much less dense, but with the much more energetic luminal phenomena of the more harmonic super-high and ultra-high frequency regimes, seemingly, with much less turbulence per unit volume.

However, the analogy is imperfect and limited. So, accurately thinking or talking about energy in general requires recalling that mass and energy density D_E are measures of results of interactivity, motility/vorticity, velocity, momentum, force, intensity, frequency (rates of vibration and/or pulsation), amplitude/potential, and dissipative radiation (net energy loss). Yet, those actualities exist because of and relative to the hyper-energy field (which absorbs seemingly 'lost' field energy in galactic core vortices). So, understanding the nature and dynamics of the $\{MDE^{\infty},E_{EMF}\}$ field requires a new way of seeing its dualities, symmetries, and meta-symmetries within its nondual totality.

A simple 3-mode model of the MDE^{∞} field's density gradients helps:

1. $\pm$1/4 of the hyper-mode is hyper-dense hyper-frequency E_{PH}
2. $\pm$3/4 of the hyper-mode is ultra-dense hyper-frequency E_{PH}, and
3. the E_{EM} mode is luminal (plasma, RF, UHF, etc.) and ultrasonic (etc.) **E**

Naturally, the 3 regimes have corresponding harmonics and density/pressure gradients. However, if it were physical, we could say that the enabling meta-energy regime (of pure principles and other nonphysical phenomena) is another gradient. Yet, clearly, it is the integral enabling source of the $\{MDE^{\infty},E_{EMF}\}$ field and all subsidiary phenomena, including us, minds, science, logic, and mathematics. Also, from this perspective, relative to the hyper-plasmonic hyper-energy ($E_{\mathbf{H}}$) modes of the cosmos, all the elements we know as light or heavy (in the E_{EM} mode of matter) have inverse proportional energy density.

Thus, 'gravity' (**g**) is a by-product and side-effect of the $E_{\mathbf{H}}$ and D_E modes of the field; and, so, the more complex elements and seemingly heavier objects actually rise out of and away from the denser energy regimes. In other words, all less energetically dense objects are like bubbles that rise out of the ocean's depths. Exactly, how and why, requires more rethinking of energy.

For example, any kind of explosion in the E_{EM} mode of being, requires sufficient pre-existing energy and a causal process. So, even if we say that the E_H of the MDE^{∞} mode was a pre-existing field or source of hyper-plasmonic energy (regardless of its origin), still a causal process was required to get part of it to leak enough **E** to enable any kind of fuel, motion, ignition, fission, and explosion or implosion. However, we may as well say that every thing simply emerged and took form as the field spun, developed, and evolved.

The best candidates for the most primal, elemental, and macrocosmic forms and sources of energy are 1) a magneto-dielectric field, 2) dynamic flow, 3) spin, rotatory motion, 4) vortical motion, and 5) energetic interaction/reaction. Yet, 'early' in the imaginary Big Bang 'universe', initially, nothing interactive existed, then nothing reactive, then not enough of anything to make an explosion of everything out of nothing. So, unless we accept the intrinsic power and co-emergent potentials of natural metalogical principles and the $\{MDE^{\infty},E_{EM}\}$ field of being, we get no spin, no energy, no turbulence, and no luminal elemental phenomena, and no explosions, ever.

So, if we do enjoy the effects of original spin, energy, and power, then any microwave background energy is because the universe is still spinning. In that case, we need no big bang 14 billion years ago to begin a spherical universe much larger than 14 billion light-years in diameter. Then erroneous notions of 'dark' energy & 'dark' matter (to make up for a missing big bang) are also unnecessary.

Also, as both Nikola Tesla and the great astronomer Halton Aarp realized, accepting the realities of spin and vortical flow can eliminate the embarrassing anomalies and problems associated with the illusion of cosmic expansion, etc. (caused by SM cosmologists, et al).

For more extensive analysis, remedial theory, and valid metatheory, see the following definitions and subsequent sections of the text, below.

* Note: Throughout this work of theory and metatheory the "$\pm$" symbol is used for numbers/values derived from the work of SM phyicists, et al. That is because their methods, maths, and results are only approximations of relative relations, at best. At worst, the methods, maths, numbers, and misinterpretations common to modern SM 'physics' have misled and betrayed the whole of science, confusing everybody, and supported the status quo of materialistic kleptocracy and its governing paradigm (of corporate piracy).

Matter: Naming the basic forms of matter (solid, liquid, gas, and plasma) is a very inadequate definition, especially for any post-modern era of science and ontology. For instance, naming those 4 modes of matter tells us nothing about the fundamentals of how and why matter is what it is. Likewise, labeling and describing observed properties of the energetic elements of matter leaves us equally unsatisfied.

For example, QM and SM physics considers the elements compound phenomena made of other compound phenomena, called particles, composed of an exotic zoo of other particles (composed mostly of 'empty space' and undefined energy, plus some spin), and other undefined, unexplained objects and probabilities of QM maths. They do not explain how or why any precursor particles and/or processes could suddenly exist (without cause), then cause other particles, elements, and their properties (without necessary principles, conditions, and processes).

SM SMEs only describe what their QM maths and models let them imagine and think about a tiny fraction of 1% of what exists. They also ignore or misperceive or deny the vast majority of actual realities and required principles outside their theoretical box of concepts, notions, conjectures, and hypotheses. So, post-modern physics and ontology need a new, holonomic definition of matter and energy, providing optimum explainability, good understandability, believability, reliability, and satisfaction.

Therefore, sufficient definition, necessary for optimal progress, requires starting with the basics. Instead of speculating about 'dark' matter and causeless particles (with magic powers that came from nowhere before anything existed), we can consider the nature, essence, and potentials of the intrinsic principles that enable matter, energy, and all other phenomena, including the universe itself.

For example, the prime principle enabling solid matter is solidity, a principle of form, a metalogical principle. The prime principle enabling liquid is liquidity, a principle of form, structure, and functionality. Liquidity and fluidity are also enabled by activity and motility, all enabled by functionality (the enabling metalogical principle). Gaseous matter is also enabled by activity, motility, and fluidity, principles enabled the primal metalogic of functionality, structure, and form.

The prime principles enabling and expressed by electronic and ionic plasmas are duality, activity, vorticity, fluidity, motility, reciprocity, and magneto-dielectric relativity. They express enabling metalogical principles of being, form, structure, function, and energy. Thus, we can define 'anti-matter' (positrons, etc.) as contra-rotatory, reciprocal, magneto-dielectric complements of oppositely charged plasmoids ('free' protons, etc.), vorticles, not particles.

Yet, the fact that so little matter exists can be understood as evidence that principles, energy, and hyper-luminal hyper-plasma are the sufficient necessities of universal being.

Naturally, without all the intrinsic principles enabling being and energy, they could not exist, nor would we. Nor could there be any galactic and intergalactic interaction with what SM SMEs call 'dark matter' and 'dark energy'—without intrinsic enabling principles of the cosmos and its nature. In fact, obviously, the nature of universal being is its enabling, governing principles, which enable nature's ways, modes, and processes.

Hence, we can understand, define, and explain matter as macrocosmic and microcosmic field-effects, phenomena embodying and/or expressing universal metalogical principles of being, intrinsic to the nature of its reality. For instance, a prime principle of all directly observable/detectable matter is physicality. Thus, we can assume that the vastness and potency of hyper-luminal energy has properties that make it meta-solid, meta-liquid, and meta-gaseous hyper-plasma. So, it exhibits 2 main modes of energy density and magneto-dielectric interactivity, misnamed 'dark' energy and 'dark' matter. Yet, hyper-energy, energy, matter, and

the cosmos-as-a-whole are emergent vibratory phenomena, full of all the forces and frequencies of energy and matter.

So, we can think of the undetectable hyper-plasmas resonating as hyper-harmonic overtones of Deuterium and Tritium (or of Hydrogen & Helium). That can be known because we can detect and observe the effects of hyper-plasma interacting causally with luminal plasmas, galaxies, and physical elements. Naturally, all the facts above are possible because of mentality, the prime metalogical principle of being that enables awareness, intelligence, mind, thought, knowledge, and understanding.

Therefore, we can also intuit and investigate the nature of the pure hyper-energy that fills approximately ±96% of the detectable cosmos, while enabling and sustaining the other ±4% of phenomena (which is ±95% luminal plasmas).

We can also see the apparent disparity of luminal and hyper-luminal energy (and 'anti-matter') as an expression of meta-symmetry, not super-symmetry. In other words, the meta-material vastness of the hyper-plasmonic field is balanced by the explicate physicality of its lower-frequency (lower energy) luminal/elemental phenomena. (see defs. of Space, Reality, and Hydrogen)

Particles: In the mainstream 'standard model' (SM) QM (quantum mechanical) theory, a 'particle' is an undefined point that exists only in relation to other theoretical objects, including the [QM theoretic] field of nothingness, in which those points allegedly exist. Hence, they are all described by and per the rules of current SM QM ideas and beliefs.

For example, SM QM "points" are supposed to have various kind of spin, including "up" and "down" spin (without having any substance to spin). Allegedly, they also possess other properties, without possessing pre-existing intrinsic enabling principles (and substance), nor any causal processes that caused them to become physically real universal phenomena. So, evidently, SM QM theorists and SMRs must really believe that dimensionless points can be of various sizes, charges, abilities, functions, and powers without having any real substance or form (and definite intrinsic structure) to enable their properties and powers. Yet, they exist as QM objects because of assumptions about space, time, fields, and probable properties of particles.

In fact, the whole basis of modern SM QM theory depends on assumptions and arbitrary beliefs about probabilities, time, space, distance, metrics, and statistics that may or may not be totally reliable and valid for all time and all cases in all frames of reference (beyond those accepted as necessary and sufficient for SM theory). Clearly, the situation now fits Kuhn's definition of science in crisis mode.

If that claim was untrue, then SM QM theorists could explain why and how points of nothingness can have properties, functions, motions, and interactions that cause and sustain actual physical phenomena. Yet, they cannot explain all those magical powers of QM points, nor how they suddenly appeared in an original point of nothing, in the middle of nowhere. So, for a reliably useful, truly scientific definition of "particles" we need a good definition and explanation of their nature, and of what they are not. Now, first, we must distinguish purely theoretical particles from actual (or physical) particles.

Theoretical particles are mathematical or philosophical objects of consciousness and/or imagination (or delusion). They have no actual nature of their own, other than as objects or units of theory, enabled by mentality (etc.). They are defined or described in accordance with the terms, axioms, and rules of the theoretical domain of discourse that enables their mental (or illusory) existence.

Actual particles are constantly changing events enabled by the intrinsic principles of their

nature, universal nature, and its field and subfields of magneto-dielectric energy. Whether we think of a grain of sand or the tiniest particle of an element, actual particles are field-effects, with actual form, structure, functions, properties, qualities, and potentials enabled and determined by natural principles and interactions with the field of being (and energy) that sustains them. Every physical thing—however tiny or solid or as vast as the cosmic field—is energy, a constantly changing form of energy.

Thus, all actual particles embody and/or express all or some of the principles and properties of physicality and natural actuality. So, in terms of modern physics, actual natural particles have mass and some intrinsic motions. They or their components can spin, sustain vibratory interactivity, and so on, because of their physical form (etc.) and energy. They all have mass because it (mass) is a measure of intrinsic energy enabling and sustaining their form, structure, and functioning. That is so because all forms of detectable matter are forms of energy, the energy of the magneto-dielectric field of being (the cosmos/universe, "$U_{f\infty}$").

Those essentials of actual particles are necessities because motion, vibration, spin, and velocity are expressions of energy. So, we can also understand energetic particles by seeing what they are not.

Thinking or saying that 'photons' are moving particles (points) of light without mass is as ridiculous as believing that neutrinos, gluons, and inflatons are actual particles—that move and cause physical effects—without the essential necessities that enable the energetic physicality of actual particles (vorticles, vortices, etc.).

For example, because of the nature, dynamics, and actuality of $U_{f\infty}$ (and its magneto-dielectric field of energy), we can perceive physical objects we call particles. Only the necessary physical constituents and intrinsic enabling principles of actual particles can make them possible, and truly real.

So, consider this, most of the particles we can see, touch, or smell and/or taste are made of physical substance, elements and compounds. Most such particles are made of an element or a chemical or crystalline ensemble of elements (molecules). Yet, we also conceive of objects with some virtual, mental, or hypothetical existence we think of as real. So, if we consider mental objects of consciousness as real constituents of our psychologically or mathematically real virtual reality, then they are virtually real, as such. That does not make them or our thoughts about them concretely real physical objects.

Confusing the difference between actual and virtual objects and particles led to the erroneous SM theory and hypotheses about particles. Thanks to Democritus, et al, the SM particle theory of physics began thousands of years ago (in ancient Greece via speculative thinkers in India). Sadly, the ancient Greeks suffered pandemic egomania and cultural chauvinism. That kept them from citing their foreign sources. Evidently, it also kept them from admitting that their ideas were merely mental. So, ever since, reductionistic-particulate materialism developed in several spurts, to the 20th century and beyond.

Now, the current standard model (SM) theory—mostly due to Maxwell, Thomson, Einstein, Lorentz, Rutherford, Schrödinger, Heisenberg, and Bohr—is popularly thought well-proven. Yet, more than a few problems, weaknesses, deficiencies, and defects remain. Thus, instead of decreasing, the SM anomalies keep increasing in proportion to the exponentially mounting new discoveries of astronomy, etc.

Still, quantum mechanics (QM) succeeds by supplementing particle theory with statistical maths, approximating probabilities, processes, and 'behaviors' of models of 'atomic' and subatomic particles (and their theoretical properties). SM physics also relies on ever more exotic hypotheses, normalizations, and renormalizations enabled by increasingly complicated maths, probability theory, and ever more approximations based on empirical data and preconceived

SM interpretations (of the data) that best fit SM models and expectations. Of course, more than 1 (one) SM model makes all of them equally notional, and equally subject to falsification, ridicule, dispute, and/or disproof.

However, disputability of truly scientific theory enables progress to better, more explanatory theory, and to a more realistic post-modern era of physics and ontology. Unfortunately, the new old guard of the current SM resist every attempt to upgrade their ever more obsolete belief system (to retard progress to better science).

The alternative? Instead of imagining inflatons, gluons, strange quarks, and other tasteless yet flavorful or colorful subatomic 'points' (made mostly of nothingness and undefined energy), we can understand all energy phenomena and effects as artifacts of the turbulence, pressure gradients, and resonant regimes of energetic flow and vibrant interactions, or as vortices and vorticles, vectorial vortical and quasi-toroidal artifacts of explosions. We need no causeless points of bigger magical points, nor any more fantastic excuses posing as well-founded scientific theorems.

Hence, we should abandon deficient SM QM hypotheses that require fudging and guesswork, while lacking elemental causality and satisfactory explainability. That will eliminate countless illusory, ever-increasing anomalies of astronomy (etc.) that disprove current SM pseudo-cosmology and its shibboleths. We can then build on what remains with good theory based on understanding enabling principles and evidence.

Then, what seem to 'look' and 'act' like particles can be seen as field-effects caused by all the interacting, co-emergent energy-flow phenomena sustaining the field of universal being. We can think of it as being like atmospheric or oceanic phenomena induced by thermodynamics, hydrodynamics, weather, earthquakes, volcanos, propellors, jet skis, etc. Thus, we could and should develop a new theory of quantum fluid mechanics (to replace QED, SED, and SM QM theory).

Of course, that could be insufficient, misleading/confusing, and unnecessary. Hyper-hydrodynamics, meta-fluid mechanics, better normal hydrodynamics, fluid mechanics, plasma physics, and magneto-dielectric field theory may prove sufficient and effectively satisfactory. That is so because the field of being already exhibits enough of its nature to understand its enabling principles and processes (for viable macro-ontology and a realistic SM).

Fields: The field of energy sometimes called "the vacuum" (or the cosmos, or 'space') has magneto-dielectric properties. We can be sure of that because most were discovered, measured, tested, and described more than 100 years ago.

For example, the intrinsic principles enabling the field and its field-effects give it some properties of conduction, resistance/insulation, impedance, permittivity, potential (energy), and other qualities common to materials required for electro-magnetic phenomena. Yet, nothing lacks existence and properties. So, clearly, the field's magneto-dielectric nature and properties prove it something other than nothingness. However, a field of wild grass may be more like an interface between subfields of the cosmic field $\{MDE^{\infty},E_{EM}\}$—of magneto-dielectric and elemental-material energy—than the SM models or an EM 'field' of a magnet moving in Earth's EM field. It may be an accident of sociolinguistic limitation and deficient epistemics that "field" was chosen to label what may as well be seen as a vast sky-ocean of energy. Yet, confusion also seems to come from being somewhat like fish or birds, who never see the medium in which they live and move. However, as long as we bear in mind that the term (field) is an arbitrary label (not what it labels), it will not confuse us.

For example, science proved that energy gives form, structure, and functionality to everything—to us, and to everything within and around us. Consider the solidity of ice and the

ocean's fluidity, and the supra-fluid form and functionality of high-temperature steam—the energy, hyper-energy, and meta-energy of the universal field of being enables and sustains those forms and modes of energy. It does so without isolated subatomic points of magic and maths because of the meta-physicality, hyper-liquidity, and meta-gaseous hyper-plasma that fills ±96% of its quasi-spheroidal vastness. In other words—like Earth's ocean and sky, the sun's sky, and the galaxy's local sky and beyond—the universe is a unified supra-fluidic field, enabled and sustained by its intrinsic metalogical principles.

Coincidentally (yet not accidentally), we can see the actuality of the above in the forms of cloud-like nebulae and the many forms of vortical field-flow above and below galactic cyclones of plasma and stars (etc.). The temperature, solar weather, and radiant flow we see at the interface we call the sun's photosphere and corona give us actual evidence. The corona is nearly 5 times hotter than the 'surface' because the extra-solar pressure gradient enables that much more activity (vibratory interaction), radiance, luminous and ultra-luminous emanation, and bidirectional flow events.

In fact, the colossal fluidic (ionic) 'mass' ejections and streams of plasma (magneto-dielectric double-vortices, etc.) keep accelerating as they speed away from the sun, towards the 'local' planetary subfields, to the fringe of the "heliosphere" (the solar sub-field) and beyond. Regardless, SM QM cosmology makes the reality impossible, because

1. G (gravity) rules SM astrophysics, and
2. empty SM 'space' cannot support electricity, and
3. a SM sun only creates magnetism, not electricity, and
4. SM cosmologists ignore the inseparability of EM events, and
5. they refuse to revise their SM beliefs, assumptions, theorems, etc.

Yet, in spite of the mainstream SM QM cosmologists' belief system—and because of its very reliable enabling principles—the $\{MDE^{\infty},E_{EM}\}$ field and the sun keep doing what they do. Why and how do they do so? Because the further from the sun, the less turbulent interactions to slow the flow, and the more focused the EM driving force of the magneto-dielectric response (of the field).

Also recall the vast difference of magnitude and amplitude of the EM force [at $\pm10^{39}$ times greater] compared to G (the gravitational effect); also recall that the field's "Planck energy" density (D_{EP}) is $\pm10^{113}$ greater than 'ordinary' D_E and, so, combined, EM + $E_{PH} = 10^{\pm152} > G$.

Yet, it seems reasonable to wonder about high-energy rays, ions, and electrons. However, as explained above, we see what may look like spheroidal particles of light because atoms and other super-/ultra-/hyper-miniature plasmoids have photospheres, coronas, somewhat like those of stellar plasmoids. Yet, those are field-effects caused by local activity and densities of resonant pressure gradients, interactive flows, turbulence, and luminous interference patterns. So, we can think of such phenomena as being somewhat like omni-dimensional, animatronic holograms, projected from each vector of emergent force (within their elemental spheroids and vortices), energy, and hyper-energy.

Where does all the field's vast energy and power come from? It comes from everywhere and beyond (the meta-energy mode of the field and its hyperactive potency). In other words, energy, force, and power are expressions of the intrinsic metalogical principles that enable and determine the properties, forms, functions, and potentials of the field, its subfields, and field-effects at all scales. So, we can now understand the realities enabling thermonuclear fission, explosions, implosions, and fusion as results of either – a) disruptive, disintegrative destabilization of internal and external flow regimes, and/or as results of naturally occurring plasma flow and super-compression.

Yes, resonant vibratory modalities and pressure gradients normally sustain the characteristic forms, structures, functions, and interactivities of the elements, in their native 'rest' states. For example, the more reactive or massive and complex the form, structure, internal functions, modes of flow, vibration, and interactions of an element's nuclear ensemble (of plasmoid nucleons), the less it can resist disruptive field effects.

Thus—relative to hydrogen or its 'free' ionic-protonic plasmoid core—the core ensemble of uranium or a transuranic element is constantly being pressured (from within and without) to disintegrate. So, the 'radioactive' (dissipative) emanations of 'unstable' elements and isotopic forms of energetic matter can be thought of as like high-energy effervescence.

Remember, the core energy-density of the intrinsic-neutronic hyper-plasma vortices of elemental ensembles (of nuclear vorticles) is $\pm 10^{113}$ greater than the extrinsic energy-density of elemental matter; and its EM force is $\pm 10^{39}$ greater than G field-effects (due to omni-directional fluid mechanics and hydrodynamics). Also, recall that all phenomena are enabled and caused by intrinsic principles sustaining the 3 basic modes of the energetic field: 'ordinary' energy & matter and the 2 regimes of hyper-energy (and by their interactions).

For example, when it 'escapes' or is forced out of a complex element, a neutronic vorticle (plasmoid) lasts about 14 seconds and, allegedly, emits an 'electron' and a tasty yet virtually 'massless' anti-neutrino (instead of an anti-electronic positron). Then, allegedly, the previously neutral 'nucleon' seems to turn into a protonic vorticle (a hydrogen ion). Despite all the virtual realities, assumption, and confusion, SM QM and QCD also require other causeless and as yet unexplainable hypotheses, causing the infamous QM "neutron decay puzzle" (the NDS anomaly). Now, per post-modern ontology, the neutronic 'dark' stuff mystery (NDSM) is also obsolete.

However, using existing facts and methods of fluid mechanics, hydrodynamics, and upgraded (Prigoginean) thermo-dynamics* we can easily understand what really happens when a 'neutral' magneto-dielectric double-vorticle is 'pinched-off' and ejected from a protonic vorticle (nucleon) ensemble as a hyper-plasmoid explosion artifact.

Clearly, that happens when a disruptive field effect (process or event) causes a disintegrative perturbance, a disruptively turbulent, disorderly destabilization and change of internal configuration, pattern of flow, and interaction. The basic form and functionality of an elemental phenomenon (of the local field) may be sustained yet transformed. In other words, the balance of the magneto-dielectric forces of the contra-rotatory flows of an elemental vorticle's internal plasma and hyper-plasma vortices may be altered without changing its characteristic atomic form.

How and why must that be true? Recall that the nature of being requires and sustains simplicity, integrity, regularity, and reliability. Those essential metalogical principles enable and sustain form, structure, function, energy, and generative interaction.

In other words, nucleonic cores of complex elements are like whirling, writhing, yet very orderly toroids or spheroids of sex-crazed snakes (made out of hyper-fluid bi-directional vortices). So, an M Theory fix of String Theory is as unnecessary as the equally over-complicated, unexplanatory SM QED, SED, and QCD (and all the ridiculous excuses and anomalies they cause and require). The orderly, habitual configurations and relations of the elements—and their characteristic knots of internal double-vortices of energy and hyper-energy—are caused and sustained by the enabling field modalities, resonant harmonics, subharmonics, pressure gradients, characteristic interactions, forces, turbulent regimes, and sustaining effects of the enabling metalogical principles of being.

The foregoing facts, theorems, and metatheorems also help explain the phenomena that adherents of SM QM, QED, and QCD misperceive, misunderstand, and misinterpret as

fractional spin and partial charge phenomena. For instance, motion is motion. There is no half motion, nor any fraction of spin. A thing either moves or spins, or it does not. Misusing the word "spin" is a symptom of the linguistic problem explained in Appendix B, below (p. ?). Understanding the realities of elemental energy phenomena is easy when we eliminate the confusing SM rhetoric and shibboleths.

For example, ordinary hydrodynamics and fluid mechanics help us understand nature's many kinds of interactive flow, laminar flow, pressure gradients, turbulent regimes, and vortical transport events—like hurricanes, tornados, lightning, electronic flow, and elemental vortical flow. Those forms and modes of energy transport are enabled by principles that enable and sustain all fluidic, super-fluid, and hyper-fluid phenomena.

The most physical proof of that theorem is the super-fluidic modes of helium-3 (^{3}He) and helium-4 (^{4}He). For example, liquid ^{3}He or ^{4}He poured into a container—in a suitably cryogenic environment—cannot be contained in it, despite gravity. In other words, superfluid ^{3}He and ^{4}He defy the 'law of gravity' and most of the SM physics belief system. They can and do spread themselves as thin as possible over a suitable surface of another substance.

Why and how? The SM excuse is that, while their temperatures enable superfluidity, ^{3}He and ^{4}He escape the force of friction. Of course, saying that fails to explain how or why they do what they do. Nor does making up ever more exotic maths or graphs or new hypothetical sub-nucleonic particles help us understand anything more about the nature of ^{3}He and ^{4}He, or of nature itself.

However, like all other elemental forms and modes of energy, the nature and potentials of ^{3}He and ^{4}He are enabled and determined by and respond to the nature and forces of the local subfield in which they exist, the most powerful being EM forces. So, the magneto-dielectric nature, energy, and forces of local subfield regimes—not gravity—dominate the activity of ^{3}He and ^{4}He. So, we can deduce and infer the principles and modes of energetic interaction that cause the properties, potentials, and modes of superfluid ^{3}He and ^{4}He and all other fluidic events. Hence, using the logic and facts of hydrodynamics, fluid mechanics, and plasma physics we can relate interactions of superfluid ^{3}He and ^{4}He with their [cryogenic] local subfields (surfaces, planets, stars, galaxies, cosmic plasma currents, and local hyper-plasma flow events) to the causal, enabling principles and well-known *MDE*$^\infty$ & EMF field-effects.

For example, we can deduce and infer superfluid ^{3}He and ^{4}He activities by relating them to the interactions of the regimes of the *MDE*$^\infty$ revealed by cryogenic electro-magnetic storage toroids (EMST) and ordinary magnets.

First, though its liquid helium cooling medium may not be superfluid, the whole inner subfield of an EMST is super-conducting because the flow of energy it sustains is hyper-fluid. So, when its local *MDE*$^\infty$ subfield's condition is optimum, there is nearly 0 (zero) counter-acting resistance to flow (of energy), nor significant losses (dissipation of energy). In fact, sub-microscopic images taken at the interfacial boundary layer of the cryogenic and noncryogenic domains (the inside & outside) of EMSTs reveal nano-tornados (of bidirectional energy flow) forming, writhing, and ceasing, repeatedly. That enables 'recharging' of the EMSTs 'inner' *MDE*$^\infty$ subflield (of luminal electronic plasma and hyper-luminal hyper-plasma). Like all tornadic/cyclonic events, nano-tornados are concentric double dual-vortices of *MDE*$^\infty$ flow. Thus, their writhing axial core, though looking empty, is a hyper-luminal dual-vortex of hyper-plasma flow.

Now—far beyond what SM theory can explain—this view of a cryogenic EMST's activity is also supported by the seemingly strange magnitude and super-extension of its 'magnetic' field (*i.e.*, its local *MDE*$^\infty$ subfield). This approach also lets us understand and explain how and why its local *MDE*$^\infty$ subfield extends so far beyond SM explainability.

However, we must always bear in mind that the best theory requires and enables the best understanding and explanation. Describing fractions of reality does not equal explanation. Yet, despite the lack of adequate explanation, why do fans of SM QM cosmology ignore thousands of logical, astronomical, and elemental disproofs? The most logical answer is that pop SM SMEs are either embarrassed or too intellectually (and ethically) dishonest or irresponsible, or else, possibly, simply confused or emotionally immature.

Proof of those possibilities is confirmed by this metalogical explanation of the enabling principles and processes that allow superfluid helium to flow 'up' the walls of containers (away from planetary 'centers of gravity'), despite gravitational side-effects of local subfields ($\mathbf{g}_{fe}$).

So, superfluid helium and other 'matter' at near 0° K are nearly perfectly resonant with the hyper-frequencies of the field of being, its ground/rest-state. So, superfluid helium always seeks the way of least resistance to its state of least turbulence, least stress, for greatest laminar flow and/or harmonic resonance (in contact) with local MDE^{∞} (elemental **E**, plasma, hyper-plasma) subfield. As mentioned above, this explanation is also supported by the observable, well-known realities of magnets, including each atomic magnetic subdomain of a magnetized substance.

Remember, $\mathbf{g}_{fe}$ (of the field & subfields) is less than 10^{-39} as potent as the EM force (EMF) of the $MDE_{f\infty}$ (field & subfields). So, the EMF of every magnetized elemental vorticle (proton, or atom) and every piece of magnetic metal is $\pm 10^{39}$ times stronger than the $\mathbf{g}_{fe}$ of the local *MDE* subfield (enabling it). That causes and enables the "work" (the power, force, interactions) and the results produced by magnets and their 'fields' (of energy), seemingly without any visible motion, motive, external power source, or generator. Of course, that's obviously an illusion caused by limited consciousness (deficient knowledge). Every magnet is a *MDE* field-effect caused by all the forms and modes of energetic flow, vorticity, rotation, vibration, and interacting emanations enabled and sustained by the luminal and hyper-luminal $MDE_{f\infty}$ regimes of the cosmos (the field of being). In other words, obviously, magnets and their flow of energy are enabled and sustained by the whole field of being and its nature (activity, integrity, unity, and its other enabling metalogical principles).

So, in the absence of turbulent, noncryogenic perturbations, superfluid helium can only respond to the elemental flow trends of 'containers' and cryogenic environments per the intrinsic enabling principles. Thus, superfluid ^{3}He and ^{4}He resonate with and 'spread' out in the laminar interface of the local energy density/pressure gradient (the 'ground-state') at adjacent surfaces. In other words, the magneto-dielectric interactions of superfluid helium (with its local energy domain) and quasi-gravitic effects of intimate proximity with other cryogenic substances (due to locality, etc.) enable super-energetic flow. Thus, regardless of the exact level of energy density of a cryogenic plane/surface, super-conducting superfluids (^{3}He and ^{4}He) will reach their limit of elemental cohesion and viscosity. The intrinsic integrity of form, structure, functionality, and the subsidiary principles enabling them support those facts.

That proves and helps explain the metatheory of meta-energy, hyper-energy, and ordinary energy phenomena (sustaining the transfinite metalogical principles of being and its nature). Still, we can ask why the nature and interactivity of superfluid helium are not the same as other isotopes of He, or of H (or O_2). We can then verify the validity of macro-ontology by reviewing and analyzing the natures, forms, structures, functions, and interactions of those critically important elements of physical phenomena. First, literally, Hydrogen (H) is the prototypical elemental form of ordinary matter. Now, recall that plasma accounts for nearly 96% of the field's luminal and subluminal matter; and most of the cosmic plasma is hydrogenic.

Why? The protonic core of H is the basic vortical component of all the more complex elemental plasmoids (atoms). Being the simplest, smallest, and least massive elemental vorticle,

H is the most responsive to vibratory field-effects. Now, remember, energy is activity or potential, proto-energy. Yet, the harmonic resonance of H in its native frequency, pressure, and flow regimes makes it one of the most stable expressions of elemental energy, along with its stable plasmoid ensembles (^{3}He, ^{4}He, and the other "noble" gas elements). In fact, the nature of protion, H, is what enables the other stable elemental ensembles (atoms).

Now, also bear in mind that mass is simply a measure of the energy entrained in and semi-contained when sustaining a form of matter (see def.). So, remember that mass is not matter. Still, like other low-mass, normally extraterrestrial gases, at moderate temperatures and relatively low pressures, H is gaseous (molecular ensembles of H_2). At very-low temperatures and high pressures H is liquid, and at ultra-high pressures a solid, super-conductive metal. So, if the SM prediction of a superconducting, solid, metallic hydrogen sphere in planet Jupiter were correct, it could cause a colossal magnetic field. Yet, there are many more massy elements in Jupiter's subfield of energy, that should be nested very much deeper than hydrogen.

Indeed, the next deeper layer of Jupiter's ultra-dense ground-state would be made of helium, somewhat pudding-like, getting more metallic or ice-like with depth. After all, though the existing ratios fail to comply with SM QM 'cosmology' predictions, helium seems to be the second most abundant element in the cosmos. But, why not? Helium isotopes are really complex ensembles of protionic and semi-neutronic hydrogen. Yet, clearly, their basic structural properties and potentials—not SM rules of pointiness—make hydrogen and helium (and their qualities, properties, and potentials) what they are. The electrons are really like electronic weather events, somewhat like nanoscopic versions of Jupiter's Red Spot and a bit like the persistent polar plasma currents of Saturn, the galaxy, and countless other subfields of the cosmos.

Here again, it helps to recall that the nature, normally stable integrity, simplicity, typical relational ensembles, and activities of H, its 2 isotopic forms, and H_2 are expressions of pure energy: meta-energy, hyper-plasma, and luminal plasma; and [that] all forms of energy are enabled by intrinsic, nonphysical metalogical principles (of being and its nature). Also, without pre-existing enabling principles, processes, and powers, hypothetical (or undetectable) 'massless' particles of QM maths, equations, and hyper-complicated SM beliefs about an accidental space-time, inflatons, god particles, magic strings, spinors, twistors, mathematical dimensions of geometric space, and other unnecessary artifacts of SM quasi-science are unable to cause any physical elements, processes, and events, like the cosmos and particles.

Granted, modern QM and EU theorists got some things right, approximately. However, maps and models are not the territory, and maths' approximations are not precise measurements, nor completely accurate descriptions. So, we can take Einstein's advice. We can and should make it all as simple as possible, but not too simplistic.

For example, we can keep the technical methods that work in good accord with actual energetic phenomena. Yet, we can forget the most nonsensical and torturously over-complicated hypotheses, absurd theorems, bizarre assumptions, and pop-sci shibboleths of SM QM cosmology and neo-mythic dogma.

What does that mean? It means we can use vectors, even vector spaces, scalars, maths for hydrodynamics, fluid mechanics, plasma science, astronomy, and macro-ontology. That will enable a truly holotropic, evolutionary theory and metatheory of universal being, its enabling metalogical principles, and energy. It also means that we can drop all the confusing misuse of terms, concepts, and definitions that propagate ever more unexpected anomalies and baffling mysteries of SM pseudo-cosmology that seem to make SM QM a lame excuse for believing in an accident of atheistic creation of the field's infinite totality from a tiny point of nothingness at the center of nowhere.

Elements: The development of "Western" science and society led to the SM concept of atoms of the various elements (mostly discovered by miners) recognized by chemists. Yet, the "atom theory" of matter may have began in India more than 3000 years ago. Nearly 100 years ago, Neils Bohr successfully promoted his solar system analogy for atomic form and structure. It required ongoing revisions, supplementations, and remedial efforts that led to ever more (not fewer) problems, contradictions, complications, and anomalies. That led to the current state of crisis and confusion maintained by mainstream SM QM physicists, cosmologists, et al.

So, to enable real progress to better understanding and results, a revised definition of "elements" is clearly necessary. As explained in the definitions of particles and fields, what we think of as the elements of matter are forms of energy, indeed, subfields of the field of being and its energy (AKA the cosmos). So, the nature of the physical elements is determined by the enabling principles of the field of being (its metalogical nature) and its $MDE_{f\infty}$ (magneto-dielectric field and subfields). The nature of hydrogen, helium, and their plasmoid nucleic ions was explained in their definitions, but more insight can be gained with a more general explanation of current SM ideas and beliefs.

For instance, by SM convention, the 'atomic weight' (W_A) of H equals the quantity of its 1 protonic vorticle (its protionic 'nucleon'). So, its [relative] SM energy density number (D_{En}) is approximated at 0.00008988, apparently much less than D_{En} of all other elements.

Yet, the 'specific heat capacity' (C_{Hs}) of H is the highest by far, at 14.304 = J/g(K). However, C_{Hs} = quotient of potential activity/energy ($\boldsymbol{E}_{Pq}$), energy/voltage/power. Thus, except for pure uranium (U), H's basic vibratory frequency and vortical energy (E_V) is ±1,430.4% greater than other elements—even from protactinium (#91) to oganesson (#118)—all having C_{Hs} and $\boldsymbol{E}_{Pq} \cong 0$.

So, obviously, SM QM theorists and SMEs are missing and/or ignoring literally massive elemental realities. For example, uranium's $C_{Hs} + \boldsymbol{E}_{Pq} = 0.116$ (*i.e.*, U's $C_{Hs} + \boldsymbol{E}_{Pq} = 0.0081096\%$ of H's total energy quotient). That is so because the intrinsic enabling principles of U_{Ef} (the universal field of energy) make ±96% of it a hyper-energy-dense domain of hyper-frequency (hyper-luminal) hyper-plasmas. Thus, the seemingly 'heaviest' elements of subluminal matter all have C_{Hs} and $\boldsymbol{E}_{Pq} \cong 0$ (zero, relative to the virtually infinite $\boldsymbol{E}_{Pq}$ and D_{En} of the field and local subfields). In fact, potential energy is a valid fact because nature's enabling metalogical principles make it a property of physicality (itself a primal principle of being), enabled by the nature of energy (the expression of activity and primal functionality).

Yet, for complete analysis, to relate the modern SM elemental values to the hyper-high values of the 2 modes of hyper-plasma (E_{HP}), we can use a rule of thumb rubric and the reciprocals of the values for mass (**m** = 'atomic weight' W_A + **E** 'density'). So, per SM theory, ^{1}H has D_{Ea} of 11,135.857 and the SM value of EMF = $\pm 10^{39}$ > G (gravity). Also, the D_{En} of E_{HPF} = $\pm 10^{113}$ > U's **m** and D_{Ea}. Thus, the actual free energy values for both U and H = $1/W_A(1/D_{En})$ + $\boldsymbol{E}_{Pq}$ ∴ (therefore)

Eq. ?a, $U_{Ea} = 1/238.02891 \times 1/18.95\ (= \pm 0.0002216) + 0.116 = \pm 0.1162216$

Eq. ?b, $H_{Ea} = 1 \times 1/0.00008988 + 14.304 = \pm 11{,}135.857 + 14.304 = \pm 11{,}150.161$ and ∴

Eq. ?c, $H_{Ea} \cong 959.388\% > U_{Ea} < E_{HPf} \in MDE_{f\infty}$

In other words, per its nature (its intrinsic enabling principles) ^{1}H has ±9.6 times more potential interactivity ($\boldsymbol{E}_{Pq}$) and intrinsic energy than ^{238}U (uranium) does. That value closely matches the verified order of magnitude variations of elemental energy densities observed throughout the development of modern physics. Yet, recall that the total energy-density (and potency) of the magneto-dielectric field ($MDE_{f\infty}$) is at least $\pm 10^{152}$ times greater than G (or $\mathbf{g}_{fe}$)

and $\pm 10^{74}$ times greater than EMF events. That explains why free H & H_2 so easily sink out of 'lighter', lower energy regimes, back into the harmonic resonance of the ultra-high-energy modes of the field.

In other words, the nature and local conditions (of the $MDE_{f\infty}$) keep ^{238}U (uranium) so busy maintaining its form, structure, and elemental activity (as much as possible) its own potential responsiveness (free energy) is nearly $1/10^{th}$ that of hydrogen. Despite its radioactive dissipation of energy, the nature of ^{238}U lets it resist 'external' field-effects, making it less resonant. Clearly, the massiest, seemingly heaviest elements have the least energy densities because of what we can loosely consider the braking effects of their somewhat turbulent, and slower (unstable) rates of internal flow and vibration.

Of course, **E**'s nature loathes such restraint, which causes such high-energy emissions (when **E** wins the struggle to escape confinement). In principle, it could be similar to the corona, coronal discharges, and mass ejection events of the sun. Yet, remember that the elements (etc.) exist in an omni-dimensional sky-ocean of energy, with a triune regime of energy levels (a trinity of vibratory pressure gradients). Also recall that 'our' luminal regime has sub-gradients. They enable and sustain the form and resonance of each element. The more harmonic the resonance, the more stability; and the more dissonance (noise), the less stable the element (or isotope). A very limited analogy is massy complexes of effervescent bubbles rising out of the depths of the field, into the less dense strata of matter.

So, for deeper insight and satisfactory explanations of elemental forms and functions (even without any materialistic analogies, like quantum droplets and pilot-waves on the 3D surface of a pond of QM oil) we can now reconsider the basics, hydrodynamics, and relational potentials of H_2, O_2, and He (and superfluid ^{3}He & ^{4}He). First, we can now see G effects in massy, relatively chaotic galactic, stellar, and planetary gradients as dissipative side-effects of those noisy, more dissonant subfields. Hence, the proportionally less G effect beyond a planetary or solar (or galactic) subfield is due to the greater resonance of the greater levels of energy density. The acceleration toward less dense regimes (or other less dense forms of matter) is clearly caused by the radiant emanation (pressure) of the triune field (of luminal and hyper-luminal energy) surrounding and sustaining everything and every body.

So, we can think of our weightlessness beyond the interface of Earth's more massy domain as somewhat like floating in super-salty water. Although it seems upside-down and inside-out, we can think of our acceleration out of the denser energy—beyond Earth's noisy, massy (fluffier) gradients—being like bubbles of CH_4 (methane) rising out of the seabed, then breaking free, merging into the atmosphere. We can also understand instantaneous effects 'below' the elemental nano-scale level of form as field-effects of the 2 hyper-dense hyper-plasma regimes.

For example, if we push on a beach ball (or a ball of plutonium), the diameter is irrelevant. A point on the opposite side of the ball moves simultaneously, the same distance, at the same rate. If our cue stick puts a spin on the ball, it can be seen on both sides as it moves. Of course, obviously, hyper-frequency hyper-energy is not exactly like water or a billiard table. It exists within and around all things, and must be at least as large as the cosmos. So, clearly, hyper-field fluid mechanics and potentials transcend the limitations of QM field equations and Einsteinian 'relativity' theorems.

Now, in the absence of counter-acting forces and superseding interactions, 'free' H needs to form molecular H_2 because its enabling principles, natural forms, ways, harmonics, and constraints make its central dual-vortices and its quasi-spheroidal EM potential most likely to combine with a twin, forming an entwined (non-entangled) pair. Yet, recall that isotopes and molecules of H are interactive field phenomena, effects of the magneto-dielectric energy continuum of the cosmos (not tiny balls in a magic maths continuum of nonexistent time +

perceptual or conceptual space).

Why does being (the universe) like plasma and H and He and O so much? Remember the totality:

Eq. ?, $(\mathbf{E}_{U} + MDE^{\infty}) \cong MDE_{f\infty}$

The cosmic field oozes energy and interacting, intermingling forces, super-high & hyper-frequency standing-waves, harmonics, interference patterns (of interpenetrating wave-fronts), vortices, laminar flow regimes, and turbulent effects. That is true at all scales, from the subatomic to the biggest galactic vortices and deepest extra-galactic regions of the cosmos.

How can we be sure of that? Because we see it in all observations (at all scales) of physical events (field-effects). Now, recall that O is a writhing, knot-like ensemble of 8 protonic vorticles (dual-vortex hydrogen nucleons), but with greater mass-energy ('atomic weight' 15.999) per nucleonic vorticle, and ±15.89 times the D_{En} (standard energy density) of free H.

Why? Obviously, in relation to its 'external' local subfield and the $MDE_{f\infty}$ at-large, O is like a complex of bubbles roiling with twice the massy (entrained/captive) luminal energy and 'internal' hyper-vortical flows of four H_2 vorticles ('molecules'). In other words, the resonant harmonics, intensities, and 'scalar' vectors (of 'radiant' emanations) of the $MDE_{f\infty}$ cause the forms, structural properties, functions, and relational potentials that determine the nature of oxygen and its compounds.

So, O and O_2 are so energetically reactive because oxygenic field phenomena are normally in a fragile balance between 'internal' & 'external' turbulence and orderly flow. Clearly, that can only be because of O's nature and its harmonic relationships with its mates and its progenitor, H, and because of the nature and conditions of the all-pervading, all-empowering energy and hyper-energy of $MDE_{f\infty}$ (the field of being). Now, also recall that the actual internalized energy density of O (relative to hyper-plasma, E_{HP}) is the inverse of SM mass-D_{En} values.

Therefore, H is really 16 times more energetic than O, making its relations and bonds with O and O_2 so intensely energetic, powerful, strong, and durable. Hence, they confirm this theory and metatheory (and the fact that nature dislikes a lack of spin and flow even more than it loathes vacuum).

So, bear in mind the analogies—with suns, magnetospheres, bubbles, and water—and we see that H_2O is so hydrogenic, so fluid, with such great integrity and 'surface tension' because its nature, form, structural properties, and functional potentials force it to merge with its molecular sisters, forming a single, fluid field that resists dispersion by more turbulent, dissipative local field phenomena. Remember, the expansion ratio of the vapor phase transition of H_2O (from liquid to steam) is 1325:1, while combustion of gasoline (and oxygen) expands at a rate of only 347:1, i.e., a difference of nearly 4 to 1.

That confirms the intrinsic energy and inherent power of H_2 and H_2O—due solely to their nature and the intrinsic metalogical principles enabling and empowering them and the rest of the field (cosmos, universal totality). The hyper-liquidity of super-fluid ^3He provides another confirmation of the real nature of elemental and protonic plasmoids (ions/nucleons), their activities, and their intrinsic enabling principles.

However, for optimum understanding, we can refer to water again. For instance, though fluid H_2O is an incompressible liquid, it can expand. That is a nontrivial example of the power of the enabling metalogical principles sustaining the nature and properties of the field and all elemental forms of its energy. In fact, the greatest rise in average sea-level is at Earth's equator, because liquid H_2O can expand. The cause of H_2O's great tropical expansion is a magneto-dielectric field-effect, not the effect of the moon's G ('gravitic' force). Now, remember, a force is

an effect of energy, a field-phenomenon. Again, also recall that per the SM

Eq. ?, $\text{EMF} = 10^{39} \times \text{G}$ and that $\mathbf{E} = mc^2 = \text{EMF} + \text{G} + E_{HPf} \equiv MDE_{f\infty} \therefore$

$$\text{ZPE} \equiv E_{HPf} = \pm 10^{113} + \text{EMF} = \pm 10^{152} \times \text{G}$$

In other words, elemental energy is the magneto-dielectric field (of light, etc.) plus its integral hyper-plasma energy plus the force of gravity plus the EM electro-motive force. Therefore, since ZPE ('zero-point' energy, at 0°K) is strictly equivalent to the energy of the hyper-frequency hyper-plasma field, hydrogen and water responds to Earth's local field phenomena and other *MDE* events, accordingly. Also, since the energetic domain (field) of hyper-plasmas (E_{HPf}) is in, and around, and enabling all phenomena, while sustaining $\pm 10^{113}$ more hyper-energy than an equal quantity of all the transuranic elements combined. So, clearly, the moon's EMF effects on the interacting heliospheric+galactic *MDE* subfields, and upon Earth and all its field phenomena, is $\pm 10^{39} \times$ greater than the lunar G (side-effect of its interaction).

So, we can also admit that the moon's braking effect on Earth's rotation (reducing its field strength, intensity & magnitude) is primarily an effect of its EM electro-motive force, not gravity (a side-effect of interacting *MDE* events). That causes the stretching of the vortices maintaining H_2O and, thus, the 'swelling' of tropical salt-water (even without petrocene GHGs and extra heat). In other words, *MDE* processes cause the tides and higher tropical sea-levels.

Clearly, instead of using only quantum statistical methods to approximate unintegrated, isolated, and disintegrated elemental vorticals (that spew out of man-made explosions and thermonuclear implosion events, supernovas, etc.), we can understand the actual nature of the elements from the relations and transformations of all 3 forms of H and the 7 forms of He. So, without nonsensical ideas posing as explanations (of uncaused particles and a big bang creation story that 'begins' with an explosion in the middle of nothing, in the absence of energy and something to react with, to make magic gluons, etc. (and H protons out of those teeny-weeny bubbles of nothing)), the realities can be understood as indicating the intrinsic presence of natural metalogical principles. They enable the meta-energetic and hyper-energetic, proto-physical meta-material, hyper-plasmas, and intrinsic potentials.

All the intrinsic principles and potentials of being empowered the original spin, flow, turbulence, and precipitative co-emergence of the elemental forms of energy. They enabled and sustain this lower D_E mode of the $MDE_{f\infty}$ which we can detect directly.

So, instead of visualizing neutrons and electrons as material particles, we can 'see' the isotopic forms, modes, and ways of H and He. They express the fact that they are fluidic effects of the interactions of the $MDE_{f\infty}$ (and its local subfields) with the intrinsic energy intensities, vorticities, velocities, vibratory amplitudes, and forces generated by the toroidal and vortical flows that give all elemental field phenomena their unique characteristics.

Now, we can replace tiny balls of unexplained (and insufficiently explained) stuff and 'dark' stuff with active interfacial vortices and vectorial potentials of interaction, integration, and disintegration of pressure gradients and flow regimes. Again, the apparent emission of particles is caused by perturbations of the 'internal' form, structure, functions, and integrity of the elements, and of (or by) the 'external' local field. For example, envision a gamma ray as an ultra-high frequency femto-vorticle of hyper-plasma ejected from an ultra-high energy event at an ultra-high velocity. Naturally, it leaves an ultra-high frequency, ultra-high energy 'trail' as its vectorial dual-vortex tunnels through the hyper-plasmonic and elemental 'material' field of universal energy. So, it can seem to behave like an ultra-high velocity particle of stuff, with qualities that give cosmic 'rays' and 'gamma' and neutrino vorticles the properties found by observation, measurement, and maths.

The actuality is that 'neutrinos' and 'gamma rays' are—like all other energy events—

interactive field-effects. All such rays are the result of events that cause penetrative vectorial vortices. Some traverse the vastness of the $MDE_{f\infty}$ and countless interacting, interpenetrating subfields. In fact, when the energy involved is sufficient, vectorial interaction across vast 'distances' can happen instantaneously because what seem to be particulate sources and recipients are not and never were separate from the unitary $MDE_{f\infty}$ and its enabling meta-energy. In other words, in that case, since the source-level core of every form of energy/event (subatomic, etc.) is hyper-luminal, meta-luminal, and unitary, the luminal speed-limit is irrelevant. So, no 'entanglement' of 'particles' ever happened because they never existed as separate, isolated objects (accidentally spinning & vibrating in nothing).

Finally, the nonphysical elements—the intrinsic metalogical principles of nature—enable, sustain, and determine the forms, modes, and potentials of all other things (including awareness, mind, thought, and science). Accepting those facts and realities, we can understand elemental matter as results of the relationships and interactions of the various levels, densities, modes, and forms of nature's energy. That also lets us understand why the universe is ±96% hyper-luminal energy and why ±95% of what we see (or detect) is plasma (protionic/electronic energy). That eliminates the need to believe in accidental, inexplicable, god-like numbers and symbols (G, c, etc.). (see def., Mass & Matter)

Mass: As shown in the definitions of energy, matter, particles, force, and spin, SM "mass" has become confusing. Mass is too often confused with 'physical' matter, instead of being understood as a label for what it represents, a measure of integral energy. In other words, all the modes and forms of 'internal' energy that sustain any form of matter, give it its overall measure of mass. So, instead of limiting ourselves to current SM QM and Einstein's equations, we can more easily understand mass with

Eq. ?, $\mathbf{mc^2} \equiv \mathrm{EMF} + \mathrm{G} + E_{HPf} = \mathbf{E}_{\lambda\upsilon}(V_{\mathrm{vT}}) \cong MDE_{f\infty}$

Briefly, although it implies an observer (a being, or consciousness), mass times the speed of light squared is strictly equivalent to the integral combination of the electro-magnetic forces, gravitational acceleration (dissipation, etc.), and the energetic action/reaction of the hyper-plasma field. So, it also equals the required energy per wavelengths and frequencies times the total vortical velocity of enabling flow. Of course, the dynamic nature of the magneto-dielectric field's activity enables rotation, laminar and vectorial vortical flow, but also turbulence, thus vibration, pulsation, and oscillation. Therefore, also being essentially unitary, changeless, and infinite, it ($MDE_{f\infty}$) cannot precisely equal its luminal/elemental subfields of emergency, form, and so on.

Light: The SM claims that light is electro-magnetic waves and/or points (photonic 'particles' or wavicles or packets or bundles) and/or "rays" of undefined energy or matter. Of course, SM QM SMEs also seem to know that all such forms/modes of energy are effects of a field of "EM energy" (somehow sustained in a mysterious, unexplained nothingness or ±96% vacuum). They also believe that, like other waves, the waviness of light 'behaves' in a similar manner, with and without a sustaining medium (an actual 'field' of something that can be affected in ways that cause waves).

All that contradiction and lack of definition maintains the mainstream SM's ongoing crisis of confusion, incredibility, and absurdity.

Apparently, its visibility, detectability, measured actions, and effects make light's nature seem self-evident. Clearly though, depending on the consciousness and knowledge (or beliefs) of an observer, light may not always be what it seems. For example, while thinking of it as ball-

like points or packets of stuff ('EM' energy/matter) or waves of nothingness, it becomes nearly impossible to see and understand the various modes of light as emergent effects (emanations) of interacting subfields of the magneto-dielectric field ($MDE_{f\infty}$) of being.

For instance, the ancient 'aether theory' (of a basic, fluidic, gas-like, universal energy) was trashed for the sake of maths and a new sense of sciencey certainty. However, the SM makes "**c**" light's speed without admitting that waves and their speed limits happen only in and because of a medium (which is what does the waving). Of course, mainstream SM QM believers also ignore the fact that **c** is defined per the arbitrary (and deficient) definitions of time and distance as seconds and meters (or the ancient hours and miles).

Conveniently, mainstream believers also ignore 2 other facts: a) 'time' is a conceptual construct that thingifies our limited perception of momentary change, and b) space is a concept and a perception of an attribute of the $MDE_{f\infty}$ (field) or a local ensemble of subfields (a place). Naturally, ignoring those 2 realities makes it impossible to see the modes of light as results of the interactions of the subfields of the $MDE_{f\infty}$ (of its luminal and hyper-luminal regimes). Yet, mainstream SM astronomers realize that the 'dark' hyper-luminal modes of hyper-plasma are powerful enough to cause the galaxies to disobey the rules of mainstream SM QM 'cosmology' and obsolete theory. Still, like fish who never know about water, the SM believers refuse to admit that their beliefs and rules may be so deficient that they prevent progress to a vastly superior SM, better science, much better STEM education, and a new era of sane civilization.

Spin: This ontological definition of spin defines and explains it as the primordial form/mode of universal energy, enabled by integral enabling principles (of being and its nature).

Of course, we might suspect that pulsation or oscillation or precipitation could be the most primitive form/mode of motion (energy). We now see pulsation, oscillation, and precipitation everywhere, yet the most basic mode of motion that enables and sustains all other modes of motion (forms of energy) and physical processes is the axial spin, orbital rotation, and spiral/cyclonic vortical flow of energy that generates and sustains more energy (at all scales of form, structure, and functionality).

However, in SM QM physics, "spin" does not mean spin (the rotation of physically 'real' things). Currently, SM 'spin' is a term that signifies various measures of incompletely yet statistically determined objects of QM models of

a. hypothetical (conjectural) geometry
b. fields (of theoretical configurations of mathematical objects), and
c. partially observed field-effects (of undefined/ill-defined energy/matter)

So, though results of QM, QED, and QCD are as impressive as the models' mathematical descriptions of objects (etc.), its fractional and integer unit 'measures' of SM 'spin' tell nobody anything definitive (about the whole realities of the field, its subfields, elements, and why they are as they are and do what they do).

For example, in general, QM and its variants now say that the 'spin' of theoretical particles (of undefined stuff) must be either fractional or whole number values, without explaining or defining any causal processes or enabling principles (of actual reality). Of course, that can only be because SM QM SMEs know next to nothing about 99.9975% of the reality and nature of the MDE^{∞} field (of being), because SM QM excludes adequate data, knowledge, terms, and definitions. Unfortunately, that is because the sociocultural paradigm of current QM, and its domain of discourse, prevent using, thinking about, and discussing any realities and concepts outside its obsolete framework of theoretical reference. However, like all theorems and hypotheses, QM 'spin' can be rehabbed and upgraded or discarded. It can be converted into a

term referring to the real spin of actual phenomena and processes (caused by understandable, explainable properties and enabling principles).

So, in the case of protonic and neutronic vorticles (nucleons, not particles), we can understand the observed "quantum states" of measurable spin as caused by the nature and conditions of the various intra-elemental subfields (radiation pressure gradients AKA SM 'electron shells') and the local external subfields in which they exist. Those 'quantum spin' field-effects are also the results of the various ratios of internal rotatory velocity and vortical and/or toroidal/hypertrocoidal flow (through and around axial double vortices) of luminal and hyper-luminal energy. Yes, those rates of motion are enabled and determined by local (intra- & extra-nuclear) field-effects and the supra-elemental forces impinging on (and existing as) the local subfield of a nuclei or ensemble of nucleonic vorticles (an 'atom'). To more easily understand that, we can use a quasi-fractal analog.

For example, though the sun is not exactly like an elemental vorticle (a nucleon), a star is a plasmoid phenomenon, a sub-galactic *MDE*$^{\infty}$ field-effect of universal energy. So, we can say that, in principle, the heliosphere is somewhat like a radioactive isotope of iron. We can visualize Earth as a protionic vorticle, with the moon being its single, electron. Of course, for this Bohrian analogy, if we fail to replace the moon with a vortical flow phenomenon (of pure energy), then it suffers Bohrian defects. Thus, we may as well imagine Earth being made of pure luminal & hyper-luminal energy flow. Doing that, we can 'see' its EM & *MDE*$^{\infty}$ field-effects as a subfield of the sun's subfield (of the galactic subfield).

In other words, we do an inverse, reductive extrapolation, down to the elemental and sub-elemental scales of energetic flow, form, structure, and functioning. So, in the macro-model analogy we see the complex, interdependent forces of EM effects, fluid mechanics, and the enabling *MDE*$^{\infty}$ field-effects (of interacting subfields of the cosmic field of being's energy) embodying and/or expressing intrinsic enabling principles of being (and its nature). In the micro-scale model, the embodiments and/or expressions of being's nature and primal energy vary in kind and intensity, but not in principle.

We can now visualize the cyclonic/tornadic vortices and hydrodynamics of the various levels of form, structure, functionality, and interactivity in the molecular, elemental, and sub-elemental regimes (of the field of being) being a bit like planetary and solar 'weather' events (i.e., energetic field-effects), at least in principle. Yet, the quantum numbers for QM 'spin states' need more explaining.

First, spin is clearly not a state of a thing. It is an action, a mode of motion, which is a mode of energy, generally considered a form of kinetic energy. However, the old terms can be confusing. For example, saying "kinetic energy" may lead to thinking that there are separate kinds of energy. Yet, it really relates to the forces and effects of energy we perceive/detect (and measure) being embodied and/or expressed in what we call mechanical phenomena. Yet, at the deeper levels of being, mechanical effects are all enabled by EM forces and effects, fluid dynamics, and intrinsic principles enabling the whole *MDE*$^{\infty}$ field of universal energy (and all its subfields, including sub-elemental levels of energetic interactivity).

Now, consider quantum spin numbers and quantum 'jumps' of energy, electronic and photonic transitions (in particular). Also recall that neither 'electrons' nor 'photons' are isolated balls of stuff, and nor are they simply points of magical maths. So, there is clearly no good reason to assume different causal factors producing similar quantum limits. Thus, we can and should relate the intra-elemental field-effects with spin, wavelengths, frequency, velocity, energy levels, and reactions/emissions with extra-elemental (external local) field-effects. After all, even current SM QM theory claims that electrons (etc.) are field-effects (of energy, without bothering to fully define or understand energy and its source).

For instance, Einstein's relating of frequency and proportional energy levels to the photoelectric effect (and quantum thresholds) was and is a very limited confirmation of the nature of energy and its $MDE_{f\infty}$ (the 'field' of universal energy so incompletely defined and misunderstood in SM QM). A major part of the SM QM problem was and is defining time and space incorrectly. Calling time a physical quantity was and is both confusing and misleading. Thinking that space is an empty container of particles, wavicles, or bundles (packets) of ill-defined energy was and is equally confusing and misleading. Time—even its 'operational definition (in the SM)—is a conceptual fiction. Space is a perception/conception of energy's *MDE* medium, the omnipresent source of energy (enabled by intrinsic nonphysical principles, especially activity and functionality).

In principle, the pressure gradients, varying levels of energy density and interactivity) in Earth's local field, from its inner core on out to the fringe of the Van Allen Belts, are somewhat similar to conditions at the elemental scale and beyond. In fact, especially at the nanoscopic levels, there is no difference between pressure gradients and their energy density. Their actual conditions and interactions are determined and limited by intrinsic principles that enable all physical form, structure, functionality, and interactivity. So, all the attributes of the $MDE_{f\infty}$ and its energy can only be expressed and/or embodied in accord with the nature and ambient conditions of the eight (8) vibratory pressure gradients of luminal energy interacting with the ninth/zeroth ($9^{th}/0^{th}$) regime of hyper-high frequency energy and meta-energy domains. Thus, we find 8 'electron shells' and 8 'valence electrons' and 8 'periods' of subluminal elements.

So, there are no fractional spins or multiple spins of electronic, protonic, and neutronic points (SM 'particles'), just varying rates of flow and rotational velocities of the various laminar and turbulent field-effects (of the different energy density gradients, not shells). Oddly, SM physicists and chemists talk about 'electrons' as if they are tiny, electrified planets or moons, but also as if they can fill their 'shells' or leave them empty. Naturally, the realities, observations, and data make more sense with fluid mechanics and energy density gradients, caused by resonant energy dynamics, vorticity, vortical motion, flow, turbulence, vibration, and radiation pressure.

Now, we can more carefully consider the original spin. Currently, SM 'cosmologists' believe it necessary to make up weird excuses for the "red shift" of light seen as coming from extraterrestrial plasma phenomena, galaxies, and stars as evidence of accelerating expansion of the explosion of nothing that caused everything. Of course, the SM and all its additional hypotheses and particles seem to support the Big Bang of everything from nothing because the model and its exotic particles of maths were designed specifically to support all the popular mainstream assumptions. Yet, a more realistic explanation of the "red shift" and how the universe works involves its most common forms/modes of motion and flow: rotation and the vortical, laminar, and turbulent modes.

Granted, knowing exactly how purely nonphysical, metalogical principles and meta-energy caused the emergence (or precipitation) of either hyper-luminal plasma or physical forms/modes of energy (flow, spin, etc.) is as far beyond the domain of science as making models of universal totality exploding out of a point of nothingness. However, once the energy of being and physical potentials emerged, the most basic expressions of activity and interaction could generate the basic modes of motion, entraining more energy out of the hyper-luminal MDE^{∞} regime of the field. Clearly, because of the enabling principles required, we can reasonably assume that spin was essential to the initial energy required for everything else.

So, instead of a residual 'cosmic microwave background' caused by an explosive magic expansion (before there was any place, time, and stuff to cause it), the basic heat energy of being's $MDE_{f\infty}$ (the 'field' and its activity) can be understood as an effect of its spin. Naturally,

heat requires causes, interacting subfields, varying rates of flow, and the effects of turbulence (etc.). Obviously, the cosmos is the totality of such phenomena and their energetic emanations. It may even be possible that the overall spin of the cosmos interacts with the different rates of motion of its hyper-luminal and luminal subfields (another possible cause of cosmic heat).

That last conjecture may apply to unexpectedly hot 'strange attractors' (in what seem like the emptiest parts of the cosmos). The above theorems and hypotheses may seem hard to accept, but they are all clearly more realistic and reasonable than the nonsensical assumptions and claims of mainstream SM QM cosmologists.

Plasma: SM astrophysics tells us that plasma amounts to ±95% of all physical matter. Yet, SM QM 'cosmologists' mostly ignore fluid mechanics, electrical engineering, and plasma physics. So, the mainstream SM definition and descriptions of the most abundant form/mode of matter leave much unsaid and unexplained.

Saying that plasma is both electronic and ionic calls for better definition and explanation of electrons and ions. (see defs., Particles, Matter, Energy, & Hydrogen)

However, the verified properties, normal relations, and potentials of ions and electrons discovered by experiments and described by QM physics are already fairly well-known. So, this macro-ontological definition of luminal and hyper-luminal (hyper-frequency) plasmas focuses mainly on the hydrodynamics of their fluidic, ultra-fluid and hyper-fluid modes.

The terms are critical, for the observed nature, modes of flow, radiance, luminosity, and EM activity of plasmas make it clear that their fluidity be considered the key characteristic necessary for full understanding. For example, radio-astronomy enabled an image of the spheroid region of the cosmic field ($MDE_{f\infty}$) currently detectable, and it looks like a brain-like web of twisting, writhing filaments and currents of luminous liquid or neural networks. Yet, instead of seeing the hydrodynamic nature of the fluid mechanical sky-ocean of plasmas and hyper-plasma (now AKA 'dark' energy & matter), mainstream SM QM theorists and 'cosmologists' prefer thinking about nanoscopic sub-particles and probabilities.

Of course, ignoring all the flow, motions, interactions, and colossal forces of the ultra-high energy of the $MDE_{f\infty}$ and its hyper-high-energy action/reaction events makes it nearly impossible to understand how they affect the nanoscopically tiny, delicate sub-fields of the quantum level (of the field). So, to understand it, we must abandon the refusal to consider the realities of the whole of the field, especially its basic, fluidic, and hyper-fluidic nature.

We must also drop the normal SM habit of pretending that the field, its subfields, interactions, and effects exist in isolation. Seeing only imaginary billiard balls in empty space in a mental model prevents seeing the universe's fluidic sky. In the depths of the $MDE_{f\infty}$ and its interstellar and intergalactic subfields (and currents of plasmas, galaxies, galaxy clusters, etc.), its reality and enabling principles make it obvious that all its forms, modes, forces, and events are interdependent and simultaneously interactive.

Therefore, instead of an approach like exploding water to see isolated atoms or molecules, we can consider the principles and modes of magneto-dielectric interaction that enable the fluid nature and hydrodynamic flow of plasmas (and hyper-plasma). Hence, its reasonable to call the hyper-fluid hyper-frequency regimes (of the cosmos) hyper-plasma, not 'dark' energy/matter. We know that because it causes observable effects of fluid mechanical interaction with and in a) galaxies, yet also with b) nebulae, c) colossal plasma currents of galaxies, and d) with giant plasma filaments enabling star-formation.

We can also be sure of the hydrodynamics because all of the field-effects in the ±93 billion LY bubble of detectable phenomena are entering, leaving, and flowing across the field from sources, towards terminal locations. So, seeing and thinking about the cosmos as a vast sky-

ocean of magneto-dielectric energy is realistic and very helpful. Luckily, SM astronomers and physicists looking for evidence of 'dark' stuff, found evidence of fluid mechanical interactions with, within, and around galactic subfields, including this one. Also, since ±96% of the cosmos is hyper-luminal plasma, and ±4% is ±95% luminal plasmas (mostly hydrogenic), and the majority of the other ±5% (of matter) is hydrogen, it seems best to accept the fundamental ubiquity and omnipresent effects of hydrodynamic principles, from the quantum right up to the sub-/supra-quantum, hyper-luminal levels of scale.

So, plasma and hyper-plasma phenomena are fluidic field-effects, enabled and sustained by the magneto-dielectric energy of the field of being, per its intrinsic enabling principles. So, we can understand the electro-magnetic and thermodynamic forces/effects of plasmas and hyper-plasma as results of their modes of activity (motion, flow, etc.), and their subfields' interactions. (see defs., Fields, Force, Energy, etc.)

Force: A force is a property and effect of energy. So, there are no isolated, independent forces sustaining the forms of elemental matter. Labeling different 'kinds' of force tends to confuse the forest of energy with the trees.

What seem to be separate forces—a 'strong' force, a 'weak' force, 'gravitational' force, and electromagnetic force—are all just effects of interacting, interpenetrating vortices, currents, and expansive magneto-dielectric subfields of energy and hyper-energy. Those enabling forms and modes of energy are field-effects (MDE_{fe}) of the cosmic magneto-dielectric field of being and its energy.

So, the 4 apparently separate forces of dominant SM physics are misconceptions and misinterpretations caused by exotic maths, deficient theory (mostly shots in the dark), conjectures, and inadequate knowledge based on fractional observation, defective lingusitics, and deficient ontology.

In other words, as Faraday and Tesla intuited, the all-pervasive, magneto-dielectric (MDE^{∞}) nature of **E** (energy) enables all subfields and all modes of energy, at all scales. It enables all observable forms, structural modes, functions, motions, and interactions of galaxies, suns, plasmas, elements, molecules, compounds, weather, prions, viroids, mitochondria, DNA, RNA, life, and us.

For example, the 'strong' force is actually just the stronger integrative effects of bi-directional protonic dual-vortices, their rates of flow, the momentum, velocities, intensities, densities, vibratory motions, and radiant emanations. They enable and are enabled by the 'internal' and 'external' pressure gradients of the local subfields ('inside' and 'outside' the elemental gradients of resonant energy density). That explains the activity and limits of elemental quanta and 'quantum leap' thresholds of transition and transformation.

Naturally, that applies to vorticity, spin, rotation, orbital velocities, and the angular momentum enabled. Thus, we can think of 'electron shells' as like nested bubbles, with internal harmonic (yet roiling) plasma pressure gradients/zones of density, resonant & turbulent activity, and force. 'Electrons' are like swirling femto-hurricanes on the interfacial 'surfaces' of the elemental bubbles of energy. Yet, they can align and merge with the electronic vorticies of other elemental bubbles, enabling the connecting double-vortex of vectored flow (as subnano-tornados of luminal energy and protionic hyper-plasma). The strength of the protonic and electronic flows and connections (of nucleons and/or molecular ensembles) are enabled by and depend on the protionic/molecular configurations and ever-changing conditions, caused and enabled by the nature of the field and its elements.

Consider a 'line of force' really being a twisted-pair of bi-directional (double) dual-vortices of energy, with hyper-plasma at the axial core. So, the transfinite axial line in the center of each

filament is not simply a directional vector in 'space', but a hyper-powerful MDE^{∞} effect of elemental interaction in and with the field and 'local' subfields. Now, as explained in the definition of energy, the misnamed 'dark' energy and matter are major modes of the MDE^{∞} hyper-energy domain. The principles, properties, and effects of energy's MDE^{∞} nature let the hyper-plasma modes interact with our more turbulent, slower, lower energy domain and elemental phenomena, 'inside' and 'outside' of every flowing protonic vorticle of elemental energy (E_{EM}). The nature of the field's MDE^{∞} & F_{EM} effects, forces, flows, and potentials are what makes what we 'see' as twisted-pair dual-vortices of plasma (and 'lines of force') in a magneto-dielectric field tend to stay apart, twist, spiral and/or loop. So, they also tend to stay coupled with and by those interacting, seemingly 'internal' and 'external' forces of the field (and its nature).

The exception to that is the natural tendency of plasmas' twisted-pair double-vortices to come together as their energy, flow, and force grow beyond the point of balance. The interactive field-effects can then compress and constrict ('pinch') a segment of the plasma filaments. They then ball up, like a spheroidal knot of roiling vortical loops. That can then be pinched off, to become a micro-plasmoid (an elemental vorticle, proton, etc.) or a macro-plasmoid (a star). They can then be sustained by the MDE^{∞} & EMF field-effects, galactic/extra-galactic currents, and other effects of energy and hyper-plasma.

So, lines of force, 4 independent 'forces', 'quantum gravity', and gravity in general are clearly unnecessary flukes of obsolete maths and physics. Effects of MDE^{∞} phenomena—plasmas, plasmoids (protons, suns, etc.), and elements—and all MDE^{∞} field-effects can be understood and explained with hydrodynamics, fluid mechanics, and the maths of upgraded electrical engineering & EM theory. That is so because the field of being and its MDE^{∞} are omni-present, all-encompassing. They pervade, enable, empower, motivate, and enliven every domain, mode, and effect of energy and matter.

Hence, nothing is separate or independent of anything or everything else in subfields of elemental MDE^{∞} & EM interactions (which are all that exists). Of course, force is also a concept and a functional principle that enables and sustains the activity and effects of energy. So, forces are enabled and governed by nature's functionality, the metalogical principle that enables effective activity. (See defs., Energy, Matter, & Particles)

Hydrogen: The most basic, simple, abundant, elemental from of energetic matter—other than plasmas—is ^{1}H, hydrogen, AKA protium (or protion, the prototypical ion).

All 3 names are appropriate, for ^{1}H has the unique distinction of being the required essence of water's fluidity and, also, the most prototypical protonic plasmoid enabling energy's other, more complex elemental nucleons. In other words, all other elemental nuclei are ensembles of protion (^{1}H) nano-plasmoids. Some of them have higher energy hyper-plasma flow (in their axial vortices), 'neutralizing' their 'positive' charge (making them act and 'look' like neutrons). Now, recall that the activity and effects of 'dark' energy/matter demonstrate the omipresent reality of the hyper-luminal (clear light) of hyper-plasma. So, just as every proton is a nearly identical 'ion' of ^{1}H, all 'neutrons' are really higher energy protionic plasmoids, as in ^{2}H (deuterium) and ^{3}H (tritium).

There are other previously unexplained facts and causes for all the distinguishing properties and actualities of hydrogen. For example, its unique priority as the most primitive element of matter is no accident. So, the nature of $^{1}H_2O$ being as it is, the most basic expression of liquidity (the principle), fluid dynamics is also called hydrodynamics. Thus, all energetic phenomena, interactions, and field-effects can be described with the terms of fluid mechanics.

Another actuality of hydrogen is its magneto-dielectric susceptibility to axial alignment with

electromagnetic subfields. That confirms the pervasive magneto-dielectric field and intrinsic forces that enable all hydrodynamic flow regimes. So, that enables energetic events at all levels and scales of phenomenal form, structure, function, complexity, and actuality. In other words, the hydrogenic properties of hyper-plasma, plasma, and elemental energy flow enable the more complex forms of elemental matter.

Now, in its ^{1}H form, hydrogen needs no 'neutron' because its protonic vorticle (and its internal hyper-plasma dual-vortex) is the perfectly balanced, massy, vortical flow phenomenon enabling all protonic nano-plasmoid form, structure, function, and activity. So, that makes ^{1}H the prototypical nucleonic vorticle that enables more complex elemental forms (of matter). In those elements, due to meta-fractality and nature's other primal principles, the electronic interfaces of protionic domains merge, somewhat like the merging of (molecular) H_2 (or O_2). Hence, per the enabling principles, depending on the conditions and interactions of the intra- and extra-elemental subfields and the quantity of positive and/or neutral protions (in an elemental ensemble), the nature and energy density of the field (of hyper-plasma) permits up to 8 (electronic) subdomains per multi-protionic element.

Briefly, a plasmoid 'neutron' of ^{2}H or ^{3}H is really the hyper-luminal vortex that flows and spins faster than the luminal energy vortex it enables and sustains. So, a proton's magneto-dielectric (*MDE*) force and power (EMF + V), and its relative non-neutrality is due to meta-symmetric relativity, asymmetry, interactivity, and the lossier bi-directional vortical flows of its hyper-luminal axial core. So, the energy/pressure/flow regime of the $E_{EM} + MDE^{\infty}$ field sustains ^{1}H protons (from within and outside its elemental domain).

Clearly, the principles enabling basic protionic plasmoids that enable the 3 isotopic forms, structures, and functions of H, also enable the other modes of the other elemental nuclei. Hence, hydrogen is rightly considered the prototypical kernel of all other elements. So, it makes sense to assume that its 3 forms are due to its resonance with the 3 fundamental frequency domains of the field: the basic vibratory/radiant energy of our mode of being, and the 2 hyper-plasmonic modes of the $MDE_{f\infty}$ (field). That and its 3 forms/modes, structural configurations, and functionalities also reflect hydrogen's primal expression and embodiment of primal unity, duality, triality, trinity, triadic and quadratic structural logic (in $^{\infty}$3D). That is so because its nature and basic hydrogenic morphology physically, energetically unite primal singularity and duality.

Hence, deuterium, ^{2}H or D, embodies and expresses primal triality with 1 protonic vortical + an equally powerful, 'internal', effectively 'neutral' dual-vortex of hyper-plasma, with only 1 coronal-interfacial electronic potential. In other words, its more massy internal flows and activity gives ^{2}H approximately twice the apparent field strength of H, yet remains relatively stable. That makes it seem as if it has an extra SM 'nucleonic particle' (a neutron).

Free tritium, ^{3}H or T, embodies and expresses primal quadrinity and tetradic morphic-structural logic, with 1 protonic (dual-vortex flow) and, apparently, 1 electron (with 2 coronal energy potentials). Hence, the 'local' energy density, vibratory and rotatory phenomena, harmonic resonance, turbulence, and pressure (of the MDE^{∞} field) pump H into its less stable, unsustainable levels of energetic activity, ^{3}H (or ^{2}H). Thus, when ^{3}H loses enough 'neutral' hyper-energy and merges with another ^{3}H plasmoid, it becomes the more massy He. That shows that mass is simply a measure of entrained, constrained energy sustaining the forms, modes, and ways of ions, elements, plasmas, galaxies, stars, planets, and other forms of energy.

The rarity and dissipative instability of ^{3}H confirm the intrinsic principles and properties of H that sustain its form, priority, and status as the prototypical element that resonates with the most powerful, pervasive frequencies of the MDE^{∞} field. Thus, ^{3}H's 2 'phases' (forms & modes) and levels/ways of activity (energy density, intensity & harmonics) clearly confirm causal

interaction with the 2 major modes of hyper-plasmas (misnamed 'dark' energy & matter).

Why and how? Because all forms, modes, ways, and effects of energy are enabled and determined by their intrinsic principles, enabled by the fundamental metalogical principles of being. So, this view of elemental actuality accords with the abundant evidence of nature, form, structure, functionality, and hydrodynamics of the tri-modal MDE^{∞} field and its semi-cubic/tetramorphic hyper-physical infrastructure.

Helium: He, the element, is a model morphic seed-form of H_2 (the natural molecular form of hydrogen). However, though He (like H_2) is an elemental embodiment and expression of its intrinsic enabling principles (of natural metalogic). Its 9 forms (isotopic variants) are field phenomena enabled by the nature and potentials of MDE^{∞} energy and co-emergent interactions of and with the bi-modal E_{PH} (hyper-plasmonic) domain of the actual field of being ($\mathbf{U}_A$).

This approach to elemental ontology is supported by the SM finding that, as radioactive elements decay, they emit helium atoms. Yet, modern SM doctrine fails to explain why, and what that really means.

What it means is that, just as singular vorticles (atoms) of hydrogen (and its enabling hyper-fluid MDE^{∞} hyper-plasma's hypertrocoidal, toroidal and hyper-paraboloid flows) like being coupled with a vortical double, helium vorticles like being coupled with at least one partner. So, clearly, the 2 nondual protonic vorticles of helium like to be coupled in their more materially resonant flow regime, determined by the local and universal field phenomena and their nanoscopic, picoscopic, and femtoscopic effects.

For example, as we see with hydrogen and its [isotopic] variants, the 9 heliums embody and express the primal, enabling, characteristic principles of energetic elemental matter that make helium 'look' and 'act' like helium. So, we might relate the 2 modes & density regimes of hyper-energy/matter to hyper-plasmonic hydrogen and hyper-plasmonic helium. Whatever the case, we cannot verify that conjecture directly. So, we can only analyze the circumstantial evidence. We can start by looking for reasons why hydrogen needs no neutron, then intuiting what neutrons and electrons really are.

So, as claimed for hydrogen, a lone protonic vortical plasmoid's axial flow is enabled by the neutral, contra-rotatory, bidirectional, double-helical vortices of E_{PH} flow. However, in the nuclear domain of He, the resonant harmonics, pressure gradient, and surrounding turbulence of the MDE^{∞} field enforce the characteristic form interpreted as neutral vortical plasmoids coupled to the 2 protonic vortices of the helium ion. Yet, if such a neutral complement of protons exists as an independently, concretely real object, then there should be a satisfactory explanation, including causal factors.

Of course, these theorems and metatheorems can be falsified, like all truly scientific theorems, but neither SM cosmology or physics offers a satisfactory substitute, nor a valid disproof. In fact, like all valid metatheory congruent with actual universal phenomena and their nature, the metatheorems presented here are falsifiable only with fallacies. Thus, this work of metatheory presents viable, valid, logical and metalogical definitions, causes, and explanations of enabling metalogical principles. For example, this $(E_{em} + M_{De})_{\infty}$ domain/regime of the field of being sustains H_2 and all forms of He as the lightest forms of elemental physical matter. However, relative to the hyper-plasmonic mode of the field of being, the dyadic 'positive/negative' EM charges, flows, interactions, and forces of the $(E_{em} + M_{De})_{\infty}$ field are counteracted or canceled by the opposite contra-rotatory flows and spins of the hyper-energetic E_{PH} mode of $\mathbf{U}_R$ (universal reality). That makes hydrogen the most energetically resonant, relatively energy dense form of elemental energy. Thus, H sinks into (*i.e.*, escapes) the oceanic hyper-energy of the extra-planetary field more easily than helium.

How and why should that be possible? We only need to observe the macrocosmic and nanoscopic evidence, and consider the actualities with an open mind, free of obsolete hypotheses, doctrines, dogmas, and shibboleths of SM QM cosmology. We can also review the absurdities of current SM QM. (also see defs., Plasma, Fields, Energy, etc.)

Measure: So far, the definition and meaning of measurement has been largely ignored by almost all SM QM researchers. So, general understanding of the field of magneto-dielectric energy ($MDE_{f\infty}$) was prevented.

Worse yet, not understanding the nature of measurement supports misunderstanding of $MDE_{f\infty}$ energy events, numbers, consciousness, and reality. That occurs mainly because the consciousness (conceptions, perceptions, and knowledge) of most researchers causes some confusion of resulting data and interpretation with the phenomenal reality studied. In other words, failing to know and bear in mind the reality of measurement always supports the error of thinking and acting as if our numbers are what they quantify, our maps are the territory, and models are as valuable as the fraction of reality they partially approximate.

For example, a measure of a thing or process assumes some consciousness of it, without any explicit account of how little of it is perceived. Clearly, we normally fail to realize how much of what we observe remains unknown or unknowable. Currently popular mainstream SM QM and 'cosmology' are perfect examples.

On the other hand, macro-ontology lets us approximate how much of reality is either unknown or unknowable per the rules and limits of mainstream SM QM. That measure equals less than ±95% of ±5% of ±4% of universal totality, which equals ±0.0025 of 1% of reality, per the SM's own results and measures (of quantities). It is far less than that number because the non-ontological SM totally misses the huge percentage of qualitative realities (and other nonphysical elements of reality) that make the universe, being, and life what and as they are (in each ever-changing moment of presence).

Absolute proof: Unlike conventional unconditional proofs and 'finitistic' proofs, absolute proof of a theorem or metatheorem may refer to primordial natural phenomena and primal principles that make it true, and unfalsifiable.

Absolute proofs combine comprehensive logic with definitive explanation and the results of experimental verification. So, a metatheorem may be proved absolutely within the context of a holonomic domain of discourse, as in holotrophic ontology or metamaths, or in a holonomic metalinguistic metatheory.

Perfect proof: A perfect proof includes definitive, logical, and elementary proof of absolute truth, unconditionally verifying a conjecture, a theorem, or a proof. Perfect proof is also congruent with natural principles, relevant metatheory, and related theorems.

So, perfect proofs can explain exactly why hypotheses, theorems, and proofs are valid or truly viable. For example, a theorem or metatheorem may be finitistic and truly complete, derivable from and proven per enabling principles, axioms, and holonomic meta-axioms, thus, durably reliable. Hence, perfect proof covers and resolves the whole of a problem. So, perfect proofs require and enable optimal explainability, eliminating or minimizing disputability. Yet, though a perfect proof of a conjecture or theorem may be falsifiable, its elements and essentials may be unfalsifiable metatheorems and meta-axioms. Still, falsifying a perfect proof requires foolishness (using logical fallacies, erroneous thinking, etc.).

Elementary proof: An ideal elementary proof correctly explains how (or why) a phenomena

exists or does what it does. It logically (if not comprehensively) states the most basic truths or enabling elements of the subject of a hypothesis or theorem.

Euclid's elementary proof that the possible quantity of primal numbers (the 'primes') cannot be finite is an example of an absolute yet not fully explanatory proof. In other words, elementary proof that some things or sets of things are infinite may not be disprovable, yet not enabling explanation of how and why those things or sets are infinite.

Unconditional proof: An unconditional proof may be elementary, absolute, or perfect, or simply technical, yet may be as falsifiable as any well-proven scientific theorem. On the other hand, a conditional proof is partial proof, with limited viability, not a complete proof of absolute truth, with definite reliability. Yet, an unconditional proof (of a theorem or conjecture) derived from an incomplete and/or erroneous paradigm may be both falsified and replaced with a better proof of more effective theory.

Technical proof: A purely technical proof may rely on proven theory and/or conventional techniques. It requires no purely logical, elementary proof, nor any metatheory of enabling principles. A technical proof may be unconditional or conditional, partially valid.

Hundreds or thousands of examples are produced with QM mathematics and SM astronomy. Technical proofs need not explain or predict anything, and they rarely (if ever) enable better theory and metatheory. Therefore, in the pure sciences (etc.), technical proofs inevitably prove inadequate or simply false.

Finitistic proof: While ignoring the required enabling principles, David Hilbert and his followers did their best to formalize the logical 'rules' and metatheorems of maths and proof. They tried to establish the best, most logically valid, viable (complete and consistent) rules of maths and proof. The assumption was that, to be reliably perfect, proof of a logical truth must completely, formally, demonstrate noncontradictory integrity (of the axiomatic system) enabling it.

However, increasingly, modern maths, number theory, and metamaths abandoned most of Hilbert's concerns and finitistic ideas. More recently, the Quine-Putnam "indispensability thesis" generated renewed interest in philosophical metamaths. Some important work, new theorems, and hypotheses (of finitism, idealism, realism, naturalism, and holism) were fielded. Yet, as can be shown with perfect proof (of metamathematics), those attempts were neither fully satisfying, nor successful.

Indeed, despite all the benefits, Hilbert never fully defined his finitistic program, its terms, its basics, nor its paradigm. Thus, lacking full congruency with propositional logic and enabling metalogical principles, Hilbert's metamaths (and proofs) lack comprehensive definability and explainability. That proves the result of incomplete definition and inherent deficiency.

For the same reasons, modern metamaths, set theory, proof theory, and number theory (etc.) remained unfinished, incomplete, and inconsistent (with logic and nature). Therefore, they all suffer from refutability and deficient logical integrity. Likewise, the defects of metamaths plague current SM QM physics, economics, and many other arenas of 'applied' science. Consequently, this disproof of modern metamaths and QM pseudo-cosmology is an example of a perfect finitistic proof of the enabling ontological metatheory and metalogical principles of universal nature.

Logic: Dictionary definitions of logic typically provide references to logic's relationship with language, propositional logic, and what makes sense within a context of shared knowledge,

beliefs, biases, agreements, and artificial systems of axioms and rules. Yet, DNA encodes a quadrinary language of life. So, logically, we can accept the reality of nature's logic as a metalogical language of being. Clearly, nature's enabling metalogical principles are intrinsic expressions of its intelligence and mentality (the functional principle that enables mind, thought, science, etc.).

Because of its logic and enabling meta-logic, maths can correlate with nature. That helps us describe natural events, processes, and so on. So, it can seem to be the language of nature or God. Yet, nature's language is being and all forms of expression and communication, its semiotics. Its meta-language is its metalogical principles, enabling and informing the meta-semiotics and existence of all things, all processes, and all beings.

Also, all ways of communicating depend on and express the meta-semiotics enabling them and their potentials. So, the principles and semiotics of the universe and all beings are nature's language, not maths, and not artificial logic. Nature's meta-logic is also nonphysical, preceding and enabling the totality of universal presence, and Life.

Nature's metalogical principles are of several basic kinds/classes:

- Original/actual: primal generative principles enabling all phenomena
- Morphic/formal: enabling all types, modes, and properties of form
- Structural: enabling all modes and properties of structure
- Functional: enabling and governing all kinds of functions
- Operational: primal principles of relativity and interaction

Clearly, the levels of nature's metalogical principles are nested, arising with and enabled by original metalogic. Morphic, structural, functional, and operational levels of principles are interdependent yet ordered per priority of their nature and potentials. Some principles, expressions, and embodiments evolve or derive directly or indirectly from and with the deeper levels of being. For example, all embodiments and expressions of morphic principles derive directly from and depend on the generative original principles. Yet, forms require and enable structure; and they enable functionality and operations, all empowered and enabled by relativity, actuality, and energy (the essential expression of activity).

Unlike artificial systems of logic and meta-logic, all subordinate principles of morphic, structural, functional, and operational metalogic are interdependent, ordered, and nested. They are emergent potentials and results, enabled by the more primal principles. Maths provides examples of practical systemic logic we can categorize as ordered, and others as bivalent, existing as both nested and ordered expressions of semi-artificial logic.

Some of the greatest hypotheses, conjectures, and theorems of the great pioneers of science and maths deal with multivalent nested logic. Yet, all kinds of logic depend on and express enabling metalogical principles. Therefore, understanding the enabling principles enables the best proofs of hypotheses, theorems, and realities expressing those principles.

Form: Form is the primal morphological principle of being that enables appearance or presence and the shapes or modes of things and bodies.

Despite the opinion of architectural sophists, form does not follow function. Form, structure, and function are inseparable, interdependent, and integral to all phenomena, either virtually or overtly. Yet, to exist, everything must have a form, even the undetectable seemingly formless field of 'dark' stuff we thought was empty space.

Even the most basic principles, at the very subtle level of nöetic phenomena, have form, logical structure, functionalities, and operational potentials. Elements and components of structure have forms. Without form there can be no structure. However, because of relativity

and integrity, the metalogical principles, there can be no form without formlessness. Like nothingness, formlessness has only virtual existence relative to what it is not, each and every actual thing, however subtle or virtual. The primality of form is self-evident by the fact that every kind of structure is the structure of a form of being or a thing, and every component of a structure has some kind of form.

Forms can be seen and known as dimensional, as shapes or appearances, or as nondimensional, like principles of logic and ideas, or other subtle, virtual forms. So, the form of form, the principle, is all forms, including itself. Emotions, speech, and sounds are examples of subtle, transfinite forms. Numbers and other symbols have very subtle, virtual forms, expressible as actual forms, objects of perception and consciousness. The nature, attributes, properties, and potentials of forms are determined by the basic metalogical principles they express and/or embody.

Structure: Structure enables and sustains the forms and integrity of phenomena, all things, and all forms of being, even principles, numbers, and identities. Structure enables the durability of all principles, elements, molecules, cells, organs, bodies, groups, cultures, societies, organizations, systems, and languages.

For example, maths is a language and a logical system of symbols, values, functions, protocols, rules, and procedures enabled by the principles, attributes, properties and potentials that constitute its structural logic. The nature, properties and potentials of various structures are determined by the varying degrees of basic metalogical principles they express and/or embody.

Functionality: Without understanding the nature, metalogic, and actuality of functionality, fully understanding the nature of numbers, maths, functions, and semiotics is impossible. The functionality of maths and maps is not a magical invention of mathematicians.

Minds and logicians exist because functionality is essentially a metalogical principle of being. The convenient relationships of mathematical functionalities to physical functionalities are no accidents of a mechanical cosmic automaton. In the explicate, overt order of existence, function is subsidiary to form and structure. Yet, in principle, functionality is integral even to the basic generative principles of being, the primal metalogical principles, and to every embodiment and expression of form and structure.

Thus, we can understand the principle of functionality as intrinsic to all expressions of activity and energy, to the nature of being-as-a-whole, and its momentary totality.

Observation: Observing is an event and process enabled by perception, which is enabled by sentient being, awareness, conscious intelligence, mind, and embodiment. They express and are enabled by naturally intrinsic metalogical principles: mainly actuality, mentality, activity, and awareness. However, perception and observation may be inaccurate, illusory, and limited by existential conditions or the conditioning of observers, and the limitations of their minds and senses.

In other words, there can be no isolation or separation of subjects and objects, or self and world, microcosmic phenomena and universal being-as-a-whole. So, clearly, the critical importance of defining observation and, hence observers, is necessary for all the sciences.

That is true because understanding observations and objects requires a good understanding of the actualities and limitations of our observations. For instance, Einstein's famous reduction of energy and matter to $E = mc^2$ required the existence of observation, a conscious observer, the observer's frame of reference, and space, and time. Yet, Einstein's theories and all post-Einsteinian physics lack the definitions and optimal recognition of all those terms and basic

requirements. So, to this day, most of us usually take all those postulates for granted (as necessities of life, science, and maths), without looking to deeply into what enables and governs their actualities and potentials.

For example, an astronomer may observe an unexpected phenomenon that proves part of the basics of SM physics absolutely invalid. Yet, in those cases, since the astronomer has no concepts or valid theory to 'make sense' of such phenomena, she/he may misinterpret what is really happening, or else simply label it an anomaly. A more ordinary example, we commonly misperceive something, yet trust that our inaccurate or incomplete observations and presumptions are valid, correct. Obviously, that is a problem typical of many controversies, conflicts, false dichotomies, and bad or inadequate theory.

Consciousness: Understanding the nature of consciousness is a necessity for fully understanding SM physics, relativity, QM, and reality. Without a valid, viable, generally satisfying definition and explanation of consciousness, the anomalies, uncertainties, futile arguments, and deficiencies of modern physics and cosmology will keep limiting physics and society.

Now, despite contenders who play at defining and explaining consciousness (without any foundation of elemental enabling principles), we can admit that consciousness is a property of sentient being, enabled by the actualities and potentials of awareness and mentality, the principle. Naturally, awareness, sentient intelligence, knowledge, and consciousness are enabled by and express the nature of mentality, an intrinsic metalogical principle of being. Thinking that awareness, intelligence, consciousness, and thought are only products or expressions of physical or physiological functions and processes is simply foolishness.

Clearly, physicality is a principle, like mentality, identity, personality, intentionality, and the other natural principles that enable mind, sentient being, subjective consciousness, observation, and objects of conscious perception. So, we can agree that awareness is the interactive essence and expression of mentality; and consciousness is the resulting, ongoing state of sentient intelligence, expressing the intrinsic metalogical principles and properties of mind and mentality.

So, the actual, nonphysical principles of being enable the physical and biological embodiments and/or expressions of consciousness. Reversing that metatheorem would imply the existence of an *a priori* but, as yet, undiscovered material or physical process that magically produced living, perceiving, sentient beings, thoughts, and intentions. However, no magical mind-making substance nor physical objects or process ever was or will be found. Because the principles that enable all substances and minds are enabled by other metalogical principles, they determine their functions and potentials.

The nature of being, form, structure, functionality, interactivity, energy, and all its universal embodiments and expressions of reality ($\mathbf{U}_R$), enabled $\mathbf{U}_R$ and the nature of life, as is, long before planet Earth existed. Since then, because of their nature, the primal principles of $\mathbf{U}_R$ have never changed its nature. Being nonphysical, principles have nothing to change, and they never enabled anything else that could change them.

Physical conditions and processes cannot change nonphysical principles that enable matter, energy, processes, and transient conditions. Otherwise, there could be no finite forms, durable structures, characteristic properties and functions of life, identity, entities, things, and places. Yet, life and reliably durable elements are intrinsic to the field of being.

For example, science has discovered molecular evidence of life in the outer reaches of the heliosphere (this solar system), and far beyond. That strongly indicates the existence of biological life throughout the universe, as an intrinsic to being-as-a-whole. So, in even the most

primitive forms of life—prions, virions, viroids, archeo-bacteria, and tardigrades—we see the basics of purposive intentionality (a subsidiary principle and property of mentality). In fact, the species of [microscopic] tardigrades can revert to a spore-like form that survives intense high-energy radiation outside Earth's atmosphere.

Hence, we can admit that a species of being with any awareness of the field (of being, and its '3D' dimensionality of local 'space') proves that even primitive expressions of intentionality demonstrate:

1. expressions/embodiments of mentality
2. forms/modes of subjective awareness, and
3. consciousness, however limited or unrecognizable

In our human case, we can understand apparently impossible mental phenomena as the evidence of our possibly limitless potential capabilities. In other words, the potentials of human mentality may be as limitless as the potentials of universal being, its mentality, creativity, energy, and power. After all, all properties, processes, and potentials are enabled and sustained by (and belong to) being, its universe, and its nature. So, for example, pre-mortem and post-mortem OBE's (out of body experiences) and accurate clairvoyance (visions and precognition of actual future events) can be understood as naturally generated potentials of consciousness, enabled by the intrinsic potentials and properties of energy, enabling meta-energy, universal intelligence, and mentality, the enabling integral principle of mind and identity.

Thus, we can accept that the intelligence and consciousness of mind and DNA can exist without, before, and after living brains and bodies. We can see that proven by research enabling progressive understanding of mental functioning by using EM sensors placed on (outside) the head. They detect patterns of EM field-effects caused by the brain's activity.

Yet, like ±96% of the cosmic field (its hyper-luminal energy AKA 'dark' energy), we cannot directly detect the presence of the mind's field of meta-energy. Still, we can study the patterns of EM emanations and local field-effects of mind (awareness, consciousness, thinking, etc.), enabled by neural functioning, enabled by intrinsic metalogical principles and properties of mentality. Hence, we may come to understand the meanings of the patterns and the meta-energy enabling the whole of being (the cosmos).

Thus, we should accept OBE and precognition as natural evidence of the pervasive intelligence of the filed of being and its nature. They also prove that 'mind' is not only a 'physical' product of 'normal' biochemical, physiological functions (of a 'living' body), but an intrinsic potential of universal reality. So, we can be sure that the existence of consciousness is an inherent expression of the intrinsic potentials of mentality.

Awareness: Necessarily, awareness, is the essential expression of mentality, the principle. Primal principles of being make the presence of awareness integral and universally pervasive.

For example, without awareness, perceptions, appearance, knowledge, and information would be impossible. Understanding awareness and the primal logic of mentality permits realization of the interdependently nondual nature of subjective perception and objects of consciousness. That understanding enables realization of the psychophysical nature of our self-world constructs. Understanding that permits awareness of the inseparability of fundamental principles and the phenomena they enable and/or govern.

Understanding the basis of awareness enables to understand the nature of perception, consciousness, intellect, and reality. We may then understand the depths and results of science, maths, logic, and being.

Reality: Most of us seem to take "reality" for granted, except when thinking and acting as if it must be a matter of opinion. However, that notion is a prime motivator of corruption and institutionalized confusion and delusion.

For example, for effective science and maths, a valid, unambivalent definition of reality is essential for proof of truth and untruth. Hence, if science and ontology are to progress to a superior, post-modern era of theory, metatheory, and praxis, disambiguation of "reality" is a nonoptional necessity.

Consider maths, metamaths, QM, SM cosmology and physics in general. They all started stagnating as popularization of notional/personal reality was increasingly accepted and institutionalized as the new, post-theistic justification for ethical & anti-ethical, moral & immoral, and amoral 'relativism' (with decreasing interest in valid logical relativity and actual reality). The worst of it is SM cosmology, now well beyond 99.9% illusion, conjecture, misconception, and misinterpretation.

So, we now need an irrefutably viable, holonomic definition and understanding of reality that supports transition to post-modern science and society (and to survive the consequences of modern civilization's deficiencies and atrocious excesses). Also, in general, what is real is whatever is truly expressive of the principles and actualities of universal being. Naturally, that requires valid, or at least optimal theory and metatheory of valid macro-ontology, and acceptance of the actualities of being.

Still, acceptance is optional. However, disputing and attempting disproof of the necessary sufficiency of good theory, its basis in actuality, and logical truth, makes realism's opponents guilty of self-negation and foolishness. For example, the relativity of personal/conceptual 'reality' and pre-existent cosmic reality can only be falsified by disproving the validity of logic and actual reality. Yet, any argument against cosmic reality would invalidate the reality and viability of mentality and being (and be the ultimate logical fallacy).

Validity: Truth is both a principle and a concept, enabled by validity, actuality, and reality, the principles. Truth, the concept is multivalent, depending on the context and its domain of discourse. Validity, the principle, always makes truth the opposite of false (invalid or unreal) phenomena or claims.

Essentially, absolute truth is what is ultimately valid, or real, beyond or before or without us and our opinions. Yet, our intellect is a dualistic function of mentality, enabling categorical perception of relative phenomena, mainly our experiences, perceptions, and ideas about them, this, and/or that. That enables the existence of relative truth, conditionally valid concepts, and assumptions.

For example, the principle of mentality enables perceptions, conceptions, consciousness, intellectual discernment, illusion, delusion, and evaluation of results of interaction. That gives rise to knowledge of relativity, distinctions, identities, differences, similarities, qualities, values, and ethics. So, essentially, relative truth is a principle of practical logic enabling its own functionality as an element of semiotic and provisional logic. Relative truth is also a resultant variable of sociocultural norms and semiotics, a derivative of the linguistic logic, ideology, and dominant paradigm of a host culture.

Without a paradigm based on a metatheory of nature's actual metalogic, socialization and conditioning make some confusion about the nature of truth inherently unavoidable. The more socially generated bias, the more the confusion about truth. The definition of truth in an unbiased, purely logical metatheory explains truth as reality, an actuality. For example, a true statement expresses concepts or perceptions congruent with natural reality, or it may describe the nature of a person's activity, or of a place, an event or thing, or a principle.That truth is what

makes the valid metatheorems of a well-founded metatheory true and provable within the context of its own paradigm and domain of discourse.

Strange attractors: Like 'dark' stuff, and other SM anomalies, the label "strange attractor" is a verbal landmark proving ignorance, misunderstanding, and deficient theory.

For example, some regions of the universal field 'look' dark and totally empty, being very far from all galaxies and galaxy clusters. Yet, some seem attractive, with very high temperatures. All that heat 'normally' indicates energetic activity and massive SM matter. However, SM physicists are as baffled by that anomaly as by the thousands of others that disprove their pseudo-theory.

Obviously, the only things that attract anything or anybody are pheromones and other signals for facilitating mating, hunting, and purchasing of products. That is so because all flow phenomena of the MDE^{∞} field of energy and hyper-energy are best understood with terms that best describe the fluid dynamics and enabling fluid mechanical principles that make it all possible (and visible as fluidic phenomena). High 'pressure' regimes/regions are not attracted to lower pressure regions/regimes, because they are not separate, isolated things, events/processes. Fluidic flow phenomena are inseparable field-effects of the field and subfields of (interdependent) MDE^{∞} energy and hyper-energy.

That is as true of magnetic flow and hydraulic processes as it is of the whole of the cosmic field of being. So, the basic assumptions and interpretations of obsolete theory are simply invalid (thus, terminally deficient). The hyper-plasmonic modes of the field of energy and hyper-energy are constantly sustaining a responsive 'push' of co-emergent energy. That enables the detectable forms, modes, and effects of energy that are recycled back into the hyper-frequency modes of the circuit. (see defs., Energy & Matter)

However, in SM pop-sci media and mainstream literature, we see little or nothing about those apparently dark, colossal regions of intergalactic MDE^{∞} field phenomena. Likewise, we now see little or no work on the huge cosmological constant problem,* despite ever-increasing evidence provided by all the heliospheric, galactic, and extra-galactic phenomena discovered via new astronomy. So, doing optimal scientific work (mentally, physically, empirically, theoretically, and experimentally) requires courageous exploration and investigation where no modern SM theorists dared to go before: into the realm of post-modern science.

On the other hand, the recent Nobel prize for using maths to confirm the possibility of 'Black Holes' proves the degree of confusion and decline of the SM paradigm of modern science and society. Of course, there are CGI images of data that seem to show evidence of black holes in galactic cores. However, the associated data and images could just as well be seen and understood as a phenomenon in the center of axial galactic vortices. Also, with fluid dynamics, a torodial or quasi-spheroidal cosmic vortex of a maturing 'strange attractor' can be equally easily understood, possibly as a [pre-galactic] embryonic nebula. (see defs., Galaxy & Black Hole) On the other hand, heat requires causes, interacting subfields, varying rates of flow, and the effects of turbulence (etc.). Obviously, the cosmos is the totality of such phenomena (and their energetic emanations). It may be possible that the spin of the whole cosmos interacts with the different rates of motion of its hyper-luminal and luminal subfields (another possible cause of seemingly strange cosmic heat).

Space: Space is a word representing our perceptually derived experience/concept of explicate dimensionality. Space is not nothingness. Nor is it a '4D' continuum of empty geometry+time. Yet, dimensionality and space are nonphysical, existing only for and 'in' the minds of beings who experience perception, realizations, ideas, illusions, etc. Space is also a virtual property of various actual and potential expressions and/or embodiments of

dimensionality and locality, two of the properties and subsidiary principles of form (the metalogical principle). So, we see telescopic images seeming to support notions of 'dark' energy and 'dark matter' filling ±96% of a mostly empty universe (the field of being between and within galaxies (and everything else)).

Yet, we can now admit that 'space' is not empty, because it is every place, never outside of or apart from things, entities, energies, and meta-energy. We can rely on that because good astronomy shows that the 2 undetectable forms of energy (the 'dark' kinds) interact with luminal forms of energy: plasmas (the light, slower kind), nebulas, and galaxies. So, to us, what seems dark and empty is simply transparent, invisible. That theorem is also supported by experiments with 'synthetic' ultra-heavy elemental nuclei. They can cause breakdown (turbulent slowdown) of the vacuum (the hyper-energy field), causing precipitation of electron-positron pairs.*

Laboratory experiments verified work that confirmed the existence of the indirectly detected field ($MDE_{f\infty}$) of hyper-plasma (E_{PH}), the hyper-luminal energy of being. Wikipedia's article on the results of QED and SED helps:

> "…both quantum electrodynamics (QED) and stochastic electrodynamics (SED)…with the principle of Lorentz covariance and with the magnitude of the Planck constant suggest a much larger value of 10^{113} joules per cubic meter.[4][5] This huge discrepancy is known as the cosmological constant problem."

Early work in QM physics estimated the energy-density of the emptiest cubic centimeters of the universe at 10^{80} or 10^{100} greater than the energy density of the densest physical element. That is vastly greater density than 10^{-9} Joules per m^3 of seemingly empty space. Of course, that estimate was calculated without including Planck energy density and hyper-energy density. So, clearly, no part of the field of being is empty or lacking energy sufficient for enabling all subsidiary, constituent phenomena, processes, and events.

Yet, more importantly, the findings of QED, SED, and radio-astronomy prove that our old notions about ordinary matter and reality were severely deficient, mostly defective. This post-modern theory and metatheory of macro-ontology and natural metalogic resolves obsolete SM deficiencies and the cosmological constant problem.

Time: The universe is a momentary event, always happening now. Time is a concept and an illusion enabled by our minds, perceptions, changes, and duration. Those experiential phenomena are enabled by the principles of actuality, activity, mentality, physicality, form, structure, functionality, and semiosis.

So, time is not an independently real, universal actuality or thing that exists outside our minds. Thus, reifying (thingifying) time, while ignoring its illusory existence may make good scifi possible, but makes good physics impossible. So, unreifying time by defining it as half of an impossibly curvy, totally empty 'space-time' continuum was a bad idea.

For example, 'space' is a psychosocially derived construct enabled by principles and properties of form. Like time, perceived space is an illusory product of limited knowledge. So, combining illusory time and illusory space—to create an impossible fabric of curvaceous yet ±96% empty cosmic geometry—is as foolish as it is confusing. Actually, the universe exists momentarily, as it always has, as a constantly changing event.

The very reliable principles of nature enables and sustains its constantly changing events, subevents, processes, living beings, and all other phenomena. Otherwise, it would all get stuck, stagnate, or else never be here and now in any definite, durable form.

So, the only necessary and sufficient continuum of universal reality is the continuum of being, energy, and the meta-energy of its enabling principles. Also, that makes the only real

'time travel' via either memory or dreaming, or as a mental field-effect of universal being (and its intelligence and infinite potential). We can be sure of that because being's totality is constantly changing every form of being and energy in its current moment of presence. Its intrinsic principles, properties, and interactions enable, cause, and limit the changes. In other words, the universe (and its ever-changing condition) and our consciousness are co-emergent phenomena (of being) happening in the only place and time that exists, here, now.

The past (a previous condition of universal being) always was and is being constantly transformed into being's current moment of presence. In other words, all former states, forms, conditions, and enabling processes of physical being no longer exist, because they enabled this moment of being and its current condition.

* In laboratory experiments, special equipment enabled researchers to create a super-heavy ion (artificial nucleus) of a transactinide (transuranic) element that they then inserted into a near perfect 'vacuum' (in an assembly containing a positron detector). That was thought to cause a destabilizing turbulence and "decay of the vacuum" (of the field) and "precipitation" of self-annihilating positron-electron pairs. The choice of wording was more appropriate than realized at the time. However, the result was an example of a quasi-Schwinger Effect enabled by the existence and nature of the hyper-luminal MDE^{∞} field (of hyper-frequency hyper-plasma).

Regularity: The morphic, structural, and functional properties of regularity, the principle, enable the results of arithmetic progressions, even in the exotic domains of complex algebraic geometry, post-Riemannian topology, and SM QM maths.

Governing principles of numeric and mathematical logic (and rules)—enabled by metalogical principles of being, form, structure, function, and operation—rule mathematical functions, operations, and semiotics. Thus, using any kind of maths properly cannot cause dysfunctional irregularities.

That regularity is a metalogical principle of reality is abundantly proven with an ever-increasing number of studies of physical, geological, biological, and statistical evidence. That truth is shown and known as the Newcomb-Benford curve (or first digit rule) or, in this work, as the natural distribution rule (**NDR**). Clearly, nature, science, maths, and regularity support metalogical and mathematical permanence, the principle.

So, regularity enables viability, reliability, and certainty. So, there is no reason to believe that Riemann's zeta function will ever cause any results other than what it has caused between 1859 and the present moment. That truth supports the importance of regularity as an essential element of post-modern metatheory of maths, logic, and proof.

Priority: Priority is a principle, property, and subordinate expression of originality, primality, and relativity. Priority is also a property of ordinality, and a reciprocal opposite of posteriority.

Priority is enabled by mentality, actuality, causality, validity, reality, identity, integrity, reciprocity, and regularity. Without priority, primacy, numeracy, counting, initiation, succession, progression, maths, metamaths, measurement, analysis, evaluation, organization, and effective communication would be impossible. For example, discovering and verifying *a priori* (pre-existent) principles and facts of nature enables development of better theory and metatheory. Therefore, priority is fundamentally essential to proof and holonomic, holotropic metatheory. Also, the axiological and metalogical actuality and superiority of theory proven valid, gives it qualitative priority over obsolete theory proven invalid or inadequate.

Certainty: Mainstream SM QM 'cosmology' and Zermelo-Fraenkel set theory (ZFT) prevent arguments in favor of proof theoretic rules requiring satisfactory certainty of results (concepts and provable theorems congruent with reality).

Satisfactory certainty is the ideal result of optimal proof and sufficient explainability. Thus, this revised metatheory of maths, proof, etc., includes certainty as a fundamentally essential element of optimal proof and metatheory. Recall that we appreciate science and good theory because it provides satisfaction with certainty, ensuring that new knowledge is valid or, at least, that new theorems are as viable as possible. Clearly, validity, value, and maths, its results, theorems, and metatheory depend on reliable certainties.

Certainty is enabled by and confirms awareness, mentality and, sometimes, validity. Of course, certainty may be an illusion or delusion. Hence, valid certainty is a prime motive and goal of science, maths, and proof. So, certainty requires actual congruency, the fact, making congruency indispensable for certainty. So, both are key necessities for the logical integrity of metamath, maths, and proofs in accord with reality.

Provability: Provability is a principle and a necessity of good science (and maths). Good theory is a description of phenomena or enabling processes (or a definition of concepts and claims) that can be tested, verified (proven), and explained for generally satisfactory certainty of truth, being congruent with reality, nature, and/or logic. Therefore, realizing that a theorem or hypothesis is or is not provable is critically important (to avoid retarding or preventing progress)

An unprovable set of statements or axioms fails to provide any certainty of validity, hence failing to qualify as a viable theory of science (or maths). Even in the domains of metatheory, where logical tautologies are valid—to be considered well-defined, acceptable, and viably explainable—the elements of a metatheorem must be congruent with natural reality or, at the least, perfectly logical.

So, unfortunately, its ever-growing deficiency of provability and the increasingly vast number of disproofs (AKA anomalies) makes SM 'cosmology' a perfect example of why proof and provability are essential for good theory and science.

Definability: Einstein realized that the best understanding enables the best theory, the best proof, and the best explanation. They all require and enable the best definitions of terms that, ideally, they represent valid concepts and actual phenomena. Thus, definability, the principle, enables the best theorems, metatheorems, proofs, and proof theory.

For example, post-modern metamaths enables and is enabled by necessary definitions of terms that enable description and optimal explanation of the elemental principles that enable maths and universal reality, the actualities of being. Hence, post-modern metamaths is able to correct the deficiencies that caused the failures of the pioneers of modern metamaths. Those deficiencies were caused by inadequate definability of the pioneers' terms, axioms, theorems, and metatheory. So, completing the pioneers' programs was impossible.

Lack of definability was clearly due to insufficient recognition and understanding of elemental principles, making the necessary foundation of metatheory an impossibility. Clearly, without optimum definability, sufficient explainability of metatheory and proof theory are impossible. By including the definitions of the enabling principles of maths and reality, let post-modern metamaths restore and fulfill the original purpose of maths: the development, study, discussion, knowledge, and understanding of universal reality, valid theory, proof, and satisfactory certainty. Hence, post-modern metamaths enables better maths and science. (see defs., Falsifiability & Regularity)

Acceptability: Acceptability is a fundamental principle of maths, metamaths, physics, valid theories, and definitive proofs. It should be considered essential for effective teaching and communicating valid information. Unfortunately, acceptability can also seem to be an option, a variable quality of something that may lack validity or real value. So, some accept baseless opinion, erroneous assumptions, and lies because of deluded ignorance, irrational habit, or whatever. So, that kind of acceptability can and does cause or foster general acceptance of deficient or defective theory, bad science, and worse.

So, for science and proofs, acceptability must only be conceded when proven by validity, certainty, sufficiency, natural congruency, and optimal explainability.

Falsifiability: Viably valid scientific theory must not only be verifiable but also falsifiable, because the nature of universal being is transfinite. Everything constantly changes, except for principles. So, being beyond knowing completely, actual, and virtual phenomena may be recognized and understood, but not fully described. Thus, to be congruent with reality and reflect the natural actualities discovered by new and/or better observations, good theory must be evolutionary, upgradable, and refutable, thus falsifiable.

Unfortunately, most pop-stars and fans of modern metamaths, cosmology, QM physics, and astronomy ignore their rejection of falsifiability and refutability. That prevents progress and resolution of the SM's current crisis. So, natural phenomena now challenge cherished SM assumptions, misconceptions, and misinterpretations. So, observed phenomena and data keep disproving the basics of current standard model theory. Yet, SM believers do all they can to protect and preserve the incomplete foundation of existing theory (with ever more excuses and wilder speculations).

Clearly, refusing to recall the necessity and importance of falsifiability and refutability of valid scientific theory is a self-deluding abuse of science. Of course, it does help to perpetuate confusion about the basics, which helps perpetuate enjoyment of wrangling over theorems, hypotheses, and conjectures that lack and/or prevent optimal verifiability, certainty, explainability, validity and/or completely logical provability.

Although valid tautologies and metatheorems congruent with principles of natural reality are not falsifiable, proving them and using them to prove theorems of subordinate logical systems makes falsifiability an essential element of metamaths. Falsifiability is thus a critical element of post-modern metamaths and holonomic proof theory.

Explainability: Inherently, good explainability indicates validity or adequacy and reliability; and it can support satisfactory results, certainty, and acceptability. It also tends to prevent or minimize objections, doubts, disputes, and disproof. So, teachings, theorems, and assumptions that lack optimal explainability may lack value and necessary sufficiency, proportional to lack of validity or viability. In the fields of education, logic, maths, metamaths, engineering and other technical disciplines, any deficiency of theory or metatheory that hinders optimal explainability is unsatisfactory, and dangerous. Explainability is clearly a key principle and element of the metatheory of science, maths, logic, and proof. It is therefore indispensable to good science and any theoretical work of real value and importance.

Disputability: Disputability, the fact or condition, is normally caused by a) lack of validity or certainty, b) deficient explainability, or c) faulty logic, d) doubt or ignorance. The principle disputability is an important element of holotropic metamaths, logical analysis, and proof theory. (see def., below) Even using common logic can enable and require disputability.

Clearly, mentality, intellect, sanity, reason, and truth enable insight or intuition and knowledge that support agreement and/or acceptance of the validity or realism and adequacy

of an assumption or claim. Alternately, knowledge and reason or intuition may cause doubt or suspicion, or curiosity that supports the disputability of a questionable assumption or claim.

So, despite their many benefits, the various versions of modern metamaths, especially Hilbertian formalisms, and the many questionable assumptions and claims in the complex of debates on the Quine-Putnam Indispensability Thesis are all perfect examples of theory and metatheory infested with inadequacies, thus disputability. Hence, optimal explainability and viability are lacking. That justifies intuition or suspicion that necessary validity and logic (sufficient for unconditional proof) are absent.

Another example: This project enabled proof that SM number theory suffers disputability because of inadequate numeric metatheory, insufficient logic and, thus, deficient explainability.

Axiom: "Axiom" is a symbolic label sometimes applied to "laws" of nature or maths, or elements of formulas. Originally, to the Greeks, an axiom was a definition of a principle or statement about the nature of something that could be trusted as proven true, by long observation and experience, or with logic and/or by practical experiment.

In that sense, holonomic meta-axioms have constituents, real semiotic components that express natural principles. They make the symbols, thoughts, maths, functions, and operations possible. Yet, axioms of limited conventional theories have limited validity and potential. So, we have two kinds of axioms, 1) the provisional axioms of conventional logic or limited SM theory, and 2) meta-axioms of valid metalogical metatheory.

Symbol: A symbol is an object of consciousness, a virtual conceptual construct that may be expressed or embodied as a semiotic object of perception and cognition. So, though a symbol may be a purely mental object of consciousness, it can be expressed with an actual physical or graphical object or image, or sounds, names.

For example, numbers can be represented by symbols, and they may be spoken, written, depicted or embodied somehow, and encoded as representations of values, quantities, entities, or anything else whatsoever. So, essentially, a symbol is a semiotic device existing for the sake of communication, with no actual or logical existence separate from or apart from its meaning, what it represents. Nor do symbols exist apart from the consciousness of a perceiver or conceiver and communicators.

Theory: Theory, the word, is intimately related to the concept of divinity and/or theology and gods (or, more recently, to God). Of course, the amazing Greeks of antiquity accepted and used notions of multiple gods (to deal with unknown facts of nature and being). So, naturally, since then, more modern 'Western' societies and their defeated competitors adopted and adapted to the dominant paradigm of science, society, etc.

Thus, a theory is an aggregation of theorems composed of combinations of assumptions, notions, conceptions, and/or interpretations of data (either observed or deduced). They provide approximate descriptions, speculative hypotheses, and incomplete explanations of actual phenomena, processes, and events. Therefore, truly scientific theory may be upgraded and falsified.

So, anyone who rejects or seeks to prevent effective critiques or upgrades of existing theory or SM hypotheses is defending unscientific falsehoods or nonsense, not legitimate scientific theory.

Metatheory: Unlike conventional scientific theories and assumptions, principles, and valid theorems of post-modern maths metatheory are not falsifiable. As in conventional metatheory,

statements of the truths of a holonomic metatheory are proven within its own context, yet also by virtue of pre-existing natural principles. Those principles of natural metalogic are not just concepts or elements of axioms, theorems, or hypotheses. So, nature's principles and the meta-logical metatheory are unfalsifiable.

Naturally, while anomalies and disputability reveal the incompleteness or fallacy of a theory, absence and reduction of anomalies confirms the completeness and validity of a metatheory. Wikipedia gives these interpretations of the meaning of conventional metatheory:

> A *metatheory* is a theory whose subject matter is some other theory (a theory about a theory). Statements made in the metatheory [*of a*] theory are called metatheorems. A **metatheorem** is a true statement about a formal system expressed in a metalanguage. Unlike theorems proved within a given formal system, a metatheorem is proved within a metatheory, and may reference concepts that are present in the metatheory but not the object theory. (Wik 2020-08-24)

For example, new paradigm maths metatheory is holonomic, describing and explaining the basic principles of enabling meta-logic, semiotics, maths, and numbers. Yet, they also enable thought, communication, practical activity, and being itself.

Ontologically, "metatheory" means the domain of discourse and body of knowledge pertaining to the principles and nature of being, forms, structures, functions, operations, and other phenomena. It underlies, supports, and functions beyond the scope of conventional systemic theory. Valid metamaths metatheory enables optimal theorems about actual and virtual phenomena, proof, objects of consciousness (principles, axioms, rules, numbers, geometries, algebras, systems, physics, and so on).

Therefore, the holonomic metatheory of science deals with the self-evident logical and metalogical principles and semiotics required. Understanding metatheory and maths evolves more easily by studying history. Related articles are helpful, especially the article on metalanguage, linked here: https://en.wikipedia.org/wiki/Metalanguage

Number Theory: It may not seem relevant to a holonomic ontological theory of atemporal primacy, but reconsidering number theory relates directly to the principles enabling all scientific work. For example, to be valid and viable, number theory must include the basics of numerical logic and semiotics. It must enable understanding of the nature and potential of numbers, individually, as symbols, and as both mental and semiotic phenomena.

In other words, the only valid, viable number theory is holonomic, a logically whole, self-consistent, and logically complete metatheory of numeric logic. Conventional number theory fails to explain why and how numbers are what they are. It ignores the basics, what numbers are, how, what they relate to, and why. So, modern number theory lacked a viable logical foundation of valid metatheorems (of numeric metalogic). It also suffered from the lack of a unitive paradigm of science and maths. A metatheory of numbers and numeric logic must include all the required basics.

Thus, holonomic number theory enables understanding of primal principles of numeric logic, form, structure, functions, relations, semiotics, and the results. Based on the enabling metalogical principles of being, holonomic numeric metatheory is completely logical, self-consistent, and holotrophic (evolutionary, extensible). It includes the enabling principles of numeric logic. Thus, it fosters new theoretical work and greater understanding.

By integrating theory with enabling metatheorems, holonomic number theory is congruent with the actual metalogical principles of maths, next SM metamaths, and the holotrophic metatheory of logic and science. (see defs., Science & Proof Theory)

Poof theory: Modern proof theory was unfinished, incomplete, deficient, disputable, and suffered the lack of a completely defined metatheory of logic, maths, and proof. Thus, many important problems remained unsolved, some for centuries.

That lack of proofs partially proves the deficiencies of former proof theory. In fact, this project enabled realization of 2 mostly ignored elements of metamaths and optimum proof theory: satisfactory explainability and disputability.

Clearly, the greater the degree of a theorem's (or proof's) logical explainability (and intelligibility), the greater its success. Hence, the better the explainability, the more satisfaction, viability, and value provided.

Yet, where optimum explainability is lacking, the greater the degree of a theory's disputability, the greater the degree of its weakness and/or failure. Ontological proof theory is holonomic, based on holotrophic metamaths and its enabling metalogical principles.

The principles of meta-ontology's metatheory enable logical and metalogical proofs of maths, and of optimum proof theory. For example, this work uses the principles and methods of optimum proof that enabled explaining the reasons for the historic failure to prove the truth of **RH** (Riemann's hypothesis). Even with the most powerful "AI" computer systems available, **RH** was and is a hard NP-complete problem not solvable by economical computation in "P time" (polynomial time). Another prime proof that P ≠ NP is proven by the disputability, defects, incomplete definition, and deficient explainability of modern (SM) metamathematics (since Hilbert).

Yet, holonomic proof theory enables logical confirmation of the possibility of resolving hard NP-complete problems computationally (in P time). Yet, that is possible only if the enabling logic, metatheory, and sufficient understanding (of enabling principles) are available. The results of this work verify that claim.

Identity: The existence of intelligence, knowledge, and consciousness imply and confirm the existence of identity. However, the nature of identity seems generally unknown, which seems deeply problematic, possibly catastrophic.

For example, identity is a primal metalogical principle of being, intrinsic to the nature of the universe. So, naturally, the nature of identity is essentially determined by other enabling principles. Obviously, there are personal and impersonal kinds of identity. Yet, the existence of any kind of identity requires and involves the enabling principles listed below:

- Actuality, physicality, mentality, beingness, and presence
- Form, structure, functionality, relativity, activity, and energy
- Individuality/singularity, integrity, unity, duality, and multiplicity
- Primality, relativity, reciprocity, regularity, immutability, and mutability

Creativity: Creativity, the metalogical principle, is intrinsic to being as a whole. Whether there was a sudden beginning from absolute nothingness nowhen, with a big bang of everything in the middle of nowhere, or an evolutionary emergence from a beginningless infinity, creativity was essential, at least as a pot implicate principle.

The universe exists, as it is, thus creativity exists, and vice versa. The principle of creativity can be seen in the existence of the universe itself, by the existence of physical and nonphysical elements, in the ways of living beings, in artists, even in the pioneers of maths.

Simplicity: Simplicity is a subsidiary principle of form and structural meta-logic, intrinsic to and enabling all other principles and irreducible expressions of numeric logic and geometric

metalogic. Unity, individuality, integrity, form, structure, and complexity enable and are enabled by the actuality and possibilities of simplicity. Naturally, simplicity and complexity are logical, interdependent complements of each other.

Evidently, realizing that, Einstein saw that "everything should be made as simple as possible, but not too simple."

Complication is the negative, noncomplementary opposite of simplicity. Typically, the more confusing a situation, system or theory becomes, the more complicated and estranged it is from natural metalogic and reality. Thus, powerful, deeply explanatory, elegantly simple theories are typically the most accurate.

Occam, Newton, and Einstein were not the only fans of the natural potency and relevance of simplicity. Nor does it take scientific expertise to recognize, understand and appreciate the importance of simplicity. Even children and lucky fools can appreciate it..

Complexity: It, the principle, belongs to the logic of form, structure and morpho-structural meta-logic. So, both simplicity and multiplicity can be expressed and embodied as complexity. That is so because simplicity is the interdependent logical complement of multiplicity, the prerequisite of complexity.

A complex phenomenon is not necessarily complicated. The whole of universal being and logic are prime examples of complex phenomena compounded of the simplest elements, principles. Actual complexity is a primal requisite and result of nature's negentropy because, as complexity increases, so do potentials and the flow of energy, enabling new forms of order, interaction, and change.

Complication retards progressive change and smooth flow of energy, decreasing orderly interaction. Actual expressions of complexity pose no problems for logic ecotects, computers, logic infrastructure. A simple theorem or formula (like ʁƒℤ) can relate to infinite complexity, enabling more complex operations, interactions, and firther development of complex results. Yet, a complicated theory or logic infrastructure may be based on mistakes, misconceptions, erroneous assumptions, misinterpretations, misperceptions, and/or inferior logic. Thus, defective theory can and does decrease creative interaction, development, and successful evolution.

Primality: Primality is a metalogical morphic-structural principle, not simply a concept or invention of mathematicians. Primality is intrinsic to being and nature's original metalogic. Primality is intrinsic to identity, and an expression and property of unique individuality. Mathematical and numeric primality is an expression of original primality.

For example, original unity and universal being are *a priori* (pre-existing) expressions and embodiments of metalogical primality. Numeric primality reflects the primality intrinsic to all phenomena in each unique state of the whole, and each subsidiary identity. Primality is an intrinsic aspect of every embodiment of originality, the most primal is the universe itself. Hence, 1 is the primary, logical numeric symbol of primal priority.

Remember, primality, causality, and creativity are interdependent principles that enable each new state of being's presence and intelligence. All other principles, properties, and expressions of being, form, structure, function, and operation exist in interdependent relationship with identity and its primality.

So, the primacy of natural meta-logic is primary and prior to all other expressions of primality. The unity and integrity of being are infinitely pervasive in each new moment of presence, making primality intrinsic to all things, beings, and moments that express it to any degree.

Unity: In maths, there may be an infinity of roots of unity, but only 1 taproot of infinite unity, integrity (the primal enabling principle). Physically or virtually, unity requires, expresses, and embodies the primal integrity and harmony of components, elements, or constituents of a whole thing (being, the cosmos, etc.).

A single unit of some kind is called a unit because it is 1 embodiment or expression of unity, an undivided wholeness. Unity is also realized as the presence of a dyadic, triadic, primal, or composite phenomenon, a thing or concept, an entity or identity, or the whole universe. As a metalogical principle, unity enables a state of oneness, of being at one or conjoined as one with another or with all things.

So, the universe is the original embodiment and expression of unity, and that confirms the integral presence of its original metalogical principles. The interdependent relativity of identity and infinity sustains unity, as in the definite identity of an individual being, with an ever-changing actuality of infinite complexity sustained by constant multiphasic interactivity. Singularities, dyads, triads, and sets are expressions of unity. The simplest expression of unity is the relationship of two phenomena.

The existence of unity may be psychophysical or sociocultural, simple and/or complex, definite and/or infinite. The primal logical expression of unity is that of 0 and 1, or just 1 representing the unity of numeric logic and all numbers. That is so because unity and identity can only exist in relationship to something other, such as diversity, disintegration, separation, division, multiplicity, nothingness, etc. The logical interdependence of disunity and unity make them a prime example of primal dyadic unity.

Primality is always integral to unity and vice versa. Ultimate unity is embodied and expressed as the wholeness of cosmic reality. No expression of unity has greater primality than cosmic unity and its logical and actual integrity. That primal primacy makes unity the prime expression of primality, the prime primal symbolized by $\boldsymbol{P}$ or the number 1.

R**eciprocity:** Reciprocity is a functional principle inherent in all phenomena, however subtle or metaphysical.

In principle, the universe can be seen as the relationship of all relationships, requiring reciprocity for its existence. Yet, actual reciprocity requires energy or its essence, the principle of activity. Therefore, the reciprocity of physicality and mentality, the principles, enable our understanding of it and its expressions. Obviously, intellect would be impossible without reciprocity.

All relationships, whether elemental, biological or mathematical would be impossible without reciprocity. The principles of unity, primality, duality, relativity, symmetry, integrity, activity, and functionality enable reciprocity and everything else. So, all things are subject to the functional principle of interdependent interactivity because of relativity and primal (original) reciprocity. From the level of basic metalogic and elemental physical phenomena to the astrophysical and psychosocial fields of being, reciprocity ensures that the constancy of interdependent interaction sustains the evolutionary creativity and potential of universal nature.

The properties and usefulness of mathematical reciprocals are no accidental invention of mathematicians. The reciprocal relationships of the reciprocals to their denominators and of the sequences and patterns of all the primal and nonprimal numbers in the serial progression of all natural numbers $\mathbf{NS}\rightarrow\infty$ are enabled and sustained by reciprocity and unity. Original reciprocity and duality are inherent to all mathematical progressions and functions, shown by all sums and zeros of Riemann's Zeta function ($\boldsymbol{R}_{fz}$), and the reciprocity of 1/2 and −2.

That is true because, implicitly and explicitly, all numbers, complex terms, polynomial

expressions, algebraic equations, geometrical relations, and trigonometric functions require reciprocity. So, reciprocity, the principle, is integral to the metatheory of post-modern maths.

Equality: Without the principle of equality there would be no equations, no arithmetic, no logical equality of 0, 1, and 2 (as natural whole numbers and members of the primitive triad). The equality of the maths of continuous and discreet phenomena is revealed by the 'nontrivial' zeroes at the line of symmetry (at ½) generated by graphing Riemann's Zeta function ($\boldsymbol{R}_{f\zeta}$).

In fact, the equality of 1/2 and −2 (confirmed by $\boldsymbol{R}_{f\zeta}$) and the nature of 1 and 2, also confirm the primal relativity of 1 and 0. Clearly, equality, identity, unity, and integrity are interdependent, relative functions of each other. The basic principles of primal intelligence to macroscopic phenomena are logically equal constituents of universal totality. Some may dispute that, but the reality of being is all equally necessary things, beings, events, and processes.

So, despite assumptions, opinions, judgements, prejudices, preferences, and aversions, the basic logical value of an element, a principle, a system, a number (or some other symbol) equals all others. For example, as numerical symbols, as concepts, and as elements of mathematical logic, the primal (prime), odd, and even numbers have equal importance. Also, in principle, the intrinsic value of finite phenomena (or symbols) equals the value of infinity. For instance, all physical things and beings emanate energy and constantly change (microscopically, etc.), yet remain what they are, finite yet infinite.

The interdependent functionality of equality and relativity make each element of a dyadic expression (of relativity) an equally distinct, unique identity, of logically equal and absolute value. So, like awareness and appearance, each number and its symbol are equally finite and infinite, in principle and fact.

Symmetry: Symmetry and asymmetry are nondual aspects of form, structure, relativity, unity, integrity, individuality, and reciprocity. So, the symmetricality of a pattern or a thing or group of things is perceivable and/or knowable only in relation to what is asymmetrical. That relationship can be seen in all forms of life at all levels, from the cosmic to the mineral, vegetal, animal, to the cellular, the viral, viroid, DNA-RNA and submolecular scale.

Every kind of mind, brain, body, and species would be impossible without the intrinsic symmetry and asymmetry of nature's metalogical principles. As primal expressions—of form, structure, relativity, and reciprocity—symmetry and asymmetry can be seen in the numeric structure and sequences of all primal numbers (primes) and their reciprocals. The relationship of primals and composites in a series or field of whole numbers is a prime example of asymmetry existing only in relation to symmetry. Numeric inequalities are expressions of asymmetry's logical inequality with symmetry.

The intrinsic symmetries and asymmetries of numbers and other phenomena are non-optional (nor accidental or fictional), nor simply inventions of mathematicians.

Equations are mathematical examples of logical symmetry expressed with equality, but asymmetrical values may be on both sides (of "="). As with singularity and duality, or individuality and multiplicity, the principle of symmetry exists only in dyadic relativity with asymmetry, its logical opposite. For example, the nature of the rational expression for 1 divided by 2, can represent unity divided by duality, yet also the dyadic relationship of logical asymmetry (1 and 1/2) and symmetry (2 and 1 + 1).

One side of a symmetrical image is a mirror image reflection of the other side. In Riemann's famous graph, "the line of symmetry" ($x = 1/2$) reflects the symmetry of the 2 sides (− and +) that meet at zero ($y = 0$). Obviously, the logical realities and enabling metalogical principles

make it impossible for Riemann's zeta function not to generate nontrivial zeroes only on the line at 1/2 (unity divided by duality). It also expresses the asymmetry of nothingness divided by the primal symmetry of the unity and totality of reality.

Individuality: Individuality, like personality, is a commonly unrecognized principle of being. Individuality is an aspect and interdependent expression of identity, singularity, integrity, and relativity.

The universe is the primal embodiment of individuality, expressed in and as each and every subsidiary phenomenon. Each principle, each idea or thought, each symbol, every elemental form and function of being (every molecule, compound, cell, organ, and body in the universe) embodies and enacts individuality. Without the intrinsic metalogical principle of individuality, there could be no identity or unity, nor relativity and complexity, and no diversity. Logical, virtual, and actual individuality can be finite, definite, and infinite.

For example, the actual individuality of phenomena and forms of being can be as transfinite as any infinite set of unique totalities. Thus, macro-ontology and post-modern metamathematics affirms individuality as a primal enabling principle.

Multiplicity: The primal metalogical principles of being enable multiplicity, a subsidiary principle of form. It enables the existence of more than one natural phenomenon, of quantities, multiple qualities, and numbers. Multiplicity is a relative complementary opposite of singularity, individuality, and identity. Multiplicity also enables productive replication and procreative reproduction.

Totality: Totality, the metalogical principle, enables the existence of a) all qualities, elements, and potentials of a form or mode of being, or b) of a set or group or field of phenomena. Universal totality ($\mathbf{U}_T$) is all phenomena, everything, the whole of being, including its principles and qualities. That also includes what is present and/or expressed only as potentials, ideas, virtual symbols, and imaginary or illusory phenomena.

Naturally, totality includes the results of the past and memories, but not what no longer exists, or never existed, nor what may happen in the future (except as dreams or imaginings or potentials). So, totality cannot include or begin as an impossible yet seemingly endless, boundless expansion of nonexistent nothingness into everything from the middle of nowhere. Recall that, so far, what we can detect of $\mathbf{U}_T$ is at least ±93 billion lightyears in diameter, with ultra-colossal currents of plasma and galaxy superclusters (entering and exiting and almost crossing it). So, we can be sure that $\mathbf{U}_T$ is immeasurably larger and "older" than the imaginary Big Bang. Also recall that, beginnings, explosions, and initial conditions require energy, and energy requires something other than nothing, nowhere, and nowhen.

We can think of cosmic totality as the infinite whole of reality, greater than the sum of the individual totalities of every subsidiary form of being, every person, place, or thing in the current moment of universal presence (including all its nonphysical enabling principles). For example, the ever-changing complexity of each human life is immeasurably greater than a sum of its physical parts. That makes us infinite and transfinite expressions and embodiments of universal being and its intrinsic enabling principles. That ensures the infinite totality of being (the universal macrocosm).

In fact, as far as we now know, humanoid beings may be the only beings who can embody the totality of all universal principles. Hence, if universal totality came from anything before physical phenomena, the most likely source is undetectable hyper-energy and the meta-energy of its metalogical principles, properties, and qualities (still enabling and sustaining universal

phenomena and us). If true, then each symbol or number expressing primal totality is as infinite as the infinite totality of all phenomena. That is so because each level, mode, and realm of reality (including the mental, virtual, and meta-energetic modes and domains) is infinite.

Quantity: Like dimensionality, quantity is a subsidiary principle of the metalogical principles of being, specifically: form and structure. Naturally, embodiments and/or expressions of quantity are also enabled by other primal principles: physicality, mentality, awareness, cognitive perception, consciousness, and so on.

Expressions and embodiments of quantity are all psychophysical phenomena enabled by the principles of relativity, integrity, individuality, unity, and multiplicity. Also, all perceptions of quantities are relative to perceivers' qualities, conditions, conceptions, and metrics.

Without the principle of quantity nobody could perceive things as either few or many things. Numerous or scarce, large or small, seeing and knowing more or less of something require quantity, the principle. Fully understanding and appreciating the vast scale of the field of being (the cosmos) and its subfields (including us) requires real understanding of quantity. Otherwise, as is normally the case, we tend to confuse notions and illusions of quantity with the reality.

Notions of money and wealth are perfect examples of imagining illusory quantities. Worse yet, without realizing the true nature of quantity, we all too often confuse its value with the value of quality. Then , we too often prefer illusory quantity over real quality. That error pervades current SM paradigm science and maths. Yet, without understanding the different kinds of quantity and value, real, unreal, etc., there can be no qualitative progress in science or maths.

For example, confusing quantity with quality (and vice versa) makes it impossible to recognize the importance of a) intrinsic metalogical principles of life, b) natural reality, c) hyper-fluid mechanics, d) plasma physics, e) metamathematics, and f) sanity (etc.). That prevents or retards understanding and development of better theory and metatheory. So, quantity, the principle, is essential to holontology, macro-ontology, and post-modern science.

Quality: We normally encounter it as a subjective, psychosocial construct or concept (or imagined per personal consciousness via culturally induced bias). Yet, quality, the principle, like property, is an integral principle and property of the enabling metalogical principles of being.

In fact, quality enables the qualities and potentials of all other primal principles of being. It also enables the existence and qualities of real values, and of numeric and symbolic values. Thus, quality enables counting, measuring, mathematics, and science, especially bio-ethical axiology, the science (and study) of natural values. Conceptions of quality vary from person to person and from culture to culture, sometimes from moment to moment.

Yet, within the various orders, classes, and types of phenomena (including beings), phenomena clearly exhibit qualities and degrees of quality. Without it, sanity, analysis, science, maths, art, and technology would all be impossible. If quality were not a primal natural principle, then there could be no wellness, illness, inferiority, superiority, excellence, beauty, and goodness (etc.). Also, because of it, liquids exhibit the qualities of wetness, fluidity, viscosity, deliciousness, and so on. Likewise, different kinds of stone embody qualities of solidity, hardness, density, beauty, and so on.

The characteristic qualities of properties (of nature), elemental composition, and structure depend on it. Plants and fungi have qualities of living beings, and of foods, medicines, poisons, and much more. Living beings embody and express the qualities determined by the nature of

their species, their individual nature, their capabilities, potentials, limitations, behaviors, habits, and relationships (to other beings, groups, places, and things).

So, the qualitative aspects of reality are essential to the whole of being and its subsidiary phenomena. High quality habitats, communities, thoughts, emotions, communication, semiotics, science, maths, logic, technology, and arts are important to us because because high quality of life is good for us. Human intellect depends on and expresses the quality of each of us (and of our knowledge and/or wisdom).

If the principle of quality were not intrinsic to being, then intellect would have nothing to enable effective analysis or to prove valid theory and knowledge. Without quality, there could be no ethics or justice, no compassion or humanity, no good, no evil acts, no words and thoughts, no art, no music, no architecture or engineering, and no valid or viably sustainable society worth sustaining.

Property: The principles that enable and govern all phenomena give them their characteristic properties. Properties are integral to principles and to being.

Form, structure, function, and all the other principles and modes of being, give each phenomena its unique properties, its actuality, its identity. For example, the sequential arithmetic progression $\mathbf{N}_S \rightarrow \infty$ (from $0 + 1 \ldots \rightarrow \infty$) is unique, always what it is, not like any other operation or result of maths. The changeless principles and properties that make it so, ensure identical results with every instance of its use.

Property, the principle, is essentially important to the holotropic metatheory of post-modern metamaths, holonotology, and macro-ontology. The defects and crisis of metamathematics, unethical economics, current SM physics, and 'cosmology' are partially caused by a pandemic failure to understand the nature of property and properties.

Mathematics: Mathematics (maths) is a a) field of logical thought, b) a symbolic descriptive language, c) a technical discipline, d) a practice, and e) a science. It is enabled by logical and metalogical principles of being form, structure, function, logical relativity, axiology, and operational semiotics.

Mathematical principles and phenomena are virtual, non-physical, logical, psychophysical, and semiotic. So, the properties of maths can make it descriptive, prescriptive, and generative. They also enable mathematical functions, concepts, systems, complex constructs, communication, interactive applications, operations, and results.
Originally, maths developed as a semiotic discipline that existed for the sake of gaining useful knowledge and wisdom, the understanding of reality. Though maths now seems mostly used for practical tasks and commercial applications, its original purpose survives and drives the development of new metatheory. For example, we can now see that principles of mathematical logic are subsidiary expressions of enabling principles of morphic, structural, functional, and semiotic operational meta-logic. So, maths is a subordinate subdomain of metamaths.

Metamathematics: "Metamaths" is the metatheory and metalanguge of the intrinsic metalogical principles and logic enabling and governing maths. It is also the ontologically and socially focused study and philosophy of maths and its epistemics.

Wanting to confirm, expand, and extend the scope and potentials of maths and philosophy, David Hilbert initiated the modern approach to its ontology. However, he failed to provide a well-defined foundation of metatheory. So, his fragments of metatheory were and are insufficient for supporting better maths (etc.).

Holonomic metamaths deals with the actual nature and elemental principles of maths and

the intrinsic metalogical principles that enable them. Holotrophic development of holonomic metamaths enables new theory and metatheory of maths, thus new uses, and new possibilities.

Semiotics: The logic and study of communication is called semiotics. Natural metalogical principles make linguistics **(**and its branches) subsidiary to semiotics.

Semiosis, communication, an integral principle and function of being and intelligence, is clearly a ubiquitous property of life. Cells, flowers, and most animals use chemo-semiosis. Some also use sonic semiosis for direct expression and interaction. Our languages are semiotic and mostly symbolic.

Maths and semiotics are inseparable, but semiosis is an expression of metalogical principles and properties existing independently of and prior to maths (and all other human languages). Hence, semiosis proves the existence of mentality, the principle, and mind. Semiotics also proves the trinity of mind, voice, and body.

Some physicists believe that information is a primordial constituent of universal reality, intrinsic to all forms and structures, yet without minds and communicators; and without any explanation of how information can exist without mentality, receptivity, transmittivity, and other natural principles of being. Information is an object of consciousness, composed of our ideas, illusions, assumptions, opinions, and facts. So, without intelligence, semiosis (sentient communication), and transmitting and receiving entities, information would be impossible.

The linguistic nature and functionality of maths exist in interdependent relativity with its intrinsic principles and semiotic expressions. The symbolic sublanguages of maths and mathematical logic are perfect examples of logical semiotic code, enabled by the extensible systemic domain of overt operational logic.

Semantics: The philosophy and unfinished definitions and metatheorems of modern maths were limited by deficient a) philology, b) linguistics, and c) semantics. Semantics give the dialects of languages their currently accepted meanings and connotations.

As in all human languages, the semantics of science and mathematical linguistics and semiotics are equally definitive. Likewise, they deserve and need evolutionary revision, better theory, and better metalanguage of the governing metatheory. Hence, semantics is a critical element of post-modern science, metamaths, and proof.

Unfortunately, generally accepted theories, assumptions, and beliefs of groups of users of languages determine the scope, content, and intentions implicit in their languages and their semantics. So, societies' different languages tend to limit 'subversive' communication with inherently dynamic conservatism. Groups of mathematicians of the various subdisciplines are no less subject to currently accepted norms of their current paradigms.

Only when a group's fundamental paradigm, its standard model (SM) of 'reality' is revised does its language change or evolve. Otherwise, a group's semantics reinforces and limits the scope of its inherent philosophy, its paradigm, its current *understanding* of reality, and the thoughts that are normally thinkable. Hence, Neils Bohr thought that major scientific revolutions happen when the last of a paradigm's Old Guard defenders are buried.

Until then, new theory and meanings, and radical new philosophy normally generate negative reactions, overt and covert hostility, and derision, or worse. Exceptions to Bohr's theorem of scientific revolution are vastly outnumbered by the historic proofs.

Epistemics: Macro-ontological epistemics is the holistic study and knowledge of the modes and mechanics of knowing, meaning, connotation, interpretation, implication, reasoning, and the nature of knowledge.

Of course, mastering all that requires extraordinary knowledge of anthropology, sociology, philology, semiotics, linguistics, semantics, world history, literature, and philosophy. Yet, the sociocultural paradigm of modern SM science and maths failed to foster and support adequate study of the basics of holistic epistemics. Thus, limited by psychosocially enforced deficiencies, the domains of discourse, theory, and metatheory of modern science and maths were retarded.

Optimal science and metatheory require optimum phenomenology, ontology, semiotics, and epistemics. Unfortunately, any group's semantics are enculturated psychosocial constructs. So, without effective epistemics there can be no optimal semiotics or semantics, no effective communication and, so, no optimal proofs, no optimum theory or metatheory (of science and maths).

Zero: When we think of the nature of a womb, then 0, the numeric symbol of absence or nothingness and nonbeing is a perfect symbol of the neutral origin of all numeric forms. Zero—always relative to something that exists (universal totality, etc.)—also symbolizes both negative potential, pure neutrality, and virtual phenomena.

Zero (0), a primitive symbol of absence, is a uniquely singular, logical reality and label. So, 0 deserves the unique distinction of being the one and only virtual expression of original and neutral primality. Of all integers, only 0 best expresses the numeric origin of both sides of the number line, and the central point of coordinate mapping graphs. Only 0 has no actual or virtual positive or negative identity. That confirms its proto-primality and singular logical nature.

In fact, unlike the many mathematical objects commonly believed to be 'black holes' in 'dark' stuff (called 'space' or "curved space-time"), 0 is the purest, truly naked singularity, hidden in plain sight. On the other hand, consider 1, a symbol of singularity. It can also represent positivity (or truth), unity, individuality, identity, presence, and original wholeness. Still, what is originally or persistently nonexistent or yet to exist is always currently unknowable but, logically, the presence of anything implies and requires the absence of nothingness.

So, in principle, zero represents the logical relativity of nonbeing and the quality of presence intrinsic to universal being. So, without 0 (zero), no 0 + 1, then no 1; and no 1, then no $\mathbf{N}_S \rightarrow \infty$ (no numbers, no maths, no measurements, and no science).

One: "One" and 1 are not simply numeric concepts and symbols. Natural oneness was originally all-inclusive, and preceded the mathematical expression of it. Thus, a single identity or form (of some kind of thing or being)—or the unity of a vast set of truly identical things or entities—is and was always itself, not another unit of some other kind.

A natural form of being, whether actual or virtual, is present and knowable because of its unique identity, its singular embodiment and/or expression of the actuality and integrity of its individuality. Yet, in principle, the original, universal one-ness of all things and beings is enabled and sustained by its primal primacy and its primary priority. That may seem paradoxical, unless we recall that all things and beings are subfields of the field of being, enabled by its energy and nature, its intrinsic enabling principles.

So, consider the pervasive expressions and instances of oneness, singularity, individuality, identity, unity, and uniqueness (including the cosmos itself, and each new moment of its presence). Now, the elements of the pre-existent field of phenomena (the events of life's present moment) were and still are all logical and/or metalogical in nature. So, each part of any composite thing is an expression of its own singularity. Thus, the primary ordinality of 1 implies its priority and its unique expression of elemental wholeness, the completeness of

being's unity, and its cosmic integrity.

So, 1 deserves priority as the primary numeric expression of positive primality. , Also, because both nothingness and duality are relative logical complements of unity, the nature of 1 implies both 1 and 0, and 1 and 2. Then, 0, 1, and 2 enable and imply 3, which symbolizes the primary set of all manifestations of triality, and of 1 + 1 + 1 and all relativtives of 0 + 1 + 2.

Clearly though, we can see that 1 of anything is not anything else; also that singular phenomena existed before humans and maths. So, the natural primality of 1ness preceded its existence as an element of maths. Its numeric value and priority are virtual yet, as a transfinite expression of formal semiotic potential, 1 is inseparably related to cosmic unity-as-a-whole (and all phenomena within it, including primal integrity).

Two: Primal duality enables and relates to two (2), the number and its graphic symbols. Like all other numbers, 2 does not exist in any nondependent way, separate or apart from the other numbers, numeric logic, natural realities, entities, quantities, and values to which it relates.

As the first post-unity primal number, the primitive primality of 2 can be seen in its direct relationship with 1 and 3, with no derivative nonprimal numbers intervening. The number 2 is also the first primitive primal that can symbolize the existence of something other than the singular totality of natural unity.

All psychophysical instances of duality, dyadic primality, nondual relativity, and polarity are embodiments and/or expressions of the generative principles governing the nature of being and explicate actuality. Hence, the complementary relativity of 0 & 1 (or nothing + something) makes them primal expressions of dyadic unity, 2ness. The numeric logic of 2 is a consequence of the generative, morphic, structural, and functional principles that make it as universally potent, primal, and important as 0 and 1.

Three: The first primitive primal number representing the existence of something other than unity, duality, and dyadic primality is 3, the symbol of triality and triadic phenomena. All psychophysical instances of triality, triadic primality, and their relativity are all embodiments and/or expressions of the primal nondyadic (triadic) symmetry (enabled by nature's metalogical principles of being) and its intrinsic, explicate multiplicity.

The numeric reality of 3 is virtual. As with all other numbers, 3 and 3ness do not exist in a nondependent way, separate or apart from the natural principles, entities, quantities and values they enable and/or represent. The relativities of 0 and 1 and 2 and of 1 and 2 and 3, used as groups or sets, make them expressions of triadic primality. As the first post-dyadic primal, with no nonprimal sums or products preceding, the primitive primality of 3 can be seen in its direct relationship to 0 and 1 and 2.

As a trinity or triadic set, the first 3 primitive integers are each a virtual negation of 3 (each signifying an absence of explicate 3ness). Yet, 3 is the result and cardinal value of the set. So, the triadic primality of 3, and its status as the first nondyadic (odd) number other than 1, is an integral expression of positive primitive primality and the relationship of 0 and 1 and 2.

The absence of an intervening whole number between 2 and 3 is an expression of the primitive primality of the primal numeric triad and the principles of triality and trinity. Clearly, the nature of triality (triadic primality) enables and expresses the actualities and potentials of complex multiplicity and all geometric phenomena. Thus, forms, structures, values, numbers, and quantities (greater than or beyond 2) are enabled by 3.

For example, we may find that cellular intelligence can use many levels of high-bandwidth EM communication code, but RNA uses a trinary chemo-semiotic code to produce our proteins, enzymes, and nucleotides. That trinary code also enables and maintains the quadrinary DNA

code informing and sustaining us and countless other species. Of course, trinary code also enables and sustains the much more numerous forms of viroids and virions on and in the Earth and its oceans.

Virtual numbers: Calling some values and numbers “imaginary” or "transcendental" or “real” or “rational” or “irrational” or “infinite” is confusing. Numbers are conceptual. They may exist as products of realization or of imagination and/or visualization. They can appear as conceptual symbols, via intuition and/or memory.

However, numbers and symbols are infinite, yet definite, and some can more usefully be called or considered virtual numbers or values. For example, in the domain of maths, the value of $\boldsymbol{i}$, the value that, when squared, equals –1, is called imaginary, but it is clearly not. It is also no more abstract than any other numeric or symbolic abstraction. In fact, in the obsolete context of antique maths, $\boldsymbol{i}$ once seemed an absurd impossibility. Yet, the useful potential of $\boldsymbol{i}$ and other exotic symbols of virtual values make them everyday necessities of technology, business organizations, cultural institutions, and modern science.

Such virtual values, numbers, and phenomena exist because the metalogical principles of being enable the totality of this universal moment (of life). Yet, bear in mind that being and life never make circles with “transcendental” ratios and fractions. What we call “π” (or pi) is simply a symbolic referent, an inexact approximation, a numeric concept, and a rationalized label that transcends nothing but 0 (and nonbeing). Still, obviously, all numbers, numeric values, and ratios are virtual phenomena.

Intrinsic numbers: Numbers themselves (not the semiotic symbols we use) are virtual objects of conscious realization or intuition, and of communication. Yet, some numbers—classified as irrational or transcendental or imaginary or real—closely approximate or express various natural or mathematical phenomena. We therefore know of formulas, equations, expressions, ratios, and constants useful in physics, engineering, astronomy and so on.

For example, the ratio called pi (π) is intrinsic to the geometrical construct we call the circle, among other things. So, π is intrinsic to our system for measuring what we call “the passing of time” (etc.) and mapping Earth’s geography. Of course, if geometers in ancient Mesopotamia based their number system on anything other than the number of bones in their fingers and toes, then hours, minutes, and circles might not relate so intimately with 60 and 360; and trigonometry might be very different, if not nonexistent.

Anyway, the fractional ratio of the circle’s circumference divided by its diameter is close to perfect, but still not exact. Still, no perfect circles outside of purely conceptual geometry, but geometry is a natural product of human mentality, a natural reality (in principle, at least). So, it is somewhat confusing to call a logical ratio an irrational or transcendental number. We may as well call them either virtual or intrinsic numbers.

All numbers, terms, and expressions of maths are essentially virtual and actually intrinsic to the paradigm of maths, which exists only in human minds. Hence, numbers, symbols and expressions relating to natural and virtual phenomena relevant to the paradigm of what was named “continuous maths” could be called natural, but so are numbers representing discreet phenomena, like 2 babies.

To minimize confusion while supporting clarity, instead of calling them natural, or rational, or irrational, or imaginary, or real, or transcendental, we could call them all special or virtual, if they relate only to virtual phenomena; and, if they relate directly or are integral to descriptions of natural and/or discreet phenomena, we can think of them as intrinsic numbers. For example, we can consider the Golden Ratio, **Φ**, phi (pronounced like fee), and similar objects of maths as

symbols of naturally intrinsic numbers or ratios or constants.

Phi, an ideal example, has the virtue of being intrinsic to pentagrams, pentagons, and other objects of geometry, trigonometry, and the Fibonacci sequence (etc.). It also closely approximates many observable natural forms and patterns. So, like pi, phi could be considered and called intrinsic, virtually and actually. Then, if the language of maths became much easier to understand, explain, and remember, even ordinary children might enjoy thinking and talking about numbers and maths. After all, maths is a language. So, with more logical names and terms, teaching and doing maths, science, and engineering may be more effective.

Primals: Primality is a principle that exists within and far beyond maths. Calling natural whole numbers divisible only by their own value and 1 "prime" is overly simplistic and confusing. Primal numbers $\mathbf{N}_P$ (or $\boldsymbol{p}_n$ or $\boldsymbol{n}_p$) are those positive naturally whole numbers that express the primal integrity of unique numeric identity, individuality, and unity.

The most primitive numeric expressions of positive primality are symbolized by 1 and 2 and 3. Yet, uniquely, 0 expresses neutral numeric primality. For example:

$0 \div 0 = 0$ and $0 \times 0 = 0$ and $0 + 0 = 0$ and $0 - 0 = 0$

None of the results of those equations are either positive or negative, because the logical negativity of 0 is neutral. That makes 0 a uniquely singular expression of primal integrity and nonbeing (nothingness). So, together, nonbeing and its primary logical complement, unity (or 1), express the primality of 2 (the numeric symbol of primal duality). Original primality and unity are expressed by the complementary nonduality of action and stasis, change and constancy, form and formlessness, or truth and falsehood (reality and unreality).

So, we can use 1 and 0 to symbolize all primordial existential couplets or anything else we encode. The numeric primality of 2 also reflects actual duality in unity expressed in DNA-RNA, cell division, sex, birth, and all the other relative polarities of being, including that of presence and awareness, body, and mind. Clearly, all subject-object phenomena express dyadic primal relativity of identity and duality (or infinity).

The nondual 'self-other' relation, simply symbolized with 2, also represents the logical nonduality of symmetry and asymmetry, simplicity and complexity, singularity and multiplicity, unity and totality. Other than 0, 1, 2, and 3 are the primals most expressive of purely primitive, numeric primality.

That can be realized after recognizing the nature of triadic primality as a potential of the nature and presence of duality and dyadic primality. The primary expression of diversity and multiplicity is symbolized by 2. Yet, where there are 2 objects or events, in principle, there must also be 3, virtually, at least by logical implication. For example, the primary expression of complexity is intrinsic to 3, which we can see in the presence and relationship of 0 and 1 and 2, and all other expressions of predominant triality, trinity, and triadic primality.

The primal presence and effects of 2ness and duality infuse and inform the logical backbone of the formulas, equations, expressions, and results of work numbers. Duality and triality are also intrinsic to the primal pairs ('twin primes'), always separated by a $6\boldsymbol{n}$ value. The fact that all primal numbers (in the progression of $\boldsymbol{n} + 1 \ldots \rightarrow \infty$) occur before and/or after a multiple of 6 confirms the preceding metatheorem and this metatheory of meta-ontology.

Composite numbers: The oddly named 'composites' ($\boldsymbol{C}_n$ or $\boldsymbol{n}_C$) express numeric nonprimality and complexity. They can symbolize all composite phenomena of logical relativity. However all numbers are composed with other numbers, most simply by adding 1 to any other number.

So, all the relations, functions, processes, entities, identities, and activities of all domains and

levels of being can be symbolized and related to nonprimal numbers with appropriate attributes, forms, structure, functional potentials and properties. That is so because all phenomena are both unique and relatively dependent upon something else and, essentially, the cosmos as a whole (AKA being), the perfectly prime phenomenon.

Hence, the nonprimals can express formal and structural symmetries and complementary logical polarities and relations relative to the logically relative asymmetry of unity and duality (and the primitive primals, 1 and 2 and 3, and so forth). So, if we could keep adding 1 to each $\boldsymbol{n} > 3$ forever, an infinity of $\boldsymbol{n}_C \rightarrow \infty$ will display increasing intrinsic and extrinsic complexity, symmetry, complementarity, and divisibility increasing proportionally.

For analyzing numbers, number theory, numeric metatheory, ***ʀfℨ*** and ***RH***, investigating and understanding the natural nonprimal numbers is critically essential. After all, without composite nonprimality, primality and primal numbers would be impossible. So, nonprimal numeric metalogic is as essential to fundamental metamaths as the numeric logic of the primal numbers. Ramanujan's works, among others, proves that truth.

Phi: The ancient Greek letter "Φ" (pronounced "fee")—the essential key of the metamaths of Pythagorus and Plato—can be understood as the origin of modern number theory and post-modern metamaths.

The Golden Mean, Golden Ratio (or Golden Section), and the Golden Spiral generated with Φ, mimic the structural logic of nautilus shells (etc.). Made famous by Fibonacci and his famous series, Φ is the ratio of 1 to Φ and to Φ^2 and its relationship with $\mathbf{1}/\Phi^{-3}$. The virtually congruency of that unique expression of numeric logic with magneto-dielectric motion, and with basic formal-structural dynamics, lets Φ verify the enabling metalogical principles of being.

For instance, if we symbolize the wholeness of unity as a line or time-line, we can choose to divide it into 2 unequal segments. If we then subdivide one of those segments in the same way, depending on our choice, potentially, we can describe the relations of those segments as Φ and 1. Then, the larger segment could = 1 and the smaller segment = $1/\Phi^{-3}$.

Summing those values gives us Φ^3 and that demonstrates the *a priori* nature of numeric metalogic. The fact that $\Phi^3 = 1/\Phi^{-3}$ verifies the basis of the Fibonacci sequence, algebra, equality, reciprocity, relativity, identity, and also makes it, in principle, validate the functional logic of maths, its enabling principles, and the primal metalogical principles of being (its nature). So, the nature of the ratio we label with Φ makes it an incommensurable, irreducible, incontrovertible expression of nature's creative, morphic, structural, and functional principles.

Addition: An additive operation combines units or quantities or numeric symbols without multiplication or exponential expansion. So, adding1 thing and another gives a sum of 2, a new quantity or thing. So, $1 + 1 + \boldsymbol{n}$ things produce an aggregate of 2 things plus the amount or quantity symbolized by $\boldsymbol{n}$, for a new aggregate sum.

Addition may also involve symbols of fractional values and/or complex quantities that include quotients of implicate division and/or products of multiplication and exponential expansion. Addition requires only the summing or combination (or aggregation) of units or components of a composite thing or set, or of a group or series. An important exception to the above is the addition of a sperm to an egg, when the combination of their half strands of DNA, become a new example of oneness, unity, and singular identity, a new being.

Yet, that potent exception also proves the primordial interdependence and inseparable primalities of unity and duality (see the definitions of unity, duality, 1 and 2, below).

Nöetic: Mental and virtual phenomena and conceptual constructs are nöetic, nonphysical yet

actual phenomena. The principles of maths and natural metalogic are the subtlest and most potent constituents of the nöosphere. The realm of mentality, metalogic, and cognitive phenomena contains and enables all subsidiary domains of logic, concepts, and discourse.

So, some mental phenomena and conceptions of maths and metamaths are less subtle and mostly less potent than elemental principles of nöetic meta-logic. From the perspective of natural logic, the nöetic, semiotic, and somatic orders of reality exist in dynamic dyadic and triadic relationship, subsets of the macrocosmic nature of being. For example, nöetic, semiotic, and somatic principles enable the potentials of the principles and properties of mental, vocal/verbal, and biophysical actualities of being. Thus, we can intuit or realize and/or see the intrinsic ultra-virtual, virtual, and extrinsic forms and orders of being, logic, and interaction.

In other words, physical embodiments, actual and virtual expressions of being are integral, interdependent, interactive aspects of universal intelligence. Hence, natural nöetic principles enable science, maths, and metamaths, enabling and verifying their existence.

Neophobia: All chronic or recurrent irrational fears are phobias. The most irrational phobia is chronic fear of the new, because each moment of being is new. As most of us know, with the tiniest fractions of duration we can call moments, all physical things and beings constantly change. All its ever-changing things and events change the whole universe and everything in its vast yet momentary presence.

Each moment, however brief, all things and events exist in a new form and way, whether we realize that or not. Yet, scientists and mathematicians are human animals, most less than perfectly rational, at best. Therefore, most resist new ideas and theories that seem to threaten their conceptions of reality, normality, and acceptability.

Xenophobia: Chronic irrational fear of the alien (or the strange) usually occurs in combination with neophobia. The more different or unusual or unexpected something seems, the more alien and frightening it seems to xenophobiacs. So, the disorder involves irrational fear and loathing of the new, the unknown, and the unknowable. Xenophobia is a major hindrance, impeding and/or preventing the evolution of science, maths, society, and civilization.

MacDonaldization: The pandemic commodification of everything ensured by the forces of consumerist commodification of everything, maintained by pervasive neurolinguistic programming (via normalized mass-deception AKA education & advertising) enforces increasingly competitive commercialization of science and technological R&D. That led to systematic subversion and siloization of specialists. So, calling it "MacDonaldization" came to seem increasingly appropriate.

APPENDIX B

The Linguistic Problem

Introduction

A prime number is one measured by a unit alone. – Euclid

Mathematicians have tried in vain to this day to discover some order in the sequence of prime numbers, and we have reason to believe that it is a mystery into which the human mind will never penetrate. – Euler

As far as the laws of mathematics refer to reality, they are not certain, as far as they are certain, they do not refer to reality. – Einstein

Those opening quotes—of Euclid. Euler, and Einstein—are potent examples of the neurolinguistic power of trend-setting genius and normal confusion. This little story shows why that matters, and how and why science and society slid into the global crisis now threatening civilization and all life on Earth.

Understanding, repairing, and upgrading the paradigms of science and maths requires nothing less than a new telling of the story of their development, a realistic history. Success requires explaining and critiquing our Western phase of world history. Critiquing the West's stunted, mislabeled "Age of Reason" (AKA The Enlightenment) also required brief critiques of two books of great (if imperfect) wisdom and influence. Both dealt with knowledge and paradigms (mental models), and the power of ideas, assumptions, beliefs, and social norms. However, as shown below, both books failed to fully address and explain the powers and deficiencies of language.

That failure has plagued science, maths, and society for more than 3 millennia. For the sake of a solution as soon as possible, this must be a summary of the problem. The aim is absolute proof that whoever wants to do mathematics (maths), economics, or mathematical physics should have a good basic understanding of the foundation of maths, its paradigm, its metatheory (enabling principles, concepts, semiotic & numeric logic, etc.), AKA metamathematics. The fact that it is not well understood is proven by economists, daily, also by the label "quantum mechanics" (QM).

What's in a name? Names, words, and ideas have real power. So, how we all use them or misuse them matters.

Confusing mechanics with statistical maths, was much worse than a minor problem. Statistics, probability theory, and models of hypothetical models of potentially probable approximations of mathematical objects, forms of energy, and a theoretical universe are probable, not mechanical objects.

However, holonomic macro-ontology, its theory, and the metatheory of enabling principles (of being and its nature), prove that materialistic QM 'cosmology' (and QM rhetoric) diverted physics, astronomy, and education. For instance, the theory and meta-theory of primal enabling principles prove that a Big Bang from nowhere is impossible. That disproves QM cosmology and much of QM particle theory. Also, while subverting most scientists, QM theorists mystified, confused, and deceived most of the rest of us for nearly a century. So, those claims can seem too colossal, too outrageous to be true. Yet, this essay confirms the proof, with extensive evidence, verified by truly great experts (of real genius) in the relevant fields.

First, for anyone unfamiliar with the terms presented in this paper, it could seem that physics and my theory and metatheory of atemporal primacy, mathematics (maths), economics, ethics, and linguistics have little or nothing to do with each other. However, read on and you may see how and why they all made this work both possible and necessary.

Briefly, my reasons for attempting this seemingly colossal project also motivated nearly 55 years of my quest to end my confusion and its consequences. Eventually, I realized that success was and is possible. We can master the science of being (ontology) and the art of living (Oikonomia, Eng., from ancient Greek). I then saw that most of our modern problems were caused and maintained mainly by mass-confusion, aggravated by systematic corruption. It promotes more normalized corruption and ignorance of the

nature and subliminal power of linguistics and psychosocial programming. That enables more confusion, more corruption, and more mass-deception.

So, though I will always respect pioneers of great genius, I will always dislike their potential for increasing confusion. For, when opinions of super-intelligent experts support normalized deception and confusion, they quality of education decreases as mass-regression increases. Consider these examples:

Both were brilliant pioneers but, to Leonhard Euler, Euclid's definition of "prime numbers" must have seemed confusingly obscure or deficient. Believing that numbers can be measured and that numeric units exist in isolation does require confusion. Still, Euclid developed the first elegantly logical proof that there could be an infinite quantity of primal numbers, AKA primes (if anyone could keep adding forever).

Of course, Euclid's ancient Greek words probably meant much more than ours. For whatever reasons, Euler was so baffled by numbers that he supported making 2 the first primal number (demoting 1, the primary numeric symbol of primality, priority, and primacy). Euler also approved of the technical re-definition of a "prime number" (giving it a less logically realistic meaning). So, now, almost all mathematicians and logicians are at least as mystified by and confused about primality (and the other enabling principles of numeric logic) as Euler, Gauss, and Riemann.

They decided to just take the term ("prime") for granted, as if a label for an atheistic mystery or accident of maths is acceptable. So, they ignore their illogic and fail to see the distribution of primal numbers and sequences as a result of the non-random orderliness of numeric logic and all the other ('even' & 'odd') numbers.

In the long run, Einstein's genius for humor may seem his most potent talent, but he was clearly confused about maths, time, space, gravity, and reality. Of course, Einstein understood the problem well enough to make his clever joke about it. Yet, even using the word "laws" (even with a wink) fails to eliminate normal confusion about both reality and maths. However, it proves and exposes the nature of our linguistic problem and the severity of its impact on science and society.

Indeed—other than certain economists—it would be hard to imagine someone more influential than Einstein. Still, most of us remain unaware of all his achievements and failures. After all he was a man of his times, stuck with words and ideas maintained by the mainstream paradigm (the post-medieval context of thinkability).

Then, as now, for almost all civilized folk, money and economics seemed to make the world go round. Yet, money and economics could never exist without enabling logic and mathematics; and, now, modern economies and currencies depend on and are secured by 'prime numbers' and mathematical logic.

Oddly, though mainstream economics and mathematics are inseparable, the combination helps perpetuate illusion and deception. Politics and our linguistic problem cause and perpetuate that unethical dilemma. However, pure science and mathematics may be hyper-exotic, but not purely corrupt. Despite that logical truth, history proved corruption, sciencey rhetoric, and over-sophisticated scientification (of unscientific professions) enabled removal of ethics from mainstream economics.

In other words, rationalized abuse and misuse of statistics and maths—for the sake of profit, status, politics, and mass-confusion—served anti-ethical capitalism very well. So, politics, all of society, most scientists, and [what we call] science suffer from confusion about money and anti-ethical economics.

Therefore, the cure includes reviving "oikonomia"—the communal art of living well—to rehabilitate economics. Only adopting a linguistic paradigm that supports bio-

ethical meta-economics and holonomic ecometrics will enable a cure. Only integrating economics and bio-ethics can end civilization's ecocidal new normal.

Fully understanding the historic cultural dimensions of the problem can help us resolve the neurolinguistic root of our problem.

Mechanics vs. God

Descartes and Newton midwifed the mechanical cosmology and much of the language of modern science, but religious beliefs clouded the issue. That was caused by the inherent biases of language, the antique paradigm of post-medieval civilization, and the ongoing confusion they caused. To be fair though, Galileo, and the Greeks before him, got the modern world's mechanistic ball rolling.

The famous "Antekithera device"—a mechanical astronomical calculator—dates mechanistic thinking back to the time of ancient Greece (etc.). By the mid-18th century, one of the greatest multi-specialists in the history of science, C. F. Gauss, lamented all the confusing terminology of maths. Now, it is reasonable to believe that he realized the potential for derailing future maths and the other domains of science. So, he suggested more logical, purely descriptive terms. His colleagues and successors had little or no interest in solving that problem, and neither did Gauss.

So, early in its development, economics was infected by scientism's amorality, increasingly unrealistic theory, subversive rhetoric, and the mass-urge to counteract the power of the "Holy Roman Empire" (with new, atheistic dogmas). The infection soon spread to other fields of endeavor and enterprise.

Why? As far as "laws" of mathematics go, Einstein was partially right. His final knowledge of "reality" is unknowable; but mathematics has principles, functions, and rules, not laws. Physics is not God rolling dice, but reality and maths depend on much more than Einstein could know. Clearly though, he was not the only genius limited by an incomplete understanding of the paradigm and neurolinguistics of his time.

Like us, Einstein talked about his own beliefs (etc.), his own version of subjective reality and unreality. He was unaware of a way to understand and write or talk about the pre-Earthly reality of being. So, as he watched, QM maths, physics, economics, and politics went ever further astray. Seeing how and why is as important as understanding how to avoid premature extinction.

For example, a fortune cooky truism says "the code is mightier than the word." In fact, the world and technopoly are so computerized now—regardless of ethics, sanity, etc.—code and coders run the world, for better and worse.

However, maths is a language, a vast domain of knowledge, a science, a complex of technical disciplines, and the practical endeavors from which it evolved. So, in this technified post-Trump era of commercial civilization, understanding the nature of maths matters. Additionally, the unbreakable law of interdependent interaction, AKA karma (the nature of action & activity) is universal. Ignore it and, sooner or later, the effects of causes and not knowing what you don't know will hurt you.

Of course, most busy parents and normal members of civilized society may not want to make metamathematics (metamaths) a long-term study. Still, understanding the basics is easier than mastering trigonometry or algebra. The nature of maths, metamaths, is its enabling principles, basic properties, and potentials, defined and explained by its metatheory. Its logic infrastructure is enabled by nature's metalogical principles. That may seem inscrutable or overly challenging but, understanding the nature of something is possible without knowing all its details.

Actually, understanding its nature demystifies maths. Then we can deconstruct and critique the logic, semiotics, and rhetoric of economics and mainstream SM physics (and of QM cosmology). It also enables seeing the illogic maintaining and limiting our anti-ethical socioeconomic system and its ecocidal Winners Take All paradigm. We can then rehab the incomplete development, deficiencies, defects, and notions of post-Einsteinian physics, QM cosmology, and post-Truth economics.

Otherwise, most academics, scientists, mathematicians, technicians, politicians, and economists (and their employers) will keep misleading and disinforming us. If that goes on, the end of dysfunctional technopoly may come sooner than otherwise possible. In fact, like dense fog, modern status quo economics and its dynamic conservatism have normalized the pandemic of commercial mass-deception, for mass-confusion.

Unfortunately, that pandemic normalizes the sanctification and mystification of science, maths, and technology. As shown here, the abuse of language and knowledge making maths so difficult made modern economics too unrealistic to be really good for anyone. The process of gradual mass-confusion (mass-deception & corruption) was as effective as baffling for all us. Now, the losers fail to realize that the US Federal Reserve system always keeps the richest monopolists getting richer faster, easier, automatically. Inevitably though, being vulnerable mortals, the 'hyper-rich' will suffer the results they caused, possibly by 2028.

This most modern cycle (the "business cycle" AKA Casino Capitalism) may be the last, taking down all players, potentially all species. Remember, by design, the Fed failed to prevent catastrophies, like the Crash of 1929 and the global Great Depression it was supposed to prevent, forever. The losers (about 99.9% of us), now thoroughly bamboozled, fail to have the Fed abolished. So, the percentage of civilized folk getting poorer faster keeps increasing faster, by design. When a critical mass of disillusioned participants have had enough of the game, their exit will end it, one way or another.

Already, thanks to the Internet and viral mass-sharing of truths and realities, billions of losers are waking up and opting out of central bankers' debt-currencies. The Fed's USD$ are as vulnerable as all other currencies based on bad theories and fake concepts. In fact, per IMF estimates of the Fed's paper currency in circulation globally, US$100 bills may total more than ±14 billion (i.e., ±$1.4 trillion USD). Yet, by 2018, the Fed's estimate was ±80% of nearly 12 billion real $100 bills were outside the USA. Oddly, the Fed says all counterfeit US$ bills in the USA ranges from 1 in 10,000 to 1 in 4,000. That difference reveals severely fuzzy certainty of the total, just in the USA. Of course, it avoids mentioning that—outside US jurisdiction—perfect fakes, of both older and new "supernote" US$100 bills, may out-number Fed Benjamins by much more than 6 to 1. Obviously, the Fed and US Treasury have no interest in reporting even smaller numbers. Even an hour of online searching turns up no up-to-date articles or official discussion of how many fake US$ trillions may be printed and used by the huge crime cartels, state-sponsored terrorists, and failed/rogue states (to avoid money laundering hassles).

Of course, the biggest Black-marketeers are happy with any currency they can use as easily as US$100 bills. So, it doesn't take a degree in economics or maths to figure out the real scale of the Fed's vulnerability. Clearly, doing even rule-of-thumb maths enables realization of the implications, likely outcomes, and sustainable alternatives.

However, modern society keeps making conspiracy theories of history obsolete. Consider the *Wisdom of Leopold Kohr*,[?] a lecture by Ivan Illich.(Ill 1994) He summarized how regressive systemization, scientification, commercialization, commodification, and devolution ensure the devaluation of reality, humanity, and community.

Kohr and Illich, among others, saw direct connections between Euler's attempt to systematize music with mathematics and the drive to 'normalize' everything. Also, standardization of musical tunings, metrics, and education for the sake of technocracy, supported the ever-growing sociopolitical power of scientists, technologists, academics, military-industrial monopolists, and the anti-ethical economists who rationalized it. That rationalized the increasingly pervasive acceptance of anti-ethical economics as a 'hard' science, validated by mathematics and modernism.

Kohr also saw the multi-century devolutionary process accelerating the decline and gradual loss of both 'common sense' and humane ethos. Illich's lecture on Kohr's understanding is brief, but deep, broad and detailed. The following excerpts serve well enough here:

> The word "common," which began with a robust sense (something "belonging to the community," *Oxford English Dictionary*) extending to each person ("This was the comyn voys of every man," Chaucer), by the late nineteenth century came to signify a mean or vulgar person.
>
> Not only were seeing and hearing transformed, not only the senses themselves, but also the character of desire—with the good disappearing, to be replaced by value. In ethics, value widely displaced the good. It's true that "value" is an old word; it stood near "dignity" in meaning, pointed out what was precious, indeed magnificent, and early on indicated the selling price of an object.
>
> Since the beginning of the eighteenth century, "value" has had these uses and has denoted what was always desirable, useful, even what was due; it then entered discourse in place of the good. By the time of my youth, it simply stood on the positive side of zero. Today, however, one needs a qualifier—values can be either positive or negative. To resolve this convertibility, to make it determinate, there is no stable criterion. With values, anything can be transposed into anything else, just as in music, with equally tempered tones, any melody can be transposed from one key into another.
>
> Proportionality being lost, neither harmony nor disharmony retains any roots in an ethos. The good, in the sense of Kohr's certain appropriateness, becomes trite, if not a historical relic. It then becomes possible to speak about the triviality of evil.
>
> In ethics, values are as opposed to an immanent, concrete proportion as are the sounds of Helmholtz. Like them, values run counter to *tonos*, the specific tension of a mutuality or reciprocity. As timbre separated from tone, so that one could play a violin's part on the piano, so an ethics of value—with its misplaced concreteness—allowed one to speak of human problems. If people had problems, it no longer made sense to speak of human choice. People could demand solutions. To find them, values could be shifted and prioritized, manipulated and maximized.
>
> Not only the language but the very modes of thinking found in mathematics could norm the realm of human relationships. Algorithms "purified" value by filtering out appropriateness, thereby taking the good out of ethics. − Ivan Illich
> centerforneweconomics.org/publications/the-wisdom-of-leopold-kohr/

Naturally, ethics without goodness is as impossible as goodness without ethics, but economists still ignore that fact. Rehabilitated value and primality are explained in Appendix A. Yet, a brief recap may help recall the original sense of prime values.

Value and primality are relative terms but, essentially, they relate to elemental natural principles. Value refers to natural benefit, whatever enhances or sustains quality of life and its enjoyment. Evidently, from our beginnings, we cherished the proportional relativity and appropriateness that best served the specific relational harmony of daily lives, in the habitats that fostered and sustained our ancestors. What best fostered our well-being and greatest joy was considered magnificently precious, even sacred.

So, what we think of as prime is of primary significance or importance, relative

to everything else of secondary quality (or less than prime). The prime value was once

- life itself
- the cosmos
- its nature
- Earth's amazing habitats

All that supported our enjoyment of life. That preceded our artificial, systemic (symbolic) values, and arbitrary, abstract (purely conceptual) valuation.

Our symbolic constructs exist only within the context of our beliefs, definitions, assumptions, illusions, doctrines, and dogmas. Clearly, the curse of Babel is about much more than too many different languages. Unfortunately, languages and the technical jargons of specialists are built on and maintain not only logic, but also the illogic, prejudice and embedded social agendas that normally remain unknown or ignored. So, it remains normally ignored or unconsidered or discounted, and exploited. That makes the divisive mechanisms of our cultural languages almost invisible and, thus, virtually impossible to eliminate or change.

Mathematicians and economists are not immune to the limiting and deceptive effects of their languages. That begat the illogical basis of anti-ethical economics.

Western Enlightenment

Sabine Maasden and Peter Weingart provided an encyclopedic exposition of the mechanics of the problem in *Metaphors and the Dynamics of Knowledge*,(Maa-Wei, 2000). Using systems theory, they analyzed knowledge dynamics and studied the functioning and influences of ideas and popular assumptions (in society). They analyzed dominant trends characterized by

- anti-theistic sanctification of Darwinian presumptions
- bureaucratic institutionalization of Kuhnian metaphors
- the transformation of "chaos" into a Show Biz buzzword

Valid chaos theory notwithstanding, lacking awareness and understanding of the nature of the problem, the Yellow Brick Road of commericialized 'good' intention led to the freeway to Hell.

For example, in Chapter 3, *Struggle for Existence* (on "selection, retention, and extinction of a metaphor") Maasden & Weingart expose the vulnerable "[f]unctions and dysfunctions of metaphors in science" and show how the process proceeds. Reviewing even a few of the most revealing realizations, enables deeper, broader understanding. Consider the issues raised and implied in the following excerpts.

> …the use of metaphor can be defined as one of those societal procedures by which 'in every society the production of discourse is controlled, selected, organized and channeled' (see Foucault 1974: 7).[?] This is supported by Max Black, who sees the creative potential of metaphor in the fact that it 'selects, emphasizes, suppresses and organizes 'features of reality (Black 1962: 44).[?]
>
> In the context of Foucault's discourse analysis, metaphor can be described as a principle of arrangement and diffusion of knowledge. The socio-historical privilege attached to some metaphors is not just the result of some intellectual game, but of a competition of existing and institutionally established discourses, which select for or against the import of particular *foreign* constructs. For a metaphor, that is, the construct of an *extraneous* discourse bears the stamp of the latter, and, in relation to the importing discourse, poses the 'risk' of 'swallowing' a whole cluster of epistemic as well as political and moral implications (e.g., Nancy L. Stepan 1986).[?]
>
> More is involved, though, than 'only' symbolic processes. Discourses changed

> by metaphor reorganize reality. In this way, within the order of discourse, metaphors are effective elements in the interplay of power/knowledge (see Foucault 1977: 120).[?] (Maa-Wei, 2000: p. 21)

Unfortunately, pristine academic styling gives *Metaphors and the Dynamics of Knowledge* impressive scientific credibility, yet also serves to perpetuate the problem as much as it fosters clarity and resolution. For optimal odds of avoid premature extinction, civilization needs emergency response for a mass-paradigm upgrade.

Disembodied conceptual discourses, metaphors, and their contexts do nothing on their own. Our actions of human body, speech, and mind change and reorganize reality. Maasden & Weingart wisely targeted the historic devolution of Kuhn's insights and notions about devolution and revolution in scientific models of reality (paradigms). That and abuse of chaos theory prove the common misuse of metaphors.

Yet, Maasden and Weingart only mention 'conventional wisdom' in alluding to an alleged lack of Social Darwinism in proto-Nazi Germany, without voicing the difference between wisdom and knowledge, or between truth and rhetoric. So, by default, their respectable, academic rhetoric supports chronic institutionalization of intellectual elitism (if not weaponization). Still, they help us recognize and understand the nature and potency of metaphor.

Clearly, understanding the devolution of conventional wisdom, as a relentless cause and effect of stealthy social control mechanisms (embedded in the commercialized context of academic and nonacademic social groups) is necessary for intellectual honesty and optimum responsibility. Not throwing baby out with the bathwater, the following paragraph reveals real wisdom:

> In one of the most ambitious studies in recent times, which seeks to identify the extrinsic influences on the reception of noncausal quantum physics in the 'German cultural sphere', Paul Forman explicitly objects to 'vague' and 'ambivalent' attributions and insists on a sociological causal analysis. Its starting point is the description of the 'intellectual milieu', in which German physicists worked and in which quantum mechanics was developed (Forman 1971: 1).[?]
>
> Forman characterizes the climate of this milieu, that is, the post-First World War period, as *antagonistic toward analytic rationality*, in general, and toward the *exact sciences* and their technological applications, in particular. The *seeming paradox* that this climate, which is most unfavourable to physics and mathematics, should have produced the most creative scientific achievements in the history of these disciplines, is solved via the question about the type of reaction on the part of the scientists.
>
> They *endeavour* to bring *the image* of their disciplines into *harmony* with the current *values* of society. This endeavour entails a change in *its values and in the ideology* of their science, ultimately also affecting the latter's *foundations*. (Maa-Wei 2000: p. 12)

The italics were added to emphasize the ironic, normally ignored conservatism maintaining the dominant sociocultural paradigm of technopoly. Maasden & Weingart maintained respectability required in the top tier academic social system's power structure. That may reveal deficient realization of differences between a society's values and dysvalues.

Yet, either way, that proves **GIT** (Gödel's incompleteness theorem), and **TUT** (Tarski's undefinability theorem). **GIT**, **TUT**, and their proofs, prove the impossibility of fully understanding or transcending an axiomatic system of theory from within its own conceptual constraints. However, as shown in this paper, viable metatheory (in accord with actualities of nature and/or valid metalogical principles) are exceptions to that truth

(re: **GIT** & **TUT**). As if hidden in plain sight, another irony eludes anyone unfamiliar with the real history of science: illogic (nonanalytic irrationality)—fueled by unbridled creativity and undiagnosed narcissistic egomania—spawned particle physics, QM, and fantastic ideas of speculative cosmology.

Thus, they now include only interpretations of data and new observations that fit current 'standard model' (SM) theory and popular imaginings. So, thinking and talking as if a current state of SM physics theory is the ultimate, perfectly well-established, unquestionable 'theory of everything' now subverts, retards, and obstructs science and common perceptions of it. The tragedy is explained below:

> Jonathan Harwood directly addresses some of these problems. He takes 'styles' as indicators that thoughts are subject to certain patterns. His distinction between 'comprehensives' and 'pragmatists' among the German geneticists is a very general one, as he himself admits.
>
> As one reason for how such types of style could develop, Harwood proposes *the change in values* which, in the course of the modernizing process, occurred when the '*mandarins*' of the German university (*system*), who had embraced the ideal of *humanistic* education, were replaced by the new social stratum *of the sons of merchants and industrialists*. They stood for *the type* of the discipline-oriented specialist.
>
> These differing styles of thought had a *selective impact on scientific theories*: depending on their *political* outlook, 'comprehensives' and 'pragmatists' took up opposing positions. (Maa-Wei 2000, p. 13)

Again, the italics were added to emphasize the subliminal distortions of common knowledge. The *mandarins* referred to were the "old guard" of the previous cultural paradigm mentioned by Niels Bohr, He saw them preventing scientific revolution until the last of them are buried. Their disastrous definition of *humanistic* education and its effects reveals another tragic irony: Their system created the younger monsters who replaced them.

History proved that systems of mass-education designed to produce obedient, self-enslaving servants of a military-industrial socioeconomic oligarchy serve corporate fascism, not humanism. So, to their credit, Maasden & Weingart critiqued the devolution of post-modernism and its pervasive subversion of Kuhn's ideas and keywords. Still, if conventional study of metaphor and knowledge dynamics becomes as influential (and subversive) as Kuhn's unfinished project, the aftermath of military-industrial civilization could get much worse before it gets any better.

Yet, as James Redfield reported in his nonfiction book *The Celestine Vision*, Kuhn's exposure of the defensive mechanisms perpetuating scientistic social elites, their hidden agendas and obsolete paradigms was truly revolutionary. Kuhn fostered a more rapid changing of the guard, but the new guards of the new status quo were and are normally vulnerable. In-group devolution favors protecting positions, salaries, benefits, pensions, status, grant funding, social power, and institutional continuity, not quality of life, not even organizational success.

Redfield, Maasden, and Weingart also confirm related results of Donald Schon's *Beyond the Stable State*.(1973) Schon brilliantly integrated the ways and means of social theory, systems theory, and learning systems theory. He realized that any kind of social groups, of any size or scale (at least in complex mass-societies), tend to devolve into a self-defending special interest group.

So, despite the original mission and purpose of a group, its main mission becomes self-perpetuation *as is*. Schon saw that involving systemic polarization. Sorting

the membership of a group—into a power elite, the leaders, and less responsible followers—maintains the status quo by default. Schon also realized that a group's power structure develops a virtual mind of its own. It maintains the status quo and the group's PC culture with stated and unstated rules, dynamic conservatism. Of course, that tends to cause devolution to the lowest common denominator and increasing dysfunctionality.

Hence, group neurosis is normally worse than the sum of members' individual neuroses, fears, vices, and weaknesses. It then relies on its dynamic conservatism to prevent remedial change and enforce compliant conformity. The group's defensive mechanisms can include deflection, diversion, denial, co-option and, if necessary, more drastic measures. Schon also saw repetitive, large-scale patterns and cycles of decline (toward disastrous social collapse), followed by what seem like sudden turn-arounds. He realized that, when a social group's dysfunctionality grows too severe. The support for status quo conduct starts crumbling, more members jump ship or aggravate the decline. Then, inevitably, the consequences and conditions become intolerable, even for the most heavily invested power brokers.

Schon identified three social dynamics that often make social dysfunctionality unavoidable. He realized that total change can be caused by any change in (a society's)

1 - social structure (rules, etc.) or
2 - 'theory' (its paradigm, beliefs, values, etc.), or
3 - technology

The more radical and rapid the change of one or more of the 3 basics, the more radically and rapidly the social group changes. That explains the more radical attempts to prevent or subvert radical change. Naturally, that accelerates and aggravates the dysfunction, devolution, and consequences.

So, those realizations (and Kohr's wisdom), seemingly ignored by technopoly's dominant power brokers, prove their normative self-delusion. Thus, by default, popular scientism, exotic maths, and systemic corruption support general acceptance of what can be called the ecocidal economics of mass-insaity. They mystify and sanctify quantitative metrics, materialistic theory, and fantastic speculation about what lies beyond what can be technically detected, directly studied, and known.

As the atheistic mystification of science subverts common sense, it supports delusional commodification and devaluation of life and nature. Whether the process is intentional or not, consciously deliberate or subconsciously instinctive is irrelevant. The effects and aftermath continue as long as the causes continue.

Famous Giants vs. Clarity

Eliminating systematic confusion is clearly essential for progress. Editing and upgrading civilization's paradigm is required. Yet, recall that, unlike intrinsic principles and presence, theories are not universal realities.

So, the deficient conceptual context of 17th and 18th century Christian theology maintained the dualistic determinism of both René Descartes and Isaac Newton. That led directly to anti-theological, anti-analytic, anti-rational backlash, and to technocracy. The rise of modern maths, QM physics, anti-theistic cosmology, and the mythification of materialistic atomism enabled a covert neoPtolemaic neoPlatonism. The current SM is the aftermath, another wildly extreme swing of the pendulum.

The new in-group uses its status quo to make the previous in-group and its status quo obsolete. So, by today's SM standard, Descartes and Newton were like antique religious fanatics.

Descartes is mostly unknown or forgotten now. Also, despite inventing calculus (independently) Liebnitz is mostly forgotten. Now, Newton's obsessive study of notions, potions, and formulas of medieval alchemy and his antique religious beliefs is mostly unknown. However, like many well-known modern scientists, Newton had no idea what he was missing. He was a prisoner of his culture, blinded by its paradigm, its domain of thinkable discourse, and thus of his language, his neurolinguistic programming and social conditioning. He had no idea that alchemy was a mish-mash of mumbo-jumbo and specious reasoning.

Likewise, most modern physicists have no idea what future understanding will make today's popular speculations and misinterpretations seem as ridiculous as Newton's worst. More importantly, why and how great minds host great insight and utter nonsense at the same time is rarely (if ever) considered important enough for major study and regular discussion.

How could so many scientists and mathematicians fail to question all the subsequent basics taken for granted as absolute truths? Recall that, in Newton's day, European thinking was still largely submerged in Dark Age dogma, perverted ontology, and philosophy subverted by regressive religious elitists and feudal power brokers. Their mental limitations and misconceptions were possible because of the subversion of Western philosophy, linguistics, semiotics and semantics. Thus, many modernists suffer residual subliminal handicaps imposed by Dark Age Bishops, Popes and Robber Barons. The habits and manic-depressive PTSD of unHoly empire, theocratic corruption, barbaric tyranny, war, piracy, deprivation, suppression and repression persist.

Why? As the late Carl Sagan realized, sadly, too many of us are too easily bamboozled, and the longer and worse, the less we want to know about it. We can see such truths confirmed with each new breach of computer security and system integrity. Each new 'upgrade' of software is almost as unreliable as the versions sold 30 years ago. But now as then, irrational egos thrive on chaos and confusion. For example, all new, improved, software 'fixes' perpetuate vulnerability. Despite ever more patches and inadequate 'security' updates, they remain symptoms of an essentially defective logic infrastructure and a deficient logic paradigm.

Do you doubt that? Well then, whoever asks why a logical logic system needs any patches or fixes, ever?

Right, very few if any of us. Why not? Most mathematicians, computer scientists, economists, professors, teachers, and technicians are normal, busy workers. They have problems to fix, things to do, bills to pay. They all want paychecks, benefits, insurance, amenities and so on. Hence, the aftermath of Dark Age egomania persists.

For most of the reasons given above, more than 2500 years ago, the historical Buddha, Siddhartha Gautama, predicted that this phase of civilization would decline for about 12,000 years. Unfortunately, most great pioneers, scientists, mathematicians, and philosophers of the modern West knew little or nothing about the great wisdom of ancient Asia. Therefore, the 'Enlightenment' of Western civilization failed to fully banish the darkness of ignorant unwisdom.

Then, anti-theistic misconceptions primed modern civilization for increasingly pervasive confusion, credulity, and fascination with wildly speculative hunches and nonsense (worse than the most ridiculous myths). For example, Heisenberg's defective philosophy and anti-religious Nazi mysticism infected maths via the reification and virtual sanctification of statistics, probability theory, and scientistic rhetoric (of SM QM).

It replaced the mish-mash of medieval myths, half-baked philosophy, theocratic

notions, superstitions, and confusing mumbo-jumbo with a more bewildering yet awe-inspiring mish-mash of new mumbo-jumbo. That caused more mass-confusion, gullibility, bamboozlement, and cynicism. Commercialized science and education grew increasingly more powerful and entrenched. Automatically defended by increasingly incentivized specialization, it increased compartmentalization, development of different domains of knowledge, and jargon known by specialists.

All the scientific and technical disciplines were pressured and funneled into ever more financially rewarding pursuits, more limitations, and more exclusivity. That then ensured ever more specialization, increasingly narrow, more normative education, and systemic defensive mechanisms (overt and covert). The special realms of jargon ensured structural, discipline-specific sociolinguistic silos, by default. That maintains SM status quo and QM semi-reality.

That partially explains Einstein's incomplete critique of semi-reality as described by SM QM theory. He skipped skewering the predominant paradigm of commercial civilization at the heart and root of the problem. It limited what was normally thinkable and discussible. It also discouraged progressive use of adequate bio-ethics, logic, and methods. Now, most scientists and technicians talk and act as if ethics and quality of life are optional. So, we seem to need invisible keys to escape an invisible prison.

Yet, unrecognizable or ignored, the keys were available. They enable viable logic and realism. Luckily, pure science, maths, and logic mostly work with convergent logic, where quantitative values and metrics rule. However, a sustainably effective, global solution requires dealing with convergent and divergent, qualitative problems. They call for using the theory, metatheory, and strategy of macro-ontology and meta-ontology. That is because being and human mentality and our problems happen in all domains and subdomains of logic and nonphysical metalogical principles.

Here, "logic" and "metalogical principles" refer mainly to nature's principles of being, physical presence, energy, thought, perception, illusion, delusion, corruption, and other human realities. So, holistic ontology, sociology, and meta-economics can deal with all the divergent problems and illogic of civilization.

Convergent logic only permits finding and using methods for solving problems with causal factors that resolve to a solution, as in engineering, telecomputing technology, equations, puzzles, coding, and cryptography. Most of our worst problems are resolved only by death, capitulation, concession, compromise, cooperation, or creative transformation .

Sadly, most of the time, most of us act like we loathe and fear change. The more radical a change seems, the more we seem to dread it. We love getting nice, reliable solutions to convergent problems and puzzles. We love them because we can solve them, all of them. That gives us the satisfying sense of certainty we love.

We also love quality, sometimes more than quantity, but sometimes not. We dislike our divergent social and physical problems. So, usually, most remain unsolved and unsatisfactory. Unluckily, that reinforces the basis of our problem, pandemic fear and loathing of unsatisfactory experience. For example, convergent problem solving is mostly useless for our worst divergent problems, but we prefer it. Mastering divergent problem solving requires facing our fears, pain, failure, loss, poverty, suffering, shame, death, and other unpleasant, mostly unavoidable realities of this world. So, most of us prefer entertainment, illusions, and hope, while they last.

Yet, almost all human problems are relational problems of the divergent kind, with mostly sociolinguistic causes. So, being confused about the nature of the two kinds

of problems, we use the wrong ideas, strategies, and techniques (for solving them). That never enables satisfying results. However, many of us keep using the wrong problem-solving methods over and over again, obsessively.

The reason seems to be civilization's tendency to foster and reward egocentricity (or monstrosity), while implicitly discouraging ecocentricity (respecting nature, life, and culture). For example, confusing opinion with truth and reality, now pandemic, causes and maintains mass-hostility, violent conflicts, too often to horrific consequences and, potentially, to ecocidal mass-extinction.

So, unproven theorems, hypotheses, conjectures, fictions, and lies are commonly confused with realities. For instance, many physicists, mathematicians, and economists normally talk and act as if maps and models are territories and universes, or elements that make them possible. Yet, trying to keep the current SM physics stuck in its box, will never sustain a culture of normalized confusion, deception, and dysfunctionality. More damage will be the devolutionary, disintegrative, destructiveness caused by:

a) the socioeconomic structure of technocracy,
b) its fear-based negativities, and
c) neurolinguistic mass-programming

Hence, in the media, schools, or wherever—instead of fostering resolution or more effective communication—typical discussions of human problems (politics, etc.) often reveal subliminal denial (of realities). So, 'politically correct' (PC) verbal "civility" tries to hide deeply entrenched fear of whole truths (and consequences). Divisive aims, negative attitudes, and divergent/deficient opinions then win the day. That obscures or the normal lack of nice, neat, mutually satisfactory solutions to our divergent problems.

Yet, languages of our cultures maintain deficient status quos only until they self-destruct or evolve. Yes, languages, political propaganda, and double-think can make convergent problem-solving strategies and techniques seem like fixes for divergent problems.

Obviously, that delusion only postpones some of the consequences, while fueling worse systemic corruption and normalized institutional incompetence. Not believing that will never sustain a nice, truly safe, but impossible comfort zone. Realizing which kind of problem is which can be difficult, even for logicians and scientific pioneers, but real progress and sustainability require wise choices and effective responses.

That difficulty tends to prolong our worst problems, generating more subliminal fears. However, its subliminal and overt fears—of exposure, of bamboozlement, and proof of inadequacy—make 'normally' socialized ego cause and prolong the difficulty. Naturally, subliminal defensive 'mechanisms' and fears make it extremely difficult to evolve, to new and better ways of thinking about reality, and an alternative to unethical economics, defective politics, war, dystopia, and ecocide.

So, chronic mass-confusion and diversion keeps complicating, obscuring, and reinforcing the linguistic problem, its symptoms—deceptive semantics, propaganda for profit, etc.—and the cure. In fact, mass-deception, misconceptions, false dichotomies, and verbal illusions literally dictate most of civilization's failures. For example, dualistic assumptions, scientistic mythicism (sanctified by SM QM maths), and the falsehoods of post-Einsteinian materialism kept perpetuating our worst mistakes. That reinforced our increasingly pandemic of normalized corruption, greed, and egomania.

Post-literate Society

The section header refers to Neil Postman's diagnosis of this post-literate Age of

Show Biz. In his classic *Amusing Ourselves to Death*, Postman details the devolution of the literate era of modern civilization, from the Era of Typography to the commercially sponsored televideo pandemonium of today, the Era of Showbiz.

To fully understand the process, recall that previously, despite awful exceptions, for most of the last 12 millennia, most of our ancestors were raised in cultures well-endowed with healthy spiritual values. They served as a bio-ethical standard of quality, conduct, and respect for life, habitat, and nature.

Then, for millennia, science evolved. Progressive culture, discovery, experiment, realization, better communication, cooperation, theory and proof were all fostered by mostly ethical pioneers. They saw credible theory as our best-case description of natural phenomena, but not as explanation of causes considered eternally mysterious and/or supernatural.

However, with the rising power of organized religion, increasingly, viable ontology and phenomenology seemed to threaten status quo theology, social norms, and traditions. So, a truly realistic study of being increasingly dangerous, unprofitable, and of less interest to almost everyone.

So, in the "Holy Roman Empire" of Western and Eastern Europe, truly realistic ontology and phenomenology were abducted. Good theory was submerged in the rising tide of theological notions and mystifying theorems that "fit" the (Flat Earth) geocentric SM of Ptolemaic cosmology. Of course, it also supported repressive religious dogma, political corruption, defective government, feudalism, and mass-exploitation.

Naturally, that was followed by an increasingly anti-theological backlash, first in science, astronomy, mathematics, then in cosmology. Decreasing explanatory power and the huge increase in "mystifying" anomalies are rationalized by popular scientification, nonrational acausal speculation, and QM inconceivability.

Therefore, even into this century, ontology was not fully rehabbed. Real recovery was delayed by the neurolinguistic residue of the post-medieval paradigm still stuck in brains stuck with modern egos. That reinforced the trend to increasing anti-religious mystification and mythification. It was popularized by increasingly vacuous television (TV) news programming, classic Hollywood-style films, and TV entertainment shows. Then, maths and SM QM cosmology replaced mystic revelation. Now, it serves as a glamorous, very profitable, anti-theological religion of atheistic academics, well-funded researchers, celebrity pop-scientists, and their misguided fans.

As referred to above, popularization and abuse of chaos theory supported more imaginative SM QM cosmology and SciFi fantasies. That made maths seem much sexier. For example, Jurassic Park (the film) glamorized pop chaos. The linguistic semiotics and semantics of maths was mostly ignored, except by Wittgenstein and a few little-known pioneers and iconoclasts.

Likewise, as Kohr and Illich realized, the semiotic, logical and ethical dimensions of economics were mostly forgotten or removed, in favor of ever new econometrics and models, to satisfy the desperate need for more credibility.

NeoFeudalism vs. Nature

As mentioned in Alexis de'Toqueville's book, *Democracy in America*(1831), the mediocre majority unwittingly enabled the rise of a soft tyranny. Gradually, systemic corruption accepted a norm of neoFeudal status quo. It was and is enforced mainly by increasingly pandemic narcissism, egocentricity, vanity, conceit, deceit, greed, fear, and threats (real, etc.).

Now, ongoing neurolinguistic programming of parents and babies maintains crypto-colonial colonization of their egos. Its paradigm is installed in their brains and communities and institutions. That supports the world's military-industrial-commercial bureaucracy, automatically, easily, globally. Thus, ecocentric values, responsibility, and integrity became officially unnecessary or unrealistic, inconvenient, and unaffordable.

Hence, this theory of psychosocial reality seems unpleasant and unsatisfying. For, what we like most about great theory is our satisfaction. Understanding reality seems to make our lives better, more enjoyable or longer (safer), more prosperous or content. So, rejecting or ignoring realistic theory because it describes and explains unpleasant facts about us and our deficiencies prevents solutions and remedies.

However, mainstream economists deliberately ignore those sad truths and facts. They prefer to focus on best guesses about models and assumptions. Then they slightly alter them after real people and real-world events cause surprising disasters. Clearly, most economists think their newest models and maths more important than predicting (or preventing) disasters (and understanding the causes). Still, the unfortunate victims keep supporting the mainstream status quo of modern economics.

SM physics remains more useful than the economics of neoFeudal technocracy, but it suffers similar human-factor deficiencies. Arguably, it also causes and indirectly rationalizes potentially terminal disasters—like failing nuclear reactors, vast quantities of nuclear waste, and the potentially ecocidal nuclear arms industry. Yes, as a statistical discipline, SM QM usefully predicts how some processes may "work" or will work, but not why, not even why it (QM) works.

Of course, modest QM specialists admit that their work has nothing to do with discovering why or how particles are probable points with inexplicable super-natural powers. (see def., Particles, above) In fact, only corrective "renormalization" makes SM physics "work" as well as it does. Yet, maths is not:

- imprecise measurement (of fractionally detectable evidence)
- probable approximation
- educated guessing
- post-explosion testing
- limited perceptions, and
- theoretically biased interpretations of probable data

So, without all the fudging and doctrinaire/dogmatic interpretations, QM would be obsolete, a relic of antique theory and bad science. Yet, current SM QM is clearly ripe for a major upgrade.

Still, mainstream economists must be very envious of lucky QM physicists. Even now, they get to enjoy super-impressive, multi-billion dollar facilities, and hyper-sexy experiments. Economists might get better results if they talked about the Fed and crazy monetary theory as if they were like 'Dark Matter' and 'Dark Energy'. Of course, all the spooky maths, exotic models, and sciencey rhetoric of SM QM cosmetologists and SM economists directly affect economies, institutions, markets, and the value of investors' assets. Thus, economists keep using their current stratagems and excuses.

Those facts relate directly to the neurolinguistic root of the current SM problem. In fact, after all their successes, SM QM and economics offer no satisfactory explanation of anything, while confusing almost everyone.

That goes on because QM descriptions and mainstream economics depend on interpretations only of data that 'fit' their status quo models, theorems, speculations, and

beliefs. Yet those are all based on deficient assumptions and inadequate observation of the part of reality that seems "worth" study and grant-funding. Indirectly yet implicitly, the SM status quo supports deficient/invalid theorems used for rationalizing unethical economics, stupid monetary policy, unnecessary deficit spending, systemic government corruption, and pandemic authoritarian personality syndrome (PAPS).

PAPS is one of the most tragic symptoms of cultural illness aggravated by mass-deception, mass-confusion, and mass-psychosis enabled by and enabling fascism and corporate technocracy. The modern version perfected by Adolph Hitler's regime was doomed, but only because it was too psychopathic, violent, and corrupt to prevent the rise of mass-stupidity.

The current Euro-American strain exploited by the Trump regime may seem less violent and less stupid. Yet, deliberate ignorance is stupid, and the genocidal Anglo-American war against indigenous peoples and their habitats was atrociously violent. Biocidal destruction of nature for profit requires the ultimate violence and psychotic stupidity. Yes, mass-disrespect and destruction of habitats and living beings existed long before the USA. However, relative to our general intelligence and opportunities, Americans' historic violence and mass-stupidity is unparalleled.

In fact, the microbial community in a cubic centimeter of healthy soil has more wisdom than all the nations of the world, and no stupidity. For example, like indigenous communities of ancient cultures, a microbial community would never need money it had to borrow from itself, then pay taxes to itself to pay the interest. Naturally, microbial communities would never go to war and pay more taxes for borrowing more of their own money to fight a community in the soil of a foreign forest.

Clearly, the Euro-American neoFeudal trend became the envy of the world by being so good for life-styles of egocentric consumers and anyone unwilling to oppose status quo corruption and mass-stupidity. So, the socioeconomic power of the hyper-rich and the illusory American Dream persist (for a shrinking minority), while becoming unattainable for a rapidly growing majority.

All that depended on mass-confusion caused by mass-deception. For example, the SM paradigms of science, economics, and society are interdependent, interactive elements of technocratic civilization. Continually polluting them with inadequate theorems, hypotheses, misinterpretations, misconceptions, false assumptions, beliefs, and opinions makes it increasingly hard to recognize truths, opinions, and lies. Hence, this is the post-truth era of media and pop-culture. That should be equally troubling and sobering.

Evidently, most SM QM physicsts, mathematicians, and economists are unable to understand the nature of the financialist money system that funds, corrupts, and limits science and society. For instance, Einstein failed to fully realize the nature, scope and depth of the problem limiting maths, physics, cosmology, science in general, and the whole of human culture. Of course, without understanding the causes, extent, and underlying dimensions of the linguistic problem, centuries of looking for "how" could never lead directly to the "why" of anything.

If that were not true, then Gödel's incompleteness theorem (GIT) and Tarski's undefinability theorem (TUT) would be untrue and unproven. Yet, both are well proven and true for any axiomatic system of theory, especially SM QM.

Fortunately, holonomic metatheory is not limited by either GIT or TUT. To fully appreciate that truth, reconsider the basics of maths and psychophysical reality. Causal interactions and underlying principles enable and condition all physical things, places,

persons, processes, and events, but not the principles that enable everything, including logic, maths, and QM. So, to be effective, maths and science must deal with that reality, all of it (as much as possible).

Naturally, what viable science and maths can study and describe is knowable, provable, the detectable, the observable or the logical. So, good physics must deal with what can be detected, studied, tested, and understood, as it is. The actual reality and ways of a form of being must be studied and understood without blowing it up, then guessing about how it worked by looking at images of parts, bits, and pieces as they scatter this way and that. What can be studied and learned that way is the nature and modes of explosions (of whatever).

So, thermonuclear implosion-explosion events and the environmental effects of nuclear power plants (and radioactive heavy metal waste) show us as much of what we can detect and/or observe of them (when we do so). It confirms $\mathbf{E = mc^2}$ as an equation describing a basic aspect of the observable relationship of interactive energy and matter. It does not describe or define the nature or cause of the whole of being (reality). CERN's super-large, super-expensive devices, electricity bills, and personnel enable explosions that confirmed the desired probabilities of Higgsian SM QM theorists. Yet, they still fail to enable description, definition, and explanation of even the tiny part of the whole field of being as it was before they blew it up.

Of course, the CERN group and their academic believe that their projects are works of pure research, pure science. Yet, truly pure science exists only for the sake of understanding and better knowledge (of natural reality), thus better quality of life. Now, remember, those results require optimum explanation, requiring sufficient definability, enabling adequate description of the results of a study (of the whole of the subject). However, materialistic destruction experts are satisfied with a) CERN's budget, b) their work, c) the results (probability statistics), and d) their interpretations of the data on the explosion artifacts.

Clearly, such SM QM experts fail to care that nobody else is satisfied, with no more, or even less, understanding of reality, nature, energy, matter. and life. That should surprise nobody, because SM Higgsians are satisfied with inexplicable expansions and explosions of nothing nowhere (and everything everywhere else). So, obviously, they like inexplicability better than understanding and effectively pure science.

However, in real science and maths, unconditional logical proof or disproof of anything, backed by real evidence, remain superior to incomplete or conditional proofs, or even a technical proof relying on brute force computation (and deficient theorems). In maths and science, secondary and tertiary level theorems and conditional proofs require accepting both limited understanding and unproven conjectures as necessary (evils) and sufficient (though they are not). They can never explain either actual wholeness or the infinite realities of being or even of cultural interaction. So, the unreal or inferior results of inferior works always fail to explain or improve anything.

Still, even if possible, proving something about how an infinite field of complex phenomena happens could not explain why. On the other hand, good metatheory can answer the why questions of a well-studied reality. Thus, as always, viable metatheory enables perfect proofs, that verify and explain valid theorems, intrinsic logic, and the metalogical principles enabling being and its nature. So, only a durable foundation of good theory and metatheory will enable and sustain an ethical civilization's cultural wellness.

We clearly need a cure, and it always required pervasive adoption of bio-ethical

ecometrics, realistic socioeconomic theory, and ethical scientists. The best-case outcome also requires willingness to support healing of the linguistic psychosocial causes of the legal-financial complications. Doing it, progress to truly realistic monetary policy would enable many previously predicted and unimagined benefits, for science and society.

For example, bio-ethical meta-economics could enable effective qualitative and quantitative assessment of human interaction and scientific progress. Yet, that will remain impossible for minds as stagnant as their paradigm. Luckily, human intelligence can transcend normative limits. Clearly though, without understanding the nature and scope of our limits, evolutionary progress is impossible.

Also, without a realistic bio-ethical standard of conduct and community, using only a strictly quantitative-axiomatic system of analysis, wasted time and opportunity. Strictly quantitative, convergent problem-solving strategies and methods never resolve qualitative problems. Hence, working within the limits of a deficient paradigm always failed to produce satisfactory results. Making that the constantly normalized status quo of society and science always ensured declining quality, inevitably, globally.

The tragedies of our history prove that—to sustain a lively yet stable cultural economy—we need enough understanding to work with nature, not against it. Nature's primal law of interdependent interaction always guaranteed that our results and quality of life were and still are determined by causes, the quality of our choices and actions. Nature's intrinsic principles, enabling the logic and illogic governing human activity, are the root causes of our best and worst results.

Without more and better understanding of nature, culture, and ethics, the best possible contributions of science will remain impossible. That explains why the crises in SM science, maths, and society grow worse, as the ecological effects grow more severe, faster. It also points out why mainstream economists always failed to predict crashes, disastrous depressions, and recessions (that deflate/inflate the Bubble Market economy).

Acceptable Risk

From the standpoint of daily life, there is one thing we do know: that we are here for the sake of each other—above all for those upon whose smile and well-being our own happiness depends, and also for the countless unknown souls with whose fate we are connected... Many times a day I realize how much my own outer and inner life is built upon the labors of my fellow men, both living and dead, and how earnestly I must exert myself in order to give in return as much as I have received. – Albert Einstein

If we do what is necessary, all the odds are in our favor. – Henry Kissinger

Trickle-down theory, the less than elegant metaphor that, if one feeds the horse enough oats, some will pass through to the road for the sparrows. – John Kenneth Galbraith

This short section deals with more of the sociopolitical effects and complications of our historic neurolinguistic problem. So, the opening quotes seem appropriate here. They offer hopeful glimpses of a solution, and focus a bio-ethical spotlight on the dismal socioeconomic context diminishing our rapidly worsening odds.

For example, Einstein's poignant statement of understanding and appreciation of connectedness may not prove that we humans are here for each other, but the results of biology and ecology confirm it. Even mainstream SM QM confirms interactive universal relativity of all forms and modes of being, however tiny or huge. So, despite Einstein's questionable realism, his bio-ethical values, optimism, and altruism are commendable.

Despite the [possibly horrific] implication's of Kissinger's truism, its applications apply to almost all fields of human activity (and study). Galbraith's distillation of

neoCon/neoLib Voodoo Economics (AKA mainstream macroeconomics, etc.) skewers the unreality of neo-feudal financialism's toxic propaganda, while rightly denouncing its virulently corrupting Winners Take All plutonomic paradigm. So, we see the light and darkness of modernity's current SM status quo more clearly using Galbraith's lense.

First, consider the kind of thinking of social engineers who set the SM trend now accelerating from the late 17th century to now. For example, during World War 2 and the Cold War, politicians, bureaucrats, generals, and high-ranking spy masters thought it best to protect the Euro-American Free World by whatever means necessary. The threat of mutually assured destruction (MAD), was the main deterrent chosen. Then, *for our own good*, think-tanks, expert engineers and planners, were commissioned to determine our limits of acceptable risk.

Of course, ordinarily ignorant citizens were not consulted, nor informed (of the final determinations and possible consequences). Though MAD was based on a theory developed by a violently paranoid schizophrenic, and later disproven, the same basic strategy determines social control policy today. So, a huge risk mitigation industry tries to minimize liability by 'externalizing' (transferring) costs of damage (to us, our habitat, and the world). The goal? Not optimizing quality of life (QOL) or quality of culture (QOC), and general domestic happiness (GDH), but only maximizing corporate profit and political power. So, we can describe the nature of the strategy with an equation:

Eq. 8: $\mathbf{V = BA_a}$

There, **V** symbolizes value. What value? Equation 8, above, defines value as equivalent to benefit, **B**, of and/or realized by $\mathbf{A_a}$, appreciative awareness.

That may seem too simple or too insignificant for serious consideration and deep contemplation. However, as Einstein intuited, consideration and appropriate response are virtually synonymous with compassion, requiring empathy. Even in Christianity and non-theistic Buddhism, no virtue is more highly valued than compassion. Also, our ancient ancestors equated divinity (sacredness) with the ultimate goodness, benefit, and value (supreme quality). Nearly 400,000 years ago, our ancestors were burying their dead with funerary blessings and spiritual reverence.

Clearly, if all the scientists, technicians, politicians, economists, and teachers of the last 400 years understood what Einstein, Kissinger, Galbraith, and the first modern humans understood—and always acted accordingly—then our world might resemble a Heaven on Earth, or a civilized Green paradise.

Failing that, how could we expect anything other than the failure of modern civilization?

This world of 7 soon to be 9 billion people is fundamentally different than one with only 1 or 2 billion people. The rules and attitudes appropriate to 18th century social games are now biocidally irresponsible and inappropriate. Still though, antique attitudes poison governments and major corporations. Consider a few consequences:

- 90% of oceanic fish are now gone and over 15% of the things eaten at the base of their food chain are very small or microscopic bits of decomposing plastic.
- Acidification of the ocean (due to heat pollution and excess GHGs) is accelerating, killing coral reefs and reducing plankton populations (reducing fish populations and oxygen production).
- Over 100,000 new chemicals—most of them endocrine disruptors, epigenetic mutagens—are flooding the biosphere, our life-support "system".

Plankton mainly comes from coral reefs and the eggs of creatures that lived there. As acidification reduces coral and plankton populations, while parent, consumer and predator species ingest an ever higher percentage of plastic and other toxins. 150 years ago, plankton were producing over 60% of Earth's atmospheric oxygen. However, the odds are not favoring appropriate response: global habitat restoration and radical reduction of ecocidal industrial production and consumption.

Modern politicians act as if the old anti-ethical business and propaganda as usual games are still good enough. Despite the best new evidence and movements against political inaction—re: radical climate change and mass-extinction—most voters and politicians seem unwilling to get serious, realistic, and sufficiently effective. Naturally, that confirms a diagnosis mass-psychosis.

Still, it seems that even kleptocrats and the hyper-rich must hope for a best-case scenario, at least for themselves. Yet, apparently, dedication to maintaining acceptable risk winning wars and protecting military-industrial development became an addiction feeding political addiction. So, it now seems obvious that modern financial predators are no more sophisticated than primitive hunter-gatherers (taking advantage of instinct, herd behavior, and easy pickings). In fact, top-tier financial predators seem much less intelligent than the early over-kill hunters who drove whole herds over cliffs. Financial predators are practicing mega-overkill after 5,000 years of destructive history.

What's worse? Primitive hunters feel reverent respect for their prey, killing to eat and live, not for perverse pleasure, profit, status, or the desire to conquer and enslave. Kleptocrats and monopolists are not so attuned to the reality of universal life, nature, and the habitat that sustains us all.

Behavioral economists' may not have the whole solution but, at least, they look for and study our actual passions, obsessions, and habits, especially our habitual passion "for persuading ourselves that what we want to believe is true" regardless of disbelief.

Summation

A central aim and result of the theory and metatheory of the atemporal primacy of enabling principles supports the fact that an impossible "Big Bang birth" of universal totality was caused by confusion. The thesis and supporting content also show that the confusion was caused by general failure to recognize and account for the pervasive lack of knowledge of the defects of ordinary languages and how they support normal neuro-linguistic social programming (maintaining mass-confusion, etc.).

Now, in this concluding summary, more scientifically verified facts support the essential realizations. They also confirm the necessity of a major paradigm upgrade, to enable real progress to more unitive theory and a more realistic standard model of science, reality, and being. The following content also supports the necessity of doing science for the sake of better understanding and better quality of life.

Hence, this summation makes it obvious that the key points of this critique of world history and modern society are applicable to the so-called scientific community. For, clearly, what we commonly think of as modern science is inseparable from the minds and egos of scientists. All of us are subject to psychosocial forces and influences at work beneath the surface of civilized society.

For example, chronic failure to remember the simple dynamics of bubble markets is curious yet revealing. Behavioral economist George Lowenstein cites herd mentality, and its false security (re: safety in numbers). Nothing new there, but discovering how

neurological responses to danger, threats, and fears relate to economics is relatively new. Consider an atrocious real-world example:

Why were suckers not scared by the amazing Mr. Madoff's improbable success? Because it didn't trigger their primal fear, greed fueled their unreasonable optimism. It short-circuited natural threat response functions and appropriate risk aversion. That enabled excess risk tolerance, adrenaline addiction, irrational exuberance, and excessive bravado, inappropriate risk taking.

Thus, the pandemic pathology of irresponsible credit card use is actually due to the modern illness of addiction to the win or lose dynamics of modern economics and technocratic neurolinguistic social programming.

For example, brain scans show credit cards having an anesthetic effect (on our brains), literally suppressing rational consideration of scary issues and bad outcomes. So, because we can make "affordable" monthly payments, credit cards trick the brain into not sensing that we're going into debt.

Of course, we can end the plague of plastic loan sharking, theoretically. Some decision makers and corporate sustainability experts can and do integrate healthy strategy with methods that help consumers (and voters) make nondestructive choices. If this were a simpler, more perfect world, producers could protect the sustainability of their annual business cycles and the biosphere by protecting customers from themselves.

We now have good numbers and proof that psychosocial dynamics determine real production and performance. That makes earlier notions of profit incentive obsolete. For simple, routine tasks, increasing compensation works well, to a point. Beyond that point the curve goes flat. In complex, high risk endeavors, high stakes tend to make the brain narrow our focus, limiting or impairing performance. People can care more about winning or losing than their work or why their doing it.

When high performance requires creativity, expansive thinking and innovative approaches to complex problems (with unobvious odds for resolution), high stakes and high pay are typically counter-productive. Therefore, if they were perfectly impartial, ethical agents, directors and stockholders of corporations could stop rewarding heartless psychopaths with insanely high salaries, bonuses, and ultra-huge severance packages.

The financial Meltdown-Bailout catastrophe and the ongoing 737-Max disaster (caused and maintained by the USA's biggest DoD contractor) provide massive historic proof that Devils' bargains really are bad deals. Yet, they remain the most popular con-games in the world. The reasons are tragic, ironic, and bizarre. Behavioral economists see greed as desperation, they call it hyper-motivation. Lowenstein sees greed as "the antithesis of self-interest."

Greed motivates us to get one thing at the expense of other things that may be more valuable or important, immediately or in the long run. The mechanism that keeps us susceptible is called loss aversion. Socially induced envy and jealousy make the brain register a sense of loss, making us desperate to get out of an illusory hole. The tendency to cheat is not from a sense of limited options, but a deep-seated sense of deficiency, insecurity, and inadequacy. That can only be remedied with compassionate education, skillful therapy, or intense self-motivation.

Behavioral economics seeks to demonstrate and document how individual and collective shortsightedness (subliminal stupidity) is caused by the brain's "present bias preference" (we want what we want, now). So, our tendency to laziness and haste, often employed to work against us, can be used for our best possible benefits.

Empowering methods for effective wellness programs for overeaters, over-spenders, over-payers, and over-earners are available. Sadly though, since the two most influential neuro-types are mostly corporate executives, globally transformative results will be lacking until rational governance is pervasive. What's worse is that behavioral economists, even adequate understanding of neurolinguistic programming, cannot force anyone to care or even think about reprogramming themselves.

Fortunately, healthier social programming can redirect our collective momentum upward, possibly more rapidly than anyone can imagine. Cultures that survive terminal End Game scenarios relatively intact typically develop a new version of the conventional socioeconomic game. Starting or continuing an entirely new nonprofit game based on infinite values and ethical integrity offers a superior option.

All we need for long-term viability is effective assessment of history, seeing how not to make the same mistakes again, how to initiate and sustain a win+win scenario, and then co-create it. First though, we need to make sense of the existing system and envision effective transition. To do it, we need to understand and envision the potentials of a completely new cultural paradigm.

For example. a hybrid economy could spin out of control like the existing money game. It happened in Argentina, twice. The causes were enabled by the lack of sufficient neurolinguistic paradigm upgrade. The people were still stuck with the banking cartel's socioeconomic paradigm. It only enables subversive beliefs about money, credit, value, and success. Obviously, to avoid ultimate failure, civilization needs a new paradigm.

Do we have enough time to accomplish a cure before total collapse unleashes more chaotic destruction? Who knows, but do we have a better alternative?

Paradigm upgrading and cultural evolution take time yet, in crisis, our cultural learning can go into an almost vertical rate of change. This time civilization needs a new paradigm credit system. Our, success will depend on pervasively installed biocentric definitions of success and wealth.

As in many ancient gifting cultures, true wealth is a measure of giving, sharing and the ability to give, share and create value or benefit. Will formerly middle-class families and communities refuse modest affluence and a viable transition to sustainable wealth? Probably not, but we will get no help from mainstream risk analysts, economists and academics. Despite the consequences, mainstream economists and risk managers are working for the good of the global military-industrial-financial complex, whether they know it or not.

Clearly, thinking success and ecocidal destruction are compatible is insane and stupid. Seeing wealth as a measure of taking, cheating, hoarding, maniacal greed, and winning (despite ecocidal harms) is psychotic. Thinking we would all refuse a superior alternative to a totally ruined civilization seems silly, at best.

Now, thanks to the Internet, anyone can quickly generate a huge catalog of risks impossible 100 years ago. Again, the time is ripe for a sustainable solution, a bio-ethical 21st century culture. An ethical AI system could help, but not without a major paradigm upgrade. All it takes is enough of us with real commitment to accomplish the mission.