

Being the Whole: Toward Our Emerging Noetic Revolution

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Introduction

The Emerging Noetic Revolution

For no light matter is at stake. The question concerns the very way that human life is to be lived.

—Plato (*The Republic*, Book I)

On the cusp of the 2nd century CE two great scholar-masters—Nagarjuna in the East and Plotinus in the West—began the noetic nondual knowledge revolution for our species that is just now re-emerging as the new Noetic Revolution of the 21st century. (Nondual is subject/object unity, *advaya*/not two/not one; nondual wisdom is *noēsis/noetic* knowledge with no essential subject/object, spirit/matter separation.)

Ultimately understood, the bricolage of all our personal, social and cultural knowledge relationships are necessarily subsumed and embraced by a vast interdependent matrix of relationship, an unbounded whole—by whatever name—that is formless nondual (trans-conceptual, "not one, not two, but nondual") ultimate reality itself, the inherent basal source condition or primordial ground of all relative-conventional reality, things and beings that arise therein. Holistically viewed, the whole subsumes and embraces the parts that arise and participate therein. Hence, the parts, while relatively, conventionally differing within this vast whole, are not ultimately separate from it. There obtains herein an *ipso facto* prior intrinsic epistemic and ontic unity. In due course, some of these parts 1) coalesce into life, 2) evolve consciousness, then 3) self-consciousness, then 4) enlightened consciousness (Buddha mind). It is the reality *chosen* by the third of these that begets the fourth. How shall we understand this?

As the developmental dialectic of humanity's emotional, spiritual and ethical evolution proceeds, and the ontological estrangement of the present Modern scientific materialist worldview—and the nihilism of its Postmodern reaction—recedes, this incipient global noetic reformation in religion, science and culture has reintroduced to humankind an integral, transpersonal knowledge paradigm. Such knowledge is discoverable through the contemplative injunctions of the *esoteric* and *nondual* wisdom paths of our pre-Modern wisdom traditions—Hinduism, Buddhism, Taoism, Judaism, Christianity, Islam, Shamanism; all this toward uncovering inherent meaning, even ultimate meaning in our lives. This is urgent given the present cognitive crisis following the collapse of our Modern/Postmodern cultural meta-narratives.

What is the meaning of life in this constant presence of our death? What are the causes of human happiness? The causes of our unhappiness, our suffering? What shall we do with this precious life we've been given? The big questions ask of our origin, our identity and our destiny. Such ultimate questions orient us toward the rediscovery, then recovery of the ineffable mystery of both relative and ultimate meaning and happiness for one who considers them. We shall herein consider some of them. Is this not now our urgent knowledge imperative?

Some of these premodern primordial wisdom traditions teach of the profound knowledge/wisdom dialectic of our Two Fundamental Truths—our two ways of being here—the social/informational interobjective, and deep cultural, linguistic intersubjective worlds of Relative Truth (*samvriti satya/prakriti/form*), our arising finite conventional spacetime objective reality; and then Ultimate Truth (*paramartha satya/purusha/emptiness*), infinite primordial nondual perfectly subjective ultimate reality ground that transcends, yet embraces objective reality, and in which or in whom this all arises, descends and appears (involution).

Our wisdom traditions tell that this vast ultimate ground of primeval space, unbounded whole of reality itself is “non-propositional” and “non-prescriptive.” Such cognition is trans-rational, acausal, and not reducible to mere objective, material, electro-chemical physical brain matter; and thus we cannot derive conceptually based ethical principles from it. This wholeness ground transcends yet embraces human linguistic, cultural concept/belief systems—our deep background socio-cultural net (*langue*) of signification and meaning. The ideational content (*parole*) of this primordial web of meaning constitutes for Quine our essential “web of belief,” and for Peter Berger our encompassing societal worldview or “*nomos*”. So meaning (*ethos*) is bestowed through *both* our individual and collective, objective and subjective experience. We shall see that human cognition is far more than mere conceptual thinking. Indeed, as we cease to limit ourselves a binary two-valued rational thinking mind, most of the intractable problems of philosophy, religion and morals retreat into the wisdom of uncertainty.

What to do? We shall see that our lives are an opportunity and a choice to “ascend and return” to this basal ground (evolution), not as a self/ego-I, but as the essential light of the mind, the very nature of mind. As our nondual wisdom traditions have told, That/*tat* is our actual “supreme identity” as human beings. In such understanding lies great benefit for all beings. Thus our human condition is this: we must abide in and balance these two worlds, these two faces of our unitary nondual nature, our actual identity—relative/objective and ultimate/subjective—at once! Indeed, an epistemic and ontic sticky wicket.

So the perennial dilemma for science, spirituality and culture is the resolution of this invidious *apparent* duality, the essential relationship of our objective finite material existence—body and mind—to perfectly subjective all-embracing nondual spirit, infinite ground/whole in which, or in whom this all arises and participates. Such is the “problem” of soteriology, the individual and thus collective challenge of human psycho-spiritual liberation/awakening (full *bodhi*). Who is it, this “always already” present indwelling presence of the unbroken whole shebang? The choice of recognition, or the choice of denial of *That* is the rub for human beings.

I shall herein argue that the rigorous cognitive coupling of our objective and scientific understanding with the deep subjective realization of this momentous principle of the indivisible unity and coalescent dimensional interdependence of these two seemingly incommensurable paradigms—these perennial Two Truths, relative and ultimate—is the inherent treasure of mind, our heart’s desire, and both origin and aim of all our happiness seeking strategies.

To this end I shall enlist, for ultimate soteriological as well as relative polemical and pedagogical ends, the profound intertextual epistemological dialectics—both conceptual critical analysis, and trans-conceptual contemplative mindfulness and insight practice—of 2000

years of the great centrist Buddhist middle way *Madhyamaka Prasangika* philosophy of Nagarjuna, Chandrakirti and Tsongkhapa, and of the eclectic perfect mind of the Vajrayana's Longchenpa. We will here encounter the recent radical Neo-dualism of David Chalmers' proto-idealist panpsychism—all matter is intrinsically endowed with mind or consciousness. We shall see that ultimate reality itself—in which all of this arises and participates—is much more than mere material substance. Thus do we seek a balance, a centrist view between our objective and subjective realities.

With this dialectal causal Buddhist Mahayana sutra foundation we will then glimpse the non-dialectical acausal Vajrayana tantric view of the directly present immanent unity of objective material form (energy/matter), with the ultimate spacious, perfectly subjective sphere of *Dzogchen*, the Great Perfection, both pinnacle and base of Mahayana Buddhist view and practice. We shall see that the unity of these two Buddhist views—causal relative, and acausal ultimate—have much to offer our 21st century rapprochement of objective Science and subjective Spirit, whether exoteric religion or esoteric spirituality. Indeed, an ambitious agenda.

Thus do we engage the inherently vexed (to concept mind) profundity of the perennial duality that is these Two Truths, objective form/matter and subjective emptiness/spirit as they arise from their nondual spacious matrix ground, remembering all the while Buddhist nondual wisdom that “form is emptiness; emptiness is form.” Knowing subject and perceived object, while appearing separate, are ultimately a prior epistemic and ontic whole. The praxis of this lifeworld wisdom path, and its potential result—liberation, ultimate happiness—is we are told, always here now fully present, when we remember this great nondual truth that is the vast unbounded whole (*mahabindu*) itself. Indeed, this is the pragmatic “one truth”, invariant through all cognitive state changes of our exoteric objective and esoteric subjective experience.

To the same end we shall briefly explore an important bit of 20th century intellectual history, namely, an urgent Postmodern but non-nihilist “ontological relativity” as it arises in Relativistic Quantum Field Theory, the core of the Standard Model of particles and forces of recent physics and cosmology (and on occasion in recent physicists and cosmologists).

By these lights let us then revision this prodigious, but waning Standard Model. This must include a holistic new look at the magical metaphysic of recent Big Bang cosmology with its utterly *fantasque* dark matter/dark energy, then the (Planck) nature of space-filling energy itself; then we explore the logical and empirical possibility—or impossibility—of a physical/material “Theory of Everything.” It is here that I shall lament, as have many others, the alienating, destructive aspect of Modernist, determinist, mechanistic “Scientific” Materialism.

We shall here revisit the Postmodern, pragmatic and perspectival ontological relativity of Nietzsche, Bohr, Gödel, Quine, Derrida, Bell, Kuhn, the Neo-pragmatists, Zen master Dōgen, and a centrist Buddhist *Prasangika Madhyamaka* anti-essentialist Realism. Again, all of this toward a phenomenological, post-Kantian, post-materialist, noetic reconstruction and unification of our two knowledge paradigms, objective Science and subjective Spirit.

Just so, we'll glimpse a promising new post-Standard Model anti-realist quantum theory from a philosophically recalcitrant Stephen Hawking (*The Grand Design*). We'll see that it is

not philosophy (the unity of love and wisdom) that is "dead", but 2400 years of received Platonist Foundational Realism, including the proto-religion of Scientific Realism/Scientism, that must now be surrendered (*wu wei*) to the theme of that next more inclusive yet ever incomplete knowledge paradigm. After all, is not the end stage of any paradigmatic belief set the prelude to a more inclusive paradigm? Yet alas, do we not limit ourselves most by our emotional attachment to, and defense of our closely held theories and beliefs? We must evolve beyond mere conceptual theory to a post-rational, post-critical, neo-realist understanding.

We shall then visit some recent developments in philosophy of science, including "ontic structural realism"; the reckless rush to the Higgs boson; and then to post-quantum/post-Standard Model Quantum Bayesianism (QBism) which offers a probability theory rescue of the quantum wave function from its maddening logical paradoxes. We'll then see just how it is that all of this relative science profoundly furthers both human conventional flourishing, but as well, our ultimate liberation from the ignorance (*avidya*) that is the cause of human suffering. How shall we accomplish such a consummation?

A robust, integral noetic science of matter, mind and spirit must utilize the phenomenological "doublet" of both objective third person exterior/exoteric quantitative Science, and subjective first person interior, introspective, esoteric qualitative spirit/value methodologies. Such an integral, noetic research program is required to guide our evolution—that epistemic processional of preconscious, conscious, and supraconscious experience—individually and thereby collectively through the ascending life stages of human psychological, emotional and spiritual development. The end point of this evolutionary process is nothing less than the awakening/liberation of the individuals of our species; which is to say, in due course and by grace, the long deferred nativity of *homo gnostica*, an ever imperfect bright new species. I have here and elsewhere referred to this evolutionary reformation in religion, science and culture as the emerging Noetic Revolution of the 21st century. This evolutionary process—and its relative, and even ultimate human happiness result—shall herein be our ultimate concern.

Hence, such a non-androcentric, integral noetic science requires the perennial cognitive dialectic (*pramana*) of both objective reason (*vikalpa, anumana*), and subjective yogic direct perception (*pratyaksa*) of, and meditation (*bhavana*) upon our indwelling inherent (*sahaja*) nondual primordial awareness wisdom (innate *gnosis, sahajajnana, yeshe*). How do we do this?

As suggested above, these two intertextual complementary knowledge paradigms—these perennial "Two Truths", objective relative and subjective ultimate—together enhance the practice of the socio-cultural and "spiritual" path to the recognition then realization of our "supreme identity" with that primordial, perfectly subjective basal ultimate reality ground. Yes, it is this ontic base in which, or in whom all descending spacetime relative things and beings arise and participate. "Form is not other than emptiness; emptiness is not other than form".

Again, on the profundity of our nondual wisdom traditions this realization—and its spontaneous effortless actualization in everyday lifeworld kind compassionate conduct—represents, through cause and effect (*karma*)—step by step—our relative, but also ultimate individual and collective meaning that is ultimate great happiness itself (*mahasuka, paramananda, eudaemonia, beatitudo*), the happiness that cannot be lost. And yes, this requires a bit of practice.

So let us now engage our two ostensibly incommensurable knowledge paradigms—objective Science and subjective Spirit—so that we may better understand their "already accomplished" coming to meet in this 21st century Noetic Revolution that is now upon us.

I

Being Here

Our Two Knowledge Paradigms

Do you understand the two minds: the mind which includes everything, and the mind that is related to something?

—Suzuki Roshi

Modernity and its discontents: the hermeneutics of suspicion. There have been three great revolutions in the knowledge dialectic of Western science and culture: the Copernican Revolution of the 17th century begat the Newtonian Revolution of the 18th century which begat the 20th century Relativity-Quantum Revolution. The Copernican Revolution gave birth to the classical relativistic physics of Galileo, Newton and Einstein and, with the Newtonian Revolution, produced the objectivist/rationalist social and cultural revolution called Modernity.

The Postmodern intellectual reaction and subsequent subjectivist critique of the objective Modern Enlightenment valorization of reason with its Metaphysical Realism and monistic Materialism came to be known as Postmodernity.

The essential concern of Modernity: What to do about God? Meaning in a Modern world without the authority of God was rather grim, to say the least. A dualistic, separate theistic God was, as Hume has shown us, reasonable but not rational. The culture *imaginaire* of the European Enlightenment that was to become the Western Modern Mind with its hyper-objectivist idealization of Science—in its fundamentalist raiment, the proto religion called Scientism—was supremely and obsessively rational in its flight from premodern tradition, that tyranny of subjectivity that was the arbitrary, non-rational and irrational religious and political authority of the medieval Age of Faith.

This Modern Enlightenment Project, with its rationalist ideologues Bacon, Descartes, Locke and Kant, justified or rationalized epistemological Realism and its cognitive ontic handmaid, Scientific Materialism, on purely rational grounds; a Platonic “foundational” Realism essentially abstracted from its subtler subjective basis in human society and culture. Such Realism attempts to ground all human knowledge, both objective and subjective (including religious, moral and political knowledge) in reason, empirical sense experience and physical nature (Naturalism) *independently* of our intersubjective, linguistic, socio-cultural, moral, religious and spiritual experience.

Our two knowledge paradigms then—our two faces of human nature—are objective relative scientific, the dimension of Relative Truth, and subjective ultimate spirit, the dimension of Ultimate Truth. Our Eastern wisdom traditions speak of these wisdom dimensions as the “Two Truths”—Relative or *samvriti satya*, and Ultimate or *paramartha satya*. Let's unpack this, first in terms of scientific objectivist Modernity and its subjectivist Postmodern reaction.

The postmodern "ontological relativity" of Bohr, Quine, Gödel and Wheeler wherein arising and appearing objective reality is inherently *dependent* upon our semiotic (linguistic logical syntax, semantics and pragmatics) and cultural "web of belief" (Quine) is denied by the Modern mind.

The culture of Modern Science—which has become the prevailing view of Western culture—is therefore, theory-model-*observer-independent*. But scientific objective "fact" is "theory-laden" (Quine) and depends upon, and is constructed upon the objectivist cognitive edifice that is our concepts, theories, models and beliefs. That is to say, ontology—"what there is", and how we know it (epistemology) is *observer-dependent* and relative to our deep background cultural concepts and beliefs, just as the postmodernists have told.

We shall herein seek a middle way between the *ontological extremism* of these two views as we explore our inherently vexed aboriginal problem of knowledge.

Modernist incessant rationality, this idealization and valorization of the sovereign of human objective reason with its obsessive desire to quantify everything, and its underlying preconscious fear of our inherent human subjectivity, the "taboo of subjectivity," produced the adventitious grail quest for absolute deductive certainty—knowledge that is objectively certain, logically necessary, and universal—that still infects our capacity to reason, not only deductively, but inductively and inferentially, and abductively (retroduction or inference to the best explanation) in order to appreciate the stochastic, perspectival, ontologically relative, pragmatic, normative, evolutionary, socio-cultural and historical nature of our scientific and spiritual knowledge of reality as it arises from its vast, formless, nonlocal, basal primordial awareness "groundless ground".

The rational discursive human mind here bestowed upon itself an omniscient capacity to grasp the very nature of the entire physical/mental/spiritual *kosmos*. This hubristic cultural mass mind-state, rooted as it is in collective deep cultural background Platonic Realism (Plato's *Sophist*), Aristotelian binary two-valued logic with his principle of causality, and dualistic Cartesian Rationalism has fabricated an unnatural, destructive, impudent scientific and cultural metaphysic of mechanistic "Scientific" Materialism that has split our objective science/matter from our subjective mind and spirit. This deep cultural preconscious belief in a purely physical, *independently* real and separate world—the absolute bifurcation of knowing subject and object known, of "self" and "other"—has resulted in *en masse* self-deception (*avidya*, *hamartia/sin*, ignorance) and terrible human alienation and suffering.

The cultural belief system that presumes an utterly materialist ontology—matter is all there is—finds value only in material *things*. This mind-set has resulted in the merely materialist, narcissistic consumerist worldview that has colonized Western mind and culture. Such a world view is tragically lacking non-material altruistic moral and spiritual values that are, on the accord of our world wisdom traditions, the very causes of human happiness—both relative (human flourishing), and ultimate (emotional, spiritual enlightenment). In such a materialist culture esoteric spirituality is largely absent, and exoteric religion is more materiocentric than it is theocentric.

Thus arises what I have come to believe are the two primary evils for human being, namely, scientific materialism (Scientism), and religious fundamentalism/provincialism. The healing of this bipolar split between objective Science and subjective Spirit/spirituality—healing the separation between our objective and subjective faces of being human—is the real work of our emerging 21st century Noetic Revolution. We shall explore below.

Adding insight to injury, from such a worldview emerges the two ostensibly incommensurable paradigms that we have come to know and love as the mind-body/spirit-science duality. The “mind-body problem” has been with us since our primeval beginning. Everyone agrees, we have a body, and we have a mind. “Common sense” Substance Dualism holds that 1) mind and body are both exclusively physical/material, and 2) they are inherently separate. So how do they interact, one with the other (the intractable perennial “interaction problem”)?

Twentieth century continental and American analytic philosophers don’t agree on much, but they have generally agreed that Cartesian Substance Dualism is untenable. So, are mind and body *really* separate? Again, the healing of this odious perennial split between object and subject, body and mind, matter and spirit, science and spirituality shall herein be our ultimate concern.

Well, subject and object, subjective and objective cognition, body and mind, matter and spirit, self and other certainly *appear* to be separate. Western philosophy and culture has, for 2400 years, presumed that there is here an essential separation. The price paid for such impudent dualism is human ignorance of our actual identity, our “supreme identity” with the vast, nonlocal original unbounded whole, by whatever name—primordial ground or source in which, or in whom, this all arises—that transcends yet embraces these, our two human voices. How is this so?

The classical cognitive dichotomy of our competing subjective Spirit and objective Science paradigms have coexisted, uncomfortably, since the 17th century when Descartes, Galileo, Locke and Newton established and codified our Modernist ontology: the substance monism that is Metaphysical Materialism, and the Platonic foundational Metaphysical Realism of our current empirical objectivist scientific paradigm.

Such an unholy paradigmatic duality between objective and subjective modes of cognition, and being, is still very much part of our preconscious deep historical background intersubjective cultural “web of belief” (Quine). This objectivist/realist *zeitgeist* pervades every aspect of Modern and Postmodern Western and Westernized mind and culture, and has greatly obstructed enlightened, benevolent pragmatic resolutions to the three vexing problems of human existence and human happiness: *knowledge* (objective and subjective/emotional/spiritual), *morals/conduct*, and *governance*.

Early in the 20th century, as the Modern Mind gradually began to recognize that its reaction to the religious and political authority of classical and medieval tradition had itself become a tradition, Modernity became Postmodern. Brimming with a post-Nietzschean pathologically pluralistic and relativist *independent* quest for objective hubris and self-esteem the Postmodern mind has largely ignored the *interdependent* selfless (*anatman*), impermanent (*anitya*), emptiness/

boundlessness primordial ground of some of our holistic premodern wisdom traditions, both West and East (Veda/Vedanta, Buddhist, Taoist, Judaic/Christian, Neoplatonic).

In contradistinction to the Modern Mind, the Postmodern view denies that our percepts and concepts represent an objective reality. Arising reality presupposes semiotic linguistic representation which intrinsically separates us from an objectively “present” world. On this account we do not relate directly with reality. The Postmodern “linguistic turn” (1929)—the turn from Modernist objective foundational truth, and from the “philosophy of the (human) subject”—views our cognitive life and relationships as a surreal, indefinite matrix of linguistic signs and concepts. This is analogous to the Buddhist *Madhyamaka* “Two Truths”—relative-conventional truth (form), and ultimate truth (formless boundlessness/emptiness)—but without the redeeming ultimate truth aspect, and prospect. More on this below.

Yes, Postmodernism gave us the gift of a perspectival (many perspectives) ontological relativity (we cognitively construct or fabricate our realities via our sociocultural concept/belief/language systems). But its aggrandizement of the *pathological individualism* of ego/I/self furthers the atavistic cognitive infernal machine of subject-object, self-other dualism that hinders our new emerging sociocultural narrative, namely, a rational, intertextual, integral noetic (body mind spirit) rapprochement of the two paradigmatic realities that are existentially absolutist Modern objective Science, and a nihilistic, proto-Idealism Postmodern subjectivity.

The pressing epistemic challenge for both 20th century Modernism and its reactionary Postmodernism lies in the simple fact that without Realism we are stuck with nihilism, an ontic fate worse than death! To the rescue came several mid-century creative attempts to reform Realism in the face of the demise of the Modernist foundationalist “quest for (objective) certainty” (Dewey). If Enlightenment Rationalism and Realism has failed—a culmination of 2400 years of Platonic Realism or “first philosophy” wherein human knowledge is founded upon objectively certain universal forms, or “empirical” sense experience—then we had better fix it. An ontic and epistemic knowledge crisis is now abroad in the postmodern world.

This reformation of Modernist Realism assumed various epistemic forms. Premodernist strategies—Hannah Arendt and Alasdair MacIntyre—revived Aristotle. “Pro-modern” neo-pragmatist Realism revisionists—Jürgen Habermas, Hilary Putnam, Thomas Nagel, Joseph Margolis, Donald Campbell, and the great Postmodern neo-pragmatist Richard Rorty all responded to Postmodern nihilism through the fluent cognitive reticulum of the Pragmatism of James, Peirce and Dewey (c.f. Rorty's *Consequences of Pragmatism*). Middle way *Madhyamaka Prasangika* Buddhism with its Two Truths epistemology (objective/relative and subjective/ultimate) offers what we might call a premodern neo-pragmatism (Ch. III C below).

Paradoxically, the Modernist objectivist scientific and cultural knowledge exemplar has become the subjectivist quantum matrix mechanics of Bohr and Heisenberg, which produced the post-classical, post-Einsteinian Quantum Revolution of the 20th century. Quantum mechanics with its quantum non-locality or entanglement blurred the naïve distinction between knowing subject and its ostensibly separate object, and, with Middle Way Buddhist *shunyata*/emptiness, collapsed objective reality altogether (Boaz, “The Collapse of Objective Reality: Quantum Non-Locality and Buddhist Emptiness”, www.davidpaulboaz.org).

Then in 1928 English physicist Paul Dirac derived a relativistic wave equation, the prodigious "Dirac Equation", which reconciled Einstein's Special Relativity Theory (SRT) with Heisenberg's matrix mechanics, predicted antimatter, and won its creator a Nobel Prize in 1933. From this sprang the notoriously recondite, indeterminist, subjectivist, post-empirical, acausal, anti-essentialist and antirealist Relativistic Quantum Field Theory (QFT/QED) which resulted in our third intellectual revolution, the Quantum Revolution; and with it the physical untidiness of the "spooky" entanglement/non-locality metaphysics of quantum cosmology's mystical subjectivist "empty space" quantum fluctuations (quantum foam), the vacuum ground state, quantum zero point energy field (ZPE)—that energy density ($\Omega\Lambda$) of space itself.

Goethe's Romantic idealist response to the extravagant rationality and empiricism of 19th century Modern Science anticipates 20th century Postmodern *ontological relativity* (Quine, Gödel, Kuhn, Buddhist *Madhyamaka* and Bohr's and Heisenberg's Copenhagen quantum uncertainty and complementarity with his pith, "All phenomena are merely metaphorical."

We've seen that Scientific Materialism is dependent upon and assumes a metaphysic of Platonic Realism. Objectivist physicists (are there any subjectivist physicists?), chastened by the subjectivity and "lucid mysticism" (Pauli) of Bohr's and Heisenberg's acausal (matrix mechanics), that is, the instrumentalist, antirealist Copenhagen Interpretation (1929) of Quantum Field Theory have continued to insist upon this epistemologically realist metaphysic (Scientific Realism/Scientism) and have become the proto-orthodox ideologues of the "Hidden Variables" realist interpretation of QFT (Einstein, Bohm).

This admittedly *ad hoc* attempt to save the principle of causality from the apparent acausality of Bohr's Copenhagen QFT was a frantic effort to "save the appearances"—the sacrosanct empiricist "myth of the given" (physical reality is given solely through empirical sense experience)—of Modern Scientific Realism and of mind-body dualistic "common sense" Naïve Realism (Russell's "metaphysics of the Stone Age).

Acausal quantum mechanics supervenes or depends upon the logical causality of the classical mechanics it refutes and replaces. The Taoists have pointed to this beautiful paradox of reflexively utilizing probative logical argument to deconstruct and refute the efficacy of logical argument. Hume, Kant, Nietzsche, Bohr and middle way *Madhyamaka* Buddhists have all utilized logical argument to point to the inherent limit of our logical discursive mind and its relative-conventional concept/belief productions, resulting in different brands of skepticism—some healthy, some nihilistic—as to our exoteric and esoteric knowledge of the proto-physical world of appearance.

This productive realist/antirealist, orthodoxy/heresy dialectical intellectual tension has pervaded the epistemology of Science and of Spirituality/religion since Galileo. But it seems that this ontic porridge of reality has always been either too hot or too cold; too objectively material (Aristotle), or too subjectively transcendent (Plato). Perhaps with kindly intervention by pragmatic Buddhist Middle Way "Two Truths" realist epistemology—the recognition of the prior unity of objective relative "form" and subjective ultimate "emptiness"—we can get the porridge "just right." Let's see.

The Quantum Revolution is now complete, if not completely played out historically. Now, in the twilight of the Postmodern worldview we “Bestride,” as Hannah Arendt so aptly told, “a landscape littered with the rubble of broken narratives.” *Here, on the cusp of the 21st century we enter our next evolutionary stage that is nothing less than a new non-foundational, post realist/materialist meta-narrative, a scientific and cultural revolution that is our emerging post-quantum incipient integral Noetic Revolution in science, religion and culture* (Boaz 2016).

“Noetic” here means the integral pragmatic marriage—a new meta-narrative of subject and object—of concept and percept, of conceptual reason with our ultimate mythopoetic contemplative direct experience (*yogi pratyaksa*); and with that a unified methodology that includes both the third person data of science and first person introspective contemplative experiential data. This Noetic Revolution continues the epochal nondual knowledge revolution begun, as Ken Wilber has pointed out, on the cusp of the third century by Nagarjuna in the East, and Plotinus in the West.

It is here then, with the 21st century noetic epistemic turn from the separate subject self—seemingly independent from its “other” objects—and from the quest for a conceptual foundation for all knowledge, that we begin the urgent process of rationally restructuring and unifying the Modernist cognitive trajectory of destructive dualistic thought about these two seemingly incommensurable paradigms that are matter and spirit. Here we nurture the seed of a healing, integral noetic science of matter, mind and spirit, and a profound Postmodern “ontological relativity”: what there is, is relative to our pre-conscious deep background cultural linguistic concept and belief systems and theories. We accomplish this without positing or assuming, or denying the metaphysical dogma of an *independently* existent “real world out there” (RWOT).

Ontological relativity recognizes, not an independently existing reality, but an interdependent relative-conventionally real world—everything is related to everything else. Yes, it’s a really real world out there, and in here, but not an independently (observer/experiencer/theory independent), essentially or ultimately existing real world. It is rather a world reified and fabricated via our deep cultural background linguistic/semiotic “web of belief”.

As Buddhist *Prasangika* epistemology has demonstrated, appearance (form) arising from its formless ultimate source (emptiness, ontic openness) has a conceptually imputed and designated all too real relative-conventional reality (Realism), but, as Nagarjuna told, “not a shred” of absolute or ultimate reality. These are our perennial Two Truths, objective relative form/matter and subjective ultimate emptiness/spirit, which we shall herein further engage.

Such a pragmatic Two Truths recognition opens the possibility of the moment-to-moment conscious mindful management of the problem of human evil—the negative fear/anger aspects of our obstructed unconscious and conscious awareness (ignorance, *avidya*, *marigpa*, *hamartia/sin*)—that is the primary cause of the ubiquity of our iniquity, that is to say, adventitious human wickedness and its resultant human suffering.

Where the here now presence of selfless kindness and compassion is present to/in human consciousness there is little cognitive space for destructive negative emotion (Attraction: desire/attachment/greed = Aversion: fear/anger/aggression). Thus may we more freely select

our conscious, and even unconscious realities, and thereby—with only a modicum of Matthew Arnold’s prosaic “sweetness and light”—choose our destiny. Well then, how is this possible?

Ontological relativity, this imperative epistemologically pluralistic, pragmatic (choosing among a plurality of truths) Postmodern truth (Bohr, Quine, Kuhn, Rorty, Habermas) has given birth to a new *Science of Consciousness*. This integral noetic science is the long neglected study of the mind, our preconscious, conscious and supraconscious cognitive reference frames that comprise the natural subjectivity of mind beyond or ontologically prior to mere reductionist “scientific” objective conceptual cognition and electrochemical physical brain activity (or epiphenomena of brain activity).

Such a science includes both Western neuroscience and Eastern contemplative science (*adhyatmavidya*), and shall not fail to further the vital project of unifying our noetic view of the hitherto seemingly incommensurable knowledge paradigms that are Science and Spirit/Spirituality (both secular and religious spirituality).

This unified noetic Science of Consciousness is a precursor to the emerging integral noetic science of matter, mind and spirit, and an augury to any provident fruitful integration of these two competing knowledge paradigms toward a higher, subtler post-realist, post-materialist, post-Postmodern unifying synthesis—a rational noetic reconstruction—that furthers human happiness and well-being (“Conclusion”, p. 90 below).

I shall herein argue that such a paradigm shift—not toward one or the other pole, and not even toward a revolutionary new paradigm, but toward an objective/subjective balance, a restructured unification of this bipolar, paradigmatic split—begins simply in the exoteric (*theoria*) and esoteric (*logos/noesis*) recognition, and then the continuity of contemplative praxis that is a cause of the even subtler nondual realization that these two cognitive paradigms were never separate at all. Indeed, as wholes subsume their parts, these realities cannot be, contrary to “common sense” Substance Dualism, ultimately ontologically separate. *Physics and metaphysics, Science and Spirit may be seen as two views, two voices, two faces of this vast expanse of the nondual unbounded whole* (Klein, p. 21 below).

Well then, does such an integral view—with its cognitive surrender of the invidious perennial conceptual duality between objective matter/nature and subjective mind/spirit—constitute a revolutionary new knowledge paradigm, or not? It depends upon the view, relative or ultimate, as we shall see.

So we need not be timorous about metaphysics. Metaphysics is simply “after physics” (Aristotle), or beyond physics, a natural and ontologically necessary epistemic continuation of the continuum of process from empirical sense experience to the all-inclusive aboriginal unbroken whole—objective and subjective—that is our primordial source, nondual reality-being itself. Fear, avoidance or denial of the subjective realities of metaphysics precludes any possibility of knowing the inherent subjective aspect of our body-mind-spirit *presence* that participates in this great whole of reality itself, without a single exception.

Such methodological avoidance cannot be scientific. Let us remember that non-objective metaphysical, even supernatural assumptions undergird both of the ontologies that are Eastern Idealism and

Western Scientific Realism/Materialism, not to mention Postmodern cultural relativism (Boaz 2012 Appendix B, “The Idols of the Tribe: The Metaphysics of Modern Science”).

The truth of the matter is that all of our assumptions as to the nature of the mind that experiences what is—reality arising from whatever it is that reality arises from—are metaphysical assumptions. There is and can be no purely objective scientific “proof” for any of it. The Postmodern truth of ontological relativity reveals that, as Hume has demonstrated, the causal arising of what is (ontology), is but an epistemic “habit of the mind,” the fallible inductive relative-conventional conceptual play (*lila*) of the human mind cognitively reveling in its objective and subjective experience.

Well, the matter and spirit, body and mind of these two competing paradigms—objective relative and subjective ultimate—certainly *appear* separate! And that is the point. As Hindu, Buddhist, Taoist and Christian epistemologies have demonstrated, *the things of arising reality are not as they appear*. As physicists, religious and contemplative mystics, and indeed the human history of ideas attest, outer exoteric appearance may veil or cloak (*vikshepa*) a subtler, esoteric deeper, even nondual truth as to the singular basis or perfectly subjective ground of both matter and mind, of both objectively and subjectively appearing realities. Christian First Cause cosmology and its derivative physics Big Bang cosmology notwithstanding, both paradigms generally agree, appearing reality does not arise *ex nihilo*, from nothing. There must necessarily be a prior source or ground. But must this ontic basal primordial awareness wisdom ground be only physical/material? That is the question.

We shall henceforth argue that the original basis or ground of reality itself, in whom this all arises, need not be merely physical; that is to say, Scientific Physicalism/Materialism with its habitual scientific reductionism (reduction of emotional and religious and spiritual experience to mere electro-chemical brain states is false. How shall we understand this?

The subtle cognitive process of denial of the subjective realities of the non-physical or meta-physical domain, this obscuration and “normally neurotic” (Freud) self-deception (ignorance, *avidya*, *ajnana*, *marigpa*) occurs at both the psychological level of the individual, and therefore the psycho-social level of our evolutionary, historiographic cultural collective unconscious (Jung). Such denial results in the Romantic *strurm und drang* that is the suffering of beings. *Human history might well be seen as the never ending drama of this storm and stress of avidya writ large*.

The antidote? Objective knowledge (information, *doxa*) and subjective discriminating wisdom (*sophia*, *prajna*) together begin to understand and express the great all-embracing depth that is our “always already present” intrinsic primordial awareness wisdom (*gnosis*, *jnana*, *yeshe*)—beyond an antidote—abiding ontologically prior yet always potentially contemplatively cognitively present in this chaos of extrinsic appearances of arising relative-conditional spacetime reality. *We shall here suggest—with the Mahayana Buddhists, the Advaita Vedantists and the Taoists—that this primordial ground (ultimate truth) of appearance (relative truth) is the unified bright nondual essence or nature of mind/reality that is both origin and aim of all our insufferable relative happiness seeking strategies*.

We shall in Chapter II further explore these two ostensibly incommensurable paradigms—Science and Spirit/Spirituality—through a very brief examination of the anomalies and limits of the venerable Standard Model of recent theoretical physics with its Quantum Field Theory, quantum cosmology (with its supernatural Big Bang cosmogenesis), and some of their philosophical consequences. We shall then perpetrate a bit of philosophy upon physics in the hope that physicists and philosophers of physics begin dialogue.

One such quasi-philosophical perpetration upon the epistemology of Modern physics and Postmodern social science is Rupert Sheldrake's excellent book, *Science Delusion* (2012). Sheldrake opines that the waning Science/Scientism paradigm cannot even hope to understand the subjective nature that is the whole of reality through the mere objectivist metaphysical dogma of its mechanistic materialistic "web of belief," to use W. V. Quine's metaphor.

For example, the obsessively *objective* ideology and methodology of Science cannot, *ipso facto* penetrate the dimension of human *subjective* experience that is the reflexive participation—instantiation—of human consciousness in the vast expanse of reality that is consciousness itself, the very primordial base, or "groundless ground" of everything (p. 50 below).

As we have seen, objective and subjective awareness are different phenomenological facets or modalities or states of the prior unity, the unbounded whole that is the vast matrix continuum of primordial consciousness/awareness itself. One must not expect a less subtle cognitive modality (objectivity) to do the taxonomic work of that which is epistemically more subtle and inclusive. *The desideratum to be wished is an integral noetic science whose methodologies fluently ambulate in both our worlds—exoteric objective and esoteric subjective—at once.*

Sheldrake, in a few pages, has completed the deconstruction of the "science myth" with its proto-religion that is "Scientism," thereby opening still another aperture into an integral noetic view.

I shall also suggest here that the Modernist view of an idealized independent, objective, culture-free, value-free physical and social science is naïve, and that the Postmodern reaction, the rejection of Modernity's *grands récits*—reason, objectivity, progress, individualism, truth, unity—is at best a post-Nietzschean perspectival cynicism, and at worst, a nihilistic Orwellian wasteland. Ultimately, critical Postmodernism devours itself. It cannot survive its own deconstruction (Boaz 2012, p. 16). However, the profound contributions of both the Modern and Postmodern reformations must be, as Ken Wilber has so clearly shown, embraced, transcended yet included in the 21st century integral noetic knowledge reconstruction that is now upon us.

Our all too brief visit with the epistemology of Modern Science shall then lead us to the pragmatic, centrist Indo-Tibetan Nalanda Buddhist epistemology of middle way *Madhyamaka Prasangika*, and thus to the ontology of human "open awareness" or "open presence"—the "ontology of presence" (Klein 2006)—that is the fully present knowing (*vidya, rigpa*) of the unbounded wholeness that is the "perfect sphere" of *Dzogchen*, the Great Perfection.

Such an architecture may be seen as a cognitive transept that supports an interdisciplinary, cross-cultural, rational noetic reconstruction that points the way to a trans-rational or trans-conceptual recognition of the prior ultimate unity of these perennial paradigmatic "Two

Truths," objective relative and subjective ultimate. Moreover, as we have seen, Buddhist middle way epistemology offers a robust pragmatic relative–conventional non-foundational and non-essentialist Realism that may, perhaps, complete the failed objectivist, existential absolutist foundational Realism (Scientific Realism) of the Modern Enlightenment project.

Again, these Two Truths are the two faces of our objective and subjective relative-conventional material spacetime reality (form)—the domain of Science—and its non-separate, perfectly subjective ultimate trans-physical, trans-rational, yet not cognitively transcendent primordial emptiness ground, by whatever name, the *kosmic* domain of Spirit/Spirituality. That is to say, subject and object are two voices or two faces/facets of an ontologically prior and present primordial unity. "Only the whole is completely objective" (William Earl). As Buddhist *Madhyamikas* tell it, "Form is emptiness; emptiness is form." It is this emptiness of form that fills the world with light. Because of its emptiness ground, form may arise, in accordance with the law of cause and effect, and furnish nondual reality itself with the myriad things and beings of our beautiful compassionate intersubjective relative–conventional spacetime reality.

"Emptiness" or boundlessness is the epistemic Middle Way between the philosophical extremes of Western realist/materialist existential absolutism, and Eastern idealist nihilism. However, the view that Buddhist emptiness is nihilistic renders the possibility of moral virtue impossible. If nothing exists, then why bother with compassionate activity toward other beings? Conversely, if we believe that existence is permanent, then there is no motivation to realize the wisdom of emptiness. Thus, "Only fools claim that emptiness is nihilism" (Marpa in Cabezon 2011). Middle Way *Madhyamaka* strikes this epistemic balance.

Praxis: reality is a choice. Our Primordial Wisdom Tradition (Hinduism, Buddhism, Taoism, Judaism, Islam, Neoplatonism) teaches that practical, goal directed, exoteric and esoteric contemplative/meditative practice is an antidote, as indicated above, to the unruliness of human reason, that is, to the inherent confusion, contradiction, paradox and distraction that is the adventitious production of the semiotic, binary, conceptual, self-absorbed "wild horse of the mind."

What I have elsewhere termed the Integral Noetic Imperative requires that scientists, philosophers, intellectual historians and those in the teaching and helping professions learn the essentials of "mindfulness meditation" practice in order to train the wild horse of conceptual mind in a bit of peaceful equanimity, precursor of relative, and then ultimate wisdom.

We must, as well, become familiar with the rudiments of philosophy of science (philosophy of physics, cosmology and biology). Of equal importance, and this is the profound result of mindfulness meditation, we establish an esoteric wisdom spirituality and soteriology (about liberation)—in other words inner, esoteric Buddhist, Hindu, Taoist, Christian, Kabbalah, Sufi—and perhaps even exoteric philosophy of religion, and religious philosophy, theology and neurotheology. It is here that the ontic premodern perennial, primordial wisdom (*gnosis*, *jnana*, *yeshe*) foundation of our species is revealed. Through our adventitious ignorance (*avidya*) it has been forgotten. Through its *praxis*—*freed of metaphysical presuppositions*—it is recognized (*satori*), realized (*samadhi/moksa*) and stabilized (fruition/result), then expressed spontaneously in the everyday lifeworld as kind, compassionate conduct, the very secret of human happiness.

Such an Integral Noetic Imperative requires that this profound nondual primeval knowledge be inter-textually integrated with the epistemic dualism of Modern and Postmodern scientific worldviews. Without this wisdom depth we are relegated to mere discursive information and theory, with no nondual ontic reality base. The result is not only theoretical confusion, but alienation and separation from our ultimately subjective source, our primordial root, with the subsequent suffering of beings.

Thus shall I argue that in all cases, practical, here now quiescent, non-transcendent mindfulness training—sectarian or non-sectarian—is requisite to such a holistic reality view; and as an antidote to prideful therapeutic and pedagogic paternalism, and to both exoteric and esoteric scholarly pretentiousness (perhaps not unlike this present thesis of mine).

Suzuki Roshi (1970) tells us that ninety-five percent of our thinking is in service of the self. Woody Allen quipped that “eighty percent of life is showing up.” Since most of our lives are spent in an atavistic obsessive colloquy of past and future ego-self, mindfulness practice, not ego transcendence, enables us to “show up” for, and to be fully present to the selfless, timeless, peaceful and quiescent *now* of our own being here, even in the seeming chaos of the conventional world and commonplaces of everyday spacetime “Relative Truth” (Dōgen, p. 86 below).

As the seeming duality of subject and object, self and other, spirit and matter is here somewhat “bracketed” (*shoshin*, *epoche*) or placed in cognitive abeyance, basal “self-arising primordial wisdom” (*gnosis*, *jnana*, *yeshe*) with its kind, compassionate lifeworld activity naturally and spontaneously arise together, we better accept and manage the primal fear and denial of our impermanence (with its flip-side angry aggressive projections), the suffering of beings—human and otherwise, including our spaceship mother earth—is reduced, and relative happiness increases, just as our premodern wisdom traditions have always told.

Indeed, recent research in neuroscience, neurobiology and neurotheology (the neuroscience of spirituality) has shown that evolution has “hardwired” us, not for an adversarial lifeworld, but for cooperation and compassion. The “neuroplasticity of the happiness circuit,” that is to say, the compassion generating upper left prefrontal cortex (gamma) modulates the fear/anger/stress generating amygdala (beta) during mindfulness (*shamatha*/alpha/theta) and penetrating or contemplative insight (*vipashyana*/alpha) compassion and quiescence meditation (Wallace 2007, 2012; Begley 2007).

The consciousness states, then pursuant personality traits of both relative and ultimate human happiness are, in large part the outcome of acquired skill in these various mindfulness meditative/contemplative compassion practices (HH the Dalai Lama 2009; Zajonc 2004; Goleman 1997; Begley 2007, Newberg 2011). In short, there is an evolutionary advantage in kind, compassionate lifeworld contemplative “spiritual” practice. Therefore, we must learn to mind the wild horse of the mind. Such meditation or mind training in “being here now” is indeed imperative. And assuredly, such meditative-contemplative cognition is not what we think.

Silence is the element in which great things fashion themselves together, that at length they may emerge, full-formed and majestic, into the daylight of life...

Derrida: unity in *différance*. In deference to Derrida's *différance* (*De la Grammatologie*, 1967), we shall here note that the dualistic conceptual signs, symbols and constructs that represent our perennial nondual "Ultimate Reality" or "Ultimate Truth" are, as Derrida kindly points out, metaphysical "logocentric transcendental signified" entities or realities.

"*Différance*" is a pun on the relation of "difference" and "deferral" in French. It implies that meaning lies in the differences of linguistic expressions, as well as the indefinite deferral of any definite, privileged meaning-bestowing connection with a trans-linguistic external reality. *Différance* thus expresses our human conceptual mind's inability and incapacity to transcend the indefinitely "deferred" series of both synchronic (present pattern of related signs in a language) and diachronic (historical occurrences of a sign's presence) differences in meaning. Here all we have is this never ending stream of differences. Therefore, our mere concept-mind can never know any singular, unitary meaning. Speech acts and writing necessarily suppress and repress this linguistic stream of consciousness in a fruitless attempt to stabilize and concretize meaning.

This means that limited rational, conceptual mind can never know any "originary presence" of any presumed ultimately subjective primordial reality, or reality ground, thus denying and precluding extra-linguistic, trans-conceptual, even spiritual experience. Any cognitive attempt—for Derrida this means mere conceptual attempts—to know a more subtle reality than this semiotic, dualistic stream of discursive difference is not possible. Derrida limits the entire spectrum of human cognition to mere discursive conceptual cognition. What shall we make of such apparent radical nihilism?

Derrida's view represents both the truth of Postmodern ontological relativity—that we cognitively construct or create our realities through intersubjective linguistic conceptual imputation and designation (Mahayana Buddhists would surely agree)—and the Postmodern curse of nihilism, namely that we are limited only to such dualistic cognition, which ignores most of the "real world", much less the "logocentric transcendental signified" nondual primordial unbounded whole, primordial ground of all arising spacetime phenomena, however it may be signified.

Such nihilistic Postmodernism utterly misses the point of the second part of our primordial wisdom tradition's Two Truths equation (relative truth + ultimate truth), that is, the interior always now "presence" (*vidya, rigpa*) of the perfectly subjective ultimate truth in which all of this *différance* arises, and the direct experience (*pratyaksa*) of this more subtle, greater truth through mindful non-conceptual contemplative cognition. This "epistemology of presence" (Klein) is utterly absent in the Postmodern mind of Derrida.

The truth of the matter is that the objectivity of the proof lies in the subjective experience of the pudding. "Subject and object are only one" (Schrödinger). Here philosophical notions of truth are but the play (*lila*) of ultimately meaningless concepts. Yet we need both.

It must be pointed out here that it is the contrived, constructed entified *concept/sign* of presence and ground that is logocentric, not the unfabricated trans-rational unbounded whole

or *ground* of reality itself in which such concepts arise. The *concept* of such a ground may be deconstructed by such tiresome post-structural “refinement and aporia” tactics, but not the ineffable, trans-conceptual, extra-linguistic, meaning bestowing, nondual ontologically prior unbounded *whole itself*, the trans-rational ground which—on the accord of our wisdom traditions—all beings, signs, concepts and differences arise and participate. The *concept* of the ultimate ground of reality must not be conflated with the utter mystery of the ground itself—beyond truth-functional semiotic conceptual cognition—that is to say, the nondual meditative-contemplative direct, *non-conceptual* experience of this numinous ground. Direct contemplative experience (*pratyaksa*) must not be conflated with the dimension of mere conceptual experience (*vikalpa, doxa*).

For Derrida then, *différance* is the “deferred” indefinite arising of differences in the meaning of a linguistic sign and is the primary condition for the activity of language, and thus to conceptual thinking, and thus to conceptual meaning. Well and good. But once again, must meaning be merely *objective* and conceptual? Surely there are more things in heaven and earth than are dreamt of in the protocols of nihilistic Postmodern concept-mind.

Our wisdom traditions speak of and teach of subtler, ontologically deeper strata of *subjective*, even ultimate meaning. Does not every one of us experience such trans-rational meaning? Must our non-empirical, non-propositional inherently subjective emotional and spiritual experience be reduced to mere objective concepts? Here alas, the epistemic beast of Postmodern nihilism raises its discursive reductionist head. What is the use of denying our human subjectivity?

As seen above, Derrida points out that the meaning of a linguistic sign is at once diachronic (functioning culturally through historical time), and synchronic (immediately available cluster of related signs). A sign's meaning is the simultaneous intertextual reference to both in any linguistic utterance.

So it is through this process of discursive meaning, deferred throughout our indefinitely vast cultural language matrix, that we discern differences in the objects of appearing reality. The non-discursive process of pure attention and perception is then interpreted through the semiotic two-valued, binary conceptual constructs of language. For postmodernist poststructuralist Derrida, language or conceptual *différance* is reality, indeed defines reality. The possibility of meaning in the purity of pre-conceptual perceptual direct experience, or of a subjective meaning-bestowing trans-linguistic trans-conceptual cognition, by whatever name, is utterly absent in Derrida's process. Must meaning be only conceptual meaning?

That philosophical discourse—both speech and especially writing—is destined to fail in its obsessive quest for absolute unitary meaning is however, Derrida's contribution to the pansophic ontological relativity of the Postmodern mind, and is a precursor to a post-Postmodern objective/subjective unifying synthesis, and thus to the emerging integral noetic paradigm that is now indeed a noetic revolution.

On the accord of our wisdom traditions the world is created by voice, *vak*, speech, logos, the Word. But is not the nondual basal primordial ground of this dualistically arising spacetime reality inherently non-conceptual or non-propositional (*nirguna*) abiding ontologi-

cally prior to discursive thinking minds arising therein? Again, if it is, Derrida's eternal deferral of a fixed privileged logocentric meaning bestowing *conceptual* entity must not be conflated with its subjective trans-rational, extra-linguistic matrix base or source *directly* present (*samadhi*) to a *non-conceptual* yogic contemplative consciousness (*yogi pratyaksa*). Concept-mind cannot deconstruct that which is, by its very nature, trans-conceptual. To attempt to do so is a higher order category mistake. O learned hubris that mere discursive human mind should have such sway.

Moreover, this trans-rational contemplative direct experience (*pratyaksa*, *kensho/satori*, *samadhi*) of the numinous "presence" (*vidya/rigpa/shekina*) of the unitary one truth which subsumes all of these conceptual binaries cannot be such a "logocentric transcendental signified" for such experience is, as Nagarjuna (1995), Longchenpa (2007), Dōgen (1986), and indeed all of Buddhist Mahayana have told, not transcendent at all, but always directly here now *presently* signified, if often conceptually unrecognized, within our pristine pre-conceptual direct perception, and thus indirectly in the conventional thinking and feeling cognition of our ordinary mind (Dōgen, p. 86 below).

And wonder of wonders, on the accord of our wisdom traditions, this trans-conceptual meaning is the "presence always present" of our primeval "supreme source" (*dharmakaya*, *dharmadhatu*), recognized, realized and actualized in compassionate conduct through the agency of the highly trained contemplative mind. That our conceptual human mind should be so limited, while its intrinsic innermost esoteric nature or essence is so vast, is indeed a great and inspiring paradox to ego/self-centered rational discursive mind.

Such a radical trans-rational mode of knowing as it seems, unavailable to Derrida, as it is to most Western scientists and the thinking classes—caged as often we are in the obsessive, waning objectivist paradigm—who fail to explore, let alone practice the subjective trans-conceptual methodologies of our Eastern and Western contemplative wisdom traditions.

Again, the inherent (*sahaja*) nondual, "innermost esoteric" experience (*samadhi*) of the primordially present presence (*vidya*, *rigpa*) of the vast space of Reality Itself (*dharmadhatu*, *dharmata*)—unbounded wholeness/sameness—cannot be recognized or grasped by the truth-functional two-valued, binary/bivalent logical syntax of language—the mere *differences* of a limited semiotic discursive mind—no matter its dualistic intellectual virtuosity.

Aristotle taught us that all statements or propositions are logically bivalent or truth-functional. That is, the logical syntax of language is dualistic, true-false, black-white, subject-object, good-bad. The Modernist hyper-rational quest for absolute deductive, objective certainty—necessary truth—still infects our ostensibly counter-rationalist Postmodern culture. But not all cognitive values are bivalent black and white (parietal lobe binary brain structure and function). Reality admits of a lot of very meaningful cognitive grey.

Perhaps then we should dump Aristotle's learned bivalent Western logical canon with its either-or Law of Excluded Middle and embrace a paraconsistent, contradiction tolerant tri-valent (3VL) deductive logical system that provides access to the subtle contemplative precision and depth of "the logic of the non-conceptual" (Kline 2006). After all, Indian Nyaya logic has five laws of thought.

Modern science has demonstrated through its discovery and practical application of quantum mechanics self-organizing systems, nonlinear systems, chaos theory, neurotheology, contemplative studies, Buddhist studies etc. that there is more unity (holistic or unitary right-brain structure and function) in the things in heaven and earth than were dreamt of in the binary dualism of the Greek realist philosophies of the Modern mind.

Indeed, we shall see that the Two Truths (relative and ultimate) of Middle Way *Madhyamaka* Buddhism strikes a balance between the philosophical extremes of objectivist Aristotelian Classical Rationalism, and Cartesian Modernist Rationalism on the one hand, and subjectivist anti-rationalist, even nihilistic Postmodernism, and subjective esoteric spirituality on the other.

Such a pragmatic, pluralist but not ethically relativist middle way between the extremes of objective or subjective view and method fills the cognitive void left in the wake of the failure of the adventitious 2400 year quest for a certain, logically necessary and universal presuppositional foundation for knowledge, i.e. the varieties of objectivist foundational Realism/Materialism.

Hence, paradoxically, Derrida's dramatic Saussurean linguistic *différance* reveals—upon a close integral noetic reading—the prior primordial ontic unity (sameness/*samata*) that he denies and attempts to deconstruct. Socratic irony?

To repeat, an inherently nondual, non-constructed, non-conceptual subjective experience cannot, *ipso facto*, be logically/conceptually objectified and deconstructed. Meaning is not merely conceptual and objective. And the nondual "spiritually empirical" ultimate meaning of religious contemplatives is, by definition, non-conceptual.

W. V. Quine on the nature of meaning: "Meaning (conceptual meaning) is what essence becomes when it is divorced from the object of reference and wedded to the word."

Is it not refreshingly ironic to observe Premodern and Modern unity at the core of all this cynical, nihilistic Postmodern difference? *Perhaps we can honor, appreciate, enjoy and work within the exquisite asymmetry of this pluralistic epistemic diversity, while abiding in the perfect symmetry of its prior ontic unity.* Our incipient noetic revolution offers the view and the methodology for such an integral result.

Such an integral centrist middle way is indeed the desideratum to be wished. This urgent relative difference between objective semiotic conceptual meaning, and subjective direct contemplative meaning—these two cognitive facets of mind—is requisite to an integral noetic understanding that accounts for the ontological unity that arises as the relative-conventional play (*lila*) of both.

The beautiful asymmetry of this primordial objective/subjective cognitive tension pervades every aspect of human knowledge and value. The more or less moment to moment recognition, then realization and stabilization of this natural and necessary process is an antidote to the distress and confusion of dualistic, obsessively seeking goal directed perception and thinking, and facilitates a holistic view wherein objective and subjective cognition/experience are complementary, not ultimately different cognitive paradigms. It is beautiful circular syncretic logic of complementarity that tames the conceptual dualism of the wild horse of the mind (Bohr's Principle of Complementarity below).

This astute continuity of here now non-seeking (*wu-wei*) recognition of the subjective basis of reality, in the midst of all of this relative-conventional chaos, has been called “keeping the view.” “Leave it as it is and rest your weary mind; all things are perfect exactly as they are” (Shakyamuni Buddha).

Have not the ideologues of monistic Scientific Materialism and the radical reductionist philosophy (ontology) of Physicalism failed to consider in their philosophies this numinous ultimate ontic prior unity of the two-fold—objective/subjective—nature of semiotic relative mind? It seems that the materialists either deny (“Eliminative Materialism”), or reduce (“Reductive Materialism”) the final perfect subjectivity of this primordial binary that is our perennial “Two Truths”: relative objective form/matter and ultimate subjective emptiness/spirit.

We have seen that the cognitive purity of subjective immediate direct experience (*pratyaksa*) of whatever it is that arises from the ultimate primordial base or ground is, in both the hyper-rationalist Modernist view, and in the nihilistic Postmodernism of Derrida, mistakenly viewed as a *separate* logocentric “originary presence” of Ultimate Truth, and is thereby reduced to a Relative Truth *concept* of mere physical matter, i.e. brain states and processes. “And thus has philosophy been ruined” (Whitehead).

Objective view, subjective view; a noetic integral view includes and utilizes both. Neither pole can be privileged. Indeed it is the trans-rational basal nondual unbroken whole that is trans-rationally privileged. Thus must we understand—through both ordinary mind perceptual and conceptual recognition, and subtler contemplative, concentrative recognition and realization—that these two views of reality are not ultimately separate, but rather a non-problematic circular complementary, inherent unity. Truth (as pragmatic revealing *aletheia*) and nondual ultimate knowledge (primordial wisdom/*gnosis/jnana/yeshe*) is revealed through a continuity of recognition of the prior unity of this bright numinous unbounded whole that is perfect space of Reality Itself (*dharmadhatu*). *From the epistemology one chooses, arises the ontology one deserves.*

Derrida’s Postmodern, poststructural deconstruction of iconic logocentric binaries is a direct denial of meaningful spiritual experience and a rejection of both a theistic and nontheistic reality ground, or basis, or even godhead. Let not such iconoclasm conflate “God” with a transcendent dualistic “other,” a mere conceptual theistic “God of the philosophers,” a “God of the gaps.” Non-theistic, nondual, nonlocal primordial reality ground or even godhead conceptually and contemplatively transcends yet embraces both Western and Eastern dualistic ontologically separate and therefore limited rational/dualistic theistic God; the ever problematic God of the “faith of our fathers.” For the mystical consciousness there is ultimately *only* basal nondual godhead, by any name.

This dialectical distinction is usually underappreciated in science/religion discourse, including Heidegger's ontotheology (ontic spiritual thinking, theistic or non-theistic, that grounds itself in notions of being itself). *When scientists and religionists speak of God it need not perforce be a logocentric theistic God—a dualistic or separate concept/belief God—of which they speak.*

Argument for or against some conceptual propositional or moral prescriptive attribute of God, for example existence, eternality, omnipotence, omniscience, omnipresence, justness,

goodness and the rest, is not to the point if “God” is understood to be non-propositional and non-prescriptive, that is to say, a god greater than a limited concept/belief “other,” a separate, dualistic, anthropomorphic theistic God of conceptually contrived human attributes.

A theistic creator God is “other” than and transcends its creations. This is an unwanted intrinsic limitation on God from which arises the intractable “problem of evil” with its myriad theodicies. Theists, West and East, have been unable to resolve these conceptual challenges to theism. Why must God be only theistic? Heidegger's ontotheological metaphysics—so misunderstood by Derrida—is a beginning. *Madhyamaka* Buddhist metaphysics offers a non-theistic resolution (Chap. III-C below).

Buddhist epistemological non-theism must not be conflated with the view of “the new atheists,” Dennett, Dawkins and Harris, who have contrived, for our religious edification, an exoteric, objectivist/positivist straw man. Scientific materialist pretensions to an objectivist critique of religious experience do seem entirely to miss the point of subjective religious/spiritual experience. The objective empirical evidentiary epistemology of modern materialist science cannot, *ipso facto*, understand subjective, esoteric spiritual, or even exoteric religious experience, and knowing. Attempts to do so are lower order category mistakes. *Spiritual experience is essentially trans-rational and non-evidentiary. Material objective science and subjective spirituality are different kinds or modes of discourse, and of knowing.*

The philosophical atheists, and indeed most secular materialist scientists and philosophers who bother to engage such questions, demand that religious knowledge and experience be empirical, objective and propositional, pretending to ignore the intrinsically subjective, non-propositional, non-prescriptive character of direct (*pratyaksa*) religious/spiritual experience and knowledge.

Once again, why must all human experience be reduced by the naturalistic hubris of Scientific Materialism to the merely objective, empirical knowledge of Western science and philosophy? *Madhyamaka* Buddhism with its two truths (objective relative *form*, and formless subjective ultimate *shunyata/emptiness*) has no such pretensions, and makes no such philosophical mistakes. We may, in this connection, also observe that the prevailing antiestablishment ideology of 20th century social and legal secularism is in no manner neutral regarding freedom of religious practice.

Skillful method in religious and spirituality discourse requires that pantheistic, panentheistic, panpsychic, polytheistic and indigenous shamanistic views—both dualistic conceptual, trans-conceptual contemplative, and “innermost esoteric” nondual—be part of the equation. Here secular and religious spirituality come to meet. *Spirituality is the esoteric heart of religion. Exoteric religion may or may not include esoteric and even innermost esoteric spirituality.*

In any case, all of these gods and non-gods are merely discursive human concepts. Nondual godhead—our primordial ultimate ground or source (*alaya, bhavanga*)—is by definition, non-propositional, and non-prescriptive, knowable only to a non-discursive contemplative consciousness reflexively arising and participating in the unbounded whole that is all-embracing consciousness-being itself.

As we have seen, our premodern wisdom traditions hold that the human concept-mind cannot objectively grasp a trans-conceptual, ultimately subjective reality through the imputation and designation of conceptual attributes (*nirguna*), although Buddhist *Madhyamaka* analytic meditation does indeed provide a profound conceptual understanding. Rather, the white noise of obsessive conceptual cognition (*vikalpa*, *javana*) must be tamed through practice of quiescent mindfulness and meditative concentration (*shamatha*). It is here that the primordial base of reality may be, in due course, ascertained with both objective and subjective certainty.

Clearly, the trans-rational truth of ultimate reality is greater than our mere concepts and beliefs *about* God, or about any ultimate reality, by any name. This must include those “confirmationally biased” sacrosanct concepts and beliefs of which we are absolutely certain. (And if this judgment be skillful means, God deliver us from skillful paternalism.)

Anne Carolyn Klein on unbounded wholeness. Professor Anne Carolyn Klein, *Rigzin Drolma*, in the peerless wisdom prose of her superb book, *Unbounded Wholeness* (2006), speaks of the “epistemology of presence” wherein ultimate meaning is always already inherently (*sahaja*) present in our human cognitive subjective mythopoetic space, prior to any temporal, discursive or even contemplative operation or dualistic linguistic semiotic distance between subject and object, knower and known, self and other, practitioner and the unbounded whole that is both discursive and non-discursive nondual spirit itself.

In this “logic of the non-conceptual,” meaning—both relative and ultimate meaning—is always inherently present in all cognition, and coexists with and pervades, not transcends relative-conventional “ordinary mind” (with its cultural deep background concept/belief systems and its logical syntax of language), whether or not this is immediately recognized by a perceiving, thinking, even meditating subject. We participate in this vast interdependent *kosmic* harmony with all of nature, whether or not we know it conceptually; thus the imperative to contemplatively *practice* this feeling/meaning recognition and to act (*karma*) in accord with it. Keeping this View and Conduct in the everyday lifeworld has been called the compassionate wisdom of kindness and is, on the teaching of the traditions, the secret of human happiness and wellbeing.

Professor Klein (2006) reveals this great atavistic primordial truth: “*Unbounded wholeness is how and what reality is... Open awareness (rigpa), fully present to that state of wholeness, is the knowing of it... Open awareness is uniquely authentic (tshad ma) for it alone is fully aware of its own nature as unbounded wholeness.*”

This nonlocal, nondual awareness, through gradual lifeworld practice under the guidance of a spiritual mentor is the basis and ground of the recognition, realization, stabilization and ultimate fruition of our indwelling inherent presence of the primordial awareness wisdom that is paradoxically “always already” present in each human form, our actual “supreme identity” with the whole, ultimate happiness itself (*mahasuka*, *paramananda*, *beatitudo*).

“Know Thyself.” To know oneself is to know “the other” of other beings and phenomena, and to know the bright clearlight openness/emptiness that is ultimate “Reality Itself.” Such contemplative knowing transcends yet embraces the ontological relativity of the chaotic world

of arising relative-conventional truth that is our appearing spacetime reality. As with any mode of knowing, it takes a little practice.

However, Professor Klein reminds us that to argue for the here now presence of a conventionally conceptual logic and logocentric, but contemplatively non-logocentric nondual unbounded wholeness through the mere reticulum of the dualistic syntax of language is problematic, to say the least. It is difficult to speak of that which is unutterable.

Yet, as Tsongkhapa (Newland 2009), Jamgon Mipham (Pettit 1999), Shankara (Deutsch 1969) and indeed the nondual teaching of our entire primordial wisdom tradition have demonstrated, the trained contemplative mind may trans-rationally, directly experience and know, with certainty (*yogi-pratyaksa*, *kensho-satori*), that unbounded whole that is its unseparate primordial source/ground. “The child knows the mother” (Adzom Rinpoche). This at least is directly experientially certain; and is as well, conceptually certain to the vast mindstream of the great *mahasiddhas* of our primordial wisdom traditions.

Is not all of this—objective and subjective, matter and mind—a part of our reflexive participation in the diaphanous brightness of the world that is not other than this vast mindscape of the unbounded whole (*mahabindu*) of ultimate reality-being itself (*dharmata*, *cho nyid*, emptiness)? *Vidya/rigpa* is the “uniquely authentic” presence of primordial wisdom state of knowing this (*dharmadhatu jnana*, *cho ying yeshe*).

The unbounded whole: choosing reality mindfully. How does Einstein's unity of light (energy, c) and form (mass/matter, $m > E = mc^2$) arise from this vast primeval *cosmic* unity that is its trans-conceptual nondual emptiness ground—this utterly ineffable mystery that is the unbounded whole? And how does this ultimate meaning, and relative conventional semantic and syntactical meaning for human beings emerge from that? How can we know *that*?

Since Kant we have known that ontology—what there is—cannot be conceptually grasped by the language semiotics of pure reason (the paradoxes or “antinomies of reason”). In a post-Kantian, Postmodern ontologically relative world we create or construct our protean phenomenal realities—Locke’s “nominal essences” (*namarupa*, name and form)—through the prodigious constitutive power of perceptual imputation and linguistic conceptual designation, just as Buddhist *Madhyamikas* have told for centuries. However, Kant’s *noumenon*, the “thing in itself”—with its “*noumenal* self”—along with Locke’s “real essences” remain, on the accord of these authors, inherently cloaked (Shankara’s *vikshepa*) to objectivist conceptual philosophical and scientific cognitive penetration. As non-conceptual *noumenon*, it is *ipso facto* unknowable to human conceptual cognition, to reason. Is it knowable to the prepared contemplative mind, trained in trans-rational wisdom (Gnosis, *jnana*) under the guidance of a meditation master?

Thus do these anti-essentialist, antirealist epistemologies of the Western Mind participate in our perennial “Two Truths” view, represented in the East by pragmatic, anti-essentialist, but not anti-realist Buddhist middle way *Prasangika Madhyamaka*. The Western exoteric physics analog to such a view is the entanglement/non-locality of quantum field theory (QFT/QED). More on this in Ch. II.

An anti-essentialist epistemology acknowledges the pragmatic nominal reality (Realism) of the relative-conventional spacetime dimension of the mental and physical phenomenal world (form), yet rec-

ognizes that such phenomena possess no essential, intrinsic or absolute reality or existence (formless emptiness/shunyata). This is the *différance* that makes all the difference.

This great truth of the wisdom of emptiness—that arising form has an objective appearance aspect, and a subjective emptiness aspect—revived, at least conceptually, by the 20th century Neopragmatists—continues, as we have seen, in the urgent (relatively speaking) Post-modern truth of “ontological relativity” (Peirce, Bohr, Quine, Kuhn, Rorty, Habermas, B. Alan Wallace). Here we perceptually and conceptually reify our objective reality through what W. V. Quine called the whole “coordinate grid” of our intersubjective “web of belief,” our preconscious, cultural deep background epistemic and ontic metaphysical presuppositions and assumptions. That is, no observer/theory-independent, *inherently* real, material reality is posited, nor assumed to exist.

Nor is this a nihilistic assumption of non-existence. Nagarjuna, 2nd century Buddhist *Madhyamaka* founder, is his “tetralemma refutation,” reminds us that the nondual truth lies not in absolute existence, nor in nihilistic non-existence, nor in both, nor neither. Ultimate truth cannot be grasped by the bivalent discursive cognition of binary conceptual mind, yet it may be “fully present” to nondual cognition of the prepared yogic meditative/contemplative mind.

The trick and the antidote is to consciously, continuously *choose* to recognize, and to awaken to the presence (*vidya, rigpa, christos*) of this unbounded whole—to the degree that our present lifestage development permits—in the arising of all attractive and not so attractive relative-conventional phenomena as we participate in this vast, immediately present non-transcendent reality matrix together. Indeed, as Nagarjuna told, ultimately “There is not the slightest difference between *samsara* (form) and *nirvana* (formless emptiness)”. They are, in such an ultimate nondual view, the same (*samata*).

The Indo-Tibetan Buddhist Vajrayana teaching demonstrates Shakyamuni Buddha’s great nondual truth: “The essence of all dharmas is primordial purity.” On the understanding of Middle Way Buddhist *Madhyamaka*, it is this pristine, conceptually untainted cognitive continuity of *vidya/rigpa* open awareness presence that may result in human psycho-spiritual awakening/liberation/enlightenment. This cognitive stream of non-discursive openness is, among other things, the here now moment-to-moment recognition, activity, and in due course, realization of this great truth.

How do we do this? Again, it takes a bit of mindfulness/insight practice, guided by a “spiritual friend” in the context of a spiritual community.

How then does Einstein's relative-conventional spacetime mass/energy/form arise from its utterly mysterious formless ground? The unbroken whole of trans-conceptual Reality-Being Itself arises for us as a cross-cultural dialectic of nonlocal nondual Spirit, an intersubjective deep cultural, trans-rational background-dependent, mythic, poetic, emotive/feeling and aesthetic cognition of this “supreme source” the basic space of *dharmadhatu* that is the conceptually untainted purity of our basal primordial ground. The seemingly objective facticity of human reason and its intentional objects is relative to, and supervenes upon the vastness of *That* (*quidditas, tathata, suchness, nondual being-as-such*).

And how does *meaning* arise from *That*? The direct trans-conceptual recognition of this ultimate knowledge potential is then incompletely logically and epistemologically unpacked through relative-conventional semiotic (syntax, semantics, pragmatics) discursive mind in sociocultural spacetime. As C. S. Peirce observed, "Perception is semiotic." (Actually pristine direct perception (*pratyaksa*) is phenomenologically prior to semiotics.) This is all good. But something vital gets lost in translation; that something is, once again, our ultimately subjective bright here now participative direct numinous "presence" (*vidya/rigpa*) of the primordial unbounded whole, the basal source or ground (emptiness) in whom abides the great beauty of our inherent *mythos* and *poesis* as it arises for us and is spectacularly instantiated in the particulars of relative-conventional spacetime material reality (form).

These "two voices" together, this noetic doublet—exoteric objective and esoteric subjective—comprise an "epistemological unity" (Klein) that bestows moment-to-moment "harmonic" relative-conventional, as well as ultimate meaning for us. Recall once more that ultimately these two are a unity. This prior and immediately present nondual unity, though always noetically present, may not be always present to conscious awareness, even to the trained contemplative mind. Gradual, "contrived", dualistic practice is the vector that makes it so; marvelous paradox of the Path.

Let us here remember Plato's three dimensions of knowledge: empirical observation, geometry/mathematics, and *noesis/logos* or introspective contemplative nondual knowledge of ultimate reality. We understand and realize this unbounded whole, this all-inclusive one truth, this "one taste"—or we fail to—through each our own individual balance of Aristotle's three essential activities of human beings: *theoria* (both objective/conceptual and subjective/contemplative), *praxis*, and nondual *poesis*. View, Path, Result.

Here, pragmatic, therapeutic view/theory is unified with the edifying result or fruition that is the mythopoetic here now nonlocal primordial awareness wisdom knowing—awakening/liberation/enlightenment/full *bodhi*—all of this through the horizontal (exoteric) and vertical (esoteric) practice of the Path. That is to say, as one stabilizes this view, the motivation and clarity arise to accomplish the "already accomplished" immediate here now present Result/Fruition through this noetic pragmatic vehicle that is the dualistic confusion of the great paradox of gradualist practice of the "spiritual" Path. Therefore, we are advised that our goal cannot be the future happiness of liberation. We cannot become happy later; but we can be happy now. Thus do we "make the path the goal", right here in this very moment now.

But let us now depart such valorous, unbridled conjecture and engage the metaphysical pretensions to rationality of the equally speculative *theoria* and *praxis* of the noble physics paradigm.

II

“Physics in Trouble”: Matter Behaving Badly

The progress of science has now reached a turning point. The stable foundations of physics have broken up...Time, space, matter...all require reinterpretation.

—Alfred North Whitehead (1965)

Materialism is that form of philosophy which leaves the universe as incomprehensible as it finds it.

—C. S. Peirce

The Standard Model: metaphysical prelude. “It is difficult to locate a black cat in a dark room, especially if there is no cat” (Confucius). Perhaps the greatest challenge facing theoretical physics today (notwithstanding the noetic imperative to remain open and skeptical regarding our personal and collective “web of belief”) is an ongoing agglomeration of theoretical and mathematical inconsistencies of its minimalist yet robust “Standard Model” of particles, fields and forces, and the Lambda (Λ) CDM (cold dark matter) cosmology based upon it.

This situation is readily acknowledged by particle physicists and cosmologists. Nevertheless, this prodigious theory has succeeded in integrating both Special Relativity Theory (SRT) and relativistic Quantum Field Theory (QFT/QED)—but not the gravity of Einstein's General Relativity Theory (GRT)—into a comprehensive view of the basal subatomic structure and forces of physical reality. The Standard Model has as well—notwithstanding the mathematical fudge of renormalization—unified the electromagnetic force with the weak nuclear force. The work yet to be done is the inclusion of the strong nuclear force for a Grand Unified Theory (GUT), and then GUT with the gravity force for that ultimate desideratum, a logically improbable Theory of Everything (TOE). Yet the incomplete Standard Model as it now stands is indeed a grand intellectual accomplishment.

Just so, what shall we make of such a theory that, even on the account of its ideologues, fails to explain or even describe 95 percent of the total energy density of the universe? Recent dark sector cosmological theory claims that roughly 70 percent of the universe is dark energy, 25 percent is dark matter, and fully 5 percent of the universe is ordinary baryonic atomic matter/energy. The absurdities of dark matter and dark energy are hence theoretically required because the total energy density of the cosmos is so much greater than the energy density of mere ordinary matter. This is the “naturalness problem” par excellence.

Dark matter is invisible, undetectable, non-luminous, non-interactive matter that must be composed of a mystical new particle undreamt of in our Standard Model conjectures.

Dark energy is “smooth”—it does not agglomerate in galactic or intergalactic structures—and it is the probable cause of the recent (1998) discovery of the acceleration of our ex-

panding universe, possibly at an ever increasing rate, resulting ultimately in a "Big Rip" wherein all matter is rent apart at the atomic level. Bad for the economy.

Efforts to understand dark energy are usually confined to Standard Model relativistic quantum field theory. That Einstein's General Relativity Theory of gravity (inconsistent with Relativistic Quantum Field Theory) may deviate at the extreme large scale structure of the cosmos seems to be given short shrift. Perhaps a post-Standard Model theory of quantum gravity will come to the rescue. Superstring Theory, which fabulously predicts both Einstein's GRT gravity and Supersymmetry particles, is the leading candidate, but now quite conspicuous in its absence from 2016 Large Hadron Collider (LHC) data.

Historically, Schrödinger, with his quantum wave function (Ψ) formalism, and the Bohr and Heisenberg Principles of Complementarity and Uncertainty, respectively, both developed in the period 1927-1929, gave birth to the quantum mechanics that forever changed physics. These two *fantasque* mathematical formalisms were later proven to be entirely equivalent. In 1932 Paul Dirac suggested a third formalism, the "path integral formalism", developed in 1941 by Richard Feynman. The three are mathematically equivalent. Werner Heisenberg's versatile matrix mechanics has generally been considered canonical.

It was this quantum formalism that was to become the foundation of the antirealist Copenhagen Interpretation (1929) of quantum mechanics. Dirac's astounding mathematics made the quantum theory consistent with Einstein's Special Relativity in 1928. Relativistic Quantum Field Theory (QFT) then evolved into the "renormalizable" relativistic quantum gauge field theory of Quantum Electrodynamics (QED) of Schwinger and Feynman in 1948. This marvelously synthetic theory unifies the hitherto separate forces of electricity, magnetism and light into a single unified force of nature.

In 1964 Feynman's erudite colleague, Murray Gell-Mann established the Quark Model that was nothing less than a new theory of the Strong Force or Strong Nuclear Force, namely, Quantum Chromodynamics (QCD, 1973). The Strong Force binds quarks together within protons and neutrons. The force carriers here are gluons. Quarks then are the strongly interacting particles that comprise the protons and neutrons of the baryonic atomic nuclei of physical reality. QCD was finally completed in 1995 with the experimental discovery of the long predicted Top Quark. However, non-renormalizable QCD has at least one serious problem. It cannot account for neutrino mass, as we shall see.

QCD with its Quark Model reduced the theoretical composition of matter from a ludicrous 200 "elementary" particles to a particle family of two, namely, quarks (hadrons) and leptons (electron, muon, tau and their corresponding neutrinos). But QED with its "dippy hocus pocus" (Feynman) renormalization fairy dust (which bestowed the pragmatic, not so hocus pocus quantum gifts of the computer, the laser, the microwave and the bomb, not to mention the Nobel Prize in physics) resulted in the frail Electroweak Theory of Weinberg and Salam which presumed to unify the Electromagnetic Force with the Weak Interaction. The resulting Electroweak Force (1967), and the Strong Nuclear Force or "color force" (QCD) that binds quarks inside protons and neutrons, along with the force carrier particles and antiparticles of the matter particles (e.g. electron/positron) became physics' prodigious Standard Model of

particles and forces. The Standard Model was completed in 1977 with Lederman's discovery of the bottom/anti-bottom meson.

In summary, the Standard Model consists of the fundamental particles that are quarks and leptons with their charges and masses, the two, for now separate forces or interactions that are the Electroweak Force (QED/Electroweak Theory) and the Strong Force (QCD), their Force Carriers (W^+ , W^- , Z bosons, gluons), including the putative Higgs boson (p.36 below), and finally the antiparticles of the fermions (electrons, protons, quarks, etc.).

With the increasing unification of the Standard Model emerged the hope of further unification, namely, a Grand Unified Theory (GUT) of the Electroweak Force and the Strong Nuclear Force; and then the mother of all speculative theoretical hopes, a Theory of Everything. Such a TOE would completely explain the Standard Model and its core principles of force, energy, matter, space, time, through the theoretical unification of all three of Mother Nature's physical forces and their particles and fields—let's not forget the Gravity Force and its force carrier, gravitons—into a mathematically unified, or rather, re-unified primeval singular, grand unified “mother force” that was the very cosmic ground of the symmetry breaking phase transitions produced by the ostensible hot Big Bang cosmogenesis.

Unfortunately, the Gravity Force of Einstein's General Relativity seems forever (a long time) mathematically incompatible with Relativistic Quantum Field Theory of the Standard Model. Einstein's classical gravity principle is relativistic, but violates Heisenberg's post-classical quantum uncertainty relations, thus requiring a new post-standard model physics paradigm that transcends yet includes the venerable Standard Model by formulating a quantized gravity theory, and resolving some of the puzzling gaps in the Standard Model (p. 39 below).

The fabulous logic-defying (*ex nihilo*), trans-rational, blatantly supernatural proto-theistic Big Bang singularity instantly (at the Planck time quantum gravity 10^{-43} seconds) resulted in the broken symmetries (spontaneous, acausal “electroweak symmetry breaking,” EWSB) of the ontologically prior and perfect cosmic symmetry or unity of the three seemingly separate forces of nature. It was these three that then produced (nucleosynthesis) the spacetime material elemental things that stuff/form is made of.

Fortunately, in the fullness of time of this particular cosmos, such stuff evolved life, then consciousness, then self consciousness, then self-reflexive “God” consciousness (christ/buddha/atman mind) in order to recognize then realize and express its nature as a spacetime instantiation of the very formless *kosmic* primordial ground of all That.

Be That as it may, the task of current theoretical physics is to explain, or explain away the anomalies and to unify the astonishing mathematical truths of the noble Standard Model paradigm with a post-standard model Super-String Theory/M-Theory and its now improbable resultant Supersymmetry of subatomic particles and forces; and of course to explain a quite *fantasque* Big Bang cosmology with its *ad hoc* new hyper-inflationary “dark energy”, generally presumed to be the reincarnation of Einstein's cosmological constant Λ .

The formalist intuitionist mathematics of such a string theory is horrendously difficult, and far from complete, but appears to predict General Relativity, is consistent with Relativistic

Quantum Field Theory, and perhaps promises descriptions of cosmic realities—for example, a tweak in Einstein's General Relativity Equivalence Principle—that permits us to dodge such absurdities as "dark matter" and "dark energy". But there's more. M-Theory offers unification of the three (or four) forces, dodges the "problem of infinities" by yielding finite results, and appears to include the old paradigm Standard Model as a special low energy limiting case. That's a big order. And progress seems to have stalled.

Perhaps a conceptual mathematical understanding of the ultimate nature of physical cosmos, let alone the primordial trans-physical *kosmos* in which, or in whom this all arises, transcends our mere discursive, binary concept mind. Perhaps we must deepen our methodological quest to include the subtler trans-rational, trans-conceptual contemplative dimension.

It is useful here to note that a post-standard model superstring, or a quantum loop, like a Standard Model point particle, cannot *ex hypothesi* exist in physical reality. Rather, strings are mere mathematical, not "real", physical entities, a radical departure from the Platonic metaphysic of classical orthodox Scientific Realism and Scientific Materialism. Not to mix our metaphysics, but such strings seem ontologically closer to Eastern Indian and Buddhist Idealism than to Western philosophical Realism and Materialism.

The Postmodern Science meta-narrative—this “naturalistic” materialist creation myth—is, exoterically at least, nearly identical to our primordial wisdom tradition's Two Truths meta-narrative, namely the primeval duality that is relative form/matter (*samvriti satya*, "concealer truths"), and ultimate emptiness/spirit (*paramartha satya*) in which, or in whom the dance of geometry arises and descends into objective spacetime (involution/ontogeny).

Again, esoterically, the “eternal return” to the source or ground (*gzhi rigpa*) of physical and mental form occurs through matter/mind/spirit stages of evolution/phylogeny as material form, evolves life, self-consciousness, then "god-consciousness" through ascent again to its basal source condition, the “supreme source” or emptiness ground that is ultimate “reality itself” (*paramartha satya*).

Just so, this all-embracing *kosmic* ground is the physical/material primordial cosmic symmetry/unity of modern cosmology's pre-Big Bang grand unified “mother force” (10^{-43} seconds). These two views are variations on a perennial theme of the nondual primordial unity, the unbounded whole itself.

“The barrier between subject and object does not exist. Subject and object are only one” (Erwin Schrödinger). “There is no barrier. Everything being buddha nature, there is no gate through which to go in or out” (Zen patriarch Hui Neng).

Objects altogether are whole, yet separate;
Being itself already together, yet apart;
In harmony, yet dissonant. Of objectivity,
There is a great whole;
And from this whole all things arise.

—Heraclitus (author's translation)

The “lucid mysticism” of Bohr and Pauli that represents this unfathomable perfectly subjective unbounded whole, by whatever name, was conceptually imputed and designated by 20th century quantum physics and cosmology to be the *de facto* subjective basis of our arising “objective” relative-conventional realities. This mysterious quantum reality was then subsequently theoretically reduced to a naturalized, ideological, purely physical/material deterministic reality that became the unabashedly mystical Higgs field. Its particle force carrier is the alluring Higgs boson—Standard Model desire itself (“desire is the creator and destroyer of worlds” —Bhagavad-Gita)—representing the putative interaction of the Higgs mechanism that in some wondrous way bestows mass upon the admittedly, necessarily and eternally unobservable and in principle empirically undiscoverable quarks and leptons (or strings or loops) that we have come to know and love, and that we can only hope comprises the whole exoteric physical cosmos (if not ultimate all-inclusive esoteric Pythagorean *kosmos*) of post-Aristotelian quantum discontinuous physical reality itself (Higgs, p. 40 below).

Quantum Electrodynamics (QED) is the relativized, quantized electromagnetic theory of Maxwell’s sublime 19th century mathematics. In 1929 Paul Dirac, in an equally astonishing bit of mathematics, unified Einstein’s SRT relativistic mechanics with QFT—with its Schrödinger wave mechanics—to create QED, and predict the existence of anti-matter in the bargain! Dirac won the Nobel Prize in physics for this work in 1933.

We’ve seen that 1929 was also the year that the Bohr and Heisenberg collaboration—Bohr’s Principle of Complementarity and Heisenberg’s uncertainty relations, his Principle of Uncertainty—resulted in their subjectively perspicuous Copenhagen Interpretation of the quantum theory with its devastating, paradigm busting result that the nature of physical reality cannot be deterministic—as Newton and Einstein would have it—but is merely stochastic, probable or statistical. This acausal quantum indeterminacy/uncertainty voids the sacrosanct principles of causality and objectivity, thus making balancing our checkbooks philosophically problematic.

Einstein argued with Bohr for thirty years against this indeterminism of the Copenhagen view. “God does not play dice with the universe”, preached Einstein. Replied Bohr, “Oh, Albert, stop telling God what to do”.

Such quantum indeterminism negates the demarcation between our objective and subjective cognitive dimensions of reality (Kant’s hitherto fundamental analytic/synthetic distinction), between mind and the natural world; and it challenges the very principle of causality (Boaz 2012, Ch. IV). This was, to say the least, a shock to Einstein’s inner realist, and to the entire Modernist orthodoxy of Scientific Realism/Materialism.

Yikes! Objectivity and causality are kaput! With Gödel’s and Turing’s proofs that not even mathematics is logically consistent, certain and complete, the presence of non-Euclidian geometries, and Russell’s paradox we have, it would appear, a really spooky nihilism. What hath God wrought!

A brief meta-mathematical excursus. We must now ask, what is the nature of these mathematical entities that seem to dictate reality itself? Do mathematical objects exist inde-

pendently of a sentient perceiving consciousness? Do we *discover* their properties, or do we *fabricate* them—*Constructivism*—through conceptual imputation, as Kant believed?

Mathematicians and philosophers of science have now concluded that the *logicism* of Frege, Russell and Whitehead has finally failed in its attempt to reduce mathematics to formal logic. And the *formalism* of Hilbert denies that mathematics does anything more than merely suggest "real" natural entities. Here, mathematics is purely syntactic and instrumentalist, resisting epistemic and ontic interpretation of its theories. The supersymmetry of Superstrings and M-Theory suggests such an ontologically relativist view, and even parallels the ontological relativity of Buddhist *Prasangika Madhyamaka* philosophy.

Mathematical realist/Platonist Gödel assumed mathematical entities to be *observer-independent* real objects. Mathematical entities, for example tensors, really exist "out there", with or without a conscious observer to behold them. An absolute, universal triangle really exists "our there," in spacetime reality for our separate human intellect and experience to "discover", just as Plato told.

Young Wittgenstein's (the *Tractatus*) *conventionalism* is such a realist view, and has often been utilized as an argument for mathematical realism in the sciences. However, the mature Wittgenstein of the 1956 *Remarks on the Foundations of Mathematics* essentially reversed his early realist view for an anti-realist constructivist view. Prudently, the string/M Theory crowd has abandoned such an adventitious realist interpretation.

For the mathematical *intuitionism* of Brouwer, mathematical entities are *constructed* by human intuition as Kant believed, but are not objectively reified existents, and do not exist independently, from their own side, in a relative spacetime, observer-independent "real world out there" (RWOT).

Aristotle's fundamental logical "law of excluded middle"—"either A or not-A"—may be here replaced with von Pauler's "law of connection", that is, everything is connected to everything else (Boaz 2012, "Post-Quantum Logic"); or a paraconsistent multivalent deductive logical system such as Indian Nyaya with its five valued logic. Such anti-essentialist, anti-realist views challenge 2400 years of the Western (Greek) realist presupposition of objective deductive certainty regarding the *absolute* independent separate existence of physical/material reality, including mathematical entities.

I have suggested above that a non-absolutist, non-essentialist interdependent view treads a centrist middle way between the philosophical extremes of a Western independently existent absolute reality—the existential absolutism or substantialism of our prevailing philosophy of Scientific Realism and ontological monistic Scientific Materialism—and an Eastern Idealist nihilistic denial of reality.

Many mathematicians now believe that Gödel and Turing have proven that the logicism of Frege and Russell, and the formalism of Hilbert, are not mathematically possible. It seems we are, as it were, stuck with a constructivist, intuitionist view of the nature of mathematical truth. This of course, greatly displeased the Platonic mathematical realists (Gödel, Russell, Whitehead), as well as Einstein, Bohm and the "hidden variables" realists. It is refreshing here to observe the antirealist, anti-essentialist and constructivist development of the madden-

ing mathematics of the post-Standard Model supersymmetry of M-Theory/String Theory, as epistemic counterpoint to the orthodoxy of Standard Model Scientific Realism, and its fundamentalist dogma, Scientism.

Now this all is intimately linked to physics' Quixotic quest for "Einstein's Dream," an intrinsically vexed unifying Quantum Gravity that quantizes the Gravity Force of Einstein's General Relativity (GRT) unifying it with Standard Model Quantum Field Theory (QFT) which includes Quantum Electrodynamics (QED) and Quantum Chromodynamics (QCD). Such a quantized quantum gravity would resolve the problem of anomalous mystical quantum nonlocality or "quantum entanglement," and with that the problem (for Scientific Realism) of anti-Realism. After all, quantum non-locality, with its Eastern wisdom analog Buddhist boundless emptiness, portends the very collapse of objective reality—the end of a theory-model-observer-independent RWOT ("The Collapse of Objective Reality: Quantum Non-Locality and Buddhist Emptiness", www.davidpaulboaz.org).

The attempted unification of gravity with QFT/QED/QCD, if successful would bridge the seemingly unbridgeable gap between the incomplete quantum world of the very small, and the incomplete cosmological world of the very large (with its logically impossible *ex nihilo* Big Bang cosmogenesis).

Hence, the mathematics of quantum theory in the realm of the micro-world, and the gravity of General Relativity Theory in the realm of the macro realm, have proven hopelessly incompatible. After a half-century of work, a futile, non-renormalizable quantum gravity results when the General Relativity Principal of Equivalence (the equality of uniform gravitational with accelerated frames of reference) is subjected to QED/QCD mathematics, making unification a long way off, if it is logically possible at all (Gödel, p. 48 below). Recall, the Standard Model requires that QCD explain the inconvenient truth, which it cannot do, that neutrons have mass.

The Standard Model is therefore not a finite theory. "Uncontrollable infinities" (Penrose 2003) arise when we attempt to derive the values of the mass and charge of the elementary particles the Model purports to provide.

The "fine structure constant" which governs the strength of the electromagnetic force interactions simply cannot be provided by the Standard Model. We must revise either the Standard Model's Quantum Field Theory (QFT/QED/QCD) or the gravity of Einstein's General Relativity (GRT). This revealing fact further opens the door to the emerging post-Standard Model physics and cosmology of the supersymmetry theories, namely M-Theory and Loop Quantum Gravity.

The ultimate purpose of theory, model or worldview is to facilitate and evolve a more subtle, elegant and inclusive theory, model or worldview. David Finkelstein has pointed out that a theory is a view from a relative cognitive position which necessarily introduces an "idol" or false absolute into the theory. Such tacit theoretical assumptions cannot be proven or corrected within phenomenological level or context of the theory, as the great dialecticians Gödel, Quine, Whitehead, Heidegger, Hegel, Nagarjuna and many others have told. Such false abso-

lutes or idols must be relativised and embraced by a more inclusive theory. "Transcend and include," in the gloss of Ken Wilber.

Finklestein's "universal relativity principle" (Wallace, ed., 2003) precludes grand unified theories of everything, the loftiest idol in the Modernist grail quest for objective, even deductive certainty about everything. This is essentially the Buddhist middle way *Madhyamaka* view: not grasping or clinging to anything, not even the highest, subtlest, most elegant or comprehensive view. Grasping and clinging beget ignorance (*avidya*), both exoteric and esoteric; and human suffering.

The rush to glory in the cognitive wake of grand unification is illumined by Julian Schwinger, developer, with Feynman and Tomonaga, of QED: "It's nothing more than another symptom of the urge that afflicts every generation of physicists—the itch to have all the fundamental questions answered in their own lifetime" (in "How the Universe Works," Crease and Mann, *Atlantic Monthly*, Aug. 1984).

Quantum non-locality and dreams of a final theory. Alas, there can be no "final theory." All of our theories are necessarily incomplete. Only the trans-conceptual unbounded whole (*mahabindu*) is complete. We are at last coming to understand that nature cannot be reduced to conceptual entities (Quine, Rorty, Buddhist *Madhyamaka*, *Advaita Vedanta*). Once again, relative spacetime reality arising from the unbounded whole that is its ultimate ground is ultimately trans-rational.

Physicist Geoffrey Chew, inventor of "Bootstrap Theory" (S-Matrix Topology) on the clarity of non-objective quantum theory:

Every 'particle' is related to every other 'particle,' a highly non-linear mathematical formalism... All concepts are 'bootstrapped'—explained through the overall self-consistency of the conceptual web... The existence of consciousness, along with all other concepts of nature, is necessary for the self-consistency of the whole... There is no continuous space-time. Physical...atomic...reality is described in terms of isolated events that are causally connected but are not embedded in continuous space-time. Space-time is introduced macroscopically, in connection with experimental apparatus, but there is no implication of a microscopic space-time continuum. You should not try to express the principles of quantum mechanics in an *a priori* accepted space-time. That is the flaw of the present situation (in F. Capra, *Uncommon Wisdom*, 1988).

This "flaw of the present situation" is the assumption that the quantum theory describes physically real objective phenomena in an objectively "real" spacetime background. This view presumes to describe matter's basic building blocks, for example the electron, as a classical physical entity extended in classical spacetime with intrinsic physical properties of mass, charge and spin, while *ex hypothesi* denying the electron an objective determinate physical spacetime momentum and location at the instant of collapse of the wave function during observation by an experimental apparatus and an observing consciousness. If the non-classical, non-objective wave/particles and fields of quantum reality have no physical exten-

sion in spacetime—no location and no motion—how can they be said to possess the classical physical properties of mass, charge and spin?

This confusion about the inherent subjectivity of the most successful scientific theory in history is revealing. It implies that our obsessive attachment, our desirous clinging to the physicalist, "scientific" totemic absolutes or idols of such concepts as mass, energy, force, space and time are in dire need of a revisioning, relativizing noetic (subject/object unity) synthesis.

Physicist Henry Stapp remarked, "Quantum entanglement is the most profound scientific discovery of all time." Quantum entanglement entails quantum non-locality. It is the supraluminal or faster than light quantum connectedness of a pair of particles in a single quantum system that may be separated by many light years of space. This of course violates Einstein's neorealist Special Theory of Relativity with its finite light speed limit, thus precluding the realist metaphysic of Modern Scientific Realism (Boaz 2012, Ch. IV). No small matter is at stake here. Platonic metaphysical Realism undergirds the entire edifice of the stridently "objective" physical sciences. And this in the epistemic wake of the profoundly subjectivist quantum theory. Paradigm shifts take a generation or two (Kuhn below).

Stapp also reminds us, echoing Chew, that elementary particles—or strings, loops, or branes—are not independently existing *physical* things or entities, but *information* in "a set of relationships." The ultimate nature of reality now looks more socioculturally intersubjectively relational, informational, and pragmatically interdependent than a "scientific" theory-independent Realist/Materialist epistemology can explain. Clearly, the science and philosophy of the 21st century that unpacks this post-quantum ultimate reality will continue to move toward non-foundational holistic systems and relationship thinking. Perhaps Buddhist *Madhyamaka* can contribute.

Network Theory (Graph Theory) and the inter-disciplinary holism of a top-down dynamic systems methodology wherein the systemic whole gives rise to properties not present at the phenomenological strata of the individual nodes or atomic parts of the system—that is to say, "emergence"—will become increasingly important. Dynamism, not equilibrium, is the future.

The ideological quest of the Modern Enlightenment Project for objective external material substance and equilibrium has largely ignored the Postmodern fact that process and continuous change or non-equilibrium is the norm in physical and social systems (Goldman 2004). Matter/energy, space/time, language/culture and human history are not static fixed entities, but ever changing, evolving interactive, sociocultural relational webs or networks whose spontaneous and unpredictable emergent properties are a result of the interdependent prior causes and conditions that are necessarily constitutive of such relationships.

Matter, energy, force, space, time, meaning, science, mind, causality, reality: the terms are the same as they were 100 years ago, but the realities have profoundly changed. Newton's notion of mass cannot be mathematically fudged into Einstein's more inclusive mass/energy. They both work, but are conceptually, pragmatically and operationally light years apart.

The linear, mechanistic, objective and reductionist causality of Hume and Kant could not conceive of the volitional causality—value, perception, context, karma—of the emerging

noetic science of consciousness. Such an integral noetic science requires sciences of subjective qualities—mind's volition, value, the qualitative, emotion and motivation, introspective contemplative and spiritual experience—as well as a science of objective quantities. Causality has a volitional component; and meaning, even ultimate meaning, is already mythopoetically, noetically embedded in perceived arising reality.

Hence, noetic science requires *acausal* explanation: for example quantum microphysics, quantum nonlocality, Planck scale phenomena, "spiritually empirical" direct yogic spiritual experience (*pratyaksa*), etc.

Human conceptual cognition (but not pristine direct perception) is inherently dualistic, binary/bivalent or dichotomous. The current momentous epistemic paradigm shift from 2400 years of epistemological bipolar Substance Dualism and Platonic and Representational ("Scientific") Realism with their subject/object, spirit/matter split has now at least potentially liberated humanity from the cognitive curse of what Dewey termed "dichotomous thinking," a not so attractive form of cognitive entanglement. The recognition and execution of this cognitive blessing in the lifeworld of the individual—now that requires constant vigilance, and perhaps a little contemplative "mind training."

Such a consciousness shift begins with the awareness that our thinking and feeling awareness—our normal habit of mind—is preconsciously entangled with the emotional/conceptual exoteric, dualistic, dichotomous syntax of language. This is the self-created reality that we choose, moment to moment. To become immediately aware of the "always already present" cognitively subtler *esoteric* (preconscious emotional and mental), and even trans-conceptual "*innermost esoteric*" (supraconscious "spiritual") strata of cognitive life is the cognitive paradigm shattering consummation to be wished. Our Premodern wisdom traditions teach of the simultaneous unity of these three or even four consciousness dimensions: exoteric outer, esoteric inner, innermost esoteric, and nondual, which is utterly trans-conceptual. Any view which fails to consider all of these consciousness strata invites error and bias.

Since Aristotle, "man is the rational animal." Twentieth century depth psychology (the psychology of the unconscious), and recent research in economics (Kahneman and Tversky) have demonstrated the "irrationality" of our "rationally self-interested" behavior. We are rather, the emotional animal, scarcely rational at all regarding our own desire and motivation. It is perhaps useful to stay present to this psychological truth of emotional cognitive entanglement—with all our cognitive biases and logically fallacious thinking—when emotionally reacting to, or defending some concept or belief of which we are relatively, or even absolutely certain.

As to quantum entanglement, it was not an entirely welcome (Einstein and the "hidden variables" realists refused to accept it) cognitive adventure that nevertheless opened into this incipient indeterminist pragmatic noetic holism in the epistemology of Science. To liberally paraphrase W. V. Quine, "Irrefragability, thy name is unbounded wholeness." Thus are the epistemology of Science and the ontology of Philosophy "always already" intertextually entwined in an intersubjective interdependent network of physical, linguistic, sociocultural and genetic relationships.

What physics needs now is a cognitively courageous theoretical leap (in fear and trembling) from the 2400 year old self-sealing dogmatic presumption of the metaphysical fundamentalism of foundational Scientific Realism and monistic Substance Physicalism/Materialism. Such a paradigm shift is an aperture to a perspicuous new ontological relativity, and a non-realist, non-materialist, non-idealist, nonlocal, non-logocentric, acausal, indeterminate, top down, observer-dependent, theory-dependent, background-dependent, interdependent centrist middle way physics paradigm that avoids skepticism and nihilism. That's all.

Alan Wallace (2007), leading edge philosopher of science and Buddhist practitioner and translator, describes the ontology and epistemology of such a non-essentialist centrist view thusly: "Everything that exists lacks an intrinsic nature and identity...and none bears a self-defining independent epistemology." This is the epistemic pith and gist of the Buddhist Middle Way *Prasangika Madhyamaka* view, widely considered the pinnacle of the Buddhist *Sutrayana* view, and the foundation for the *Vajrayana* ultimate view of *Dzogchen*, the Great Perfection (Great Completion), the very completion of the Buddhist Mahayana Causal Vehicle Two Truths (relative and ultimate) duality.

Such an interdependent epistemology offers methodological advantages over theory-independent ontologies for, as we have just seen, it permits new emergent properties for us to "discover" that are absent in the basal particulars of a given system.

So things, processes, events and persons are not independently real, but abide in a relationship of *interdependence*. We participate together—whether we believe it or not—in an intersubjective interdependent *kosmic* harmony with all of nature, as Nagarjuna, Chandrakirti, Longchenpa, Dirac, Einstein, Bohr, Heisenberg, Bohm, Wigner, Wheeler, Stapp and Chew have told. The relationship of our concept-belief systems to ontology—"what there is"—is always equivocal, relative and tenuous. Alas, our habitual objectivist "quest for certainty" is doomed to failure.

Perhaps then, we should not expect that ultimate reality (emptiness) correspond to or cohere with our objective spacetime (form) relative-conventional concepts about it. As the Postmodern bumper sticker told, "Don't believe everything you think."

A judicious blend of relative truths, East and West,
set in the primordial context of radical emptiness,
is a very sane approach to the human situation.

—Ken Wilber

Further, as we have seen, relative-conventional spacetime "reality," the seemingly absolute existence of physical stuff (form) arising in the primordial ground of ultimate truth, is dependent upon our atavistic self-reifying perceptual imputation and conceptual designation.

Moreover, as Alan Wallace reminds us, on the accord of the Indo-Tibetan Buddhist view, our concepts, names and terms (*namarupa*)—reality, existence, meaning, knowledge, truth, subject, object, experience, and the rest—all have different *practical* uses. None of these can be said to have an absolute or ultimate meaning. Indeed they have no objective *independent* meaning beyond the definitions we stipulate, impute and designate to them. We *choose* these

definitions pragmatically according to apparent practical efficacy in accord with our interobjective social and intersubjective cultural experience and concept/belief systems. They are not pre-determined in some essential absolutely existent objective (or subjective) reality. This pragmatic Buddhist middle way parallels the view of the Postmodern ontological relativity of Quine and the Neo-pragmatists.

Toward an ontologically relative centrist view. W. V. Quine has pointed out in his enduring essay "Ontological Relativity" (1969), that ontology—"what there is"—is dependent upon the intersubjective cultural reality assumptions of our individual and collective "web of belief" (Wittgenstein's "forms of life"). For Quine there are no independently existing objective things, no facts, only semiotic linguistic meanings ("Quine: ontological relativity" below).

On the centrist Buddhist view, in opposition to the objectivist, realist/essentialist metaphysic of Scientific and common sense Realism, phenomena have no objective, absolute, independent existence. However they do exist relative-conventionally, interdependently, in dependence upon prior relative causes and conditions arising within their primordial ultimate causal matrix. This perennial "two truths" ontology—objective relative truth/subjective ultimate truth—is not only a profound truth of our experienced realities, but as well, a pragmatically useful methodological tool.

Therefore, let us consider henceforth that phenomenal reality does not exist independently and absolutely, but only interdependently and relative-conventionally, as a result of prior causes and conditions, and that phenomena are bestowed this reality via our perceptual imputation and conceptual designation. Our objective and subjective conventionally real spacetime realities are absent "any shred" (Nagarjuna) of absolute or intrinsic existence.

Does this mean that the cosmos we perceive is merely a construct of language? Are real trees and stars and people but the idealist product of mind-created linguistic utterance? No. Within a given relative-conventional conceptual frame of reference—for example the belief system of both common sense and Scientific Realism—spacetime phenomena arising from the nondual, nonlocal causal nexus or matrix that is the primordial emptiness (not nothingness) base of reality is not merely illusory; it is conventionally, really real. *Trees and stars and people exist. But it is how they exist that is in question. They exist not independently of a perceiving consciousness, but interdependently and intersubjectively, as a causal result of an indefinite number of interrelated preceding causal events, as we have seen many times throughout this cognitive odyssey. They exist then, relative to these prior causes and conditions. But once more, this relative interdependent reality of objectively real things is utterly devoid of inherent intrinsic or absolute existence.*

This Buddhist Middle Way (*Prasangika Madhyamaka*), then, suggests a centrist view between the philosophical extremes of the nihilism of Eastern metaphysical Idealism and the existential permanence, absolutism or eternalism of Western Modernist metaphysical Realism and Materialism. This view also eschews the pathological pluralism, independence and nihilism of Postmodern cultural relativity. So where does such noetic heresy lead us?

The Nominalism and instrumentalist anti-essentialist anti-Realism of the Copenhagen Interpretation of the Quantum Theory (Bohr, Heisenberg, Born, Pauli), along with W. V. Quine's (1969) work in logic and epistemology, the mathematics of Kurt Gödel and John Bell,

the historical and sociological work of Kuhn and Lakatos, and Buddhist *Madhyamaka* epistemology are all steps toward such a post-Postmodern pragmatic ontological relativity in the brave new world of post-quantum, post-Standard Model physics, neuroscience and neurobiology, in the social and behavioral sciences, including the emerging Science of Consciousness.

We have seen that pragmatic Middle Way Buddhist (Prasangika) epistemology has clearly shown in its explication of the nature of our perennial Two Truths—relative and ultimate—that arising material reality may be interdependently, relative-conventionally real, yet need not be independently ultimately real (Garfield 1995, Wallace 2007, HH the Dalai Lama 2009). This is indeed a very useful conventional duality. Could such a centrist pragmatic, non-foundational relative-conventional Realism offer epistemic solace in the wake of the failed foundational or existential absolutist Realism of Modernity with its obsessive objectivist, physicalist Science and philosophy?

Again, for Tibetan *Vajrayana* Buddhism the spacetime manifold of relative-conventional *form* arises dualistically, as a result of prior causes and conditions, from the all-inclusive unbounded whole that is its nonlocal, nondual basal *emptiness* source or ground.

Western analogs to this view are the Neopragmatists, especially Rorty, the quintessentially pragmatic and pluralistic William James' "Neutral Monism" ("twoness in one"), and the Quinean semiotic holism of Quine's student Donald Davidson in his supervenience theory of mind, "Anomalous Monism." Unfortunately, none of these has moved beyond the functionalist objectivist ontic limit of Physicalism/Materialism, although Rorty comes close.

However, with the pervasive but hidden metaphysics of monistic Materialism (with its taboo of subjectivity) as the default ontology for the culture of the prevailing stridently physicalist physics Standard Model paradigm, most scientists and others under sway of what Sheldrake terms the sinister "Science Delusion" (2012) shall never experience, or even suspect, any esoteric subjective, ontologically subtler or deeper, even spiritual reality beyond the merely obvious exoteric, conceptual, objective spacetime physical dimension. And thus has Western spirituality been ruined.

If we are more than mere physical automatons, then becoming paradigmatically mired in this usually unconscious, dogmatic, linguistic epistemic presumption of mechanistic Scientific Realism/Materialism ("Scientism")—a gothic observer-independent, theory-independent, background-independent utterly separate "real world out there"—is indeed horrific. We lonely separate observers are left out in the cosmic cold. As Ken Wilber quipped, "Is this any way to treat a universe?" Is this any way to treat ourselves?

Let us remember that it is the entering in to non-physical, nondual, nonlinear, chaotic, transrational, atemporal "spooky", contemplative *now* that transforms separate observer/researcher/theorist into included, active, ontologically relative instantiated participant in this numinous vast unbounded whole that is ultimate Reality-Being Itself. The choice to open and enter into it is the integral noetic practice for both scientific and "spiritual" practitioners, and for those few who practice both.

This subtle nondual all-embracing Pythagorean ultimate *kosmos*/ground of the merely dualistic Apollonian physical cosmos is ontologically prior to physics' Planck Scale (Planck

time, Planck distance, Planck energy) epistemic limit and thus cannot, even in principle, be objectified and described or explained by physics and mathematics. So it often goes unrecognized.

As we have seen, this ultimate reality ground or “supreme source” of arising spacetime reality is utterly ineffable to conceptual mind, but not necessarily to a noetically trained contemplative mind. The ignorance (*avidya*) of or reductive conflation of these two modalities of the one nondual reality is disastrous. This urgent relative distinction between objective concept mind and subjective trans-conceptual contemplative mind opens a centrist middle way to the resolution of many of our discursive concept mind’s bivalent binary confusions, anomalies and paradoxes—especially the epistemic and ontic status of experientially present but conceptually absent indiscernibles—in the intellectual, scientific and spiritual history of our species.

Again, the pragmatic resolution to this conundrum lies in *praxis*, the analytic and contemplative practice of objective and subjective recognition of the prior ontic unity of epistemological subject and object. We need no longer indulge the cognitive pathology of a bipolar, schizoid split between the inherent objective and subjective aspects of our nature. Recent neuroscience is now coming to understand this (mindandlife.org).

The “epistemology of presence” (Klein) is, conventionally speaking, the process of recognition of this prior ontological unity of here now “open awareness” presence (*vidya*, *rigpa*, *shekina*), our actual “supreme identity” with the nondual unbroken, unbounded whole of the *kosmic* primordial ground or source of being (*ontos*, *sein*, *bhava*). Our actual relationship to That (*Tat*, suchness, *quidditas*) is one of identity.

This bright presence abides and is cognitively embedded in the subjective depth of body, voice and mind of the human individual and thus of humankind. Its objective expression in our relative spacetime reality is the atavistic nondual wisdom of emptiness as spontaneous kind and compassionate lifeworld conduct. Here humanity is the numinous primeval subject of our collective primordial wisdom tradition in all of its premodern, Modern and Postmodern raiment; or so it is told through the differing metaphors of the subtlest “innermost esoteric” and nondual teaching of our premodern primary wisdom traditions (Boaz 2009).

Niels Bohr seems to have understood this “innermost esoteric” truth. Despite his perfunctory instrumentalist attempts to “save the appearances,” Bohr, author of the quantum Principle of Complementarity, has demonstrated a thoroughgoing understanding of the logically circular complementarity—the mutuality—of the Taoist *yin* and *yang* that represents the prior unity of Modern objective reason and premodern subjective mysticism.

The human binary concept-mind requires complementary metaphors—wave/particle, *yin/yang*, subjective/objective, esoteric/exoteric, becoming/being—in order to understand the acausal subjectivity of the ultimately non-conceptual, non-pictorial, non-objectivist nature of the quantum description of appearing reality present to its consciousness. Just so, our habitual dualistic concept-mind needs such complementary cognition to understand its relationship of identity to the unbounded whole that is the very nature of mind.

This new quantum reality, unlike the corresponding classical relativistic view (Bohr’s Correspondence Principle) cannot be conceptually pictured. However, Bohr, who used the ho-

listic *yin/yang Tai Chi* as his Danish coat of arms, must have seen this profoundly noetic symbol as representing his view of reality. Bohr was considered a mystic by many of his colleagues. Pauli quipped that the quantum theory itself is “lucid mysticism.”

The discovery of non-Euclidian geometries in the 19th century (Lobachevsky, Riemann) mathematically proved that deductive logic could not grasp ultimate reality. Just so, 20th century quantum theory—Heisenberg's matrix mechanics and Schrödinger's elegant wave mechanics (Schrödinger proved that the two are mathematically equivalent)—terminated the logical link between deductive reason and this subtle nature or essence of mind that is ultimate reality itself.

Bohr explains, “What we observe is not nature itself, but nature exposed to our method of questioning... Everything we call real is made of things that cannot be regarded as real.” Again, the anti-essentialist, anti-realist Copenhagen Interpretation of Bohr and Heisenberg (1929) holds that the epistemology of Science (physics) describes an interdependent relationship of human experience, not an independently existing objective reality “out there.”

Curiously, the observer/theory-dependent, subjectivist Copenhagen Interpretation enlists the now defunct observer/theory-independent, objectivist, determinist “verification principle” of the Logical Positivists (Carnap, Ayer, Gödel, Wittgenstein of the *Tractatus*) to buttress its radical epistemic indeterminism. This is indeed curious, for, although Logical Positivism was at its zenith, Bohr was an astute philosopher of science with a pronounced anti-realist, even mystical cognitive inclination that drove Einstein up the proverbial wall. Peer pressure perhaps?

We can now see that this notion of the unitary complementarity of logically opposed or contradictory conceptual principles, and paradigms—the dualistic binary horns of dilemma—is key to a propitious, centrist, pragmatic, pluralist and contemplative resolution of the perennial Science/Spirituality, matter/mind conundrum, and to the “problem” of soteriology or psycho-spiritual awakening/liberation.

Indeed, this radical awareness of the mutual complementarity of the slings and arrows of outrageous duality of human existence, our two ways of being here—objective and subjective—is an extremely useful cognitive habit, a practical ongoing lifeworld meditation, an analogue, or even a precursor to the subject-object unified perception of nondual Buddha cognition (*samatajnana*).

We have seen that these two conceptual paradigms—objective and subjective—correspond approximately to the perennial Two Truths of our wisdom traditions: Relative Truth (*samvriti satya* “concealer truths”) of physical/mental form, and the emptiness/openness of its originary primordial ground or Ultimate Truth (*paramartha satya*). These Two Truths abide in the unified utter simplicity and primordial symmetry of the cognitively trans-conceptual but not spacetime transcendent singular, interdependent nondual one truth—“invariant across all cognitive frames of reference” (Wallace)—the “one taste” of the all-embracing perfectly subjective unbounded whole.

This vast whole of reality transcends our epistemic concepts, yet ontologically embraces the various views of the traditions in which it arises; for example, the perfect sphere of Buddhist *Dzogchen*, or of Essence *Mahamudra*, or of *Mahashunyata*/great emptiness, or of Shankara's

nondual *Nirguna* (empty of attributes) *Brahman*, or of Bohr's Tao that is beyond heaven and earth. This unbroken whole is often viewed in the traditions as the fundamental ontological unity—by whatever name—of all bifurcated (*avidya*) dualistically appearing physical and mental objective spacetime phenomenal reality.

We must here note that while this nondual one truth transcends, subsumes, and embraces these many conventional names (*namarupa*) and conceptual designations for the ultimate basis of reality—that is to say, nondual Reality "as it is" prior to our concepts and beliefs about it—these sacred designations are decidedly not, from the relative view of the practice of the spiritual path, "all the same."

Yes, we are taught by the masters that awakening, enlightenment, liberation, Buddha Nature is "already accomplished" at the heart (*hridayam*) of each human being. Yet, if one is to *realize and actualize* this liberating potential of the Path in the everyday lifeworld, one must commit to practice just one path, and that under the guidance of, and with great devotion (*bhakti*) to entering in the primordial mindstream of a qualified master in the context of a specific spiritual lineage and community. Without such a relaxed feeling practice commitment, the spiritual path is, I suspect, mostly social pastime or scholarly self-stimulation. I can attest that both of these limits may be temporarily useful.

It is as well, useful to remember while engaging one's relative path—conscious or even unconscious horizontal, or supraconscious vertical—that from the nondual, ultimate view, the liberating Result or Fruition of the Path does not have a relative cause. While Buddhism's "interdependent arising" of mental and physical form (*pratitya samutpada/tendrel*)—the future arises in dependence upon what is happening now—always obtains, yet from the ultimate or nondual view, being good now with the intention to achieve a future reward is not so good.

Indeed, Dōgen's and Suzuki Roshi's "gaining idea," our various egoic seeking strategies for the ultimate happiness goal of some future enlightenment may derail one's practice by ignoring and negating the eternal *now* that is liberation itself. As Chekawa Yeshe Dorje points out in his *Seven Points of Mind Training*, "Surrender any hope of fruition." Thus do we "make the *path* the goal." As we have seen, we cannot *become* happy later; but we can *be* happy now.

Let us remember—moment to moment—the great teaching that there exists only this moment *now*. Past is past. Future is future. The ultimate happiness that is liberation (*vidya*) from ignorance (*avidya*) is recognition of that numinous presence of the great unbroken whole, "always already present"—here now and nowhere else—and thus cannot be *caused* at some future time (Dōgen below, and Boaz 2009, "Does Buddhahood Have a Cause?").

Thus we "just sit," and practice mindfulness, and the active engaged wisdom of kindness in our everyday lifeworld. This irony of being fully present to what arises *now* might well be called the paradox of the path.

So let us now once again depart such unbridled philosophical (the prior an present unity of love/*philo* and wisdom/*sophia*) speculation—a pragmatic, if not logically irrefragable way of knowing (and clearly not for the metaphysically squeamish)—and continue our exploration by briefly considering recent developments in theoretical physics, mathematical logic, con-

sciousness studies, and a Buddhist centrist epistemology that may further our integral noetic view. First, physics.

Revisioning the Standard Model. Physics venerable, robust Standard Model of particles and forces, with its relativistic quantum field theory (QFT/QED), is inconsistent with Einstein's classical (non-quantum) gravity theory as expressed in his General Relativity Theory (GRT). The theoretical fix here requires a post-Standard Model quantum gravity theory.

First let's look at some of the considerable problems with our prodigious Standard Model of particles and forces, and its Λ CDM cosmology model.

1) The free constants, the values which define the properties of particles/fields—their masses and the strength of the forces—remain utterly unexplained.

2) Neutrino sector anomalies: neutrino oscillations and their non-zero mass is a problem for quantum chromodynamics. The mass asymmetry between neutrinos and anti-neutrinos violates Relativistic Quantum Field Theory mathematics.

As to mass asymmetry, CP (charge/parity) violation is the broken symmetry between matter particles and antiparticles—matter/antimatter asymmetry. Symmetry means equal amounts of matter and antimatter in the cosmos. So where is the antimatter? Why are we composed of matter instead of antimatter? Without this symmetry breaking we would not be here, nor would anything else. If matter and antimatter have a mirror (parity) symmetry, then theory requires that, with the creation, awhile back, of each and every matter particle there must be an antiparticle. Where are they? We can account for very few, although a very few of them are in our positron emission tomography (PET) scans. The Standard Model cannot explain this asymmetry of matter and antimatter.

3) Is the recent discovery of a “Higgs-like” particle (CERN 2012) indeed the advent of the holy grail that is the magical Higgs boson. This theoretically omnipresent diaphanous zero spin, zero charge Higgs boson (H^0) will be a perturbation in the putative Higgs Field—the grand desideratum which proves the existence of the Higgs Field which is the result of the Higgs Mechanism for electroweak symmetry breaking (EWSB) through which—in a mysterious yet still to be fully explained manner—particles acquire mass. Thus was the Higgs boson bestowed by physicist Leon Lederman—discoverer of the bottom quark—with the unfortunate epithet “the God Particle.”

This proto-religious mystical field is omnipresent in all of the matter/energy throughout the physical and material cosmos. It is present in the inner space of the nuclei of all atomic structure. It is present throughout cosmological outer space, even of the quantum vacuum. It is the physical matrix ground—analogous to the trans-physical basal emptiness matrix ground of Buddhist *Dzogchen*, and of *Nirguna* Brahman of *Advaita* Vedanta—of all physical spacetime existence.

Standard Model unification of the Weak Nuclear Force with the Electromagnetic Force in order to become the Electroweak Force requires the Higgs field. Without it, or something like it, electroweak symmetry breaking does not occur, so there is no mass, and physical matter does not arise. If we decline to presume that being, and even intelligence, is only physical, we need not despair that the absence of mere matter is nothingness. (Although without matter,

finding a parking space should be less problematic.) We shall see that throughout this matter/mind/spirit odyssey, there are more things in heaven and earth than are dreamt of in materialist philosophies.

The perfect symmetry of the unbroken whole must be very beautiful. But not without an observing consciousness to behold it. Most of us, given our present evolutionary stage of psycho-spiritual *self* development tend to favor a consciousness expression that is physically embodied. And embodied consciousness needs the breath of life. Consciousness itself, the primordial ground instantiated in such fortuitous embodiment does not. Thus the existential urgency of such embodiment, and of some physical ground—like the Higgs field. It's good to be here!

The physicalist/materialist Standard Model needs the Higgs field. Without it the consistency of the theory collapses into trans-conceptual emptiness, or worse, some nihilistic nothingness. Come to think about it, all physical/material reality, Higgs stuff included, is always, already collapsed into, and arises from this unbounded primordial emptiness ground, the very source of this, our physical embodiment ground. What do you think?

4) The Standard Model cannot explain, or explain away the *ad hoc* utterly mystical Dark Matter and Dark Energy that together constitute about 95 percent of the known physical universe (the Cosmological Constant Problem).

In 1900 Lord Kelvin spoke of only “two small clouds” on the horizon of physics. Those two clouds portended 1) Quantum Theory and 2) General Relativity Theory leading to the paradigm shift from classical deterministic Newtonian Mechanics to the epistemic indeterminism of Quantum Mechanics. Dark Energy, gravitons, and consciousness may now represent the new “small clouds” on the epistemic horizon that portend that next shift to a more inclusive paradigm that transcends, subsumes and unifies quantum QFT/QED/QCD with GRT in an emerging 21st century revolution that includes our inherent individual and collective noetic consciousness. Stay tuned.

5) General Relativity and Quantum Field Theory—the two pillars of the Standard Model—are mathematically incompatible (attempts to merge the equations result in the “problem of infinities”) at or near the Planck length (10^{-35} centimeters) and the Planck time (10^{-43} seconds), logically precluding research on black holes, and the mystical, biblical First Cause physical singularity called the hot inflationary Big Bang.

Moreover, tentative new success of the ten year old quest for gravitons, the gravity force carrier, portends a radically revised theory of gravity. Perhaps such a revision will make GRT consistent with QFT. The *continuous* spacetime curvature of Einstein's GRT in the large scale structure of the cosmos logically and epistemologically contradicts the extreme spacetime curvature of action at the miniscule *discontinuous* quantum scale. What to do?

6) QFT/QED remains problematic with its present “dippy hocus pocus” (Feynman) “mathematical fudge” (albeit a pragmatically useful fudge for which he was awarded the Nobel prize) of QED *renormalization*, with the unhappy result that the Electroweak Interaction theory is still dubious, protracting into the far distant future, if at all, any truly Grand Unified Theory (GUT) of the three fundamental forces of nature, namely the Electromagnetic Force, the

Strong Nuclear or color force, and the Weak Force; and without such a GUT a Theory of Everything (TOE)—that learned hubristic consummation to be wished—that unifies these three forces with Einstein’s Gravity Force is logically and empirically precluded;

7) The Quantum Uncertainty Principle and quantum nonlocality (quantum entanglement) remain unexplained.

8) The Standard Model seems unable to explain the serious theoretical and philosophical problems of a blatantly supernatural Big Bang cosmology (Lerner 1992, Boaz 2012). This includes the perennial Big Bang problems of; 1) the logical and physical impossibility (breach of laws of logic and laws of physics) of an *ex nihilo* Big Bang singularity; 2) the large scale smoothness problem; 3) the flatness problem; 4) the age paradox (a 12 to 15 billion year old universe is but half the age of some of the galaxies it contains); 5) the continued failure in the mathematics of Big Bang inflation theories (Lerner 1992); and 6) increasing inflation/acceleration driven by what? Dark energy?

More recent Big Bang problems involve inflation theory’s missing mass, microwave background radiation (MBR) misinterpretation and red shift anomalies, deceleration, and much more (google “Big Bang Problems”).

Do we really have a Higgs boson? In 2012 CERN announced that they have found it! Later tweaking seems to have confirmed that it does indeed have the requisite physical parameters.

Yet there are some problems with this fifty year old Higgs grail quest. 1) Does the epistemic fudge in the incomplete mathematics of the Higgs Field render it pragmatically useful, like the fudge of QED renormalization (with its gifts of the transistor, the laser, the semiconductor), or does this bit of theoretical conjuring relegate the God Particle to that class of semiotic entities fabricated by the conceptual imputation and designation—under duress of Big Science—of the prodigious intellectual hubris of human discursive concept-mind? Let’s remember that the trillion dollar Higgs sector—key to the entire Standard Model— is under a bit of funding pressure to produce results.

Indeed, if the Postmodern, mature Wittgenstein, Quine, and the Neo-pragmatists are correct—that scientific knowledge is necessarily corrigible, conjectural contingent and linguistically socioculturally constructed—then none of its core theoretical conclusions can be necessary, certain and universal. Such results must be validated, or vindicated on purely pragmatic grounds. And that’s OK. But let this Postmodern truth of “ontological relativity” be acknowledged in the hallowed halls of Modern physical and social sciences.

Such an awareness shall then reveal and heal Science’s epistemic pretention to absolute objective certainty—Dewey’s “dichotomous thinking” with its habitual fearful “quest for certainty”—along with its related presumption of an objectivist metaphysic of foundational absolute existential Realism/Physicalism/Materialism.

Thus may this frightful beast of the Modernist “scientific” urge to objective certainty be tamed through a more pragmatic, centrist epistemology wherein Science permits itself an ambitious new methodological freedom that includes the study of consciousness; that includes not just mere third person empirical objective data, but first person introspective, even

subjective contemplative evidentiary fields, in the noble spirit of the “radical empiricism” of Wundt and James.

Physics’ Standard Model odyssey into the brave new world of inherently subjective, unobservable trans-empirical phenomena—the conceptually, even mathematically ineffable quantum world of quarks, leptons and Higgs bosons and their fields—is a profound adaptation toward such a centrist outcome. Perhaps, with this new inchoate noetic physics “rising culture” (Toynbee), forced as it is, by the inevitability of radically subjectivist Relativistic Quantum Field Theory, the diaphanous, omnipresent Higgs, and the “spooky” (Einstein) nonlocal nondual nature of quantum vacuum cosmology, all will be well in the noble house that physics built.

2) Let us assume the Panglossian view that there was no error in the processing of trillions of points of recorded Higgs data in order to “discover” the fabulously fleeting production by an unstable decaying particle of just two high energy photons. And if there were an error, who would or could really know?

3) The physics by which the mystical Higgs Field provides the perfectly precise quantity of mass to each massive particle, while leaving the mass-less particles unchanged, is not at all understood, if it can ever be conceptually understood. That is to say, the core theory of the Higgs Mechanism remains mathematically incomplete (Zebuhr, Hotson, Phipps, Gulko, *Infinite Energy*, Vol. 18/105, 2012).

We must remember that Standard Model methodology utilizes precious little cause and effect empirical, observational reasoning. It is rather, a necessary speculative concatenation of theoretical and mathematical assumptions where, due to the minute scale of the data—beyond the empirical reach of sense experience, empirical experiment, and the bivalent reach of conceptual mind—hard experimental results are virtually precluded. Well and good. That is the intrinsic nature of this subjective beast. But it must give us pause.

Now, in early 2017 the physical and mathematical parameters of the putative new Higgs boson have met the expectations of the CERN physicists who have declared to be *the* Higgs particle, we still do not know how, or if it is responsible for all of the mass in the timeless cosmos. Does such a theoretical conjecture admit of scientific or mathematical proof? How it is that this wondrous particle creates or bestows mass, like you and me, is of course, the trillion dollar question of this half century adventure. Higgs miracle, or Big Science Higgs farce? Let us follow this queer undertaking with a modicum of informed, healthy skepticism.

In summary, the several “small clouds” that portend the paradigm shift from Standard Model physics to a more inclusive post-Standard Model view: 1) a non-renormalizable QCD which fails to predict neutrino mass; 2) dark matter and dark energy (the problem of the cosmological constant); 3) the Big Bang problems; 4) gravity theory problems (no gravitons); 5) Higgs uncertainty, 6) the Problem of Consciousness (see below).

An historiographic note. Remember that theory—scientific or otherwise—is evolutionary and historiographic; its interpretations change and evolve over time. Nearly all current scientific theories have evolved from earlier theories that are now considered incomplete or incorrect. Professor Steven Goldman has pointed out that none of the scientific

theories of today were extent one hundred years ago. The theories of today have entirely replaced yesterday's theories. Should we not then assume that the scientific theories presently in vogue will be replaced two hundred, or one hundred, or even fifty years hence?

Perhaps then, science does not provide us with knowledge or truth, but highly informed opinion. Perhaps no scientific theory—no matter the research, capital and belief invested in it, no matter how sacred, or how elegant, or how practical the results—should be considered certain universal knowledge or truth. Perhaps then, as suggested above, scientific theory is informed socio-cultural history, not indubitable foundational truth (see Kuhn below). Indeed, I have here throughout presumed this unproven and unprovable metaphysical assumption. Many particle physicists, cosmologists and philosophers of physics and cosmology would agree.

As to our species fearful perennial “quest for certainty” (Dewey), I have here argued, with the Postmodernists and premodern Buddhist middle way *Prasangika*, that scientific knowledge, indeed all concept/belief relative-conventional knowledge is a construction or fabrication of the intersubjective (cultural) and interobjective (social) consciousness of the beautiful, inherently non-rational, and often irrational mind of human beings, and therefore always involves non-objective evaluative ideological and institutional sociocultural assumption and belief networks. Science can no longer claim to “discover” a pre-given, pre-existing independently existent reality “out there”. Scientific knowledge is ontologically relative; inextricably embedded in society, economics and culture—our relative-conventional “web of belief” (Quine).

Moreover, we tragically limit our individual and collective knowledge—objective intellectual, scientific and philosophical knowledge, and as well, our emotional psycho-spiritual growth—by our subjective largely preconscious emotional attachment to and defense of these ubiquitous deep background cultural concept/belief systems. This must include our economic and egoic attachment to the leviathan of “Big Science” with its funding and ideological bias in support of the Standard Model, its trillions in funding, and thousands of jobs, not to mention prestigious academic careers.

The problem and opportunity of consciousness. On a freezing eve deep in November of 1619, after an intense day of prayer and meditation, the brilliant 23 year old mathematician René Descartes (1596-1659) had an amazing dream. Upon this epiphany, and through later reflection, he envisaged a future unified science that revealed—with an objective mathematical certainty to a separate individual human conceptual consciousness—the ultimate nature of mind. This vision, based as it was in his atavistically conditioned “web of belief” assumed reality to be comprised of two ontologically separate, independent substances, namely, mind and matter. On this assumption such a unified science could eventually come to know, purely objectively, the very nature of human consciousness, and its experienced reality, with the deductive certainty of the proofs of geometry, with which he was quite fluent.

Thus began 400 years of our adventitious quest for an indubitable foundational Truth, an infallible, objectively certain knowledge of appearing reality. Descartes and Galileo (1564-1642), with their Platonic Rationalism and Aristotelian naturalism, and then Newton (1642-

1727)—whom Hume called "the greatest and rarest that ever arose for the ornament and instruction of the species"—framed the Modernist mechanistic objectivist picture of today's much valorized foundational functionalist Scientific Materialism. This picture set in relief the appearing physical object against its subjective consciousness ground. The cognitive pictorial elements of this consciousness masterpiece—the duality of matter and mind—unfortunately became quickly stipulated as ontologically separate, language and theory-independent (existing independently of our theories and beliefs about them) existent substances, entities, or properties (for Hume, bundles of properties). Thus was "Substance Dualism" brought into the emerging world of Modernity. Indeed, this ontic view gave birth to the Modern mind.

This mind-body dualism holds that both mind and matter are "real" properties of spacetime reality, but neither property can be reduced to, or explained in terms of the other. Thus arises the intractable "interaction problem", the epistemic bane for both Substance Dualism and Property Dualism. If mind and body are separate dimensions, how do they interact, causally or otherwise? And clearly they do interact. Our mentations cause, or in some way facilitate our physical activity.

Much paper and ink have been expended in service of causal Interactionism, with far from conclusive results. Behaviorism, Parallelism and Occasionalism tweaks have fared no better. Adding insight to injury, the acausal Quantum Field Theory has radically thickened this epistemic plot through its apparent demonstration that the laws of physics are not causally determined, and thus are indeterministic; a Postmodern shock to the system of the entire cause and effect orthodoxy of Modern Science.

Another vexing problem for mind-body Dualism, whether construed as separate substances or realms, or as Hume's bunch of properties, is the astounding "unity of consciousness". How is it that the experience of our senses, arising from different structures in brain, become unified into a single unified instant, and then an ongoing stream of immaterial consciousness/mind? Such a scenario would seem to require a definition of the nature of non-physical mind, or a description of the relationship among the "bundles" of properties that become such an immaterial consciousness unity.

What in heaven and earth could an immaterial substance that unifies our disparate sense experience into a unified state of a fully functioning consciousness possibly be? Neither the "consciousness theory", that consciousness itself is a substance, nor anti-theory tacks have fared well with students of consciousness.

However, an anti-theory view that relative-conventional dualistic semiotic discursive conceptual thinking cannot, in principle, penetrate the nondual ultimate reality that is consciousness itself, in which relative-conventional human consciousness is instantiated opens a trans-rational cognitive aperture that permits noetic contemplative technology and methodology. This is a good thing!

Epiphenomenalism is another approach to the interaction problem. It propounds that mental events emerge from and are indeed caused by physical events, without any causal influence upon these physical events. This is astonishingly counterintuitive and counter evolutionary. That our mental experience and states cannot and do not effect or change our

lifeworld conduct through historical sociocultural space and time is quite incredible, and thus leaves the problem where we found it.

The ontological alternative to Dualism, should it be found wanting, is Monism: Idealism, the material dimension is ultimately Mind; or Materialism, ultimately, it's all just physical.

The question of the relation of this dynamic duo of mind and matter to the trans-conceptual, non-logocentric basal ontological ground in which it arises, is little discussed in Modern Philosophy. We shall suggest below a speculative, noetic (body/mind/spirit unity), centrist notion as to this cardinal relationship between relative human consciousness (*vikalpa*) and its nondual ultimate primordial base (*gzhi*, *citatta*, *dharmadhatu*, spirit) that is no less than the very nature of the vast emptiness expanse of mind/being/consciousness itself.

What then is the actual relation of physical properties to mental properties; of the dimension of body/matter to mind/spirit; and how in the world do they interact? That is the very question of being, of our being here, and our exoteric and esoteric awareness/consciousness of it.

Because our objective and subjective mental experience seems so different from our physical body experience, there exists a *prima facie* problem of continuity of the two. Thus the Modern "mind-body problem" became gradually cast in cognitive stone; and there hasn't been a moment's ontic peace since.

This 17th century epical mind-matter duality launched the great scientific and cultural revolution called Modernity, followed by its 20th century intellectual and social Postmodern cynical, if not nihilistic backlash. And this is nothing more or less than the Western intersubjective cultural preconscious and even conscious "web of belief" that defines who we are. Or rather, who we think we are. We might do well to recall here the Postmodern wisdom of a certain bumper sticker: "Don't believe everything you think"; and don't defend everything you believe. We limit ourselves most by our emotional attachment to our present concepts and beliefs. Do we not?

For our all to brief exploration here, we shall subsume the various species of this ever-present mind-body problem—the problems of ontology, the embodied self, causality, intentionality—under the rubric of the core "problem of consciousness".

"Descartes Dream" is still just a dream, albeit today, now, this dream has become an integral noetic trend that reveals, not an idealized, objectively unified science, but the possibility of a Science of Consciousness that includes both faces of our human being here: exoteric objective experience, and our inner esoteric subjective experience, including spiritual experience.

The foundational principle of this new noetic paradigm (organized belief system) science is the ontologically prior, interdependent unity of physical and mental form with the basal emptiness/openness consciousness ground in which it arises. This vast nondual unbounded whole is known to our wisdom traditions—both Eastern and Western—as consciousness-reality itself, the very basis of human consciousness, as we shall see. Descartes realized the exoteric view (form). The species consciousness evolution that reveals the esoteric

and "innermost esoteric" understanding of our all-embracing consciousness basis (emptiness) was not yet extant in the 17th century Western mind.

With Modernity came Modern Science with its grail quest for Cartesian absolute objective certainty, then the deflation of that cognitive *fantasque* with the advent of the quintessential, acausal, stochastic, indeterminist subjectivity of the quantum theory. In this Modernity bargain we also reaped the mixed bag of gifts that included the microchip, the laser, and the bomb.

With Modernity also came Modern Philosophy with its Cartesian, dualistic "mind-body problem". Again, what is the actual relationship of objective matter/body to subjective mind/spirit? This is no idle philosophical game. Indeed, "The question concerns the very way that human life is to be lived" (Plato, *The Republic*, Book I). Our relative and even ultimate happiness depends upon how we—individually and collectively—respond in our everyday lifeworld actions to this challenge, this profundity of the cognitive balance of our objective and subjective experience. We live in these two worlds at once! That is our human condition. What shall we do with this precious life we've been given? This thorny, ironic question is none other than our inherently vexed Postmodern "problem of consciousness".

What then has the Postmodern mind made of the pretensions to rationality of the Modern scientific and philosophical metaphysical grail quest for objective certainty, this perennial desideratum that was Descartes' Dream?

"Objective" scientific knowledge is intrinsically infected with subjectivity. Such knowledge is conjectural, fallible, corrigible, conventional, contingent, stochastic, ideological and thickly theory and value-laden, and therefore cannot provide any knowledge or truth that approaches Descartes' quest for necessary, universal, absolute objective certainty.

Because conventional, conceptual objective theory/knowledge/truth "is dependent on the assumptions upon which it rests" (the ontological relativity of the Quine-Duhem theory), it must be, not necessary absolute and certain, but contingent relative-conventional and contextual, always subject to evolutionary historical/cultural change and interpretation. What then has this non-objective nature of the tribal idle of foundational Scientific Realism to do with the subjectivity that is consciousness?

The "problem of consciousness" is the most pressing scientific, philosophical and yes, social challenge confronting our 21st century intellectual and spiritual paradigmatic noetic (subject-object, body-mind-spirit unity) knowledge revolution. It has vexed the great dialecticians in the West for 2400 years. It represents a profound challenge to the prevailing paradigmatic, dogmatic scientific orthodoxy of realist, materialist, reductionist, objectivist, functionalist philosophy of mind, neuroscience and cognitive science. Here Descartes' "mind-body problem" is visited upon contemporary philosophy and neuroscience with a vengeance.

Recent functionalist, materialist/realist physics (and some actual physicists) have failed to explain, or explain away the obvious and immediate reality of subjective human experience—"what it is like" to experience a breath of Spring breeze, or fragrant scent of the rose, or a Bach violin concerto. This is the inherently vexed (to concept-mind) "Hard Problem of Consciousness"—the presumed "problem" of objectifying, or even explaining our inner subjective

lifeworld, the "qualia" states that are our inner subjective experience, including emotional and spiritual experience. Instead, consciousness is explained away by science's Physicalism, the obsessive objective functionalist reductionism (reducing our subjective qualia of experience to objective physical brain function). And all this, in the ironic shadow of the profound subjectivity of the most successful scientific theory in history, the Relativistic Quantum Field Theory of Heisenberg, Bohr, Schrödinger and Feynman.

So how does the ubiquitous mental "emerge" from the blatantly physical? How does the beauty and the terror of our inner life arise from the physical dance of the geometry—the play of Democritus' atoms, or of the fantastic micro-vibrations of post-quantum superstrings?

Functionalism holds, liberally construed, that all states of consciousness are, or are reducible to physical/functional brain states. Both reductive and non-reductive physicalists engage the often confusing notion of reduction in their philosophies. Here, consciousness is reflexively reduced to mere physical brain structure and function. Such a scientific functionalist materialist monism leaves our subjective inner life experience quite outside. How do we get back in?

The antirealist, anti-functionalist, anti-physicalist neodualists—Chalmers, Clark, Strawson, Nagel, Jackson argue that consciousness, human or divine, cannot, in principle, be grasped by realist, functionalist attempts to reduce it to physical structures and functions of the merely physical human organism. Here, the "explanatory gap" between phenomenal experience and any physical substrate cannot, in principle, be closed. This amounts to a refutation of Scientific Materialism/Physicalism.

It's useful to remember here that neodualist theories are anti-physicalist, and therefore may be construed as non-reductionist arguments for the non-physical, immaterial, even idealist nature of consciousness/mind. Neodualist accounts of consciousness are variations on Descartes' modal dualism: If I can conceive that my mind may exist without my body, then it is possible that my mind may exist without my body. Therefore, my mind is not my body, but a separate substance or entity that is different than my body. This has been called the Modal Argument.

Leading edge neodualist philosophers of mind, David Chalmers, Galen Strawson and Gregg Rosenberg, in quite different ways, suggest a radical, quasi-mystical panpsychism (all matter is intrinsically endowed with mind or consciousness) response to the concept-mind-numbing objectivist physicalist "hard problem of consciousness". The great Panpsychists—Spinoza, Leibniz, Berkeley, Schopenhauer, Schiller, Fechner, Wundt, Royce, Hartshorne, a recalcitrant William James and a profound and profoundly obscure Whitehead—are in some manner, sometimes by default, adherents of philosophical Idealism, much out of vogue in late 20th century materialist Science and Philosophy.

Idealism is ontologically opposite Materialism/Physicalism. Physicalist theories are emergentist, that is, they attempt to explain how it is that mind or consciousness emerges from matter, i.e. the physical brain. The "problem of consciousness" is a problem for Materialism/Physicalism and Functionalism. There is no problem of consciousness for Idealists for whom appearing reality is essentially identical with mind/consciousness.

Chalmers, the original architect of the "hard problem", argues that consciousness represents a fundamental new force of nature. All physical matter partakes in consciousness. Matter, all the way down to subatomic particles—quarks and leptons—is conscious, has consciousness, partakes in consciousness.

This neodualist panpsychic view parallels the middle way "two truths" duality of the epistemology of Buddhist *Madhyamaka Prasangika*, the epistemic foundation of *Dzogchen* ontology; and parallels as well, the *Advaita* (nondual) *Vedanta* of the Hindu *Sanatanadharma*. Here, especially in *Prasangika*, we find a relative-conventional (but not ultimate) duality between the ontic dimensions of our experience of conventional spacetime "relative truth" (*samvriti satya*), enfolded in primordial "ultimate truth" (*paramartha satya*) in which the former unfolds, arises and participates.

We habitually dwell and function in this relative, conditionally real consciousness as seemingly separate individuals, lonely alienated subjects apparently separated from our intentional objects of consciousness. In this realm of self-patterned ego-I experience we obsessively seek *exoteric* release or freedom from what appears to be an endless, destructive cycle of attraction (desire, greed) and aversion (fear, anger, hatred, indifference). This alienated personality-self abides in ignorance (*avidya*) of, and ego-self-contraction from, the vast unbounded whole that transcends yet embraces it. This *kosmic* ground, by any name, is all-embracing consciousness reality itself in which, or in whom, the cosmic physical dimension of relative, semiotic, discursive consciousness arises.

According to our wisdom traditions, prior to this egoic contraction from the nondual source, we are inherently (*sahajasamadhi*) established in this "innermost *esoteric*" pristine condition; and the resolution of this our human predicament lies in our individual and therefore collective recognition, then realization of that (*tat*).

This ontic mind/spirit stance is our inherent original position; our actual or "supreme identity", whether or not we recognize it at the moment. And wonder of wonders, "it is already accomplished", deep within each one of us. As H.H. The Dalai Lama advises, "just open the door". Then, enter in. This then, is the resolution of the "who question" of the problem of consciousness, as we shall see.

Thus, on this "two truths" view we are given—to receive—the gift of the grand desideratum of a really real world of epistemological Realism. Reality is not just an idealist illusion. But ultimately, these two dimensions are a nonlocal, nondual prior ontological unity. "Not one; not two, but nondual" (*yarmed*). Two truths in one prior unity. *Our relative, human dualistic consciousness is subsumed in basal ultimately subjective nondual consciousness being itself. Again, there is a relative difference. There is no ultimate difference. They are the same (samata).* This is indeed, the difference that makes a difference.

Such is the Buddhist centrist middle way between the solipsism and nihilism of Eastern Idealism, and the existential absolutism or substantialism of Western Platonic Scientific Realism and its ontic consort Aristotelian Scientific Materialism (Aristotle was no materialist).

Unfortunately, such promising panpsychic approaches to consciousness have languished in the linguistic realm of relative-conventional discourse, daring not to venture in the praxis of the trans-conceptual cognitive contemplative dimension of our perennial,

primordial wisdom tradition's "ultimate truth". It seems that even our best philosophical and scientific minds, with some notable exceptions, still remain under sway of Descartes' ubiquitous quest for something objective and physical to cling to. Meanwhile, human epistemic, semiotic relative-conventional consciousness remains inherently (*sahaja*) embraced and included by/in its ontic ground, ultimate, trans-rational, non-theistic, non-logocentric perfectly subjective consciousness-being itself.

Such nondual *theoria* and praxis is the urgent integral imperative of our emerging 21st century noetic revolution. Let philosophers of mind dialogue with Buddhist scholar-practitioners. "All that can be shaken, shall be shaken" (Dōgen Zenji).

We have seen that the bold anti-orthodox, anti-functionalist neodualists argue that the prevailing Functionalism in philosophy of mind and in neuroscience is an inadequate theory of our inner and innermost subjective experience. The scientific functionalist, usually reductionist account necessarily omits our interior esoteric introspective, private, perceptual, emotional, aesthetic and spiritual experience. That is to say, by the lights of the neodualists, and other anti-essentialist, even anti-realist views, functionalist, materialist explanations of human consciousness ideologically, adventitiously reduce the entire dimension of human interior subjective experience to a latter day functionalist Cartesian dream of ultimately objective physical brain function.

What's wrong with this "scientific" functionalist materialist picture? Must the "what question", the recognition and definition of human consciousness, and the "how question", the explanation of human consciousness, perforce be an explaining away of consciousness at the terrible price of ignoring the profound esoteric consideration of the "who question"; that is, of the "who question", that is, "who is it, this embodied primordial human awareness being here in form"?

Who is it that desires to know
and to be happy?
Who is it that is afraid and angry?
Who is it that is born suffers and dies?
Who is it that shines through the mind
and abides at the heart of all beings
already liberated and fully awake?

—David Paul Boaz, *Pictures From Cathedral Peak*, 2011

First person introspective, pragmatic Buddhist Middle Way *Prasangika* conceptual and trans-conceptual contemplative technology, and the non-propositional, non-prescriptive "simply abiding" in the non-contrived, non-constructed "non-meditation" of the perfect sphere of *Dzogchen*, together suggest a complementary, integral, noetic rapprochement of contemplative science with neuroscience and the cognitive sciences. Again, we must seek not the contradictory, but the complementary. The paradigmatic instance here of course, is Neils Bohr's Principle of Complementarity which illumined the hitherto contradictory wave/particle

duality of the nature of light. Such complementarity is ubiquitous throughout our wisdom traditions (Begley 2007, Klein 2006, Cabezon 2011, Newland 2009, Norbu 1996, Padmasambhava [Wallace] 1998, Wallace 2012, Pettit [Mipham] 1999), Dudjom Rinpoche 1991, Boaz 2012, "Post-Quantum Logic: West Meets East").

Richard Davidson at the University of Wisconsin, in concert with H.H. The Dalai Lama is has recently engaging such noetic research. Jon Kabat-Zinn, B. Alan Wallace (2007), Robert Coghill, and Fadel Zeidan with their research in mindfulness meditation, and many others are now well established in this paradigm changing work (*Mind and Life Institute*, Santa Barbara Institute, Dawn Mountain, Copper Mountain Institute, Tara Mandala, Naropa Institute, Upaya Institute, and the many Zen and Tibetan Buddhist Centers.)

Well, "what is it like" to be in the luminous, numinous "state of presence" of non-theistic, nondual, nonlocal "god"-consciousness? What is it like to be in love? What is it like to experience the taste of pineapple (Locke's qualia contribution), or the color red?

Science informs us on a multitude of so-called "easy" neuroscience problems—explaining cognitive attention and control, discrimination, integration and access of information and of internal states, and nearly everything there is to know about the physics of the color red, and the process of human perception of red—but neuroscience cannot answer the hard problem: what is it like to *experience* red?

Neuroscience functional explanations have little to say about our subjective human emotional experience, especially esoteric, and even "innermost esoteric" spiritual experience. This is however, changing with recent work in neurospirituality/neurotheology (Davidson, Goleman, Lutz, d'Aquili, Newberg, Horgan, Goodman, Schwartz, Beauregard, Strassman, Metzner).

Alas, most of this important research is limited by scientific functionalist and materialist-reductionist epistemological and methodological assumptions, and a bias toward Western dualistic exoteric monotheistic religion. With the possible exception of Ralph Metzner and Richard Davidson there seems to be little understanding of the non-conceptual depth of a non-pathological, esoteric, non-theistic, nonlocal, nondual primordial spirituality.

In short, this urgent neurotheological research often reduces inherently subjective religious and spiritual experience to the dualistic, relative-conventional objective trees of electro-chemical brain structure and function ("neural correlates") while ignoring the vast perfectly subjective background, the forest of the nondual, ultimate primordial unbounded whole that is the very atavistic context, the unified field, the ground of intertextual contemplative conceptual, and trans-conceptual direct experience of both.

Remembering our integral noetic imperative, the objective neuroscience of spirituality must understand the parameters of the hard problem of consciousness, and at least the rudiments of our perennial subjective contemplative science (*adhyatmavidya*) paradigm—the wisdom traditions—if it is to realize its potential contribution to human knowledge and wellbeing. Objective neuroscience, with its neurotheology, does after all, presume to study subjective contemplative/spiritual phenomena.

Nevertheless, the profound but inchoate consilience between the neuroscience of spirituality as neurotheology, and the contemplative science of *Madhyamaka Prasangika* Buddhist epistemology represents a huge step in this emerging noetic rapprochement of science and religion/spirituality.

Neuroscientists admit that they have not a clue as to how a physical brain could be conscious, could produce human consciousness. This should be a clue as to the woeful inadequacy of profoundly dualistic, objectivist, realist, materialist, functionalist theories of mind to explain the utter subjectivity that is consciousness. Science must finally philosophically examine the epistemic and methodological assumptions—Realism, Materialism, Reductionism, Functionalism, Empiricism, Rationalism and the rest, that undergird its theory and practice. Let scientists and philosophers of science sit down over pizza and ale, and talk.

What is it like to be conscious? What is it like to be a “self” that is conscious? We must conclude that the functional organization of brain simply cannot explain our subjective experience. Thus is Descartes' perennially vexing mind-body problem visited upon neuroscience.

The resolution of this ancient mind-body conundrum cannot be the self-sealing “hope for a miracle” epistemic plea for a future “hidden variable” that some fine day will rescue Scientific Realism from the cognitive clutches of the anti-essentialists, the anti-realists and the neodualists. This 2400 year old epistemic IOU, must now, at long last be called in.

Nor can the resolution of the mind-body problem be the Scientific Realist “no miracles” argument. This common sense argument is based in the prodigious predictive and technological achievements of, and the pursuant valorization of Modern Science. The fallacious reasoning goes something like this: “Science has been so astoundingly successful that its primary theories must be true and correct”. This argument is deflated, if not definitively refuted, by the “argument from pessimistic induction”. Past scientific theories have demonstrated predictive and technical success, but have later been proven incomplete or incorrect. Newton's gravitational constant G got us to the moon and back, but Einstein proved it incomplete. Just so, Einstein's General Relativity is hopelessly incompatible with the mathematics of the Quantum Field Theory (QED and QCD). One or both are incomplete or incorrect and in dire need of that next more inclusive, but ever incomplete theory.

So how is it that the quintessential properties of human consciousness be only “emergent properties” of matter, in this case brain matter, as most functionalist physicists and neuroscientists believe? How is it that all of our subjective experience can be reduced to purely physical objective “neural correlates” in the brain? *We must finally acknowledge that an objectivist, materialist, physicalist neuroscience can provide no purely physical, electro-chemical explanation of subjective experience.* Here the hope for a miracle subterfuge inhibits both theory construction and practice.

To be sure, mental and “spiritual” subjective experiential states have neural correlates, but it does not follow that all such subjective states of consciousness are identical to, or reducible to such purely physical neurochemistry. From the causal correlation of conscious mental states, or even of contemplative states, with physical neural brain events it does not follow that the two are identical, or that one causes the other. Correlation is not causation. Moreover, when we ob-

serve neural correlates of conscious experience, we do not observe or experience these same states of consciousness; nor do these states of consciousness reveal the requisite neural correlates.

Again, subjective consciousness/mind is not logically, psychologically or ontologically reducible to the objective structures and functions of physical body/matter. Mind and body may be an ontic prior unity, but the *objective* face of this unity is but a part of the story. We must also include the *subjective* dimension of our human nature. And this is consciousness. More precisely, this subjectivity that is human consciousness is the physical, mental, emotional, spiritual, that is to say body/mind/spirit instantiation of the vast expanse (*dharmadhatu*) that is the primordial ground, all-embracing consciousness reality-being itself, as we have seen. Let us then further examine this mysterious duality of mind/consciousness/spirit and the physical matter from which, on the assumption of the materialist/functionalists, such consciousness states arise.

Neuroscientists usually presume that consciousness does not exist apart from its correlation with brain function. Yes, these two are correlated. But again, correlation is not causation. *The mind's objective percepts, concepts and pictures, and our subjective experience of all this cannot arise in the purely physical or electrical space of the brain. Rather, objective and subjective experience arise in the prior basic space of consciousness. Reality then, arises not in the electro-chemical activity of the brain. The brain and all of our objective and subjective experience arises in the vast space of consciousness, (dharmadhatu).*

This is indeed the Buddhist *Madhyamaka* (epistemology) and *Dzogchen* (ontology) contribution to an East/West integral, noetic, centrist view of the nondual ultimate reality of the all-pervading consciousness ground in which, or in whom human consciousness, along with everything else, arises and participates.

This vast expanse that is consciousness itself, in whom we are embodied conscious instantiations, could be understood as the non-different (*samata*) inner/esoteric aspect or face of the unbounded whole of nondual reality-being itself. Just so, human consciousness is the inner/esoteric face or voice of human being. Thus, this perfect subjectivity of the *kosmic* whole of reality itself has, as it were, an inside and an outside, experienced objectively by our sense perception from without, and subjectively by our identity with consciousness from within.

Such conceptual relative-conventional dualities are useful, so long as we remember our prior identity with their trans-conceptual ontic, ultimate unity. That is to say, all of this conceptual conjecture has little to do with the nondual truth of the matter. As the concept/belief cognitive dimension necessarily refers us to a more subtle, higher order cognitive dimension, trans-conceptual, or trans-rational contemplative practice is here indicated.

We have thus far identified David Chalmers' "hard problem" of Francisco Varela's and Joseph Levine's "explanatory gap" between matter and mind for functionalist Scientific Realism and Materialism, and for all too prevalent functionalist Philosophy of Mind. This "hard problem of consciousness" represents the gap between objective second and third person accounts of experience, and necessarily private introspective first person reports of interior subjective consciousness states. There is an *apparent* gap between objective physical brain function,

states and processes, and the subjective feeling of being, our interior conscious, and even unconscious states of experience; between our phenomenal experience and a physical substrate from which such experience arises and emerges.

We've seen that the "what question" asks for a definition and a description of consciousness. What is it, actually? The "how question" asks for explanation—how can a mechanistic, objectivist physicalist explanation of human experience explain our inner subjective experience? How do we explain consciousness by way of that which is not conscious? This is the question of the *explanatory gap*, which we shall now explore. The "why question" addresses causal and evolutionary questions as to the nature and evolution of consciousness, and its evolutionary benefit to our species. The "who question" asks, "Who is it this mysterious conscious presence that we are". This, as we shall discover below, is the most urgent question of all.

Remember that our goal is the conscious and the contemplative recognition of the priority of the two perennial paradigms—objective physical body, and subjective mind/spirit—through an integral noetic methodology (Searle 1997; Clark/Chalmers 1998; Boaz 2012 p. 89).

We must now again inquire: what physical brain function, chemistry or physiology, or electro-physical "neural correlate" could possibly produce the *experience* of the color red, or the love of a mother for her child? Leibniz pointed out 300 years ago that if the brain were as big as a mill, we could walk in and observe its anatomy and physiology in fine detail, but nowhere would we find the *experience* of love, or of the taste of fine old Burgundy, or of the yogi's bliss. Nor shall we here ever discover a ripe red apple.

Thus, if human consciousness is not reducible to such physical brain structure and function—the "scientific" metaphysic that is the deterministic functionalist mechanistic physicalist/materialist assumption—then the "problem of consciousness" necessarily exceeds the grasp of physics, and physics is far from complete, that is, from providing a complete explanation of both our objective and subjective realities.

A physicalist physics is complete if, and only if, reality is only ultimately physical. This is the very metaphysical assumption of Physicalism that heavily loads scientific theory and belief, and the theoretical conjecture of Philosophy of Mind. This is of course the metaphysical question at issue in consciousness and mind-body problem discourse. Most philosophers of physics understand this. Most physicists do not. Let dialogue begin!

Therefore, this "explanatory gap" between electro-chemical physical brain function and conscious mental/spiritual life begs the question of Physicalism. That is, scientists usually assume without argument the dogma that the ultimate nature of reality must be physical/material. But if we surrender this dubious metaphysical presumption of monistic Physicalism/Materialism, then we ipso facto eliminate the gap.

This hidden metaphysics of functionalist Scientific Materialism begets the legendary "hard problem" of consciousness. From this arises the theory-loaded question, "how does consciousness arise from physical matter, i.e. the brain?" But does it? Perhaps this is the wrong question. Perhaps it's the other way round. If, as Middle Way Buddhist epistemology asserts, physical matter arises from, and is included in the nondual vast expanse of the "basic space"

(*dharmadhatu*, *emptiness*, *kadag*, *dharmakaya*, etc.) of consciousness-being itself, in which our human consciousness participates, then where is the "problem of consciousness".

The key point is this: consciousness cannot arise from relative-conventional spacetime matter, for matter arises from, indeed is, the nondual ultimate reality that is the very consciousness ground which includes all that is. Matter, mind, space, time are multiple instantiations of the basic space that is nondual, all-embracing perfectly subjective consciousness-reality itself. There is no essential separation. The essential relationship of the perennial duality of objective matter and subjective mind is, ultimately, one of identity.

This holistic primordial wisdom truth (*paramartha satya*) is not news. It is as old as human contemplative mind. Let us consider this reframing of the ostensible "problem of consciousness" in our post-Postmodern, post-Cartesian dreams of a final resolution to the imperative "hard problem" of consciousness.

Now the essential dualism of the binary, dichotomous logical syntax of language and linguistic cognition is *ipso facto* conceptual, conventional and objective, and cannot therefore penetrate and grasp the higher order dimensionally subtler perfect subjectivity that is all-pervading nonlocal, nondual consciousness-being itself. Hence, the intrinsic subjectivity of consciousness does not permit an entirely objective, rational, conceptual explanation; although human concept-mind may auspiciously approach it.

This uncomfortable truth may be a bit off-putting to our habitual, objectivist uncomfortable comfort zones because it flies in the face of our core belief in Cartesian rationality. Human reason is presumed to be our defining characteristic. Since Aristotle, "Man is the rational animal". In the West we all participate in this pre-conscious, deep background cultural "web of belief".

That this is the case does not however, preclude the trans-conceptual contemplative ultimate knowledge (*gnosis*, *jnana*, *yeshe*) and understanding of basal primordial consciousness ground that has arisen through our wisdom traditions for millennia. This nondual wisdom of consciousness may then be conceptually unpacked for our dualistic, conventional linguistic edification. Such an incipient integral research program is the foundation of an emerging noetic Science of Consciousness wherein both voices of human being and knowing—objective rational and subjective contemplative—are proper themes for scientific research. These two aspects of our nature constitute the human condition. Striking a balance is the challenge. Systematic denial and avoidance by taboo of either one is a program for ignorance and suffering.

Can we then resolve the hard mind-body problem? Yes. But not by way of even our most brilliant objective cognition. The luminous subjectivity of our trans-conceptual contemplative mind nature, combined with the quasi-conceptual analysis of noetic "penetrating insight" must be brought to bear. Science and Philosophy must at long last include that aspect or facet of our human nature which is beyond the physical, that is to say, we enter in the (gasp!) metaphysical; which is after all, merely the other half of the unbounded whole that we are.

Recall here that the "Scientific" principle of Physicalism—that reality must be ultimately physical, or reduced to the physical, is itself a purely metaphysical assumption, just as the belief of Eastern Idealism that reality must be ultimately mental/spiritual is a metaphysical as-

sumption. Again, this is old news to contemplatives, and to philosophers of science, but may raise the objectivist hackles of working scientists, and the polity steeped as we are in the scientific presumptions Greek/Hebrew Realism and Materialism. The waning Aristotelian/Cartesian paradigm that is Scientific Materialism must now be surrendered (*wu-wei*) to this ontic theme of matter/mind holism, or unity as we enter the emerging noetic paradigm in science, spirituality and culture.

So we can no longer afford to presume the separate, logocentric primacy of Physicalism, that it's all just physical. Why, other than habitual dogmatic presumption, must reality be only physical? Perhaps, because our 2400 year old preconscious, deep background historical and cultural "web of belief" commands it. Here, so much the worse for common sense notions of free will.

How then, in light of such noetic holism, do we explain our subjective experience? It arises not mystically, mysteriously from physical/electrical brain structure and function (form). Rather, it is the formless timeless play of our human consciousness as we participate together in the interdependent (pratitya samutpada/dependent arising) unbounded whole that is consciousness/reality itself (boundless whole, emptiness). Thus, as Shakyamuni Buddha told, "form is emptiness; emptiness is form". There is a relative-conventional difference. There is no ultimate difference. Once again, this is the difference that makes all the difference.

Here, as we have seen, the conceptual "hard problem of consciousness" vanishes into the direct immediacy of luminous trans-conceptual now (Dōgen, p. 85 ff. below). Once again, the trans-rational recognition and subsequent realization of such knowing takes a bit of mindfulness/insight practice. How? By entering in and following the contemplative injunctions of those who know.

Hence, on this view, *prima facie* perfectly subjective nonlocal nondual primordial consciousness/awareness (emptiness/*shunyata*, *dharmakaya*, Nirguna Brahman or whatever) is the ontologically prior source of arising physical form, which contains, includes and subsumes all of this objective facticity of our physical/mental experience of being here. Here, as we have seen, this primordial ground—the basal unbounded whole itself—must necessarily, ontologically precede embodied existence. That is to say, in contradistinction to the materialist, functionalist, existentialist view that "existence precedes essence", *essence precedes existence!*

Again, how can we know this? Clearly, such knowledge cannot be merely objective. So we must depart the limited world of conceptual objectivity, just as contemplatives—if not philosophers—have done for millennia, and relax into basic mindfulness (*shamatha*), the intersubjective core that is the trans-rational, already present presence of our "supreme identity" with this unbroken whole of being itself.

Alas, the physicalist Standard Model of physics, derived as it is from the rationalist, realist/materialist legacy of Platonic/Cartesian Western objectivist, functionalist scientific epistemology, leaves this natural interdependent subjectivity of our *kosmic* human consciousness out in the cosmic cold.

Scientific Functionalism—its philosophical ideologues—often claim an independence from these challenges to Physicalism/Materialism. But the functionalist ontology—if it is an

ontology—is at its core blatantly objective and physicalist, and its apologists are existential absolutist physicalists/materialists. And again, third person functionalist science cannot describe or explain what red actually looks like, or what love feels like.

Well, what then can be done to expand the methodological limit of this obsessively objectivist science knowledge paradigm? Recognition that the “hard problem of consciousness” has no physicalist or materialist resolution is a beginning; and is indeed the harbinger of an urgent paradigmatic shift that I have herein and elsewhere termed the scientific and cultural Noetic Revolution in matter, mind and spirit.

We have seen that we must now recognize and acknowledge that subjective experience—consciousness—eludes all objectivist/ physicalist/functionalist attempts to explain it. This leaves us with a not entirely comfortable “mysterion” conclusion; sentient human consciousness is inherently intersubjective and interdependent (observer/theory-dependent) and is not ultimately comprehensible or explainable purely objectively or conceptually (Nagel, McGinn, Nalanda Prasangika Madhyamaka). And that's OK. The cognitive wounds of our self-sense is often where the light of wisdom enters in.

This recognition of the limits of semiotic (syntax, semantics, pragmatics), dichotomous conceptual cognition is true as well for many of the trans-physical or metaphysical “problems”—and our pursuant closely held beliefs as to their resolution—that comprise both Western and Eastern intellectual history, i.e. the existence and nature of non-material conceptual entities: consciousness, God, causality, universals, other minds, action and free will, the *ultimate* nature of mind and of reality itself, and all the rest. Quite naturally these intrinsically subjective problems do not admit of mere objective solutions.

Finally, we have seen that the old paradigm Western Science “hope for a miracle” hidden variable fantasy—that some sunny day we shall finally discover a hitherto conceptually cloaked logical or even reasonable defense of Physicalism—is a 2,400 year old materialist/physicalist IOU that must now, at long last be called in. Refreshingly, the emerging integral noetic science of consciousness permits the subjectivity that is consciousness, and provides an incipient methodology for both third person objective, and first person subjective, introspective consciousness research (Boaz 2015).

Our conceptually vexed mind-body problem of consciousness—with its “hard problem” of deriving our diaphanous phenomenal subjective experience from apparent physical neural brain function—admits of no ready solution, if it admits of a conceptual solution at all. Nor, as we have seen here in our strong version of the “explanatory gap” conundrum, does it admit of a physicalist solution. Yet, we must not be downcast by philosophical questions of circularity, and charges of anti-physicalist question begging. In this limited, heady epistemic domain of dualistic, linguistic semiotic cognition our ultimate concern is not contradiction but complementarity between competing, or seemingly antithetical principles, and paradigms.

Hence, we must remain open to syncretic, pluralistic views—anti-realist, anti-essentialist, non-physicalist/non-quantum, non-empiricist and neodualist theories. The intrinsic intellectual tension between the epistemic dichotomies of Empiricism and Realism, Realism and anti-Realism, Dualism and Monism, etc. are productive. However, we must not expect

more from this conceptual cognitive domain or dimension than its inherent limit permits. The epistemic explanatory ambition of the current conceptual, materialist paradigm correctly exceeds its ontic grasp, but it must recognize when trans-rational contemplative methodologies are indicated. Sadly, this rational limit of dichotomous, discursive mind is little appreciated in Western Philosophy, much less Science. Thus, a Western noetic contemplative Science of Consciousness is alas, little more than Descartes' Dream was 400 years ago. As Thomas Kuhn pointed out, consciousness revolutions go slow.

This unhappy situation is a cause of the current cognitive paralysis in the field of consciousness studies and research. Hence, speculative, non-objective, noetic syncretic approaches that utilize Buddhist *Prasangika* and *Cittamatra*, Veda/Vedanta, and other Eastern consciousness research are indicated. This must include both Western and Eastern dualist and neodualist panpsychic (quasi-idealist) approaches. Eastern subjectivist trans-conceptual wisdom shall add immaterial substance to Western objectivist concepts of human consciousness and its place in the unbounded whole that is our consciousness basis, the very nature of mind. "East is East, and West is West", but the twain are coming to meet.

Western absolutist correspondence and coherence views of truth must here be bracketed, or surrendered to pragmatic notions of truth, e.g. truth as *aletheia* (revealing, uncloaking/*vikshepa*). Here we relax our demand for a Platonic/Cartesian rationalist/realist foundational ideal of objective Truth. Here we revisit the Pragmatists, James, Peirce and Dewey, with their "pragmatic theory of truth"; and Rorty and certain of the Neopragmatists who deny any need of a procrustean conventional theory of Truth into which we must stuff all of our conventional philosophical and scientific theories. Perhaps, as William James reminds us, "truth is what is good by way of belief", by our intersubjective sociocultural "web of belief". Such pragmatic and neopragmatic "theories" of truth are actually conceptual anti-theories.

Our perennial Two Truths revisited. Let us now briefly revisit our primordial wisdom tradition's notion of the Two Truths and its relation to consciousness. For the Buddhist *Madhyamikas*, relative truth (*samvriti satya*) is the dimension of contingent dualistic spacetime physical and mental *form*. Ultimate truth (*paramartha satya*) is, plainly considered, the nondual ontic dimension that is the primordial ground of the phenomenal objects of conventional relative truth, its ultimate mode of being, which is to say, the formless vast expanse of boundless emptiness or *dharmakaya*.

These two modes of our being here are not separate independently existing dimensions, though the dualistic binary logical syntax of language makes it seem so. The contemplative nondual realization (*vidya, rigpa*) of the prior and present unity of our Two Truths reveals that they are two faces of the same (*samata*) singular consciousness/reality itself. As the Buddha's *Heart Sutra* reveals, "Emptiness is not other than form; form is not other than emptiness".

It is important to understand here, that the *ultimate truth* of emptiness, although it is referred to with such epithets as "primordial ground" and "supreme source" of arising form, is not itself a kind of absolute substrate or logocentric cosmic creator that exists independently of the relative physical, emotive and mental phenomena that is form. Emptiness is merely a quality or aspect or dimension of form. No form, no emptiness. No emptiness, no form. This rela-

tionship is often expressed as "the emptiness of emptiness". Emptiness is not, on this view, an existent *thing* or entity, as we have seen.

What then is the truth status of this esoteric singular one truth that includes the Two Truths, relative and ultimate? What kind of truth can be "invariant across all cognitive frames of reference" (Alan Wallace), exoteric and esoteric form, and "innermost esoteric", nondual emptiness? Paradoxically (to dualistic concept mind), since this one all-embracing truth is, as with the relative phenomena it embraces, "utterly empty of any shred of inherent existence"—the "emptiness of emptiness"—its truth is established, not ultimately, but relative-conventionally. It cannot be a logocentric absolute, i.e. a theistic creator God, or Brahman, or even nondual Nirguna Brahman. Hence it is not subject to anti-theist criticism, Western or Eastern, which misses the non-theistic point entirely.

The relation of the Madhyamaka Two Truths to consciousness? Ultimate truth that is nondual consciousness being itself—the very nature of mind—is the singular primordial ground of, and is instantiated in relative-conventional human and other sentient consciousness. And this profound duality is an ontologically prior nondual unity which we come to know through the contemplative practice of the Path. Heady wine indeed, to binary dualistic concept mind.

Moreover, the Western Aristotelian Law of Excluded Middle must here be more or less surrendered to the Law of Connection—everything is connected to everything else—of the Logical Intuitionists (Brouwer), and of some paraconsistent multi-valued Indian deductive logical systems (Nayala), Boaz 2017.

Meanwhile, all of these conceptual West/East paradigmatic, ontic seeking strategies are, as suggested above, cognitively embedded in our current epistemic individual and cultural historical evolutionary "web of belief".

How then does Wittgenstein's confused and confounded fly find its way out of the ontological fly bottle? One solution lies in the "Who Question". And it is indeed near at hand. In the very moment of seeking, our primordial consciousness—that "flower absent from all bouquets" (Mallarme)—is always, already abundantly present, here and now, through all our ordinary dualistic conceptual and emotional cognition, whether attractive or aversive; whether we know it or not.

Who is it that shines through the mind and abides at the heart of all beings, always liberated and fully awake? This, our "supreme identity" is inherently (*sahaja*) certain, when we cease thinking about it, and "just open the door". In his heart of hearts, Descartes, our father of substance dualism, understood this great noetic truth. Let us do so as well.

Gödel and a new Hawking: is a physical "theory of everything" logically possible? If not, it's big trouble for the present state of materialist, physicalist physics, i.e. the Standard Model, with its supernatural proto-religious "inflationary hot Big Bang" cosmogenesis.

The Standard Model has perhaps succeeded in unifying the Electromagnetic Force with the Weak Nuclear Force to become the Electroweak Force; but if a TOE (Theory of Everything) is not logically possible, neither is any future "Grand Unified Theory" (GUT) unification of the Electroweak Force with the Strong Nuclear Force, let alone a TOE unification of such a GUT with Einstein's Gravity Force (II B above).

The adventitious quest for an objectivist physicalist TOE has perhaps provided a cognitive distraction—to scientists and philosophers of all stripes—from *the real work, namely, the noetic integration of matter/form, including the quasi-physical quantum vacuum potential and M-Theory, with their singular nondual ultimately subjective primordial emptiness ground. This then is the real work of the emerging noetic science of matter, mind and spirit of the Noetic Revolution that is now upon us.* Let's take a closer look.

The essential mathematical principle of theory incompleteness expressed in Platonic/mathematical realist Kurt Gödel's two 1931 incompleteness theorems ("On Formally Undecidable Propositions of *Principia Mathematica* and Related Systems"), and the greatly enhanced 1936 Gödel-Rosser Theorem—which together proved the inconsistency of the logicism (reduction of mathematics to formal logic) of Frege's brilliant new logic, and of Russell's and Whitehead's monumental *Principia Mathematica*—points to the untenability of any pretense to a mathematical physicalist "theory of everything" (TOE). How so?

Gödel's two proofs are understood by mathematicians and logicians as proof that no complete axiomatic system that is arithmetically expressive enough (Peano's postulates) to include the properties of natural numbers can prove all of its internal logical/mathematical truths. Or worse (for Russell, Hilbert and logical formalism): *all axiomatic systems that are internally self-consistent are inconsistent! Gödel's two theorems state that 1) any such system is either inconsistent (a proposition and its denial can both be deduced from the axioms), or 2) it is incomplete (there is a true proposition within the system that cannot be deduced from the axioms).* Now, any *Theory of Everything* (e.g. *Superstring Theory*) must be comprised of internally consistent, non-trivial mathematical systems. Therefore they must be incomplete.

So, no logical system can capture all of mathematics, Russell and Whitehead were wrong, and the hope of a logically consistent Theory of Everything is *kaput*!

Not only are the mathematics of quantum electrodynamics (QFT/QED) incomplete (nonlocality; the renormalization problem, Higgs particle indeterminacy); and the non-renormalizable mathematics of quantum chromodynamics (QCD) is incomplete (the problem of neutrino mass), but any future TOE candidate is logically *necessarily* incomplete. Alas, this must include the mathematics of the many component theorems of the post-quantum, post-Standard Model TOE candidates String Theory/M-Theory, and Lee Smolin's prodigious contribution to a post-quantum quantum gravity theory (QGT), namely, Loop Quantum Gravity (*Being and Time: Toward a Post-Standard Model Noetic Reality*, 2016; www.davidpaulboaz.org). What's a physicist to do?

Let us here remember that the hope of a physicalist TOE is based in the dubious metaphysical assumption of Scientific Realism/Materialism (Physicalism), which is that the "everything" of reality is 1) physical, and 2) somehow exists independently of our sensory, experimental, conceptual and belief systems. If reality is more than just physical matter, then a purely physicalist explanation is, *ipso facto*, inadequate as a complete theory. That is to say, any physicalist TOE flies in the face of the Postmodern truth of the *interdependent* relationships of ontological relativity (we cognitively create or fabricate our realities via our socio-cultural intersubjective concept/belief systems),

and begs the question of the epistemic truth of Scientific Realism (a RWOT), and its ontic cohort Scientific Materialism/Physicalism, that what there is, is only physical.

Shall we then surrender (*wu-wei*), or at least cognitively bracket our deep cultural background (pre-conscious), strongly held and psychologically defended "web of belief" (Quine) in the 2400 year old Platonic Realism metaphysic that has colonized the Western mind as Scientific Realism and Scientific Materialism? The inherent ontic subjectivity of Relativistic Quantum Field Theory (QFT) strongly suggests in the affirmative. Let us understand this.

The current science/physics/cosmology paradigm presents a highly idealized picture or model of the great unbounded whole of reality itself. Philosophy of physics (and even philosophers of physics) has demonstrated that the fundamental laws of this objectivist physicalist paradigm cannot verify or confirm or prove the actual existence of appearing objects of spacetime reality. Rather, the laws of physics confirm objects in a particular conceptual *model* of reality. This model is usually the *theory-independent* view of realist Scientific Materialism. Then, in spite of the *theory-dependent* anti-realist Copenhagen view of QFT, the metaphysical leap is made to a purely physical real world out there (RWOT). Let's get physicists, philosophers of physics/cosmology, and Buddhist scholar/practitioners in symposia!

Stephen Hawking (2010) has at last departed his *theory-independent* Scientific Realism metaphysic with its hope for a physicalist TOE (*A Brief History of Time*) and has now adopted an anti-essentialist, antirealist, *theory-dependent* view which he terms "positivist," i.e. it is more or less ontologically relative with no posit or assumption of a theory-independent *independently* existing reality at all ("positivism" here presumably not to be confused with the logically bankrupt Logical Positivism, Logical Empiricism or Logical Atomism of the Vienna Circle (c. 1924), and of Russell and Wittgenstein (1918 and 1921 respectively).

In the intellectual wake of the subjective shock of logically consistent alternative non-Euclidian geometries, (which one gives us the *real* reality?), and the radically subjectivist quantum theory with its growing impact on the objectivist bias of science, philosophy and culture, we begin to see the inherent ontological relativity and relational interdependence of the knowing, experimenting subject with its object, the now ambiguous data. We see this not only in Modernist physics and cosmology, but in Postmodern biological, cognitive and social sciences as well.

So even in the sciences, and in philosophy, and in religious studies, steeped as we are in Modernist Scientific Realism/Materialism, still, we increasingly observe the view that reality as it appears to the senses is empty (*shunyata*) of any objective existence or attributes (*nirguna*) *independently* of a sentient observer/experiencer/experimenter.

The quantum theory (QFT/QED) has greatly facilitated such an ontological relativity. In this view reality appears only *interdependently* (*pratitya samutpada*), just as the middle way Nalanda Buddhists have always told. That is to say, *appearing reality is observer/theory-dependent, not observer/theory-independent. Subject/object are in an interdependent co-relationship, an intersubjective interrelated co-dependent, co-terminus unity or whole and cannot ultimately be rationally, logically, conceptually or contemplatively separated or deconstructed* (Boaz 2012, Wallace 2012, Sheldrake 2012).

Of course, relative-conventionally speaking, subject and object are perceived as separate. So it is urgent to remember the prior unity. Why? Because if sentient life on earth, and earth herself, are experienced and known by human consciousness to be an interdependent ultimate unity—"we're all in this together"—our destructive self-sense, the fearful angry aggressive ego-I will be less inclined to abuse another, or to take the life of another, including our Mother Earth. With such an inchoate ecology of mind present to mass-mind awareness, perhaps we'll practice a bit more kindness, and thus be a bit happier. Such hope springs eternal.

Both Stephen Hawking and Freeman Dyson (and many others) have been disabused of the physicalist TOE cognitive urge thanks to these seminal logical-mathematical proofs of Gödel and Rosser (Boaz 2012, "Post-Quantum Logic" p. 77).

Unfortunately, most theoretical physicists and cosmologists hold to the TOE "hope for a miracle," thus the evolution of Ed Witten's brilliant synthetic post-Standard Model supersymmetric Super String M-Theory will continue, and an elegant, more inclusive theory—if not a TOE—shall surely emerge. Then, when that future M-Theory is eventually surpassed, the unifying elegance of its mathematics will continue to serve, just as some of the "truths" of Copernican, Galilean, Newtonian, Einsteinian and Quantum Field Theory shall all live on in that next more inclusive, but never complete theory on the ultimate nature of reality itself.

Bell's interconnectedness and the cloud of unknowing. In 1964 Irish physicist John Bell's paradigm busting theorem (Bell's Theorem/Bell's inequalities) proved that no local, *theory-independent* realist model of reality—for example Einstein's relativity theory—can explain the nonlocal "spooky action at a distance" (Einstein) of the Quantum Field Theory. In *theory-dependent* models—Quantum Field Theory and Stephen Hawking's (2010) promising new "Model-Dependent Realism" version of it—reality is ontologically relative, that is, arising phenomena need not be posited as, or conceptually reified into a separate, *observer-independent, theory independent* "real world out there" (RWOT), as we have seen. Nor are such theories nihilistic for they do not deny an *interdependent* really real relative-conventional reality. They deny only a theory-independent, inherently existential absolute separate RWOT reality. We've seen that Indo-Tibetan Buddhist *Madhyamaka Prasangika* is such a theory-dependent, non-essentialist, but not anti-realist ontologically relative view.

In 1984, at the University of Paris, Alain Aspect (and later many others) experimentally confirmed Bell's fabulous mathematical conjectures.

Thus do Bell's theorem and Gödel's proofs together preclude the possibility of the Hidden Variables Realism of Einstein, Bohm, Wigner, pre-MDR Hawking, Penrose and Smolin. At least this is the current academic and high culture consensus (Boaz 2012 Ch. IV). It is perhaps, less well known that this work of Bell and Gödel render any physicalist TOE untenable, as we have seen. We are left, it seems, with a conceptual/theoretical, if not contemplative, "cloud of unknowing."

Quine's ontological relativity: toward a Western centrist view. Willard Van Orman Quine (1908-2000), considered by many in the philosophy trade to be the most important American philosopher of the 20th century, authored two monumental essays—"Two Dogmas of Empiricism" and "Ontological Relativity"—that continued the quantum antirealist revolu-

tion in science and philosophy. Quine, paragon of epistemological holism, on the ontological problem: "What is there? Everything."

"Two Dogmas" (1951) presented Quine's holistic assault on scientific objectivity, demolished Kant's hitherto foundational philosophical analytic/synthetic distinction, and therefore the demarcation between objective science and subjective metaphysics (the "demarcation problem").

Quine thereby forever (a long time) changed the empirical, determinist, realist, materialist character of Western philosophy and science, opening the door to the present noetic paradigmatic crisis, and to centrist pragmatic, including Buddhist epistemic options, although this was not at all his intention. Indeed, such a view casts a subjectivist pall over Quine's professed physicalist "naturalized epistemology." Quine was, it seems, unable to entirely free himself of the logical empiricism (positivism) of his Logical Positivist mentor Rudolf Carnap (Boaz 2012, "Quine's Revolution: Epistemological Holism in Science and Philosophy," p. 16).

This places Quine, like Hume, on the cusp of an historical intellectual revolution. Hume bestrides the subjectivity of premodern tradition, and the objectivity of the European Enlightenment that is Modernity. Quine abides rather precariously between Modern objective Science, and a balancing centrist subjective metaphysic.

Again, our goal is the complementarity and mutuality of an epistemic middle way between these two ostensibly incommensurable paradigms—objective, rationalist Big Science, and subjective Spirit/spirituality. We have seen that such a centrist view, represented by Buddhist Middle Way/*Madhyamaka*, accomplishes this balance between the metaphysic of Eastern idealist nihilism and Western realist/materialist existential absolutism, facilitating the emerging Noetic Revolution in science, culture and spirituality.

In "Ontological Relativity" (1969) Quine clarified the relation of ontology—"what there is"—to language, that is, to the intersubjective deep background cultural reality assumptions (e.g. Realism/Materialism) of our individual and collective "web of belief." This concept/belief system arises from its primordial nondual ground and is mythopoetically instantiated in the binary, two-valued, truth functional (either A or B but not both) duality of the logical syntax of language. For Quine, there are no objective facts, only linguistic meanings.

For Quine and his collaborator, French physicist and philosopher of science Pierre Duhem, "The truth of a theory is dependent on the assumptions upon which it rests" (Quine/Duhem Thesis, Boaz 2012 p. 16); and these prior assumptions can never be necessary, objectively certain and universal. Thus scientific knowledge is necessarily corrigible, provisional and contingent upon evolutionary, historical variables. It follows that scientific knowledge is socio-culturally constructed, historical, normative and value-laden, and ideological.

This is hardly the idealized mass-mind notion of Science as the supreme method that *discovers* objective, necessarily certain, universal knowledge and truth of a pre-existing, given RWOT (see Kuhn below). Far from it. Once more, QFT and *Madhyamaka/Dzogchen* epistemology demonstrate that knowledge constructed/fabricated/contrived by the miracle of Modern science cannot be certain and universal, but is instead contingent, particular, stochastic, provisional and marvelously pragmatic as to its resultant knowledge products.

Scientific conceptual schemata and philosophical truths are then, on this view, not objectively discovered knowledge or truth (*gnosis/aletheia*) of an independently existing reality “out there,” but rather, duly considered and constructed scientific opinion (*doxa/vikalpa*), validated, vindicated, or falsified by empirical experience.

This is the view of Plato’s “Earth Giants,” the pragmatically wise Sophists, nemesis of Plato and his “Gods” who purport to reveal absolute, deductively certain universal Truth, namely, the universal “Forms” of Plato’s *Sophist*. So *Platonic Realism* — the view of the Gods — can no longer serve the epistemology of the colossus of earthbound Science. Once more, a realist/materialist science cannot, nor did it ever, discover pre-given, observer-independent, absolute and universal truths.

Yet, within the realm of relative-conventional truth, the spacetime quarks and leptons, and Higgs bosons that Science “discovers” are indeed, for now, conventionally, interdependently real (if not inherently, ultimately real), even though, given the evolutionary historical nature of Science, such “knowledge” will be “incorrect,” transcended in a few years by more inclusive, yet ever incomplete theories.

And real trees and real stars will still be here — ever present to the infallible direct perception (*pratyaksa*) of sentient consciousness. And the scientific explanation of their being here, for any self-conscious beings still here, will be but a footnote in the historiographic *fantasque* of scientific inquiry.

In “Two Dogmas of Empiricism” (1951), arguably the most celebrated philosophical essay of the 20th century — required reading for both physicists and religious studies scholars — Quine reveals his “radical nominalism,” an anti-essentialist, antirealist view which asserts that abstract terms, like “red,” do not entail physically real existents, like “house.”

Here, in contradistinction to the young A. J. Ayer, ebullient apologist for the Logical Positivists, our “Language Truth and Logic” (the title of Ayer’s 1936 book) require no ontological commitment to a separate RWOT (real world out there).

Again, such nominalism (the denial of universals, e.g. Platonism, that universals exist independently of their instantiations as things) shares the middle way anti-essentialist, but not antirealist view of centrist Buddhist Middle Way *Madhyamaka Prasangika* that is the foundation of the pinnacle of Vajrayana Mahayana wisdom, namely, *Dzogchen*, the Great Completion of the Mahayana Causal Vehicle. More on this in Ch. III below.

In this trenchant essay Quine also develops his consciousness expanding epistemological holism (“confirmation holism” that is a semantic holism). *The two justly famous essential and interdependent precepts of this holism are, 1) interpretation of all sense-based empirical observations are thickly “theory laden”, or theory-dependent, that is, they are dependent upon, and heavily laden with prior intersubjective historical/cultural assumptions, theories and beliefs; and 2) all theory is “underdetermined” by its evidential data, that is, empirical evidence in isolation — apart from its “auxiliary hypotheses” that comprise the “whole of science”, indeed the whole of a language — is not an adequate criterion of decidability as to theory falsification, verification, vindication or truth. This means, astoundingly, that factual scientific claims cannot be reduced to empirical data of the senses.*

Goodbye Scientific Empiricism, Scientific Reductionism, and Logical Positivism. Hello noetic ontological relativity of the new incipient reformation in science, culture and spirituality—the Noetic Revolution—that is just now emerging on this cusp of the 21st century.

On Quine's epistemic holism then, scientific statements and the theories derived from them face the crucible of our experience, not as individual hypotheses or theories, but as the "whole of science" with the "auxiliary hypotheses" of its entire language "coordinate grid." This Postmodern pragmatist narrative—Nietzsche, Peirce, James—with the Neopragmatists (Rorty), as with Middle Way Buddhism, is steadfastly perspectival and anti-essentialist, but not always antirealist (Buddhism). Trees, stars and people exist, not absolutely, but in the relative, observer-dependent eye of the beholder.

Acknowledging this epistemic limit of Scientific Realism, and the truth of our primordial wisdom's "Two Truths", relative and ultimate, Quine counsels, "Familiar material objects may not be all that is real, but they are admirable examples."

We have seen that our deep background, unexamined cultural presumption that "real" means merely "physical", or mental cognition reduced to purely physical brain events or epiphenomena of such brain events, is a primary cause of the destructive paradigmatic split between Science and Spirit/spirituality. The recognition of this constitutes a perspicuous penetration of Leibniz' subjective "indiscernibles" that pervade human consciousness (ontology, morals, value and obligation, free will, spirituality, and the rest). Reality itself far exceeds our Modern epistemic habit of mere objective cognition.

Hence, this second "dogma of empiricism" with its epistemological holism (a semantic holism) and ontological relativity, proved to be the death knell for Logical Empiricism (Logical Positivism)—Carnap, Ayer, Russell, young Wittgenstein (*The Tractatus*)—of which Quine was an early adherent.

It also effectively ended the entire scientific reductionist project, namely *ontological reductionism* (we're no more than Alice's—Carroll's—"bag of neurons" which are then reducible to the tiny, purely physical billiard balls of microphysics); and as well, *methodological or explanatory reductionism*. Here psychology and the social sciences are reducible to molecular biology and neurobiology, the all of biology to chemistry, chemistry to physics, physics to quantum physics, quantum physics to post-quantum, post-Standard Model super-symmetry M-Theory—strings, loops, branes, and the rest. Can Buddha mind be reduced to such fantastic entities? Or to the mind of a sparrow, for that matter?

William James pointed out a hundred years ago in what he called the "psychologist's fallacy," that what a theory posits, e.g. atoms—or atoms reduced to quarks, leptons and Higgs bosons—is what the theory is likely to "discover." This "discovery" then "proves" the theory.

Alas, altering the trajectory of such belief discoveries in the "Big Science" of today, with international trillions of dollars and thousands of scientific careers and reputations at stake, is not socio-culturally likely. Ah, the irrefragable, wonderfully circular logic of Scientism. Don't you love it?

Any attempt to derive such logical certainty is to commit Aristotle's logical fallacy of "affirming the consequent," an invalid form of logical deductive inference. Scientist's and their objectivist philo-

sophical ideologues must at last acknowledge that—while marvelously practical—empirical, contingent sense experience cannot validate necessarily certain and universal knowledge/truth propositions. Philosophers of physics, philosophers of religion, and religious studies folks have dedicated vast quantities of paper and ink to this logical truth. How long before the big business of Big Science physics gets it?

Moreover, the reductionist “naturalism” of the natural sciences reduces the natural world to an unnatural, unreal, meaningless spectral Planck scale micro-world which is, *ipso facto*, forever beyond human conceptual comprehension and elaboration.

That the ultimate nature of mind with its arising spacetime realities is conceptually (if not contemplatively) incomprehensible may well be the case, but this 2400 year old “old paradigm” and its obsessively physicalist/materialist arguments for a purely objective RWOT are circular and self-sealing, not to mention skeptical and nihilistic as to humanity’s urgent problems of knowledge, morals and governance. (“The Collapse of Objective Reality: Quantum Non-Locality and Buddhist Emptiness”, www.davidpaulboaz.org). Social caveat: don’t argue this point at cocktail parties, with your shrink, or in a court of law.

Thus is this scientific reductionist result at odds with its hopeful, unlikely illogical scientific quest for an objective, physical Theory of Everything. Reductive Materialism and Eliminative Materialism just get “curiouser and curiouser,” do they not? What to do?

So let us now further explore this emerging integral noetic scientific knowledge paradigm.

III

Toward a Noetic Paradigm in Science, Philosophy and Spirituality

Things don't happen in time; time exists because things happen.

—Jay Garfield

The truth of a theory is dependent on the assumptions upon which it rests.

—Quine-Duhem Thesis

A middle way non-foundational pragmatic Realism? The Postmodern Neopragmatists—the later post-*Tractatus* Wittgenstein, Quine, the later Heidegger, Derrida and Rorty—along with the Modernist Kant, and the premodern Buddhist masters Nagarjuna (Garfield 1995), Longchenpa (Ricard and Barron 2007), Longchenpa (Dowman 2010), and Mipham (Pettit 1999), and as well, Postmodern neuroscience including neurotheology (Newberg 2011), have all shown in very different ways that the objectivity of dualistic binary, truth-functional (true/false) language and concept, including high culture philosophical and religious studies discourse, is utterly incapable of grasping the inherent perfect subjectivity of the unbounded whole that includes both subject and object, both mind/spirit and matter/form.

In short, the language, concept and belief of human culture (history)—philosophies of the subject/self, for example, Existentialism, Phenomenology, Marxism, Psychoanalysis—are incapable of providing an objectively certain, or even reliable foundation for knowledge, whether conventional or ultimate knowledge. The happy result has been the demise of Western philosophical foundationalism (Platonic Scientific Realism and its ontic handmaid Scientific Materialism/Physicalism). Whitehead once quipped, "Western philosophy is a footnote to Plato".

The discursively unknowable basal ultimate primordial ground of all of this experience—it has as many names as there are wisdom traditions—the very nondual nonlocal nature of mind and its realities is the great formless unbounded whole in whom matter/energy form arises. It is known as Tao, nondual Nirguna Brahman, En Soph, God the Father, and many other names (Boaz 2016, 2012). Buddhists call this vast "supreme source" of reality itself *dharmadhatu*, *dharmakaya*, *mahabindu*, *bhavanga*. For these our wisdom traditions this nondual whole is utterly incomprehensible to dualistic human discursive conceptual mind.

That said, on the accord of Tsongkhapa and H. H. the Dalai Lama, the "analytic meditation" of the highly trained yogin/yogini may auspiciously and profoundly, cognitively approach this great whole; and through engaged rigorous contemplative practice come to recognize, then realize it in the objective and subjective structures and functions of human body, voice and mind (Newland 2009, H. H. the Dalai Lama 2009).

This is not to say, as does Stephen Hawking (2010) in dodging the philosophical consequences of his promising theory-dependent, "Model-Dependent Realism" (an about face from the orthodox theory-independent Realism of *A Brief History of Time*), that "philosophy is

dead." *What is dead is our Promethean quest for a "view from nowhere" (Nagel), independent of the sociocultural intersubjective basis of our conceptual and belief cognition, Quine's "web of belief". What is dead is a "God's eye view" (Putnam), a logocentric absolute, observer-independent, theory-independent, objectively certain foundation for knowledge (presuppositional philosophical foundationalism, Platonic Realism, "first philosophy", etc.).*

Thus, foundational epistemological representative Realism of the Modern Enlightenment Project, with its ontic consort monistic ontological Materialism/Physicalism—Scientific Materialism—are dead. (Dead is a long time.)

Hence, for most contemporary philosophers, if not for scientists, the quest for a realistic foundational philosophy, that is to say for universal, necessary and certain truth/knowledge is an explanatory dead end. This is the present view of most philosophers of physics and cosmology. It has yet to trickle down to working physicists, cosmologists and the "common sense realism" (Russell's "metaphysics of the stone age") of the person on the street.

In other words, on this view, any conceptual attempt to intellectually justify epistemological Realism—a purely objective, separate, theory/model/observer-independent "real world out there" (RWOT) through an incorrigible first principle, or through empirical sense experience, is doomed to failure. There can be no direct, indubitable, infallible non-linguistic assess by the human concept-mind to an unmediated reality, whether conceptual or trans-conceptual. All conceptual knowledge and belief is mediated by our linguistic signs deeply cognitively embedded in our various deep cultural backgrounds. We cannot stand outside our own minds—the ego-centric predicament—to observe appearing reality from an observer-independent, theory-independent, perfectly "objective" perspective.

Rather, we are fated to experience nature as through a glass darkly, Rorty's "mirror of nature", and the Vajrayana's *melôn*. Thus, on this view, there can be no certain and universal knowing of anything independently of its instantiation in language and culture. Plato's universal Forms or Ideas are kaput!

Postmodern neo-pragmatist Richard Rorty points out, and most thinkers now agree, our cognition is profoundly and always mediated by the "final vocabulary" of language and culture. All human experience is fined by this semiotic linguistic socio-cultural reticulum of our presuppositional concept/belief systems, Quine's web of belief. How then does Wittgenstein's gnostic fly find its way out of the conceptual fly bottle?

If we are to have Realism—and indeed we must, for without it we have solipsism and nihilism—it must be, not an existential absolute Realism, but a non-ethically relative, pluralistic robust relative-conventional Realism vindicated on pragmatic grounds, as the Buddhists, Quine, Rorty and the Neo-pragmatists have argued.

Buddhist *Madhyamaka Prasangika* (the Nalanda Middle Way Consequence School) view offers such a pragmatic, conventional, but not ultimate Realism through its Two Truths (relative and ultimate) epistemology (Boaz 2012, and *Principia Dharmata*, The Buddhist View, p. 34).

Prasangika's relative-conventional truth (*samvriti satya*) is an incipient pragmatic, non-foundational (recall the "emptiness of emptiness"), non-absolutist, pluralistic pragmatic Realism. This is however, unlike the Pragmatists and Neo-pragmatists, not the end of the narrative.

The dimension of relative, conventional spacetime truth is relative to, and intersubjectively, interdependently (*pratitya samutpada*) related to, indeed subsumed and embraced by, the trans-conceptual, nondual unbounded whole itself—(ultimate truth/*paramartha satya*) in which, or in whom it arises. Let us then get both Neomodern and Postmodern neo-pragmatists (Rorty) including quantum physicists and philosophers of physics and cosmology in symposia with Buddhist scholar/practitioners.

Now, as to the much prophesized death of philosophy, to be sure, Modern philosophical foundational Realism is dead. Yet, the cognitive reach of *actual* philosophy (*philo/love, sophia/wisdom*), far exceeds mere conceptual discourse and intellectual exoteric understanding about what there is (ontology) and how we know it (epistemology).

If what is meant by "philosophy" is sterile exoteric recent Western continental and American analytic philosophy, there was here, precious little life to begin with. Esoterically, philosophy is the process of the *praxis*, then realization (*sahaja*) of the prior ontic unity of love and wisdom.

Then, the *innermost esoteric* realization (*bodhi*) of such philosophy as the union of love and wisdom spontaneously expresses and actualizes this inherent unity as kind, compassionate conduct toward all beings in the bright everyday lifeworld chaos of our being here in the really real relative-conventional dimension of time and space. For our premodern wisdom traditions this is the "innermost secret" of the ultimate happiness (*mahasuka, paramananda, beatitudo*) that cannot be lost.

Moreover, mere exoteric analytic philosophical inquiry remains, with exoteric objectivist science (and not so objective quantum physics and quantum cosmology), a very useful tool in both the descriptive (scientific) and normative (fact/value, is/ought) aspects of our all too human dimension of conventional Relative Truth (*samvriti satya*). That is to say, Philosophy and Science—exoterically viewed—facilitate the "real work" of explaining and clarifying the causal and acausal arising of appearances in relative-conventional spacetime reality (*samvriti satya*), and the integration of this physical/mental cosmos of scientific inquiry with a seemingly separate but interdependent ultimate all-inclusive *kosmic* reality unity (spirit, *paramartha satya*) in which, or in whom this all arises.

How do we apply such a view to our urgent human problems of knowledge, conduct and governance? We've seen that that is the real work of exoteric and even esoteric philosophical and scientific inquiry of our inchoate 21st century Noetic Revolution.

This is, as we have seen, the conceptual perennial "Two Truths" narrative of the trans-rational nondual one truth, invariant across all—objective and subjective—cognitive reference frames. The surrender of our failed, Modernist Enlightenment obsessive bipolar grail quest for foundational absolute binary or bivalent objective certainty will open into subjective, introspective first person methodologies thereby precipitating noetic (body, mind, spirit) methodologies, and greatly enhancing this urgent work.

As both recent scholars and ancient meditation masters have shown, no single theory can explain all of its data; again, bad news for current and future "Theory of Everything" candidates and the physicalist/materialist Theory of Everything (TOE) project.

We find our objective and subjective experience, not via some infallible rational or empirical epistemic foundation (Realism, Materialism), but through the whole of our experience—physical, perceptual, mental, emotional, biological, sociocultural, and historical. Thus, as Quine has shown, our experience is heavily theory-laden and determined by, and dependent upon our cultural concept/belief systems, just as the Postmoderns have told.

As to a *non-materialist* Theory of Everything—should such an exotic conceptual entity exist—Buddhist *Prasangika* epistemology, with the ontology of *Dzogchen Ati* are, I submit, strong candidates (Boaz 2017, Klein 2006, Pettit 1999, Garfield 1995).

The demise of the logical and empirical possibility of a physicalist/materialist Theory of Everything, along with the accumulation of compounding non-trivial physics anomalies—Kuhn’s science “puzzles”—Quine’s and Duhem’s germinal work in logic and epistemology, Gödel’s and Bell’s theorems, along with the “problem of consciousness,” all together constitute a dark cloud on the horizon that portends a radical revision of the metaphysical core assumptions of the venerable but incomplete Standard Model of physics, and of much post-Standard Model physics and cosmology.

Many theoretical physicists and cosmologists are acutely aware of this predicament and are now exploring post-quantum, post-Standard Model explanations (super-symmetry, M-Theory, Loop Quantum Gravity). Ironically, some of these fine minds are still TOE advocates.

Shall we then abandon the venerable Standard Model? Of course not. It gave us the computer, the laser and the bomb, and it will continue to serve. Just so, the “old paradigm” Newtonian mechanics that Einstein “proved wrong” got us to the moon and back. And Galileo’s classical Principle of Relativity was conscripted by Einstein, and now holds forth in the post-classical Relativistic Quantum Field Theory of Bohr, Heisenberg and Schrödinger.

A necessarily heretical non-orthodox, non-realist/materialist post-quantum noetic ontology need not preclude or impede “progress” in the dimension of spacetime scientific relative-conventional truth. Indeed, such a middle way ontology is imperative.

The old scientific paradigm—Materialism, Physicalism, Realism, Rationalism, Empiricism, Positivism, Structuralism, Post-Structuralism, Functionalism—generally attempts to deny or reduce to physical the empirical and logical possibility of any reality beyond the merely physical/material. Neuroscience for example, too often attempts to reduce subjective human experience, including trans-rational spiritual experience, to purely rational physical-chemical electrical “neural correlates” in material brain.

For such explanatory methodological reductionism, it’s not that non-material noumenal reality is unknowable, as Locke and Kant pointed out, but that it is non-existent, which is as we’ve seen, an unproven and unprovable metaphysical dogma of Science (Boaz 2012, Appendix B, “The Idols of the Tribe: The Metaphysics of Modern Science”).

Scientists would do well to expand their explanatory fields of evidence and to surrender, or at least bracket their realist, materialist metaphysics. Who knows what new understanding may here arise? Again, an integral noetic science must acknowledge and utilize both objective, physical, third person data, as well as the first person introspective mental and spiritual objects of investigation.

Yet, since Galileo, mainstream Science has denied metaphysics (ontology), including its own hidden realist materialist metaphysic. Revealingly, esoteric Spirituality and even exoteric religion assume a metaphysical (beyond physical) primordial ground, often ontologically prior to the physical world, yet knowable by subjective trans-rational contemplative prayer, mindfulness and insight meditative practice. Science's proto-religious Big Bang is such a supernatural metaphysical assumption, too close for ontic comfort to the creation myths of our primordial wisdom traditions—Christian, Hindu, Buddhist. Surely something like this myth is the nondual truth of the matter.

Again, two truths—conceptual objective relative, and conceptual perfectly subjective ultimate—comprise the trans-conceptual nondual one truth that is the all-embracing primordial unbounded whole. Here, at the “gateless gate” (Hui Neng) of heresy, we may surrender (*wu-wei*) our turgid tedious concepts and conjectures *about* a non-conceptual “spiritual” ground of reality, engage the contemplative injunctions of the masters, directly enter in to it, and see.

And just in case the *ultimate* nature of appearing reality turns out to be more than just physical, then a purely reductionist (or eliminative) physicalist ontology is necessarily incomplete, as we have seen.

A physicalist/materialist physics is complete—and a physicalist TOE possible—if and only if reality is purely and only physical, a very dubious, unproven, unprovable metaphysical assumption.

Again, what is required is a pluralistic pragmatic “two truths” centrist noetic view and methodology that restructures and perhaps unifies both paradigms (Boaz 2012, Chap. VI “The Structure of Noetic Revolutions: Reflections on Methodology”).

Therefore, let physicists, philosophers of physics and religious studies folks sit down with Stephen Hawking, Roger Penrose and Rupert Sheldrake over vintage port—and chat about noetic ontology: what there is, how it is, even why it is, and most of all, who it is? Who is it this basic space (*dharmadhatu*), the very nature of mind in whom we arise?

“Why,” asks Lee Smolin (2006), “is physics in trouble?” Why is physics stagnant? Why is there so little real progress in microphysics, and in astrophysics?

I have here and elsewhere argued that theoretical physics has at last “hit the wall” fabricated by its petrified, ideological clinging to a fundamentalist foundational objectivist/realist/materialist orthodoxy grounded in the unproven and unprovable metaphysical dogma that the whole of appearing reality—from its microcosmic quarks, leptons, strings and Higgs bosons, to its macrocosmic black holes and quasars—is an objective, theory-independent, observer-independent (Realism), background-independent, purely physical reality (Physicalism/Materialism).

Alan Wallace (1996, 2007) has pointed out that in order to adopt Scientific Realism as a metaphysical ontology one must make conscious the following usually unconscious “scientific” assumptions: 1) reality is only physical and objectively exists, not interdependently, as Buddhist centrist *Madhyamaka* epistemology would have it, but independently of an observer or experimenter; 2) this reality can be known purely conceptually, through human reason; 3) of all of the theories of reality, only one can be true; 4) the view of Scientific Realism is that one true theory. This ideological dogma—this infernal begging of the metaphysical question of Realism/Materialism—is known to its critics as the fundamentalist proto-religion, “Scientism.”

Scientific Realism was supposed to extend Science's explanatory reach beyond the epistemic constraints of classical empiricism and its 20th century incarnation Logical Positivism, but I have here concluded that it has failed to do so. This dialectical intellectual tension between Empiricism and Realism is a revealing chapter in the 20th century epistemology of Science (Cushing 1989, Lerner 1992).

We've concluded above—with most philosophers of physics and cosmology—that the profound unifying quantum gravity theories now on offer by the current physics paradigm are metaphysical theories. And that's OK.

Science's urge to explanation must no longer be constrained by mere third person empirical observation. Science must transcend its steadfast empirical evidential modesty in a bold new explanatory ambition that permits the exploration and explanation of unobservable, trans-empirical, trans-realist, intersubjective, introspective and contemplative relative first-person evidentiary fields, reports and data; in short, integral non-physical or meta-physical, even noetic theory and methodology.

The Scientific Realism/Materialism of the present Big Science paradigm, with its persistent dogma of Physicalism, has failed to accomplish this. Thus do the anomalies of the current Modernist science/physics paradigm accrue, as evolution toward the new 21st century noetic paradigm arises.

Kuhn's paradigm paradigm: is Science rational? The third great scientific revolution, the Quantum Revolution, is now complete, even if quantum field theory is still evolving toward further completeness. From this great scientific and cultural revolution is emerging post-quantum, post-Standard Model logically consistent Quantum Gravity Theory (QGT), that great desideratum that is the reconciliation of the two mathematically incommensurate pillars of physics and cosmology, namely, relativistic quantum field theory (QFT, QED) with Einstein's General Relativity Theory (GRT).

The Standard Model of physics—with its Relativistic Gauge Quantum Field Theory—is now undergoing the Kuhnian “scientific crisis” that precedes the arising of a new more inclusive integral noetic paradigm, then a “paradigm shift” that shall, in due course, result in a “scientific revolution.” This fourth scientific/cultural noetic revolution (with the Copernican, Newtonian and Quantum revolutions) is to be completed, on Kuhn's (and Planck's) account over the next two or three generations with academic tenure of the new paradigm practitioners, and the expiration of the ideologues of the old paradigm. Just so, the Newtonian science paradigm evolved historically to become the current waning relativistic quantum paradigm of Einstein, Bohr, Heisenberg and Schrödinger.

Philosopher, physicist and historian of science Thomas Kuhn, in his paradigm shattering bestseller, *The Structure of Scientific Revolutions* (1962), demonstrated that Science has historically, and continues to proceed, not continuously and cumulatively, but discontinuously, through discrete scientific revolutions.

Current Modernist “normal science” utilizes, refines and extends the theoretical and explanatory reach of science through the method of normative hypothesis appraisal of descriptive objective factual propositions. The warrants for the claims of Science are the factual and formal mathematical content of its theories. Such theory is expected to explain arising anoma-

lies in experimental results. When unanswered anomalies, for example the apparent incommensurability of QFT with GRT, compound to create a critical mass—as is now the case with the Standard Model of physics with its Λ CDM cosmology, including the proto-religious, logically problematic, if not logically impossible "inflationary hot Big Bang" singularity—"revolutionary science" (crisis science) or meta-science (in this case meta-physics) enters the fray to provide critical appraisal and correction of the core assumptions and beliefs that guide theory construction and belief within the paradigm.

My thesis here is an example. Here the warrants are not the scientific "facts" and theoretical mathematical conjecture that constitute Standard Model theory, but normative information concerning the model's capacity to manage the anomalous data of the essential constituting body of theory and belief as a whole—in Quine's holistic idiolect—the "total science" or the "field of force" that is the "coordinate grid" or whole of the entire current scientific paradigmatic "web of belief."

Moreover, for Kuhn these competing paradigms—the orthodox descending "normal science" paradigm, and the ascending "revolutionary science" paradigm—are "incommensurable," that is, paradigm neutral rational communication and evaluation across paradigms is extremely problematic, if not impossible. "There is no neutral algorithm for theory choice." The cognitive "*gestalt* switch" from old to new paradigm is akin to a trans-rational "religious conversion." Indeed, this productive dialectical tension between orthodoxy and heresy is inherent in all religious paradigmatic change, indeed in all sociocultural change.

Kuhn's holistic point is this: Science proceeds discontinuously, through episodic "scientific revolutions." There is no rational calculus and no neutral point, no "view from nowhere" (Nagel), no "God's eye view" (Putnam) from which to evaluate competing science (or religious) paradigms. Kuhn's view of science continues this externalist historical, social, cultural, contextual, relativist Postmodern shift.

Once more, "the whole of science" is not rational and objective. No surprise. Neither are human beings. Science is a psychological, sociological, historical process. Scientific knowledge and truth are inextricably woven into the fabric of the vast historical, socio-cultural mind-stream of human beings.

The Postmodernists Gödel, Kuhn, Quine, Derrida and Heidigger have shown that Science, the exemplar of rationality, has a non-rational core that it cannot escape.

What then is the proper relation of this whole "web of belief" of relative objective Science to the inherent subjectivity of human spirituality with its recognition, and potential contemplative realization (*vidya*) of "Ultimate Truth" (*paramartha satya*), this trans-conceptual numinous unbounded whole that is our nondual ground, ultimate Reality-Being Itself?

The mind-body, subjective-objective duality that is the "hard problem of consciousness" is subsumed in the really hard problem of soteriology. How do we unify the dualistic divided house of a lugubrious massmind human consciousness with its luminous "supreme source" that is our primordial home, and still "hue wood and carry water," and balance our checkbooks?

Therefore we must open to the exploration of a dualistic relative-conventional, realistic, causal, epistemologically pluralistic, yet nondual acausal ontologically monistic pragmatic cen-

trist strategy that cognizes at once the reality of both our worlds, both being and non-being, both dualistic objective form (matter) and its nondual perfectly subjective, primordial ground—boundless emptiness/spirit. That's all.

After all, has not this noetic unity—by whatever name—been our heart's desire and ultimate quest from the very beginning? The pragmatic, "radical empiricism" of William James, the ontological relativity of Bohr, Quine and Kuhn, and the Middle Way Buddhist *Madhyamaka Prasangika* all suggest such a centrist epistemic and methodological architecture. This is, as we have seen, the real work of our 21st century Noetic Revolution.

We have thus far all too briefly engaged our two knowledge paradigms, rational objective Science, and trans-rational subjective Spirit/spirituality. We have probed the conceptual hardware of science, and the software of the subtle spirituality that is mind nature, the ultimate nature of mind. Herein we have indulged in a bit of unbridled ontic speculation. Now then, without the faintest epistemic timorousness, let us speak further of this brave new world of unification—both within science, and of the hitherto incommensurable realms of science and spirit.

Varieties of Buddhist experience, and quantum emptiness. In Buddhism the *Abhidharma* of the *Sarvastivada* and *Vaibhashika* Schools argue, with Democritus and his master Leucippus, and with Western functionalist Material Realism (Scientific Realism/Scientism), the realist atomist position wherein reality consists of indivisible physical/material atomic particles (atomism) that have an ultimately physical, objectively real, even absolute and eternal existence. Some Buddhist schools believe that atoms are eternal; some particle physicists believe that electrons and protons cannot decay. Such an existence is believed to be independently arising, apart from a perceiving, experiencing or experimenting mind. Such realists, whether Buddhists, Hindus or scientists, are *essentialists*, believing that reality exists essentially and independently, just as it appears from its own side, of its own power—not interdependently as centrist *Madhyamaka* Buddhists would have it.

On this essentialist, usually realist view, actually reality as it appears to our senses can be experienced only via a "mirror of nature" (Rorty), a kind of "immaculate perception" that represents an eternal barrier between human consciousness and the real world. This observer-independent, theory-independent, realist view is opposed by the Buddhist Idealists, the *Yogachara/Chittamatra* or "Mind Only" school of Asanga and Vasubandhu, along with Western Objective Idealists—Bradley, Royce, McTaggart—who explain arising material objective reality (roughly) as unreal, a subjective apparition or illusion of a sentient perceiving consciousness. For *Chittamatra* Idealism, appearing physical spacetime reality is relative and illusory (*avidya maya*) as it arises from its ultimate source (*vidya maya*). This appearing reality is "mind only." There can be no objectively real things.

Kant's Transcendental Subjective Idealism—a duality of realist, material objective phenomena, and the perfectly subjective unknowable utterly transcendent *noumenon*—is a Western (Platonist) version of our Primordial Wisdom Tradition's "Two Truths" duality—objective relative and subjective ultimate—and resembles the "Neutral Monism" of William James. It also resembles the non-idealist, non-essentialist, yet pragmatically relatively realist centrist

Buddhist Middle Way *Prasangika* view of Buddapalita and Chandrakirti, as we have seen. Is such a middle way between relative form and ultimate emptiness epistemically possible? Is there a centrist position between our apparently competing paradigms of descending Science (form) and ascending Spirituality (emptiness)?

Yes. *Between these two philosophical extremes—the realist/materialist reification of an absolute and independent physical and mental phenomenal reality, and the idealist nihilistic negation of it—abides the mean that is the Madhyamaka Prasangika*, the centrist, Buddhist Middle Way Consequence School. *Prasangika* is the theoretical basis, and complementary, according to Longchen Rabjam (Longchenpa 2007) and His Holiness the Dalai Lama, of the pragmatic view and practice of the Buddhist *Nyingma* School's *Dzogchen*, the Great Perfection (Boaz 2012, "*Principia Dharmata: The Buddhist View of the "Nature of Mind"* p. 34 ff, and "*A Glimpse of the Great Perfection"* p. 45 ff). Here we have not only a centrist synthesis of the Two Truths that are exoteric Realism/Materialism (matter), and esoteric Idealism (mind/spirit), but an optimistic and freeing soteriology—a greater esoteric or innermost esoteric view and practice for human liberation and ultimate happiness.

"Everything that exists lacks an intrinsic nature or identity" asserts Alan Wallace (1996) explicating this Buddhist centrist ontology. The appearance of objects arising from the primordial ground are interdependently related, that is, their reality is dependent on other related events and processes, "prior causes and conditions." Moreover, our minds perceptually and conceptually impute and reify these appearances into objectively "real" physical/mental/emotional spacetime existent realities; some attractive, some not so attractive.

Physics and Science are quantitative. "The qualitative" (value, volition) is active yet hidden and denied in Science. It must now be recognized and strategically developed. *What is urgently required is an integral noetic epistemology and ontology that accounts for a trans-rational, contemplatively if not conceptually knowable subjective ultimate or universal trans-physical reality matrix base or sourceground—the "supreme source" of our wisdom traditions—in which objective physical relative spacetime particulars (energy, mass, force, charge, waves, particles and people) arise, interact and participate.* Clearly, such a noetic science requires a methodological relaxing of the limits of the obsessively objective independent view and praxis that is "Scientific Realism."

The basal quantum vacuum potential of Quantum Cosmology, with Buddhist openness/emptiness (*shunyata/dharmakaya/kadag*) in which the vacuum arises, is a good beginning. This of course requires noetic contemplative research methodologies that utilize both quantitative objective third person data and the qualitative subjective data of introspective/contemplative first person reports (Boaz 2012, Ch. VI, "*The Structure of Noetic Revolutions: Reflections on Methodology*").

Bohr's Copenhagen Interpretation, Hawking's MDR view of the Quantum Field Theory and the quantum vacuum potential, and the "consciousness causes collapse" interpretations of QFT (Schrödinger, de Broglie, Wigner and the Ghirardi/Rimini/Weber theory) are Science's inchoate acausal architecture for such a middle way methodology. The rub is that physics (frequently embodied by discursively self-reified relatively real but not ultimately real physicists) still clings to its orthodox, old paradigm dogmatic metaphysic of objectivist Realism/

Physicalism/Materialism (notable exceptions being the antirealist view of Bohr, von Neumann, Wheeler, Stapp, post-MDR Hawking and others).

What might the culture of Modern and Postmodern physics look like with this methodological enrichment of the psychology and epistemology of premodern—and now, with the rise of contemplative science—postmodern Buddhist Middle Way contemplative science? This emerging integral noetic ontology presents a propitious aperture for the centrist noetic science of matter, mind and spirit of our emerging Noetic Revolution, and the healing wisdom that abides herein.

Yes, the Buddhist Middle Way *Madhyamaka Prasangika* speaks of the perennial Two Truths: Relative Truth (*samvriti satya*, the cosmos of cloaked material objective spacetime form), and Ultimate Truth (*paramartha satya*, the formless *kosmic* emptiness expanse that transcends yet embraces, and in whom arises the conventional dimension of Relative Truth).

First, Prasangika acknowledges the truth of Realism by granting an objective existence to appearing reality. Yes, arising phenomenal objects do have an objective reality. They are not illusory as the Indian Idealism and Buddhist Chittamatra/mind only schools hold. They really are real. But this reality is not observer-independent, theory-independent or background-independent, existing absolutely, from its own side. Rather, it is merely the nominal, contingent, relative-conventional reality of the spacetime dimension that is Relative Truth.

This observer-dependent, theory-dependent ontologically relative protean spacetime bound reality does not possess—is empty (*shunya*, *nirguna*) of—any intrinsic or essential permanent existence, essence, attributes or identity independent of related physical and mental causes and conditions (Garfield/Nagarjuna 1995).

But this essential emptiness (*shunyata*) of form is not merely an apophatic *via negativa*, a “non-affirming negative” that is but a nihilistic nothingness. Perish the thought. While the essence of form is emptiness, its very nature is luminosity (*prabhava*), light, brilliant clarity. And its spontaneous spacetime expression is the compassionate gift of reality—Realism—to all of us, and through this, human “loving kindness” conduct toward all life forms.

For *Madhyamaka* and *Vajrayana* Buddhists the actual “nature of mind” and its reality contents—all of our objective and subjective experience—is the numinous, radiant basal primordial awareness wisdom (*gnosis*, *jnana*, *yeshe*), the vast spacious causal nexus or ground (*dharmadhatu/dharmakaya*) of the bright (*prabha*, *prakasha*) unbounded whole in which the consciousness of sentient beings and all relative-conventional phenomena arise and play (*lila*), without ever separating from this basal source-ground.

Professor Anne Klein (2006) has told it: “Unbounded wholeness is how and what reality is... Open awareness (*rigpa*), fully present to that state of wholeness, is the knowing of it.”

Once again, the spacetime expression of this uncontrived cognitive state is kind, compassionate thought, intention and activity in service to all human and other beings. How do we do this? Through the confusing, relative contemplative practice of the path.

Is there a non-dogmatic reason that a similar interdependent centrist middle way view could not be developed by theoretical physicists and philosophers of physics—should they actually begin communicating—in their transition from the fundamentalist paradigmatic dogma

of foundational Realism/Materialism to a new more inclusive post-metaphysical, trans-materialist noetic view that includes both of our objective and subjective paradigmatic belief systems, and beyond? Is not the burden of rejoinder here upon the materialist/physicalist?

Such a pragmatic (choosing among a plurality of truths) centrist view will decline to reify our experience—attention, perception, conception, emotion, belief, intuition and satori/samadhi—into an absolute independent purely objective, physical existence, yet will offer an interdependently real, non-idealist, non-nihilist ontologically relative (Bohr, Quine, Habermas, Rorty) explanation of reality itself, of what there is, all of this arising appearance.

With the inherent subjectivity and quantum emptiness/openness of physical reality demonstrated by the nominalism, anti-essentialist anti-Realism of the prevailing Copenhagen Interpretation of Quantum Field Theory, the “consciousness causes collapse” (of the wave function) interpretations of the Quantum Field Theory, and Hawking’s promising incipient Model Dependent Realism (MDR) interpretation, the view of current theoretical physics must now actively explore such an ontology if it is to contribute anything new (e.g. a centrist theory, or even a new quantum gravity candidate) to our understanding of the multi-dimensional nature of appearing reality, and its relationship to the numinous unbounded whole itself—the “nature of mind”—that is its “supreme source.” Our “goal” here is a recognition, beyond paradigmatic dogmatic fixation, of the prior epistemic and ontic unity (not oneness) of these perennial Two Truths that are form and emptiness.

However, Hawking’s (2010) metaphysical dread is troublesome. His “Model-Dependent Realism” is necessarily a metaphysical ontology as to the nature of the reality that this “realism” presumes to describe. In spite of his “philosophy is dead” rhetoric, Hawking’s MDR is an ontologically relative, philosophical metaphysic as to a reality that is theory-dependent—dependent upon the reifying concepts of our cultural “web of belief” (Quine)—precluding his old orthodox paradigm Scientific Realism, theory-independent separate reality existing *independently* of perception, conceptual theory and belief.

Regarding such an observer-independent, theory-independent ontology, Hawking points out: “In philosophy that belief is called realism.” And this Platonic Realism has become Scientific Realism (Scientism) wherein an objective, spatially extended, external real world exists *independently* of any observer, theory or belief about it. Conversely, an observer-dependent, theory-dependent reality exists dependently, even interdependently upon an observer and is therefore *ontologically relative* as to the existence of any “real world out there” (RWOT). That is to say, for Hawking’s new “positivist” MDR view, no independent, separate, real, physical reality is theoretically posited or assumed.

Thus Hawking’s theory-dependent “Model-Dependent Realism” is not an orthodox “Scientific Realism,” but an antirealist philosophical position in the mode of Niels Bohr or Wolfgang Pauli, and in opposition to the theory-independent “hidden variable” realists (Einstein, de Broglie, Bohm, Penrose, Smolin). And that’s good news for Hawking, and for our purpose here. But MDR cannot be further developed, explicated and peer reviewed without philosophical (epistemological ontological) analysis and dialogue. Here, the intervention of philosophy of physics is required. Let dialogue begin.

Further, while Hawking's ontologically relative, perspectival anti-Realism is a courageous change of view from the earlier orthodox Scientific Realism of *A Brief History of Time*, his "philosophy is dead/God is dead" creed has no place here. Such destructive dogma represents the all too human dualistic attitudinal constellation that has obstructed the paradigmatic rapprochement between the seemingly incommensurable paradigms of Science and Spirituality for far too long.

If MDR helps us to resolve, or to avoid the problem of "the meaning of existence," as Hawking says it does, then such pronouncements are obstructionist. The meaning of existence necessarily involves, not sterile academic philosophy, but *philo-sophia*—love and wisdom, and the "innermost esoteric" unity of these two that is the intimation of, if not the dualistic theistic God that Hawking objects to, then a nondual ultimate primordial matrix ground of being (*cittadhatu*) that in *Dzogchen* of the *Vajarayana* is mind essence, the very "Nature of Mind," and in Buddhist *Mahayana* is *shunyata*/emptiness/*dharmakaya*, etc.

Perhaps this is also the direction of an inchoate MDR as it matures into its holistic potential. But we cannot know this until its occult philosophical consequences rise from the dead and engage philosophical peer dialogue.

Hence, the emerging noetic rapprochement of our two knowledge paradigms—objective relative and subjective ultimate—requires such a pragmatic centrist epistemology and ontology in which nothing—subjectivity, spirituality, value, volition—is taboo. Such a project will facilitate our next step in the evolution of the coming to meet of the causality of Western means and method (progress) with the seemingly inscrutable, acausal cognitive surrender (*wu-wei*) of Eastern Wisdom.

Our reality choices here may utterly change our dualistic goal-directed acquisitive and consumerist notions of "progress" in the physical and social sciences, in political economy, in ethical theory and practice, and in the false dichotomy between "gradualist" and "non-gradualist" spiritual practice.

We've seen that the "Science" paradigm has begged the metaphysical question of Physicalism since the Pre-Socratic Atomists. "Hidden Variables" Realism (Einstein, Bohm, Smolin, Penrose) is the most recent version of this "hope for a miracle" special pleading.

To develop that next more inclusive theory requires that we relegate the truths of Scientific Realism and Materialism to the epistemic realm of spacetime dimensional relative conventional truth, and open up to the possibility of a centrist ontology that transcends, yet includes and contextualizes Realism/Materialism. Such a centrist view will be epistemologically pluralistic, yet ontologically monistic and nondual ("not one, not two"). Again, does not the burden of rejoinder here lie with metaphysical Realism and the materialists?

Voila! Physics is now opening to such a centrist view. (One hopes that physicists will do so as well.) The psychological and theoretical openness required by the development of M-Theory and quantum vacuum cosmology has made metaphysics and the natural or "lucid mysticism" (Pauli) of post-quantum, post-Standard Model M-Theory mathematics a theoretical physicist's daily yoga. Some of them are aware of it.

As to the two paradigms—objective Science and subjective Spirit—will this new holism of the “king of the sciences” generate a centrist view and *praxis* that tackles the obstructionist “separate but equal” strategy of the “*non-overlapping magisteria*” (Stephen J. Gould) mentality.

Will the new holism address the all too real “spirituality gap” between teacher/doctor and student/client/patient that trickles down to the cognitive and biological sciences, and to medicine? That it does so quickly is indeed the happy desideratum to be wished.

For the centrist Buddhist Middle Way then—as well as for particle physics and cosmologists—the contingent, dependently arising objects of phenomenal reality in our experience are not *independent* but *interdependent* (*pratitya samutpada*) or “Interbeing”. Matter/form and mind/spirit are co-dependent and co-terminus. Such a middle way assumes the ontological relativity and pragmatics of Quine, Wittgenstein, Dewey and Rorty—that reality is “theory-laden.” That is to say, appearing reality is relative to our theories and beliefs about it, and that includes Bohr’s Copenhagen Interpretation, and Hawking’s new “Model-Dependent Realism” version of the Quantum Field Theory. Here, truth is pragmatic, that is, it cannot be found or justified in our linguistic concept/belief systems, but must be seen merely as an expression of approval or disapproval.

Again the two paradigms, this duality of objective and subjective reality—the realm of objective spacetime Relative Truth (*samvriti satya*) and perfectly subjective mind nature or Ultimate Truth (*paramartha satya*)—are co-extensive, arising in and participating in the undivided, unbroken whole that is the primordial one truth, “invariant across all cognitive frames of reference” (Alan Wallace 2007), exoteric, esoteric, innermost esoteric, and nondual.

This numinous one truth is the trans-conceptual, nondual ontic prior unity of the perennial conceptual paradigmatic “Two Truths” subject/object dualism. Just so, the *Madhyamaka* duality of the Two Truths is transcended and embraced in this “one taste” of the perfect sphere of *Dzogchen*, the nondual Great Completion of *Madhyamaka* that is the nondual unbounded whole or primordial base or source that is the very ground of being, reality being itself. This nondual source is *dharmadhatu*, *chos ying*, *shunyata*/emptiness, *mahabindu*, the unbounded whole itself. Yet this emptiness ground (*gzhi rigpa*) is not, as seen above, a mere negative, or absence. It is rather, the luminous creative basic space of reality wherein form arises and participates.

Does this mean that for the *Madhyamaka Prasangika* and *Dzogchen* view this Ultimate Reality is utterly transcendent and unknowable, like Kant’s *noumenon*, or like the separate “other” God of the theists, somehow beyond relative spacetime reality? But it is not so, say the primordial wisdom masters. While “primordially pure” ultimate reality itself (*kadag*, emptiness, *gzhi*, the base) is ineffable to our causally conditioned, discursive concept-mind, it is always spontaneously present (*lhundrub*) and self-liberated (*rangdrol*) in the unfolding of the enfolded figuring light energy arising from this primordial ground of being. This includes the spontaneous presence (*vidya*, *rigpa*) at the spiritual heart (*hridayam*) of human beings.

These Two Truths—form and emptiness—are Buddha’s dependent arising (*pratitya samutpada*). Relative-conventional truth (form) is known by our conventional mind. Ultimate Truth is known by our ultimate mind—Suzuki Roshi’s “small mind” and all-embracing “big

mind. In dependence upon the view, relative or ultimate, these two are a prior unity, yet separate from the limited view of mere conceptual small mind. They exist in spacetime, yet they do not exist ultimately. They are mere concepts. Nondual *Advaita Vedanta*, Buddhist *Dzogchen*, the Postmoderns and the Neo-pragmatists agree, our semiotic (syntax, semantics, pragmatics) linguistic concepts and beliefs cannot realize extra-linguistic, trans-rational realities. This must include the great trans-conceptual nondual whole that is being itself. Rather, the contemplative open awareness of *vidya/rigpa* guides us.

This selfless, open awareness presence pervades all cognition, every percept, every concept, every emotion, every reference frame—preconscious, conscious, supraconscious of human cognition, of the human consciousness procession. Such subtle cognition is the prepared mind's choice of recognition and realization of the prior unity (*yarmed*) of these two truths, ultimate *kadag* and its always already present spontaneous presence, *lhundrub*. Such cognition is free of an ego-self yet "the self of selflessness" remains. This no-self help is free of all bias, and its spontaneous compassion activity results in great benefit for beings—for both self and other.

Again, on this view we access this trans-rational mythopoetic ultimate meaning through the practice of relative dualistic contemplative "mindfulness" cognition of the "gradualist" spiritual path. Thus do we choose our reality. Thus do we choose our destiny.

What then is the relation of the nondual primordial ground of being to its arising particulars? Nagarjuna makes it abundantly clear. The relation is that of identity. We are *that*.

Ultimately, "*There is not the slightest difference between samsara and nirvana*" (Nagarjuna/Garfield 1995). *The Two Truths are "one taste," one whole immediate, ultimate ground of being that is invariant across all cognitive reference frames. We need not, indeed we must not attempt to transcend the Relative Truth of our ordinary mind of everyday spacetime reality for it is the samsara of the conventional reality of this ordinary and natural luminous mind—this light of the mind—that is the very nondual clearlight Nature of Mind, Ultimate Truth, perfect (if unrecognized), as Shakamuni Buddha told, "exactly as it is."* Let us awaken to *that*.

That is the great radical nondual realization, the Great (*chen*) Completion (*dzog*) or Perfection that is *Dzogchen*. This is the same nondual unity that is *Essence Mahamudra* of the Kagyu school; of the *Madhyamaka of the Definitive Meaning*; and of the *Mujodo no teigen* of Saijojo Zen. Although these nondual Buddhist teachings differ a bit as to the practice of the Path, they are, on the accord of Nyingma School's Tulku Urgen Rinpoche, identical as to the View, and as to the Fruition or Result, which is nothing less than the full *bodhi* of liberated, enlightened Buddhahood. H. H. The Dalai Lama councils:

One should not think that there is such a thing as the practice of Mahamudra or Dzogchen apart from a thorough grounding in Madhyamaka. Madhyamaka with its Two Truths is the basis for all the practice traditions of the view, and is the basis for Mahamudra and Dzogchen (Cabezón 2011, p. 57).

Now, it is told that this ultimate happiness of all of our seeking strategies is "always already" accomplished, atavistically embedded and abiding right now, deep within us. Indeed, this primordial imprint that is the nondual open awareness "state of presence" (*vidya, rigpa*) of

the ground of being (*dharmata*, *dharmadhatu*, *dharmakaya*) is our legacy—whether we're good or bad—as human participants being here in the infinite expanse of Dogen's timeless great "Being Time" (Dōgen below). Yet, both our relative and ultimate happiness are dependent upon our assiduous practice of the continuity of recognition (*vidya*), our step by step awakening to this great truth.

But is this radical nondual view actually so radical? Not at all. This primordial truth is present in the extant scriptures of all of the primary wisdom traditions (the *Sanatanadharma* of the Hindus, the Buddha Dharma, Taoism, Jewish Kabbalah, Christian nondual Gnostics, Islamic Sufism). "What you seek is already here, yet you do not see it" (Jesus of Nazareth). And as Shakamuni Buddha told: "Rest your weary mind and let it be as it is; all things are perfect exactly as they are."

This perennial wisdom is then, the common *wu-wei* (surrender of goal directed concept/belief to the perfection of *now*) of our Primordial Wisdom Tradition that is the foundation of the perennial nondual view, and the key to human psycho-spiritual freedom and happiness.

Yet we incessantly seek happiness outside this fully present here/now primordial awareness wisdom that is the very nature of our own mind. And our choice to surrender to this inner reality presence now, we are told, is the secret of human happiness. How shall we understand this?

New heresy: ontological relativity and Buddhist Dzogchen. We have seen that this ultimate, intrinsically non-separate, nonlocal, trans-rational, essentially interconnected and interdependent unbounded wholeness of appearing reality is merely and only here now relative-conventionally constituted by all interdependently arising phenomena (*pratitya samutpada/tendrils nyingpo*) from the vast expanse of its basal primordial intrinsic awareness emptiness ground or source matrix (*cittadhatu*), and abides within itself in a relation of identity (panentheism, panpsychism). And this all is the *Madhyamaka* great emptiness (*mahashunyata*) of the *Mahayana* Buddhist sutras, and of *Dzogchen*, the Great Perfection of the *Vajrayana* tantras.

Dependent arising is emptiness. Emptiness is dependent arising. Once again, "Form is empty (*stong pa*); emptiness (*stong pa nyi*) is form." Ultimately, there is no difference. Ultimately, these two paradigmatic realities participate in and arise together from the same (*samata*) ontic reality source-ground. According to the masters of this tradition, the recognition, realization and actualization of this trans-conceptual *samatajnana* or Buddha cognition is cognition that cannot be bound by cause and effect. How shall we understand this?

We are told that in the *Dzogchen* tantras, unlike the gradualist "causal path" of the *Mahayana* sutras, Buddhahood does not have a cause. We cannot attain it through our armamentarium of seeking strategies: good, goods, gurus, virtue, ethical precepts, correct meditation and the rest. Why? Because the emptiness/*dharmakaya* that is our inherent (*sahaja*) Buddha nature is "always already" present in each of us. Perhaps we are looking for happiness in all the wrong places.

Stated another way, the ultimate nature of mind—by whatever name—is nondual, that is to say, non-conceptual, non-propositional and non-prescriptive. Yes, it is veiled (*vikshepa*). We recognize, realize and stabilize it through training in quiescent selfless mindfulness

(*shamatha*), and penetrating insight (*vipashyana*), the *Vajrayana* foundational *ngondro*, and other contemplative practices. But we do not accomplish these practices through the sheer force of the cause and effect action of a spiritualized ego-I. Yes, the bright mirror (*melôn*) of the lama or “spiritual friend” is always required in awakening to this, our supreme identity.

Therefore, according to the nondual teaching of the great wisdom traditions, as this intrinsic awareness state, this presence or seed of Buddha nature—by any name—is “always already” present—if unrecognized—at the spiritual heart/*hridayam* of each human being, there is nothing to accomplish, nothing to desire and nothing to do (*wu-wei*/surrender), so all that we do is open, authentic and kind. As this vast ground of being is “primordially pure from the beginning” (*kadag*) as this spontaneous presence of it (*lhundrup*)—activity arising herein, directly, without conceptual elaboration, creates no karma.

Moreover, this primordial ground is not only non-propositional (non-conceptual), it is non-prescriptive. Without reference to any ethical precepts, spontaneously kind and compassionate conduct arises from it. So, “as it is” who we are—“as it is already accomplished”—we surrender the wild horse of the busy mind and “simply relax into it.” No need to do anything (*wu-wei*). As change is the only constant, no need to change anything. No need to *not* change anything. So we leave it alone. “Leave it as it is and rest your weary mind; all things are perfect, exactly as they are” (Shakyamuni Buddha). *Indeed, every contrived samsaric phenomenal percept and concept is an aperture opening into this non-conceptually fabricated primordial ground of our being; is not different or separate from it; indeed is it.*

So how do we “simply relax into it”? Shall we just go to the beach, or chill out with a Bud Light? Paradoxically, it is accomplished through the contrived, fabricated step-by-step practice of the causal “gradualist” path under the guidance of qualified teachers, and a qualified master or spiritual mentor. We must remember and understand that the contrived “gradualist path” that is the goal of the uncontrived nondual state of liberation are relatively different, yes; yet from the view of ultimate truth (*paramartha satya*) they are an epistemic and ontic prior unity. So ultimately they are the same.

Liberation is then not the goal. The ultimate happiness of enlightenment is not the goal. Why? We cannot *become* happy in the future. We can only *be* happy now. Thus do we make this very Path the goal, each moment now. Paradoxically, if we fail in this regard, which we inevitably do, we make no “progress” at all. We then, most fortunately, get stuck in the present moment. And it is the light of this very moment that is our “goal”, when we remember. “So let it be as it is” and just relax into it now. Heady wine, indeed.

Such a seemingly radical view (to relative concept-mind) is indeed heresy to the stasis of the commonplace assumptions that comprise Naïve Realism, Scientific Realism/Materialism and their resulting feel-good pop spirituality and self-help, and as well, to our acquisitive consumerist desire-mind political economy, and to the corporate/political leadership that attempts to manipulate and control the hearts and minds of the mass-mind polity.

So this is the paradox of the psycho-emotional spiritual path. We struggle to grasp a future happiness that is already present, here now and nowhere else. “What you seek is always present but you do not see it” (Jesus of Nazareth). This is the simple recognition which,

through the mindfulness practice of the Path, grows to a relative stabilization of the View, then ultimate realization.

That is to say, because without the practice of the Path we can accomplish only brief satori-like glimpses of this great truth, with little or no compassionate expression of it in the everyday lifeworld, practice is considered by the masters of the traditions to be absolutely necessary in preparing the mind to enter the mindstream of enlightenment/liberation, there to recognize, then realize and stabilize this “correct view.”

Such practice is auspicious (*tendril*) in allowing many glimpses—“brief moments many times”—of this miracle. Then, in due course and by grace (*euangelion*, *jin lab*), we surrender to the continuity of recognition that is the mindstream of the buddhas and *mahasiddhas*. Yes, it is the grand desideratum of the wish-fulfilling gem.

“Yes,” says Keith Dowman (2010), “there is some magic in it.” Again, primordial mind nature is utterly ineffable to the discursive human intellect, but not to the “analytic meditation” of the trained contemplative mind. The mind trained in wisdom/compassion, step-by-step, gains freedom to choose its destiny. “This cannot be taught” (Shakyamuni Buddha).

The intrepid acceptance of the deepest paradoxes of human understanding—and a courageous tolerance for the attendant fearful cognitive dissonance—is a skillful utilization of this inherent magic of reality, and is as good a definition of a reasonable, if not rational mysticism as any. “Much obscurity, great hope” (Niels Bohr). Or, as the old zen master told, “Open mouth, already a mistake.”

It is taught in the wisdom traditions that within the vast spaciousness of the “many mansions” of this *mystisch* awaits a profound clarity and peace for those who would enter in. Alas, most of us stay in the uncomfortable comfort zones of the house fabricated and well-fortified by our cultural semiotic, egoic conceptual “web of belief.”

Thus, our two paradigms—Science and Spirit/spirituality—are commensurate after all. Indeed they are a prior unity. So there is no need for Science to deny or ignore the ultimate reality emptiness base—by whatever name—by reducing it to the comfort zone of mere physical form, or to mere epiphenomenal physical-electrochemical brain activity.

Conversely, there is no need for the conceptual intellect to pathologize itself and diminish the importance of science, philosophy and analytic meditation, even with all of its tedious adventitious compensatory conceptual elaboration.

The larger view, both *Dzogchen* and the mathematics of the Unified Quantum Vacuum (the *akashic aether* matrix) and of M-Theory, describe and tacitly assume this prior nondual primordial unity of the two paradigms. And this unity, trans-rationally and trans-personally cognized, realized and even stabilized and actualized in the lifeworld by highly trained contemplative subjects must now enter the universe of discourse of academic science and philosophy through the emerging noetic Science of Consciousness (Wallace 2003, 2007) that includes the sciences of contemplative neuroscience and neurobiology; contemplative medicine, clinical science, education and practice; and as well, the contemplative philosophies and *praxis* of the wisdom traditions.

The noetic imperative is that scientists, philosophers and teachers review this mind-changing, paradigm changing work, and enter into cross-cultural and cross-paradigm dialogue, whether or not Thomas Kuhn believes that knowledge paradigms are incommensurable.

Is there method to this madness? The spacetime reality of Relative Truth (*samvriti satya*), with its wondrous micro and macro (anthropic) coherence, is relatively or conventionally real through our reified conventional consciousness imputations and designations (*namarupa*, naming of forms), while the ultimate nature and source of all empirical spacetime reality is metaphorically, semiotically described by the great wisdom traditions.

The *Madhyamaka* luminous emptiness that is the potential fullness (*pleroma*) of *Dharmakaya*, Tao, the *Nirguna Brahman* of Shankara's *Advaita Vedanta*, Laszlo's brahmanic *Akasha/aether* matrix, Essence *Mahamudra* of Buddhist *Kagyu*, the *Nyingma* perfect sphere of *Dzogchen*, Ultimate Truth (*paramartha satya*), the radiant *En Sof* of *Kabbalah*, the nondual Christian Gnostic *kosmic* depth (*bathos*) of the "ultimate mode of existing of everything"—all of this transcends yet embraces, includes and pervades the merely cosmic source that is the quasi-physical quantum vacuum potential.¹

Astonishingly, this non-theistic, perfectly subjective non-entity that is luminous emptiness—that is itself empty of any logocentric intrinsic existence—this luminosity of clearlight mind (*vidya/rigpa*) is intrinsically aware! And this primordial awareness is ontologically prior to, yet pervades and animates human consciousness. To repeat, that is who we actually are. That (*Tat*), according to the deepest and subtlest teaching of the traditions, is both origin and aim of human consciousness, and of all of our seeking strategies for relative and ultimate happiness.

Now where is the "hard problem of consciousness"? It cannot arise in a non-material, non-realist ontology. The "explanatory gap" between objective physical brain and subjective awareness states—between matter and mind—does not arise when we recognize the prior ontic nondual unity of these two paradigmatic realities, at least conceptually, if not always contemplatively.

It is useful to remember that all of this theoretical speculation is merely conceptual. Let not these many concepts betray the non-discursive, nondual meaning that abides always at the mythopoetic spiritual heart (*hridayam*) of each human being, without a single exception. "What is told to the opening rose, is told to me in my heart" (Rumi).

Now, what of the soteriological *really* hard problem of consciousness? Again, "It is already accomplished." It becomes a *zygon* (*zugoun* "to yoke") *yoga/religio* continuity of recogni-

¹ Buddhist *Madhyamaka* epistemology has, broadly construed, four classifications of knowledge: *evident* (exoteric empirical, representational knowledge; *hidden* (esoteric indirect inferential knowledge; *very hidden* (greater esoteric trans-conceptual, subjective knowledge; and *extremely hidden* (innermost esoteric nondual, ultimately subjective spiritual knowledge beyond direct experience and inference for the average consciousness, but not for the trained contemplative mind.) For example, our knowledge of Ultimate Truth is hidden. The one truth that is nondual Buddha cognition (*samatajnana*) is extremely hidden. And all of this is included in the arising, integral noetic Science of Consciousness.

tion that all arising experience is not other than the clearlight “nature of mind” that is this bright nondual ground or source of the unbounded, unbroken wholeness that is reality always being itself. And as we now understand, paradoxically this “always already” present presence (*rigpa*, *vidya*, *shekina*) is accomplished through the step-by-step practice of the Path. Paradoxically, it cannot be accomplished without such committed praxis.

This, our here *now* recognition (*vidya*, *satori*, *samadhi*), enters in the mindstream of all of the masters of all the world’s spiritual lineages (the world *Sangha*) of the “three times” —past, present and future—and thereby abides spontaneously in all sentient beings, at the Heart whether or not we are intellectually aware of this.

And again, according to the subtlest nondual teachings of our Primordial Wisdom Tradition, this presence is our numinous, bright indwelling actual nature, our dynamic intrinsic awareness (*rigpa*) mind nature (*sems nyid*), our “supreme identity,” by whatever name, whether or not we recognize it now.

All the Masters have told it; it is always here, that “open awareness” presence always present. *Tat Tvam Asi. That We Are. Who am I? That I Am!* This is the good news (*euangelion*, *jin lab*) that the *rishis*, *mahasiddhas* and *buddhas* of the three times have foretold. Our human awareness is inherently That! Not if we’re good, not in the future, but always only here, now.

Thus, our fully human legacy is not original sin, but original goodness! Wisdom/Gnosis is the multidimensional knowing of it, through entering in to it. Compassionate conduct is its non-prescriptive effortless, spontaneous expression in objective spacetime reality.

Opening to such subjective numinous clarity cannot fail to shake us from our realist/materialist nihilist dogmatic slumber wherein we abide in separate and unconnected independent realities. Here we enter in that bright interdependent mind nature which abides ontologically prior to, and pervades all states of cognition. Herein our two paradigms—Science and Spirit, matter and mind—hang together.

Thus do we integrate a post-realist/materialist wisdom of ultimate spaciousness/emptiness/Spirit, with the fullness of relative spacetime forms of the material reality of Modern and postmodern Science. We need both of them.

We can now more readily understand the subtle meaning of the words of *Dzogchen* founder Garab Dorje, “It is already accomplished,” within each human form, our shared interdependent collective mindstream that is now this primordial nature and essence of mind. There has never been a moment’s separation. Perhaps our here now presence (*vidya/rigpa*) of this timeless great primordial wisdom truth can provide solace when we feel separated from it, which alas, is most of the time.

To be or not to be? Dōgen and a centrist middle way. “There are many, many ways for the teaching to arise” (Chōgyal Namkhai Norbu).

Who is it, this primordial awareness being in human form? Being (*Ontos*, *Sein*, *Bhava*) is the alpha and omega of meaning in religion (*religio/yoga/zygon/union*) and philosophy (the unity of *philo/love sophia/wisdom*); that is to say, of human “ultimate concern.”

The truth-functional binary equation—A or not-A, is or is not, *sat* or *asat*, *eka* or *shunya*, one or zero, existence or non-existence—expresses the syntactic cognitively contingent bivalence or duality of these perennial Two Truths—ultimate and relative—that constitute our being here in anthropic spacetime. Yes, we live in these two dimensions at once. Balancing this is our existential human predicament. But are these realms of being ultimately separate? Why should we care?

In Heisenberg's uncertainty relations of Quantum Field Theory (QFT) this implicit ultimate nonduality of the relative dualistically arising “productions” or manifestations of the ultimate ground or source of reality is expressed through the non-bifurcated superposition state—*both* “is” and “is not”—of the quantum information bits (qubits/*vasana*) that constitute the elementary wave/particles (or strings, loops or branes) arising from cosmology's unified quantum vacuum.

This quantum vacuum potential is analogous to, but not reducible to Buddhist *alaya*, the *relative* substrate ground with its *alaya-vijnana* (*bhavanga*, *namkha*) substrate consciousness. *Alaya-vijnana* is the subjective space of emptiness into which the contents of mind descend in deep sleep and at the moment of death, and from which all of the subjective and objective appearances or productions of mind arise. This *alaya* consciousness is not on the accord of the masters of the Vajrayana teachings the perfect subjectivity of the subtlest or “highest” state of human consciousness that realizes the unbounded whole of reality itself.

In the Vajrayana, this perfectly subjective “absolute space of phenomena” is the primordial consciousness *dharmadhatujnana* ground that may be, to the practitioner, fully present (*vidya/rigpa*) as the nondual unbounded whole (*mahabindu*) in which or in whom this all arises. Once again, Professor Anne Klein reveals the great primordial truth of the matter:

Unbounded wholeness is how and what reality is...Open awareness (*rigpa*), fully present to that state of wholeness, is the knowing of it... Open awareness is uniquely authentic (*tshad ma*) for it alone is fully aware of its own nature as unbounded wholeness (Klein 2006).

This Vajrayana Tibetan Buddhist view is preceded in historical and cultural spacetime by the Hindu “Akashic Record” (*manakasha*) which is the physical and quasi-physical *aetheric* cosmos vacuum matrix, analogous to all-embracing Pythagorean *kosmos* that subsumes the physical, material and mental objective spacetime cosmos with its many universes in a prior ontological and epistemological unity. These then are the “two voices” or “two truths”—relative and ultimate—that constitute the one truth, the “one taste” that is the interdependent objective/subjective nondual unbounded whole of matter, mind and spirit.

Lest we interpret this view as merely the new, urgent ontic dualism of recent Philosophy of Mind—Chalmers, Strawson, Nagel, Jackson—let us recall that the epistemic dualism of these two truths is ultimately subsumed in the ontic nondual one truth that is invariant across all cognitive reference frames, objective, subjective, and trans-conceptual ultimately subjective nondual.

We have seen that this here now present “one truth” — reality-being itself — that embraces the ontic duality of the Two Truths is our human ultimate soteriological (liberation) concern. We cannot *become that*. We can only *be that*. To be *that*, or not to be *that*? That is the question.

For the “consciousness causes collapse” interpretations of the quantum theory (QFT/QED), at the collapse of Schrödinger’s quantum wave function Ψ during a measurement (or a consciousness perception) — the vexing “quantum measurement problem” — quantum uncertainty dissolves, along with the *indeterminate* wave nature of light. Now the acausal *subjective* superposition of the nondual being state that is *both* A and not-A (the Law of Connection), both being and non-being, both one and zero, collapses into the *determinate* particle nature of light that is the apparent causal *objective* duality of *either* A or not-A (the Law of Excluded Middle), of *either* being or non-being. The European Logical Intuitionists and para-consistent Eastern deductive logical systems (e.g. Indian Nayala) notwithstanding, Western logic has largely ignored this unifying Eastern Law of Connection (Boaz 2012, “Post-Quantum Logic: East Meets West,” p. 72).

In other words, the collapse of Schrödinger’s quantum wave function (the state vector reduction) at the instant of a quantum measurement by an observer, or an observer’s instrument, or by any sentient perception — that is to say a moment of *consciousness* — is an aperture for the arising of objective quantum qubits (*vasana*) of apparently physical/mental *form*, via the quasi-physical quantum vacuum potential (analogous to Buddhist *alaya*) from its nondual trans-physical perfectly subjective basal *emptiness* source-ground (Boaz 2012, “The Unified Quantum Vacuum,” p. 27).

This aperture for the arising of form is also a moment-to-moment opening, an opportunity for the return of a perceiving consciousness to its emptiness ground. Everything that appears, attractive, neutral or aversive, is an opening into this vast expanse of the “primordial purity” of the nondual base. But, it is said, such cognitive fluency requires, as with all such enterprises of great pitch and moment, a bit of practice.

Hence, the ontology of monistic Physicalism/Materialism necessarily refers us beyond or within, to that ontologically prior ground or whole — by whatever name — that embraces, includes and subsumes it, and in which the dimension of physical/mental spacetime reality arises and participates. The whole subsumes, includes, embraces and is greater than the sum of its participating parts.

Dōgen-Zenji, perhaps Japan’s greatest zen master, founder of the Soto School, called this unbidden, but not unwelcome relative-conventional arising of form “a being-time moment flashing into existence” from the vast spacious expanse of the non-logocentric emptiness (not nothingness) ground of being that is the unbounded whole of his nondual *Uji* or “Being-Time”.

Being-Time is here now presence of ever-present unity of “the three times” — past, present, future. Therefore, there is no endpoint that is the final goal of enlightenment. Being-Time reality is merely, only here now practice; everything that we do. It is nothing more. This is the realization. How shall we understand this?

For Dōgen Zenji the present exists for us only in relation to a past and a future. Being-Time is a simultaneous array of all three. Thus we live in a single vanishing moment now. Yet, this precious moment derives its meaning from the intersubjective context of a past and a future. This moment now is significant because all our past and future are interdependently, causally enfolded within it. Yes, we live in the moment, but not only in the moment. To live only in the moment now, without awareness of past and future, is to “make our life meaningless.” Not to live in the moment now is “to lose reality itself” (Garfield 2011 p. 73 ff).

The “crazy wisdom” of psycho-spiritual awakening/enlightenment/liberation—full *bo-dhi*—is the continuity of awareness wisdom that sees and fully engages appearing reality “just as it is” now; just as the “primordial purity” of our uncontrived perception presents it, before we *think* about it.

So there is no need to transcend conventional reality. There is nothing out there, or in here, that is better, or more real, or more beautiful, or more blissful. This meaning is bestowed upon us—is us—only by fully engaging *this* crazy world, as Buddha told, “just as it is.” Why? As Nagarjuna reminds us, these two worlds of *samsara* and *nirvana* are ultimately (although not relatively) identical. From the view of ultimate truth they are the same. From the Buddha’s *Heart Sutra*: “Form is empty; emptiness is form. Form is no other than emptiness; emptiness is no other than form” (H.H. The Dalai Lama, *The Essence of the Heart Sutra*, 2005, a profound introduction to the seminal Buddhist view of emptiness/boundlessness).

This then is the “correct” view. To presume or pretend that form and its emptiness base are inherently separate is the relative-conventional delusion in which we “lose reality itself.” The cognitive immediacy of this Mahayana view of Dōgen is analogous to the nondual Vajrayana view of *Dzogchen*. How then do we recognize, realize and actualize in compassionate conduct this sameness (*samata*), this unity of form/matter and emptiness/spirit?

Once again, it is through the continuity of practice of the path that we gradually, then suddenly surrender (wu-wei) our conceptual estrangement from the unbounded whole of reality itself and awaken to the perfectly present intersubjective interdependent (pratitya samutpada), impermanent (anitya), and selfless (anatman) nature of reality, just as it is now, ontologically prior to our concepts and beliefs about it.

Such a realization is a gradual emotional, devotional, (*bhakti*) process of concept/belief surrender of self/ego-I that then facilitates a spontaneous relaxing into the always “primordially present” trans-empirical spacious, basal emptiness ground (*dharmakaya*, *dharmata*, *cittata*, *kadag*, etc.).

And as Dōgen points out, prior to these dualistic conceptual elaborations and superimpositions upon this nondual pristine reality, we all do this, all the time, with every perception! Wonder of wonders, we are all “primordially awakened” (*vidya/rigpa*) to this always “already accomplished” innate and perfect clear-light mind. Our relative and ultimate human happiness requires that we understand and know this. “The clearlight mind which lies dormant in human beings, is the great hope of humankind” (H.H. The Dalai Lama). Yet, this clearlight mind is adventitiously cloaked (*vikshepa*) by our current deep background sociocultural concepts and beliefs, and the ignorance (*avidya/marigpa*) that results there from.

Do we not limit ourselves most by our attachment to, and defense of our closely held concept/belief systems?

The vector that is mindfulness and insight practice reminds us—moment to moment—of this ever present miracle of being. Then we become distracted by thinking. Then we surrender, and remember again, “brief moments many times,” until the non-essential continuity of this inherently (*sahaja*) present zen/dzogchen mindstream is always present, even in the difficult, beautiful banality of our everyday lifeworld. Is not this result Hamlet's “consummation devoutly to be wished” ?

Hence, the profundity of Dōgen's “Being-Time” may be understood as the conceptually ineffable but not contemplatively ineffable non-propositional, non-prescriptive luminosity that is our indwelling intrinsic presence of clear light awareness, the primordial innate *gnosis* (*sahajajnana*, *chos ying yeshe*) that is basal emptiness source or ground of all of our experience of interdependently arising spacetime reality.

This vast primordial unbounded whole, nonlocal, nondual reality being itself, is the one truth (*aletheia*) pragmatically revealing—to both conceptual and contemplative cognition—the ultimate *kosmic* continuum that is the interdependent arising of physical/mental form. Once again, form participates (plays/*lila*) in this adventitious adventure that is relative cosmic spacetime as it continuously arises and descends from its trans-rational *kosmic* emptiness base, by whatever name.

Here then, each relative spacetime particular experience is at once a non-Platonic instantiation of its nondual, mythopoetic, universal or ultimate ground, as we have seen. There is no *essential* difference. The *apparent* difference between conceptual and contemplative cognition is that subtle, spontaneous meditative contemplative cognition (*yogi pratyaksa*) recognizes this truth. Conceptual/belief cognition sees only the concept of this.

To the degree of one's individual realization this “wisdom of emptiness” spontaneously expresses itself as compassionate conduct in the everyday lifeworld. From the wisdom of emptiness arises spontaneous compassion. Through compassionate activity the wisdom of emptiness is realized. These two—emptiness and compassion—are an ultimate unity, yet relatively different. The affective or emotional result of this wisdom of kindness is relative happiness, and in due course, ultimate happiness itself (*mahasuka*, *paramananda*, *beatitudo*).

“The difference between a Buddha and an ordinary person is that one recognizes it, the other does not” (Hui Neng).

But let us here remember Dōgen's caution regarding the subtle attraction of conceptual epistemic and gnoseological dialectics: “Cease to concern yourself with the dialectics of Being, and instead look into your own mind” (*Fukan Zazenji*).

Dōgen's great insight then, is that prior to the imposition and intervention of conceptual cognition, ordinary direct perception is the luminous primordially pure cognition of our inherent (sahaja), blissful pristine original clear light mind nature. And it is inherently always already fully present in the perceptual apparatus of the human central and peripheral nervous systems.

Thus is form directly given to us (*jin lab*, grace) from its emptiness ground, absent and free of adventitious conceptual/belief imputation and designation. Then we conceptually and

symbolically unpack what is given to perception with Dōgen's great insight, as we have seen, in the Buddha's Heart Sutra: "form is not other than emptiness; emptiness is not other than form."

Is there then, a hermeneutically fluent, pragmatic, plural but not ethically relativist, causal, top-down middle way between the dualistic bottom-up incompleteness of objective Scientific Realism/Materialism and the subjective bright *mystisch* that is nondual Spirit?

Yes. We have seen that the pragmatic, pluralistic centrist view of Buddhist *Prasangika Madhyamaka* epistemology, the "epistemology of presence" (Anne Klein)—a middle way between the extremes of Western objectivist Scientific Materialist existential absolutism (eternalism, substantialism) and Eastern subjectivist idealist solipsism and nihilism—is the foundation of the monistic ontology of unbounded wholeness that is *Dzogchen Ati*, the Great Completion of the duality of the Two Truths trope of the Mahayana Causal Vehicle.

This auspicious noetic coming to meet of West and East provides a promising cognitive architecture and an inchoate theory-dependent interdependent model for such a rational reconstruction. This then provides a pluralistic epistemic basis for our emerging noetic revolution in science, religion/spirituality and culture which I have elsewhere termed *The Noetic Revolution: Toward an Integral Science of Matter, Mind and Spirit* (Boaz 2017).

We've seen that such a middle way view or narrative, or meta-narrative, offers a contemplative recognition of the prior paradigmatic "Two Truths" unity of relative really real but not intrinsically real objective matter (form), and ultimately non-real subjective spirit (emptiness/openness) that is the grand desideratum of objective–subjective paradigmatic unification; and perhaps, even a non-materialist, non-essentialist noetic Theory of Everything (Boaz 2012, Chapter II).

Further, the *Madhyamaka Two Truths* epistemology offers the phenomenological gift of a non-foundational, non-absolutist, pragmatic relative-conventional Realism. We're not just illusory. We're really real! There is a real world out there, and in here, in which we can practice our understanding and realization of this great process. The current scientific/physics paradigm—especially with the recent demise of 2400 years of Platonic Foundational Realism and the impact of this upon Modern and postmodern Scientific Realism/Materialism—offers no such outcome, although this is rapidly changing. Alan Wallace cautions here that there is

a fundamental incompatibility between scientific and Buddhist views of the mind... The scientific principles of the conservation of mass and energy implied that it was impossible for a nonphysical process to exert influence in the physical world... This resulted in a materialistic view of humans as nothing more than biologically programmed robots whose behavior is entirely determined by physical causes. This view is fundamentally incompatible with the Buddhist views of causality, karma, and dependent origination (Wallace 2012, p. 25, 27).

Moreover, acausal quantum indeterminacy/uncertainty at the micro level of reality seems incompatible with the Middle Way Buddhist causal view that all phenomena arise in dependence (interdependence) on prior physical and non-physical causes and conditions. The

Buddhist view that non-physical causes have physical effects contradicts the waning dogma of mechanistic Scientific Materialism (Scientism). Perhaps the radical noetic empiricism that is now abroad in the cognitive world of the emerging Noetic Revolution will further this urgent dialogue between Buddhism and Science.

Buddhism lacks a hard science. Science lacks a unified nondual view and a freeing soteriology. Perhaps, as Alan Wallace suggests, we should view Science and Spirituality—in this case *Madhyamaka/Dzogchen* spirituality—not as different paradigms, but as complementary, each contributing to a subtler understanding of the great, non-logocentric/trans-rational unbounded whole (*dharmakaya, mahabindu*) that is nondual ultimate reality-being itself.

As to paradigmatic unification of Science and Spirit, “All dharmas are ultimate reality” (Shakumuni Buddha). The dimension of spacetime Relative-Conventional Truth (*samvriti satya*), with its many seemingly separate conceptual “concealer truths”—all of these dharmas—are, in the absence of a discursive separate self ego-I, merely ultimate reality (*paramartha satya*), the all-embracing dimension of “Ultimate Truth.” There is a relative-conventional difference. There is no ultimate difference. Ultimately, subject and object are one and the same (*samata*) nondual all-embracing cognitive contemplative, but trans-conceptual one truth. As quantum pioneer Schrödinger told, “Subject and object are only one”. And wonder of wonders, *Tat Tvam Asi*; That I Am!

But the greatest wonder, as told by the masters and *mahasiddhas* of the three times—past, present and future—is that we may experience and know the immediate numinous presence of this primordial wisdom truth, not in some future time after years, or lifetimes of contemplative practice, but here and now, at the human spiritual heart. Paradoxically, practice under the guidance of a qualified master is the vector that accomplishes it.

Recall that for Dōgen, echoing Shakyamuni Buddha's wisdom of emptiness as expressed in his *Heart Sutra*—“there is no enlightenment and no non-enlightenment”—there is only present non-conceptual unity of the three times—past, present, future. There exists only our practice now, our activity today, each moment here now. Thus do we “make the path the goal”.

Thus does the perennial conventional dualism of these paradigmatic Two Truths—objective form and subjective emptiness—represent the continuum of ontological dialectic between the absolutist/externalist Realism/Materialism of Western Science (form/matter), and the nihilism of the Transcendental Idealism of Eastern Spirituality (reality is illusory). The pragmatic middle way of *Madhyamaka Prasangika* represents the profound and delicate relative balance between these perennial two truths dependently arising yet not separate from their primordial ultimate ground. Once more, the Buddha told it in the nondual wisdom of his *Heart Sutra*: “Form is empty; emptiness is form...”

There is here as well, an auspicious and productive methodological dialectical tension between “orthodoxy” and “heresy” in both Science and Spirituality.

We have now seen that the invidious split between knowing subject and perceived object is utterly deracinated in the prior unity of radically empirical, liberating, trans-rational, post-transcendental, post-materialist, non-logocentric, ultimate “great emptiness”

(*mahashunyata*). This emptiness/boundlessness is not other than the vast open unbounded wholeness expanse of the basic space of *dharmadhatu*. Let us here remember that emptiness, as with form, is itself empty of any shred of intrinsic existence. "All emptiness is emptiness of something".

Emptiness then, is not an existent thing, entity, or some vast substrate of arising spacetime reality. Emptiness is the very nondual ultimate nature of all of our objective and subjective realities. H.H. The Dalai Lama has termed this relationship "the emptiness of emptiness". And we are "the self of selflessness" of this vast spacious emptiness. Yet, this profound negation that is emptiness is full of the light/matter ($E = mc^2$) of all the luminous things of this our real world. Is there not a sublime beauty in all of it?

This great truth of the compassionate wisdom of emptiness is then, the simple trans-conceptual nondual one truth, the always here now present "truth that is," as Alan Wallace (2007) reminds us, "invariant across all cognitive frames of reference": science and spirit; objective and subjective; preconscious, conscious and supraconscious; egocentric, ethnocentric, worldcentric, and theocentric; exoteric, esoteric, innermost esoteric and nondual.

Conclusion: Intimations of Immortality

There are many, many ways for the teaching to arise.
—Chögyal Namkhai Norbu

Thus it is, the ostensibly incommensurable paradigms of Science (form) and Spirit/Spirituality (emptiness) are, in a non-relative ultimate view, enfolded in an intertextual ontological and epistemological prior unity, two truths, two views, two voices of a trans-rational vast, open, basal nondual *kosmic* wholeness emptiness ground of reality that unfolds in spacetime form, and may be auspiciously approached conceptually, and known and realized contemplatively.

The dimensions of objective and subjective understanding of this nondual ground of all experience are an ontic processional of objective/exoteric/outer, subjective/esoteric/inner, and nondual innermost esoteric (the final psycho-spiritual realization of the unity of objective and subjective being) experience that may be accomplished through "spiritually empirical" praxis, freed, step by step, from our concept/belief metaphysical presuppositions.

The result, ultimately, is the gift (*euangelion*, grace, *jin lab*) of awakening/liberation (*bo-dhi*) from ignorance (*avidya*) of our "supreme identity" with this numinous emptiness base or ground. The receipt of this gift is the antidote to human emotional, mental and even physical suffering, and is the primary cause of human happiness, both relative (*eudaemonia*, *felicitas*), and ultimate (*mahasuka*, *paramananda*, *beatitudo*).

We have seen that the mostly negative, narcissistic "wild horse of the mind" must be pragmatically tamed, stabilized and integrated through the anti-essentialist ontological relativity of Bohr, Heisenberg, Quine, the Neopragmatists, and Buddhist *Madhyamaka Prasangika* epistemology. This centrist middle way is considered in the *Vajrayana* to be the foundation for the ontology of *Dzogchen*, the Great Completion/Perfection of the Mahayana Causal Vehicle (the unity of *dharmadhatu*, emptiness, and buddha nature). Such a middle way avoids the philosophical extremes of Western existential absolute Realism/Materialism, and Eastern nihilistic Idealism. From the epistemology one chooses, arises the metaphysical ontology one deserves.

For pragmatic middle way *Madhyamaka* the particulars of dualistic, relatively arising and appearing spacetime reality are not independently real, but interdependently, intersubjectively real (*pratitya samutpada*). This epistemically centrist middle way integrates our perennial "Two Truths"—relative phenomena and their ultimate aboriginal primordial awareness ground. These two are relatively and conventionally separate, but not *ultimately* separate. Relative particulars arise in and participate as spacetime objective physical/mental instantiations of the perfect subjectivity that is this vast, unbounded whole (*mahabindu*).

Our human condition is this: we live in two worlds—objective matter and subjective spirit—at once. The cognitive paradigms of objective Science and subjective Spirit are the mythopoetic two faces, two voices of this same nondual unbroken whole that is the primordial ultimate ground of everything arising there in—reality-being itself. And, on the accord of our wisdom traditions, we actually *are* that reality, our "supreme identity"—clear light mind, the

very nature of mind—by whatever name. "The clear light mind, which lies dormant in human beings, is the great hope of humankind" (His Holiness The Dalai Lama). Just so, as the whole subsumes its parts, these two truths—form/matter and emptiness/spirit—are not separate, or separable. They are, ultimately, a nondual primordial unity. The destiny of human beings is to recognize, understand and realize *that*.

We have as well seen that the recognition (*samadhi*) of the revealing truth (*aletheia*) of the very nature of mind—this nonlocal vast expanse that is the nondual ultimate truth (*paramartha satya*) of our being here—is the wisdom of vast spacious open emptiness (*dharmadhatu, dharmakaya, kadag*). It spontaneously expresses itself in material form (*nirmanakaya*) as loving, kind compassionate conduct in the chaos of this all too real world of dualistic relative-conventional truth (*samvriti satya*). This union of compassion and the wisdom of emptiness is, on the accord of The Buddhist Mahayana tradition, the cause of both relative and ultimate human happiness.

It is this noetic (*matter, mind, spirit* unity) reality of the here now inseparability of matter and spirit, form and emptiness, relative Science and its ultimate reality ground that is now abroad in the brave new world of post-quantum, post-Standard Model science, culture and spirituality. Is not this prior ontic unity of our objective and subjective voices the urgent, radical recognition for human beings? What do you think?

Contemplative mindfulness (*shamatha*) and insight (*vipashyana*) practice (secular or non-secular)—gradually bestows this continuity of meaning recognition that is the potential moment-to-moment realization of a trans-rational but not spacetime transcendent cognitive state of knowing this always present here now, non-propositional, non-prescriptive nondual open awareness presence (*vidya, rigpa, shekina*).

Such practice may result ultimately in the “meditative stabilization” (*yogi-pratyaksa/samadhi/satori/moksha*) of our now present ultimate primordial awareness wisdom (*gnosis, jnana, yeshe*) right here in the beauty and the chaos of relative-conventional spacetime reality; here now, within, but not elsewhere.

Recall that all of this adventitious postmodern difference is at once an “always already” present sameness (*samata*), an auspicious interdependent (*pratitya samatpada/tendrel*), natural and ontologically necessary primordial unity. And wonder of wonders, “it is already accomplished” (Garab Dorje), deep within us. Yet we must open (*vidya, rigpa*) and see it, then be it.

Such is the resolution of the *really* “hard problem of consciousness”—the problem of soteriology (psycho-spiritual awakening/enlightenment/liberation)—an Archimedean point of balance between this bifurcated reality that is our two paradigmatic worlds of objective form and subjective emptiness, objective Science and the perfect subjectivity of nondual Spirit.

The continuity of remembrance of, and identification with this unbounded unified whole is non-goal directed spontaneous “non-meditation”. As this unity is who we actually are, our “supreme identity” with the bright spacious whole—*dharmadhātu, chos ying*—we learn, with gradualist, and non-gradualist practice, how to “simply relax into it,” each moment *now*; timeless continuity of being here now. A bit of mindfulness practice helps.

Lest this all seem utterly Panglossian, let us remember that such cognitive psycho-spiritual stabilization takes a lifetime—or many lifetimes—of practice under the guidance of qualified masters in the context of the spiritual community. Yet that luminous presence is "always already" present here now. We can glimpse it almost at will, if we listen. Non-gaining, relaxed but assiduous practice is the vector that makes it so. And it all begins with the utter simplicity of this conventionally dualistic, nondual ultimate View. The natural result is, on the accord of the wisdom traditions, enlightened liberation from suffering—happiness itself.

Thus, from the continuity of practice of this nondual wholeness/emptiness feeling cognition—"the wisdom of emptiness"—spontaneously arises degrees of the compassionate lifeworld conduct that translates self-centeredness into other-centeredness. This spontaneous surrender of self to others is our perennial moral imperative *par excellence*. Is this not the great secret of human happiness? The Upanishads, Buddha, Jesus, Shankara, Fichte, Hegel and Levinas have told it. From such an ethic of selflessness, gradually, spontaneously arises our individual surrender—selfless non-action, *wu-wei*—to the good of the whole. *This is being the whole*. And that, on the accord of the wisdom traditions, is our moment-to-moment *choice* of the ultimate happiness (*beatitudo*, *paramananda*, *mahasuka*), the happiness that cannot be lost.

Here then, ultimately, there is nothing left to do, so that everything we do is open, authentic and kind. And this is the noetic ultimate meta-cognitive ground through which we must—step-by-step—address our all too human problems of knowledge, morals and governance.

Hence, this inherent always present numinous presence of unbounded wholeness is the conceptually ineffable, but not contemplatively ineffable nondual "one truth", invariant across all cognitive reference frames—objective and subjective, scientific and spiritual, exoteric and esoteric, egocentric, and theocentric—whose recognition makes us happy, and whose realization sets us free.

From such an epistemologically pragmatic and pluralistic, yet ontologically monistic understanding arises the meta-cognitive basis of Toynbee's "rising culture", a latter day post-postmodern plurality of voices that defines a new cultural/historical perspective, a noetic meta-narrative of human body/mind/spirit evolution—our emerging integral Noetic Revolution in matter, mind and spirit that we are.

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