



laetus in praesens

Alternative view of segmented documents via Kairos

13th March 2010 | Draft

Beyond the Standard Model of Universal Awareness

Being Not Even Wrong?

-- / --

PART I

- Introduction
- Awakening of the Universe?
- Individual awakening: isomorphism?
- Categorizing: analogous to engendering matter?
- Inexplicable unknowns: the challenge of "the dark"?
- Extra-systemic explanation: meta-physics?
- Embodiment of "matter": self-reflexivity?
- Contribution of astrophysics and cosmology to the "universal order" of society?

PART II: Epistemological panic in the face of nonduality: Does nothing matter?

- Does nothing matter: "mattering" of "nothingness"?
- In quest of a "meta-model": engaging in a meta-modelling process?
- Strategic engagement: higher orders of vigilance?
- Transcending duality: epistemological panic of nonduality?

References

Produced on the occasion of publication of a review of commentary on the [Sokal Affair](#) hoax perpetrated by physicist Alan Sokal and of the commissioning of the Inter-Academy Council to [review IPCC processes of climate scientists](#) in the light of the [Climategate Affair](#).

Introduction

Vast amounts of public funds are expended by cosmologists and astrophysicists on understanding the origins of the [Universe](#) -- in determining what happened in the first few seconds of its existence and how, thereafter, the Universe became organized in the way we know it. Their preoccupations are with what occurred far away and some 14 billion years ago -- before some 170 billion galaxies were formed, some composed of one trillion stars. The quality of the data which they are obliged to gather in elaborating hypotheses for further testing might be said to be of a similar order to that required in detecting the existence of al-Qaida and in determining its nature.

Following decades of research, a [Standard Model](#) of the evolution of the Universe has been developed from a compromise between the observable data and the known physical constraints -- in the light of the coherence of the associated mathematics. The Standard Model combined with [General Relativity](#) is currently the best explanation of how the Universe works -- although it has inadequacies. New data, together with questions regarding the coherence of the mathematics, has resulted in the Standard Model having to be adjusted to accommodate other hypotheses. These include the existence of dark matter, dark energy and a dark force. For consistency, it is recognized that dark matter is necessarily many times more prevalent than matter as it is conventionally known. There is no agreement on the nature of such matter, such energy or such force. It is recognized as a measure of human ignorance regarding the nature of the Universe. The drama of the situation might be said to have been elegantly expressed by [Donald Rumsfeld](#) (*The Unknown*, 2002).

The following is an exploration of the correspondence, equivalence or isomorphism between the beginning (and development) of the Universe and that of any individual suddenly awakening to daily life -- notably in the first few seconds -- and the progressive organization of the surrounding universe as subsequently experienced.

This exploration necessarily incorporates dimensions absent from the methodology of physicists -- for whom any explanation, and the process from which it develops, is necessarily extra-systemic or in some way meta-systemic, not to say irrelevant to the subject matter. Their explanations are not self-reflexive, as required by the arguments of [Douglas Hofstadter](#) (*Gödel, Escher, Bach: an Eternal Golden Braid*, 1979). Any aspiration to universal recognition through a Nobel Prize -- for discovery of a Theory of Everything -- is of course absent from a coherent cosmology, as is any such theory itself, whatever its inadequacies.

The following argument considers the possibility that the tortuous explorations of complexity by physicists (in explaining the Universe) and the ineffectual strategic preoccupations of global governance (in response to a crisis of crises) may both be indicative of cognitive avoidance of epistemological panic in the face of an emerging memetic singularity. Are we witness to the systematic deployment of fig leaves in the face of psychohazards?

Awakening of the Universe?

Cosmologists have been given the liberty by society to focus intensely on the first few seconds of the existence of the Universe. The hypothesized [timeline of the Big Bang](#) distinguishes:

- a [Planck epoch](#), up to 10^{-43} seconds after the [Big Bang](#), during which the four fundamental forces -- [electromagnetism](#), [weak nuclear force](#), [strong nuclear force](#) and [gravitation](#) -- all have the same strength, so they are possibly unified into one fundamental force.
- a [grand unification epoch](#), between 10^{-43} seconds and 10^{-36} seconds after the Big Bang, during which [gravitation](#) begins to separate from the fundamental [gauge interactions](#): electromagnetism and the strong and weak nuclear forces
- an [electroweak epoch](#), between 10^{-36} seconds and 10^{-12} seconds after the Big Bang, during which the temperature of the universe is low enough (10^{28} K) to separate the strong force from the electroweak force (the name for the unified forces of [electromagnetism](#) and the [weak interaction](#)). This phase transition triggers a period of exponential expansion known as [cosmic inflation](#), notably including:
 - an [inflationary epoch](#), between 10^{-36} seconds and 10^{-32} seconds after the Big Bang. The temperature, and therefore the time, at which [cosmic inflation](#) occurs is not known for certain. During inflation, the universe is [flattened](#) (its spatial curvature is critical) and the universe enters a [homogeneous](#) and [isotropic](#) rapidly expanding phase in which the seeds of structure formation are laid down in the form of a primordial spectrum of nearly-[scale-invariant](#) fluctuations.
- a [quark epoch](#), between 10^{-12} seconds and 10^{-6} seconds after the Big Bang, during which all the fundamental particles are believed to acquire a mass via the [Higgs mechanism](#). The [fundamental interactions](#) of [gravitation](#), [electromagnetism](#), the [strong interaction](#) and the [weak interaction](#) have now taken their present forms, but the temperature of the universe is still too high to allow quarks to bind together to form hadrons.
- a [hadron epoch](#), defined as between 10^{-6} seconds and 1 second after the Big Bang. The quark-gluon plasma that composes the universe cools until [hadrons](#), including baryons such as [protons](#) and [neutrons](#), can form. At approximately 1 second after the Big Bang [neutrinos decouple](#) and begin traveling freely through space.
- a [lepton epoch](#), defined as between 1 second and 10 seconds after the Big Bang, leaving [leptons](#) and anti-leptons dominating the mass of the universe, after the majority of hadrons and anti-hadrons annihilate each other,
- a [photon epoch](#), between 10 seconds and 380,000 years after the Big Bang, during which the energy of the universe is dominated by [photons](#), following the annihilation of most leptons and anti-leptons
 - a [nucleosynthesis](#) period, between 3 minutes and 20 minutes after the Big Bang, following the fall in temperature of the universe during the photon epochs to the point where atomic nuclei can begin to form.
 - a [matter domination](#) period, beginning about 70,000 years after the Big Bang, during which the densities of non-relativistic matter (atomic nuclei) and relativistic radiation (photons) are equal.
 - a [recombination](#) period, beginning about 377,000 years after the big bang. Hydrogen and helium atoms begin to form and the density of the universe falls.
- a period of [large-scale structure formation](#) of the cosmos, including: quasars and reionization; stars; galaxies; groups, clusters and superclusters; solar systems

Individual awakening: isomorphism?

It is vital to recognize that the above distinctions are made through human cognition (as it is now) and that the categories so distinguished bear a questionable relationship to the reality that precedes the current human capacity to make those distinctions. There is a huge irony to the preference for global strategic metaphors based on "vision" when the visual portion of the electromagnetic spectrum verges on the infinitesimal. That the visual spectrum should be conventionally split into seven distinguishable colours, and that the electromagnetic spectrum as a whole should be subdivided into a similar number of bands, is indicative of the degree of human cognitive entrapment. This would seem to be reflected in the coherence offered by an Eightfold Way, whether of [particle physics](#), [Buddhism](#), or [policy analysis](#). It is curiously reflected in the recognition of only seven kinds of questions (the "WH-questions"), answers typically required to be either "right" or "wrong", and limitations of the 2-fold pattern of government-and-opposition -- all to be considered adequate for navigating a 26-dimensional Universe.

A case might therefore be made for any individual to "re-cognize" the process in the first few seconds -- or microseconds -- of waking up. Clearly, if the seconds at the origin of the Universe merit such well-funded attention by the best and the brightest, then it might be assumed a corresponding degree of attention is appropriate to the manner in which any individual's universe is constituted following the "big bang" of awakening. Does understanding the experience of waking up into a four-dimensional space-time reality involve a degree of "rocket science" in "descending" -- with a bang -- from preceding awareness of a (hypothesized) multi-dimensional hyperreality? This may bear some correspondence to the reality with which people and governance must increasingly deal ([Hyperaction through Hypercomprehension and Hyperdrive: necessary complement to proliferation of hypermedia in hypersociety](#), 2006).

Cosmologists have explored various theories -- many have been proposed -- for the first seconds of the Universe. Assumed to be necessarily "explosive", the Big Bang has been a primary focus, although there are inadequacies to this theory in its failure to explain the orderly disposition of matter and heat in the Universe thereafter. One alternative, satisfying many requirements, has been a process of "inflation". Neither theory explains how the process was triggered or the origins of the energy associated with it. Some perspective on

the possibility of alternatives to Big Bang hypotheses is offered by Chris Lucas (*Big Bang or damp squib: an alternative cosmology*, 1997/2004).

The charming possibility is that *everyone has the capacity to "re-cognize" the process of waking up and to associate explanations with that experience* -- and the (dark) energy that triggered it. Are there many different ways of waking up? Are they variously consistent, if only as metaphors, with the possible array of theories regarding the "awakening" of the Universe? Other forms of individual awakening also merit consideration, given the way they progressively form and organize experience: recovering consciousness and memory ("remembering" after an accident or a coma), "mapping" of a new environment after relocation (including the process of appropriating through naming), and being "reborn" in some way (*Varieties of Rebirth: distinguishing ways of being "born again"*, 2004).

Are some processes of waking up more insightful than others? Are some more subtle and complex than an "explosion" or an "inflation" of awareness -- perhaps richer than those cosmologists currently consider? But then to whose universe do they apply?

It would of course be awkward if any final conclusion by cosmologists regarding the "awakening" of the Universe were to lack any correspondence, be it only metaphorical, with the manner in which individuals experienced that process on a daily basis. Might individuals "re-cognize" the process with greater subtlety and sophistication than can be articulated in the mathematical models? Or might such models offer subtler insights into how to engage in the process of "waking up" and ordering one's universe?

Categorizing: analogous to engendering matter?

Emergence of form: For cosmologists it is in the early seconds, and thereafter, that matter is engendered -- if only in its most fundamental forms. It is from these that the elements categorized in the [Periodic Table](#) are composed.

In the early seconds of waking up, is there not a process whereby order is imposed on experience through categorization -- and recognition? It should be emphasized that this concerns the first (micro)seconds of the process -- if liberties of exploration equivalent to those of cosmologists are to be allowed. Clearly attention may ignore those initial seconds and be subsequently "entrapped" by the categories engendered in that early period -- perhaps then submitting unknowingly to a Periodic Table of categories (*Periodic Pattern of Human Knowing: implication of the Periodic Table as metaphor of elementary order*, 2009; *Towards a Periodic Table of Ways of Knowing -- in the light of metaphors of mathematics*, 2009)

In the case of the Universe, somehow it knows what elements can be formed -- conditioned by inherent potential in ways to be discovered, as enabled by mathematics. In waking up, there are indeed inherent constraints on what can be distinguished and given form. This is partly understood as determined by habit and instinct -- "re-cognition" of "pre-loved categories" and "hand-me-downs"? Equipped with "exotic" language, "unconventional" forms, in comparison with the "Standard Model", might be distinguished -- perhaps excluding the use of substantives in favour of verbs (R. Buckminster Fuller, *I Seem to be a Verb*, 1970; Thomas A. Sebeok, *I Think I Am a Verb: more contributions to the doctrine of signs*, 1986; David A. Cooper, *God Is a Verb: Kabbalah and the practice of mystical Judaism*, 1998).

Solidity of form: This framing suggests that the "matter" of physicists is in some way analogous to what is categorized as "mattering" in individual cognition. The solidity in the first case is beyond question -- aside from issues of the relative emptiness of atoms composing it, and the various forms it may take (solid, liquid, gas, plasma). Categories might well be understood as having similar solidity -- with similar qualifications as to their emptiness, fluidity and nebulous possibilities under certain conditions. Emptiness (*Sunyata*) is notably a preoccupation of Buddhism.

The "solidity" of many categories is evident from their rigidity over time. Arguably, just as people inhabit a built environment -- most evident in urban settings -- the same may be said cognitively. Social reality has a solidity to it and has been "constructed" in ways that various authors have argued, notably from a perspective of [constructivist epistemology](#) (Paul Watzlawick, *The Invented Reality: how do we know what we believe we know?* 1984). This solidity may have its problematic aspects. Presumptuously, humanity has ordered its rights with respect to the "Universe" in ways that extraterrestrials may find extremely humorous -- with our [Universal Declaration of Human Rights](#). Humanity's "Standard Model" of its awareness of the Universe? Of course there are already alternatives to this formulation. The extraterrestrials may be even more amused by the identification of **rights** to which other social functions are assumed to adapt, without any recognition of the adaptive functional **responsibilities** of the individuals defined solely by those rights ([Universal Declaration of Human Responsibilities](#), 1998).

Comprehension of form: The emergence of order in the Universe, or in the capacity to engender it in one's own universe, is highlighted in a different manner by the preoccupation of environmental designer [Christopher Alexander](#), initially recognized for his influential study *Notes on the Synthesis of Form* (1964). In the light of his recent 4-volume study (*The Nature of Order: an essay on the art of building and the nature of the Universe*, 2004), of special interest is his articulation of a methodology, based on geometric adaptation, building on those insights (*Harmony-Seeking Computations: a science of non-classical dynamics based on the progressive evolution of the larger whole*, *International Journal for Unconventional Computing (IJUC)*, 2009). As noted in a discussion of his evolving methodology (*Harmony-Comprehension and Wholeness-Engendering: eliciting psychosocial transformational principles from design*, 2010), he concludes his 2009 paper with the statement:

I hope the idea of harmony-seeking computation may then sit alongside other methods as a new tool in an armory of well-founded computational techniques to be used when appropriate. It is likely to be appropriate whenever a computational task is defined more by issues of adaptation, health, wholeness, and wellness, with reference to the position some system in some still larger whole, or perhaps even by a desire for beauty, or life, or elegance. All these might one day play a key role in very general kinds of computation. Science, architecture, biology, ecology, physics, cosmology - and computation - may all be the better for it.

Whether greater attention should be given to geometric adaptation (Alexander) or process (Whitehead), there is clearly a case for exploring how fundamental [supersymmetry](#) breaks down ("[symmetry breaking](#)") in the formation of the Universe -- and in any individual's capacity to comprehend it (*Dynamics of Symmetry Group Theorizing: comprehension of psycho-social implication*, 2008; *Geometry of Thinking for Sustainable Global Governance*, 2009; *Representation, Comprehension and Communication of Sets: the Role of Number*, 1978).

Frozen categories: Of greater immediate concern is the consequence of humanity collectively inhabiting a conceptual [Glacial Period](#) in which categories are "frozen" into solidity to an unfortunate degree (*Unfreezing categories and category innovation*, 2009). One of the attractions of cosmology is the capacity to reinvent the categories through which the creation of the Universe is understood -- through proving that previous efforts were either wrong or less elegantly comprehensive than those arising from new insights. ***With what frequency or freedom is the nature of the individual, or of humanity, reinvented?*** What lies "beyond the Standard Model"? Perhaps more intriguing -- whatever "it" is -- is the question how an "individual" is to be defined by it and to be identified through it (*Emergence of Cyclical Psycho-social Identity: sustainability as "psychically" defined*, 2007; *Geometry, Topology and Dynamics of Identity: cognitive implication in fundamental strategic questions and dilemmas*, 2009).

A particular concern in any reification of categories is well illustrated by scientific "collections", whether the set of 24 distinct "particles" associated with the Standard Model or the set of insects displayed in any entomological collection -- appropriately pinned. To what extent does a pinned array convey any understanding of the dynamics peculiar to each species and its ecosystemic interactions? The point is more tragically made with an animal caged in a zoo -- although of course "free to move". To what extent does this "freedom" obscure an understanding of the dynamics intimately associated with its essential identity in the wild? The argument is exemplified by the recognition -- following much arrogant expectation, that mapping the [human genome](#) would constitute a fulsome explanation of human identity -- that dynamics played a vital part, hence [epigenetics](#). With respect to the adequacy of conventionally frozen categories, a case might then be fruitfully made for "epimemetics" -- as poetry, song, or myth, perhaps?

As with cosmologists and astrophysicists, there are many human "schools of thought" promoting different beliefs in the structure of the Universe, reality and cosmology -- and in the nature of the individual. The religions and philosophies have been extremely productive in that respect. Those beliefs currently in vogue may be held with the utmost seriousness. They might well be defined as "frozen". It is also the case that there are many "universal beliefs" of cultures past that are no longer actively held. Curiously they no longer "matter" -- as may, in all probability, be the fate of any scientific theory of the moment.

Inexplicable unknowns: the challenge of "the dark"?

Inadequacy of conventional frameworks: Many belief systems of the past purported to explain everything. Some continue to do so. As religions these views have been severely deprecated by science with its new found methodology and unquestionable self-assurance. The past recognition by religions of invisible dimensions and intangible entities has been framed as ridiculous from the sceptical perspective of evidence-based science focused on tangibles.

It is therefore enchanting to discover that the Standard Model of cosmology and astrophysics -- regarding matters beyond normal human ken -- is inadequate to the challenge of the hard-won evidence. To achieve coherence, it has proven necessary successively to hypothesize the existence of "[dark matter](#)", "[dark energy](#)" and "[dark flow](#)" -- whatever "existence" may mean when such phenomena are (by definition) beyond conventional detection capacity and understanding.

There is a further irony to the hypothesizing of these phenomena in a period when global society is universally held to be under existential threat from its own form of "dark force", namely [al-Qaida](#). As has been variously explained, this phenomenon is more an "idea" than an "organization" which "exists" (Jason Burke, *Al-Qaida is now an idea not an organisation*, *The Guardian*, 5 August 2005). Nevertheless, as with the explanations of astrophysicists, its effects are frequently cited in the explanation of problematic social phenomena. There are ironical existential consequences in that, when captured, those purportedly associated with this "dark force" -- threatening the existence of humanity -- cannot be recognized as "prisoners of war" because this would constitute recognition under international law ("universal law"?) of the "existence" of al-Qaida.

Any individual, on the other hand, is purportedly free to organize the universe however it seems appropriate -- according to Article 19 of the *Universal Declaration of Human Rights*. Individuals with similar perspectives on the organization of the universe are also free to associate amongst themselves -- according to Article 20. Again this is an aspect of the social construction of reality -- but presumably excluding the understanding of adherents of al-Qaida (in the light Article 30). Not for the Standard Model the affirmation of the Roman playwright [Terentius](#), a former slave: *Homo sum: humani nil a me alienum puto* (I am a human being, so nothing human is strange to me).

The challenge with any such particular construction of reality -- as a "Standard Model" -- is the extent to which its coherence and consistency is undermined by "observable data". This may of course be ignored -- or massaged -- as with the alleged suppression of climate change data currently under investigation with respect to the [Climategate](#) scandal. Those claiming to have made observations may be framed as unqualified in some way -- especially when the observations are difficult to replicate, as with so much data on the origins of the Universe. Climate change science has however brought into question the meaning and credibility of "universal" consensus amongst qualified scientists. Presumably analogous questions could be asked regarding any "Standard Model" of individual awareness within a collective context -- as it has been with regard to "universal" consensus amongst any religious priesthood.

Inexplicability: Despite being awake, individuals are constantly confronted by "inexplicable" factors in their daily lives -- like "falling in love" -- or in explaining the disastrous experiences of others. Some belief systems readily evoke other frameworks within which to explain such phenomena -- Karma, Will of God, Fate, Chance, Evil, etc. The question is whether these are any more ridiculous than the "dark" factors attributed by cosmologists to the organization of the Universe.

The dark matter component, as hypothesized, is believed to have much more mass than the "visible" component of the Universe, of which only about 4.6% of the mass is estimated to be ordinary matter. About 23% is thought to be composed of dark matter. The remaining 72% is thought to consist of dark energy, distributed diffusely in space.

Such an indication might be consistent with the unstated and the secret characterizing a high proportion of psychosocial relations -- the "black economy" or "shadow economy", "secret agreements", illicit employment and even infidelity (*Global Strategic Implications of the "Unsaid"*, 2003; *Sins of Hot Air Emission, Omission, Commission and Promission: the political challenge of responding to global crises*, 2009). The existence of a black budget is inferred in some countries. Conspiracy theories are rife as a source of meaningful explanation. The extent to which Israel effectively controls US foreign policy is widely acknowledged and debated -- possibly achieved by blackmail against the threat of release of highly damaging information (presumably of the style that finally revealed the earlier involvement of UN Secretary-General Kurt Waldheim with the Nazi regime).

Curiously the role of "the dark" is widely dramatized and comprehended through myth, as discussed previously (*Relevance of Mythopoeic Insights to Global Challenges*, 2009).

Necessary "darkness"?: The proportion of "dark matter" held to be necessary for an adequate explanation of how the Universe "works" may indeed be a vital pointer to the simplistic manner in which the workings of global society are explained. University courses in "Civics 101" may effectively only focus on the "visible" (4.6%?) of the mass of psychosocial relations, as with "Economics 101". It is necessarily not admissible to consider the role of the "black economy" in such contexts -- although students may already have been familiarized with the possibilities of cheating in advancing their career opportunities, in addition to the many other possibilities of game-playing which characterize university life. Secrecy is already a factor which necessarily cannot be discussed.

A key figure in the British Labour government in the past decade is known as the **Prince of Darkness**. Functional equivalents are readily recognized in other countries. Reference is made to a *Ministério do Silêncio* in Portuguese (and Spanish) speaking societies. Comments are made regarding the existence of a "secret government", notably by conspiracy theorists. Corporations such as SAIC (**Science Applications International Corporation**) may even refer to themselves as a "stealth company" -- able to act under contract when government agencies are unable to get things done (Donald L. Barlett and James B. Steele, *Washington's \$8 Billion Shadow*, *Vanity Fair*, March 2007). Eisenhower's parting warning -- regarding the need for society to *guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex* -- is indicative of dimensions unrecognized in "Civics 101". Recent reporting of decades of systematic, officially sanctioned, cover-up of abuse of children in the care of Catholic institutions is also suggestive of a wider pattern in which the public face (4.6%?) of institutions paradoxically obscures a larger reality (95.4%) necessary to full comprehension of their operation (*Abuse of Faith in Governance*, 2009).

The work of **Transparency International** has done much to infer the existence of "the dark" in society, notably with its reports on corruption (*Corruption Perception Index; Bribe Payers Index*). The proportion of international and national archives treated as "classified" -- being vital to "security" -- offers another indication. The title of a complementary initiative **Global Integrity**, and its reports tracking governance and corruption trends (*Global Integrity Report*), are also suggestive of the need to integrate "the dark" into any understanding of the psychosocial universe. Conventional -- notably governmental -- initiatives tend to restrict their official focus to the "visible" (4.6%?) of society, on the assumption that this can be portrayed as adequate for global governance. Also of relevance is the extent to which deception has become a factor in psychosocial relations, including in the scientific disciplines (as noted below). In governance this is well-recognized in the increasing role of the (deniable) "dark arts" of **covert operations** and **false flag operations** (*Emergence of a Global Misleadership Council: misleading as vital to governance of the future?* 2007). Of potential relevance to this argument is the recognition in a Vatican **statement** of September 2009 that: *We know now that in the last 50 years somewhere between 1.5% and 5% of the Catholic clergy has been involved in sexual abuse cases*. However it is the fact that specific instructions were issued by the Vatican in 2001 to conduct any investigation in strictest confidence which ensured complicity in systemic cover-up ("endarkenment"?) within the Catholic Church.

From the perspective of any organized religion, those who are not explicitly associated with their belief are necessarily to be understood as "in darkness" -- even though they derive coherence in their lives from belief in a "supernatural" force. This phenomenon has been appropriately named by Cole Moreton (*Welcome to the Church of Everywhere*, *The Guardian*, 2 April 2010):

The Church of Everywhere consists of all those people who believe in a god of some kind but don't belong to a religious organisation. Polls routinely show two thirds of us in the UK have faith in a higher power. Take away the three or four million in church each week and four million members of other faiths, and you are left with about 30 million people who believe but don't belong.

Evil: The prevalence of "dark" phenomena in the Universe may offer an indication as to the prevalence of "evil" in global society. Clearly failure to believe in a specified religion is readily construed by its adherents as a manifestation of evil. With respect to the crises by which global society is confronted, to what extent are these to be legitimately explained by "dark" factors? For example, some cite "evil" or "retribution" -- as factors appropriately explaining recent major natural disasters. Any ultimate crisis, in terms of "end times scenarios", is held to be fully explicable by such factors -- within a given belief system (*Spontaneous Initiation of Armageddon: a heartfelt response to systemic negligence*, 2004). The factual nature of evil is widely promoted by Christian religion. Many religions have explicit processes for the elimination of evil as represented by **exorcism of demonic forces**. Recent debate over sexual abuse by Catholic clergy has highlighted the views of the Vatican's chief exorcist Father Amorth, claiming to have performed 70,000 exorcisms (Nick Squires, *Chief exorcist says Devil is in Vatican*, *The Telegraph*, 11 March 2010).

Presumably duly briefed by his **Science Advisory Committee**, the man claimed to be the most powerful on the planet declared with authority, on the occasion of his acceptance in 2009 of the Nobel Peace Prize: *For make no mistake: evil does exist in the world*. The

extraordinary rise in the most extreme forms of birth deformities in [Falluja](#) would of course attest to the truth of that ([Fallujah doctors report rise in birth defects](#), *BBC News*, 4 March 2010). The recognition that the workings of the Universe can only be understood by hypothesizing "dark" phenomena is clearly complemented by the recognition that global societal dynamics -- the universe of humanity -- can only be understood (by some) by acknowledging the existence of "evil" and the threat it constitutes ([Promoting a Singular Global Threat -- Terrorism: strategy of choice for world governance](#), 2002). Beyond the "frozen" categories of convention, there is then clearly a vital role for companies named [Blackwater](#) -- consistent with the argument of [Edward de Bono](#) (*From Rock Logic to Water Logic*, 1990) and of [lateral computing](#).

Of particular current interest is the dramatic "hard data" provided by the existence of suicide bombers (whether or not they are associated with an organization that "exists"). The willingness to perpetrate such acts is variously labelled as fundamentally incomprehensible and inherently inexplicable. Indeed any effort to explain -- by reference to the "honourable" Christian tradition of [martyrdom](#) -- is considered tantamount to subscribing to such behaviour. There can be no moral equivalence, as argued by [Jeane Kirkpatrick](#) (*The Myth of Moral Equivalence*, *Imprimis*, 15, January 1986, 1). The prime explanation on offer in the Standard Model is that they are inspired by a "dark force" -- evil personified. Curiously it seems that, within their worldview, they personify a form of "light force", thus ensuring them a direct route to "heaven". The Standard Model cannot handle such contradictions.

It is appropriate to note in this context that Google, as the major search engine for an emerging global knowledge society, proudly publicizes its motto of *No Evil*. This has its problematic dimensions in consideration of the capacity to mould that society through secret rules for including, excluding or weighting certain results -- possibly under commercial, religious, political or security pressures (as recently highlighted in debate over access to Google in China, with its own view of "evil").

Insights from "the dark": On the other hand, there is a long tradition of recognizing the importance of "dark" factors in subtler understanding of reality -- a recognition which predates by centuries that of astrophysicists. Many consciousness-awakening rituals and processes require that those undergoing them should experience "darkness" in some form ([Enlightening Endarkenment: selected web resources on the challenge to comprehension](#), 2005). This is even a feature of the initiatory ritual of the Freemasonry with which so many leaders of the world are associated.

A crisis in individual understanding has long been formulated as the "dark night of the soul". Much is made by psychotherapists of the challenge of integrating the "shadow" -- the [unconscious](#) -- in the process of achieving maturity and a sense of personal integrity. A case can be made for exploring the "shadow of humanity", as noted in the [Human Development Project](#) (*Integration of perceived problems*). The issue may be presented in terms of the psychosocial "underground" ([Mapping the Global Underground](#), 2010).

The interesting question is how the legitimacy and coherence of the explanation of astrophysicists -- in their fundamental need for a "dark" intangible -- are to be compared with the legitimacy and coherence of the explanation of any individual obliged to recognize the role of inexplicable "dark" factors. How is the quality of the "observable" data in each case to be compared -- given the challenges of replicability and the funding required? Given its etymology, how might superstition be more fruitfully understood -- by comparison with the "suprastition" of the right-thinking?

Again it is appropriate to cite the poetic articulation regarding the fundamental role of "the unknown" in dealing with the "darkness" of al-Qaida, as offered from an official strategic position as US Secretary of Defense, by [Donald Rumsfeld](#) (*The Unknown*, 2002). That insight has been most recently used in the analysis by Nathan Freier (*Known Unknowns: unconventional 'strategic shocks' in defense strategy development*. Strategic Studies Institute, U.S. Army War College, November 2008). This has been discussed in a wider context ([Unknown Undoing: challenge of incomprehensibility of systemic neglect](#), 2008).

Extra-systemic explanation: meta-physics?

Partial approaches to Everything: As noted above, it is delightful to observe cosmologists and astrophysicists offering explanations of the origins of the Universe -- without for a moment being concerned about:

- the standpoint or perspective from which the explanation is offered, necessarily extra-systemic -- how does a fish explain the nature of water?
- where the explanation "fits" into what is thereby explained, again necessarily requiring a meta-systemic framework?
- where the ongoing process of cosmology and astrophysics, as the development of human understanding, fits into the processes of the "known" Universe?

Given the linear timeline offered (above) from the origin of the Universe, one might ask whether "time" can itself be unambiguously understood as linear. In the emergence of the Universe from a supersymmetrical "egg" of curled dimensions, is the effort of cosmology to "penetrate" that egg from the present necessarily based on unquestionable assumptions? What of the [cyclic model](#) proposed as an alternative to the Big Bang and of the related understanding of [eternal recurrence](#)? What of the circular time appreciated in other cultural contexts (Woorama, *Linear vs Circular Logic: conflict between indigenous and non-indigenous logic systems*, 11 June 2006; Gevin Giorbran, *Everything Forever: learning to see the timelessness of the universe*, 2007)? Or the arguments for [eternal return](#) of [Mircea Eliade](#)? How linear is the comprehension associated with waking up?

The processes above would be seen, by those engaged in them, as radically distinct from the deprecated processes of religion. Religions of course tend to suffer from the fundamental (dis)advantage that they are each based on a "Theory of Everything" which has emerged at a point in historical time -- through revelation which it is a matter of heresy to challenge. There is nothing more to be "discovered" -- or rather the emphasis is on enabling all to "discover" the "Theory" in question.

By comparison any form of physics might be understood as a "process theory" of comprehension. This is effectively a "religion" in which the investment is in the process of new discovery, irrespective of whether what is discovered can be understood, other than by

the few (*Dynamics of Symmetry Group Theorizing: comprehension of psycho-social implication*, 2008). This is a switch from "revelation cosmology" to "process cosmology". As such it is purportedly open to continuing challenge -- and expects such challenge to continue into the distant future, if the discipline and its practitioners are to survive. Its difficulties become evident when there is an emergent "universal" consensus on a Theory of Everything and everyone is then called upon to believe it -- whether or not they can comprehend it.

Unintegrated processes: The process of doing any form of physics is intriguing, given the contrast to the subject "matter", most notably in the case of astrophysics and cosmology. It involves, with the benefit of funding by those expected to benefit from the outcome:

- making *observations* with respect to pre-defined categories and measurement processes
- formulating *hypotheses* -- notably challenging pre-existing understanding by peers
- articulating *papers* susceptible to *publication* in peer reviewed journals -- having the requirement that the work be "*original*"
- publication in journals under *intellectual copyright* -- only accessible at great *cost* and inconvenience by those expected to benefit, whether or not they understand the content
- competitive assessment of *competing theories* -- with the aspiration of engendering one that better "fits" the data than others, perhaps usefully to be explored as "political cosmology" or "cosmological politics" (both being themes of various studies)
- *recognition* of achievement by peers -- possibly culminating in a *Nobel Prize for Physics* or the *Gruber Prize in Cosmology* (for which astrophysicists are also eligible)

It is unclear how any of these processes, building a body of knowledge, are integrated into the outcome regarding the subject "matter" -- or who might consider this "matter" to be of relevance in producing a Theory of Everything (other than those seeking further public *funding*). Given the intense focus on *priority* of discovery, *naming* and copyright, there is the charming possibility that an influence on Einstein's understanding of "frames of reference" in space-time may have been fundamentally conditioned by his experience of the context in which he wrote his seminal paper (*Einstein's Implicit Theory of Relativity -- of Cognitive Property? Unexamined influence of patenting procedures*, 2007). In the case of **Ludwig Wittgenstein**, such a seemingly "ridiculous" possibility of cognitive conditioning has been extensively argued by the philosopher **Susan G. Sterrett** (*Wittgenstein Flies a Kite: a story of models of wings and models of the world*, 2006).

The unexplored question is within what framework or process are cosmologists "located" -- and believe themselves to be located -- when they claim to offer "ex-planations" of the universe(s) inhabited by people who have their own modes of engaging with it? It is unclear to what extent these are distinct frames of reference and how they are to be related to one another -- and from what perspective.

Embodiment of "matter": self-reflexivity?

Mockery of self-reflexivity: The process of cosmology or astrophysics of course contrasts fundamentally with that of disciplines focused on how an individual engages cognitively with their surrounding universe. The very language of the qualified psychosocial disciplines, and their presumption respectfully to learn anything from physics, is the subject of mockery. This has been well-demonstrated through the hoax -- the **Sokal Affair** -- perpetrated by the mathematician and physicist **Alan Sokal** (*Transgressing the Boundaries: toward a transformative hermeneutics of quantum gravity*, *Social Text*, 1996; *Beyond the Hoax: science, philosophy and culture*, 2010; see relevant [selection of commentaries](#)). To what extent is the Sokal Affair to be seen as a breach of trust -- perhaps analogous to that associated with the **Climategate Affair**?

Of course the Sokal Affair does raise the question as to whether Alan Sokal, within his own framework (and on his own terms), has the necessary qualifications to comment with authority on his own behaviour -- since it lies outside the domains in which he claims to be qualified. Physicists, as physicists, are not expected to be "self-aware" -- a qualification which is meaningless within the framework for which they are qualified. However that Sokal has empowered himself to write about "culture" and "philosophy" can only be welcomed as an encouragement to other boundary-crossers in exploring the cognitive implications of the origins of the Universe and the dark fastnesses of astrophysics.

It would be enlightening to see a complementary hoax perpetrated on the belief system of physicists with respect to any effort to act like the "normal" human beings funding their research, and expecting to benefit from their insights. One thinks of extraordinary individuals, many recognized to be "socially dysfunctional", as documented by Clifford Pickover (*Strange Brains and Genius: the secret lives of eccentric scientists and madmen*, 1999). Mathematicians known for their eccentricity include: **Nikola Tesla**, **John Nash**, **Johann Lambert**, **G.H. Hardy**, **Pierre-Simon Laplace**, **Evariste Galois**, **Karl Weierstrass**, **Emmy Noether**, **Joseph Fourier**, **Paul Erdos**, **David Hilbert**, **Grisha Perelman**, and **Kurt Godel**.

David Weeks and Jamie James (*Eccentrics: a study of sanity and strangeness*, Kodansha Globe, 1996) argue:

Whereas eccentric artists create their own strange worlds in their art, eccentric scientists use the world itself as their canvas, reinventing the physical universe to satisfy their creative impulses. Almost exactly the same description might be applied to the intellectual accomplishments of the great scientists of history, whose breakthrough theories form the basis of the orthodox science that *is* taught at universities. Many scientific giants were regarded as charlatans -- or, worse, heretics -- when they first articulated their revolutionary ideas: Galileo, Kepler, Harvey, Darwin, and Mendel are only a few of the most famous among them. (pp. 91-92)

In the case of physicists, how has their understanding of "universal" fundamentals improved their social functionality? Why might the question be considered irrelevant? By comparison to the mockery appropriately offered by Sokal, the dysfunctional backstabbing and posturing dynamics in the universe of mathematicians and physicists are tragically common with respect to the process of creative

innovation in both disciplines. This process is however not a matter of significance for the peer reviewed journals of those disciplines. Part of "the dark" -- necessary for a more comprehensive explanation?

Engagement with reality: There is of course an extensive literature on spiritual disciplines concerned with developing cognitive engagement with "reality" -- notably highlighting how this process implicates the person engaging in it, in ways totally ignored (if not deprecated) by physics. Not only is there a degree of mirroring, possibly described as self-reflexivity, but also a sense of embodiment of that reality. Relevant authors, some of them mathematicians or physicists, include:

- George Lakoff and Rafael Núñez: *Where Mathematics Comes From: how the embodied mind brings mathematics into being* (2000)
- George Lakoff and Mark Johnson: *Philosophy In The Flesh: the embodied mind and its challenge to Western thought* (1999)
- Hilary Lawson: *Reflexivity: the post-modern predicament* (1985)
- Francisco Varela: *Laying Down a Path in Walking: essays on enactive cognition* (1997)
- Francisco Varela, E Thompson, and E Rosch: *The Embodied Mind: cognitive science and human experience* (1991)
- Douglas Hofstadter. *I Am a Strange Loop.* (2007)
- Henryk Skolimowski: *The Participatory Mind: a new theory of knowledge and of the universe* (1994)
- Steven M. Rosen:
 - *Topologies of the Flesh: a multidimensional exploration of the lifeworld* (2006)
 - *Dimensions of Apeiron: a topological phenomenology of space, time, and individuation* (2004)
- David Bohm: *Wholeness and the Implicate Order* (1980)

In the case of Gregory Bateson (*Mind and Nature: a necessary unity*, 1979), inspired by the formalism of cybernetics, he subsequently (1987) presented his central theme in the following terms:

The significance of all this formalization was made more evident... by a reading of Carl Jung's *Seven Sermons to the Dead...* [1] began to think about the relation between "map" and "territory." Jung's book insisted upon the contrast between *Pleroma*, the crudely physical domain governed only by forces and impacts, and *Creatura*, the domain governed by distinctions and differences. It became abundantly clear that the two sets of concepts match and that there could be no maps in Pleroma, but only in *Creatura*. That which gets from territory to map is news of *difference*, and at that point I recognized that news of difference was a synonym for information.

When this recognition of difference was put together with the clear understanding that *Creatura* was organized into circular trains of causation, like those that had been described by cybernetics, and that it was organized in multiple levels of logical typing, I had a series of ideas all working together to enable me to think systematically about mental process as differentiated from simple physical or mechanistic sequences, without thinking in terms of two separate "substances". My book *Mind and Nature: A Necessary Unity* combined these ideas with the recognition that mental process and biological evolution are necessarily alike in these *Creatural* characteristics.

The cognitive challenge of Bateson's argument was subsequently by Peter Harries-Jones (*A Recursive Vision: ecological understanding and Gregory Bateson*, 1995):

Aesthetics provides a medium through which humanity can begin to understand the unity of the biosphere. Yet, when approaching unity and holism in the biosphere, our pragmatic, mechanistic civilization becomes overwhelmed by epistemological panic and does not know how to proceed. How then to overcome panic and pursue that "path where even angels fear to tread"? (p. 216)

These dimensions and processes (and the above authors) have been variously discussed in earlier papers, including:

- *Existential Embodiment of Externalities: radical cognitive engagement with environmental categories and disciplines* (2009)
- *Stepping into, or through, the Mirror embodying alternative scenario patterns* (2008)
- *En-minding the Extended Body: enactive engagement in conceptual shapeshifting and deep ecology* (2003)
- *My Reflecting Mirror World: making my World Summit on Sustainable Development worthwhile* (2002)
- *Personal Globalization* (2001)
- *Being the Universe : a metaphoric frontier* (1999)
- *The Territory Construed as the Map: in search of radical design innovations in the representation of human activities and their relationships* (1979)

Contribution of astrophysics and cosmology to "universal order"?

The challenges faced by the governance and ordering of global society are widely recognized -- as is the expectation of worse to come in the form of a crisis of crises. The question that might be fruitfully asked is whether the conceptual subtlety and sophistication cultivated by astrophysics and cosmology in the handling of complexity on a "universal" scale is of any relevance to that required to inform the organization and development of "global" society. Is the complexity of the latter commensurable with the former or trivial in mathematical terms -- being only one planet in a Universe of 170 billion galaxies (*And When the Bombing Stops? Territorial conflict as a challenge to mathematicians*, 2000)?

Do such disciplines offer access to greater coherence through the higher dimensionality they have been uniquely empowered by society

to explore? More specifically, where are efforts made to derive such insights and to bypass the tendency to game-playing and posturing so fruitfully highlighted by the Sokal Affair and its commentators? Would exploring such possibilities constitute a further justification for expenditure of public funds in deriving them -- in order to obtain results which "mattered" to society and to individuals?

There is the possibility, as yet to be confirmed, that there is a degree of mirroring between cognitive organization of relevance to a system at one level and that at another. Such [isomorphism](#) was an active concern in the decades of research associated with the [Society for General Systems Research](#) -- as published in *General Systems: Yearbook of the Society for General Systems Research*. The question is the extent to which development of cognitive capacity with respect to a system at any level has direct or indirect (potential) implications for the cognitive capacity with respect to systems at other levels -- perhaps in the light of the cybernetic theorem of the [Good Regulator](#) of [W. Ross Ashby](#). Clearly, given the vast amount of informed creative thought on the origins of the Universe and its subsequent organization, the question is whether astrophysics and cosmology have modes of conceptual organization from which benefit might be derived with respect to the organization of society -- especially a knowledge-based society. The central argument is that **coherent explanation of any system is constrained by the human cognitive capacity it is possible to apply to its structure and dynamics**. The sophistication engendered by astrophysicist then offers a template through which seemingly simpler systems may be suggestively viewed. Where waking up is to be recognized as a complex cognitive process, insights into that may also suggest possibilities with respect to the most universal systems recognized by humanity.

Such possibilities have been variously explored and argued in previous papers calling upon mathematics and physics in various ways:

- *Towards an Astrophysics of the Knowledge Universe: from astronautics to noonautics?* (2006)
- *Self-reflective Embodiment of Transdisciplinary Integration (SETI): the universal criterion of species maturity?* (2008)
- *Enactivating a Cognitive Fusion Reactor* (2006)
- *Psycho-social Significance of the Mandelbrot Set: a sustainable boundary between chaos and order* (2005)
- *Potential Psychosocial Significance of Monstrous Moonshine: an exceptional form of symmetry as a Rosetta stone for cognitive frameworks* (2007)
- *Noonautics: four modes of travelling and navigating the knowledge universe?* (2006)
- *Navigating Alternative Conceptual Realities: clues to the dynamics of enacting new paradigms through movement* (2002)

Continued in: [PART II: Epistemological panic in the face of nonduality: Does nothing matter?](#)

-- Does nothing matter: "mattering" of "nothingness"?

-- In quest of a "meta-model": engaging in a meta-modelling process?

-- Strategic engagement: higher orders of vigilance?

-- Transcending duality: epistemological panic of nonduality?

[References](#)



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](#).

For further updates on this site, [subscribe here](#)