Article

Why US?
Trespassing on an Anthropic Lawn (Part II)

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ABSTRACT

Mindful reflections upon a metaphysically misguided materialist advertising campaign: *Trespassing on Einstein's Lawn: A Father, a Daughter, the Meaning of Nothing, and the Beginning of Everything* by Amanda Gefter. Gefter, New Scientist book reviews editor, presents a philosophically confused account of current quantum metaphysics because she adheres to an out of date materialist metaphysics and claims that, whilst observers in some way create reality, the process does not involve consciousness. Her claims are shown to be invalid, the various quantum metaphysical perspectives she covers are shown to require consciousness as fundamental.

Keywords: Grand design, observers, consciousness, anthropic principle, Darwinism, evolutionary developmental biology, Cambrian explosion, quantum morphogenetic archetypes, buddhanature, nothingness, emptiness, primordial consciousness, timeless awareness, substrate of consciousness.

(*Continued from Part I*)

Mensky's account of quantum "free will" indicates that, because consciousness is a quantum field phenomenon associated with the "separation of alternatives," in some circumstances an individual mind can be in 'two minds'. This situation arises when the individual quantum state of consciousness is in a superposition of possibilities with equal, or close to equal, probability weightings. In this situation it is natural to suppose that an individuated consciousness could have a direct, but constrained, effect upon the alternative possibilities for action:

> If I wish to go to the right and actually go to the right, how (does) this happen? … In the framework of EEC [Extended Everett Concept], if the modification of probabilities is assumed, free will is explained quite naturally. There are two alternatives: in one (of) Everett's world(s) I go to the right, in the other I go to the left. Both alternatives have non-zero probabilities. My consciousness modifies the probabilities, increasing the probability of the first alternative. As a result, with a high probability I go to the right. This is my free will.[1]

Dismissing such evidence-based reasoned accounts of a quantum basis for free will by simply resorting to intellectual abuse will not do, "a book reviews editor at New Scientist" should know better.

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It is worth noting that Stapp, like Wheeler and others, endorses the Anthropic Principle. When, in an interview, Stapp was asked:

> John Archibald Wheeler and John Barrow and Frank Tipler felt that human beings were vital components within the cosmic order. Would you agree with the Anthropic Principle, that humans were brought into existence by the universe to observe it?

He replied:

> Not merely to passively observe it, but to contribute to the actual unfolding of the actual.

And later in this conversation Stapp says: "I do not believe the reality of which we are parts is an accident!"[2]

Some, perhaps, might want to call Goswami's view on the issue of free will as approaching a "New Age" perspective, but does that really make it invalid? According to Goswami:

> What materialists say fundamentally is that we do not have free will to choose; we are just products of Newtonian determinism and in addition Darwinian determinism. Evolution has given us brain circuits, and we are helpless before them. What the spiritual tradition says, that while we have this negative emotional brain circuit of competitiveness, greed, jealousy, anger, and what have you; we also, by listening to this power of downward causation and acting on them; we *can* create our reality in which we make positive emotions for ourselves and in our relationships; and we can create positive emotional brain circuits that will then mollify the negative emotional brain circuit; and so we can overcome our base desires.[3]

As with some other epithets employed by Gefter, the use of the term "New Age" is little more than a term of abuse, as usual Gefter does not use evidence or reason when dealing with non-materialist viewpoints. The crucial point here is that Goswami is talking about the way in which the brain can be rewired through the development of new habits and attitudes. This has been scientifically demonstrated in the work of scientists like Dr. Jeffrey Schwartz, an associate of Stapp, who treats obsessive compulsive disorder:

> Schwartz says mainstream science has yet to come to grips with ... what Schwartz calls "self-directed neuroplasticity," the ability to rewire your brain with your thoughts. This kind of power doesn't only rescue his patients, he says. It rescues free will.[4]

It seems, however, that Gefter is not worried about her negative habit of not bothering to investigate such evidence, she simply uses her position as a reviewer to reiterate mistaken materialist dogma.

The reality of free will, of course is crucial for any spiritual perspective, because the decision to embark on a spiritual "path to enlightenment" requires a free-willed decision and subsequent free-willed ethical and spiritual choices, often in the face of opposing desires. But it is important to understand that free will has limits. As Kyabje Kalu Rinpoche indicates:

> It is very important to understand clearly that although karma conditions our experiences and actions, we still enjoy a certain measure of freedom – what would be called free will in the West – which is always present in us in varying proportions.[5]

Karma-vipaka, cause and effect, is the Buddhist technical term for the mechanism by which actions (*karma)*, leave traces of potentiality which may be triggered to produce effects or perceptions of the same or similar kind at a future point in time (*vipaka*).

The quantum universe is a quantum-karmic universe because, as Stapp has pointed out, the quantum universe is "a universe populated by allowed possible physical actions and possible experienced feedbacks from such actions."[6] Even the appearance of the apparently material world is a karmic appearance because it has been created over vast time periods by the perceptions of uncountable numbers of sentient beings. Such a view is entirely consistent with the quantum perspectives we have been investigating. It follows, therefore, that the great majority of the conditions experienced by any human being are not under their control. This much is obvious and to be expected. Although the material world is 'created' by a quantum "epiontic" process and therefore is a product of the fundamental ground of quantum 'dream stuff', at the point of evolution wherein the containing world solidifies to the extent that it currently has, it functions pretty much like a classically material world. Normal sentient beings cannot walk through walls.

As we have seen, Gefter generally offers no reasoned refutations of opposing accounts, she uses prejudicial descriptions: "nonsense," "bullshit," "fairy dust," and so on in her attempted debunking of the significance of consciousness. She suggests that the only alternative to materialism is the supernatural, but the quantum realm, which Zurek tells us is comprised of "epiontic" (epistemology creates ontology) "dream stuff," is immaterial and yet not "supernatural." She claims that she is "yet to find a definition that characterises non-materialism by what it is, rather than by what it is not." This indicates that she has not looked very far, because Mensky, Stapp, Goswami and some others have produced detailed quantum-psycho-metaphysical accounts of exactly this. She also says that proponents of ID, and both Mensky and Stapp present quantum-psycho-metaphysical accounts consistent with ID, and Goswami is a committed proponent of ID against materialist Darwinism, "never define how non-material forces might work," but Mensky, Stapp and Goswami and others have presented very detailed accounts of how consciousness functions to unfold quantum potentialities, as has Hawking & Mlodinow. The latter have cogently argued the case for the Strong Anthropic Principle:

> The weak anthropic principle is not very controversial. But there is a stronger form that we will argue for here, although it is regarded with disdain among some physicists. The strong anthropic principle suggests that the fact that we exist imposes constraints not just on our *environment* but on the possible *form and content of the laws of nature* themselves. The idea arose because it is not only the peculiar characteristics of our solar system that seem oddly conducive to the development of human life but also the characteristics of our entire universe, and that is much more difficult to explain.[7]

And a crucial chapter of their book is entitled '*Choosing Our Universe'* in which they describe how the collective consciousness of all sentient beings chooses, over time and backwards in time, which of the alternative universes to inhabit.

Gefter indicates her materialist leanings, at the same time as inconsistently holding to a radical conclusion of an "observer-created reality," by her support for the professional "debunker" of quantum-spiritual perspectives Victor Stenger. In his excellent article concerning Victor Stenger's book *Quantum Gods: Creation, Chaos and the Search for Cosmic Consciousness,*

physicist and philosopher David Scharf writes in his abstract:

> ***Quantum spirituality***—the idea that some aspect of consciousness plays a fundamental role in the universe and that advanced physics should be interpreted as having to some extent already incorporated this principle—has had distinguished representation among both physicists and philosophers. It has generated an upsurge of grass-roots enthusiasm because of the widespread sense that science and spirituality, rather than being fundamentally separate or even opposed, are in fact deeply connected and mutually reinforcing. Victor Stenger's purpose in writing *Quantum Gods: Creation, Chaos, and the Search for Cosmic Consciousness* is to "debunk" this idea—but attention to the details shows that it is actually Stenger's arguments that need the debunking.
>
> ***Stenger***—a retired physicist who is leveraging his scientific background to try to discredit anything and everything that smacks of spirituality—doesn't respect his intellectual opponents enough to get their positions right; in some instances he appears to deliberately misrepresent their views; and, most important, his own reasoning is characterized by unremitting carelessness. Moreover, there is a method to his carelessness—it enables him to systematically avoid addressing the tough arguments of his opponents. Hence we find him frequently setting up a straw man by misrepresenting the debate as a simple matter of science and reason versus superstition. Once having defined this as the issue, all he needs to do is assume the attitude of an outraged scientist and heap on the ridicule. But if he had done his homework and taken the trouble to really understand the science and logic supporting quantum spirituality, he would have discovered that it is harder to dismiss than he had imagined. Indeed, the more carefully—and yes, critically—one considers the issues, the more one finds quantum spirituality to be eminently worthy of serious consideration, as a plausible and measured approach to the most long-standing and intractable questions at the basis of science.

To anyone familiar with the physics and philosophical issues involved it is clear that Stenger's work is a morass of misdirection, misinformation, misrepresentation and misleading claims. Scharf, however, is an adherent of Transcendental Meditation so is an interested party and might be thought to have an 'agenda', and for this reason he quickly points us to the philosopher Gordon McCabe's views on Stenger's work, precisely because McCabe is ***not*** an adherent, but rather an opponent, of the 'quantum consciousness' or 'quantum spirituality-mysticism' perspective. McCabe writes:

> Whilst Stenger is correct to debunk this type of quantum mysticism, there seems little evidence that he has a knowledge of either philosophy or the philosophy of science, and this complacency leads him into error. … [Stenger] ... demonstrates an ignorance of the relevant literature in the philosophy of physics … The principles of scholarship dictate that a professional researcher should be acquainted with all of the relevant literature before putting pen to paper, yet Stenger, and for that matter, most of the physicists who write about philosophical subjects, do so with a blithe disregard for this principle. Curious.[8]

McCabe, however, is himself a materialist who believes that, although "a formal theory of the mind doesn't exist as yet," he can, in spite of the lack of evidence or theory, be sure that:

> … the mind *supervenes* upon the brain, and not vice-versa. Arguably, it is precisely this asymmetry which suggests that the mind reduces to, or emerges from the brain…[9]

One has to wonder about McCabe's philosophical abilities, the employment of a pseudo-philosophical term – '*supervenes*' – does not cover over the fact that material 'stuff' defined to have no glimmer or trace of potentiality for consciousness, which is the 'stuff' of mainstream materialism, cannot, by definition and logical coherence, give rise to consciousness. So it is clear that McCabe, who is supposed to be a professional philosopher, is also a stranger to logical coherence.

Scharf points out that Stenger's books:

> … generally get enthusiastic reviews by the "new atheist" crowd, including such like-minded writers as Richard Dawkins, Christopher Hitchins, Sam Harris, and Michael Shermer. Shermer's foreword establishes the polemical tone for the book with its provocative title, "Quantum Flapdoodle and Other Flummery." This foreword refers to "quantum flapdoodle" or "flapdoodlists" four times in four pages, with "New Age nuttiness," "airy fairy deity" and "pseudoscience" thrown in, to make sure we get the point.[10]

So we are again clearly in the midst of the materialist penchant for the use of insults rather than reason.

Scharf's article is available online[11] so there is no reason to outline it in detail, a couple of points will suffice to get a taste. Stenger claims that Goswami's Hindu Vedanta viewpoint is solipsism, which is the view that only one individual mind exists. However, Vedanta is not solipsism because it asserts the existence of a layer of nondual universal consciousness which divides itself into the multitude of individual consciousnesses. So Stenger clearly misrepresents Goswami. Scharf also points out Stenger's astonishing lack of philosophical understanding, Scharf writes:

> In Western thought the primacy of consciousness has had many distinguished representatives, including Plato, Leibniz, Immanuel Kant, Hume, George Berkeley, Hegel, Schopenhauer and Edmund Husserl. In one of the simplest presentations, called idealism, George Berkeley proposed that all material objects exist and interact in consciousness; ultimately they are all ideas in the mind of God. In response, in what must be one of the most famous non-sequiturs in Western philosophy, Samuel Johnson kicked a stone and proclaimed, "I refute [Berkeley] thus!" But, from Berkeley's point of view, Samuel Johnson, the stone and the laws of nature governing their interaction are all embedded in consciousness; so Johnson simply failed to understand the implications of idealism. What's worrisome in the present context is that Stenger also fails to understand the implications, or to consider them in a serious or thoughtful manner:
>
> > I will not take seriously the idealist view that there is only spirit. Samuel Johnson quickly refuted that by kicking a rock. The rock kicked back. (p.64)[12]

The last passage is a quote from Stenger. The important point is, of course, that the kicking of the stone proves absolutely nothing, for Berkeley it is all, stone, Dr. Johnson and his foot, a matter of consciousness, so to speak. This complete lack of philosophical understanding indicates that Stenger is either pretending to be philosophically incompetent, or really is

philosophically incompetent.

Stenger also disregards or misrepresents the views of other physicists, as well as philosophers of mind, and presents his own simplistic views as incontrovertible. Thus he asserts that all phenomena can be reduced to the movement of material particles. This view, of course, does not fit with quantum field theory. Scharf observes that:

> But consciousness is the phenomenon most resistant to a reductive analysis. Today, most philosophers of mind (even those sympathetic to the materialist perspective) have abandoned a fully reductive approach and believe that, even supposing neuroscience will someday provide an exhaustive account of all neurophysiological processes in the brain, consciousness will remain unaccounted for. In other words, consciousness—what it is like to have subjective experience—seems to be irreducible to neurophysiology. Most contemporary discussions in the philosophy of mind acknowledge "the hard problem of consciousness" (Chalmers, 1996), according to which the fact of consciousness will remain unexplained even if—and this is a big *if*—all the functional capacities of the mind could be accounted for in terms of neurophysiological processes. Even Jaegwon Kim, regarded as a leading advocate of a hardcore materialist perspective of mind, has backed away from a fully reductionist approach.[13]

And Stenger's attitude to the phenomenon of quantum entanglement, which Schrödinger considered the "central mystery of quantum physics," is breathtakingly ridiculous. The EPR, or Einstein-Podolsky-Rosen experiment demonstrates quantum entanglement and non-locality, which is the fact of instantaneous quantum interconnection between non-local, or extremely separated, quantum 'particles'. Stenger writes that:

> The EPR experiment results are widely discussed in the literature of quantum spiritualism. Physicists, on the other hand, are underwhelmed. Quantum mechanics has passed yet another empirical test. Ho hum.[14]

This is simply not true. As Scharf points out:

> ...the distinguished physicist David Mermin refers to this as the "sublime mystery of quantum mechanics."[15]

And physicist Brian Greene has remarked that:

> Numerous assaults on our conception of reality are emerging from modern physics … But of those that have been experimentally verified, I find none more mind-boggling than the recent realisation that our universe is not local.[16]

And in a recent book the significant physicist Leonard Susskind writes that:

> Einstein pointed to something so deep, so counterintuitive, so troubling, and yet so exciting, that at the beginning of the twenty-first century to fascinate theoretical physicists. … The phenomenon of entanglement is the essential fact of quantum mechanics, the fact that makes it so different from classical physics. It brings into question our entire understanding about what is *real* in the physical world.[17]

So Stenger's claim that physicists are "underwhelmed" is clearly a falsehood.

Scharf indicates that Gefter is incapable of seeing into Stenger's methodology because of her own materialist worldview. According to Scharf, Stenger made an incorrect claim that the Maharishi Mahesh Yogi claimed that his transcendental field was the same as the SU(5) grand unification, this, apparently, was not the case. Scharf writes:

> … since SU(5) is a discredited theory, a reader who doesn't know any better might get the impression that Maharishi's ideas are tied to discredited science. And, in fact, this is just the impression he gave the hapless *New Scientist* editor Amanda Gefter. Thus she confidently declared in her enthusiastic—"with Stenger in charge … we are on sure ground"— review of *Quantum Gods*:
>
> > Maharishi claimed that transcendental meditation gave practitioners access to the "quantum field of cosmic consciousness." This, he said, was identical to SU(5), the model physicists were then investigating in their search for a grand unified theory. Sadly for cosmic consciousness, real experiments later falsified SU(5).
>
> Nice zinger, Amanda, but the falsification of SU(5) has nothing to do with Maharishi. With Stenger in charge, the spread of misinformation is hard to keep up with![18]

In his conclusion Scharf writes that:

> A fundamental and recurring shortcoming of *Quantum Gods* has to do with the fact that Stenger really doesn't think the point-of-view of his intellectual adversaries is worth taking the trouble to understand and get right. In order to properly evaluate *Quantum Gods* it is important to realize that Stenger is not trying to contribute to the debate—he is trying to shut off debate. He is setting a belligerent tenor, intended to put anyone on the defensive who dares to suggest that quantum spirituality might deserve thoughtful consideration. Indeed, at least two science magazine editors—Michael Shermer and Amanda Gefter—have readily adopted Stenger's tone and, insofar as they can influence the editorial policies of their journals, they will see to it that no articles taking these issues seriously see the light of day. In the history of science this is the way a prevailing paradigm can obstruct scientific progress, hanging on long after it has served any useful intellectual purpose.[19]

Indeed!

In her article '*How to spot a hidden religious agenda'* Gefter writes of James Le Fanu's book *Why Us? How Science Rediscovered the Mystery of Ourselves*:

> Some general sentiments are also red flags. Authors with religious motives make shameless appeals to common sense, from the staid - "There is nothing we can be more certain of than the reality of our sense of self" (James Le Fanu in *Why Us?*) ... It is crucial to the public's intellectual health to know when science really is science. Those with a religious agenda will continue to disguise their true views in their effort to win supporters, so please read between the lines.[20]

How and why Gefter concludes that Le Fanu's remark is either "shameless" or "religious" is a mystery. Le Fanu's claim looks more like a variation on Descartes' certainty of his own existence. Gefter, however, wants to paint Le Fanu as a dangerous and "shameless" fellow with nefarious "religious motives" because of his arguments against materialism and crude materialist Darwinism, and these are perspectives which she is, inconsistently, a champion of. However, as

we shall see, Le Fanu's arguments are worth taking seriously and should not be dismissed out of hand on the basis of Gefter's shameless and crude materialist motives.

Le Fanu begins his exposition by indicating that we live in an age of scientific materialism, or scientism, which is simply the dogmatic assertion that all scientific explanations must be in terms of material causes. Le Fanu focuses on two paradigm examples of scientific materialism exemplified by the so-called Decade of the Brain and the Human Genome Project. Le Fanu writes regarding the supposition that scientific materialism has no limits to its explanatory power:

> The genome project and the Decade of the Brain represent the logical conclusion of that supposition. First, the genome projects were predicated on the assumption that unravelling the Double Helix would reveal 'the secret of life', *as if* a string of chemicals could possibly account for the vast sweep of qualities of the wonders of the living world; and, second, the assumption of the Decade of the Brain that … brain scanning techniques would explain the mind, as if there could be any equivalence between the electrical firing of neurons and the limitless richness of the internal landscape of human memory, thought and action.[21]

Here Le Fanu highlights the simple logical impossibility of the supposed non-qualitative independent 'stuff' of 'matter' magically turning into an entirely alien sphere of the qualitative realm of awareness and experience. As long as matter is defined to be 'stuff' that is entirely devoid of a qualitative dimension of awareness, as it is and always has been, such a transformation is a logical impossibility, although, as we have seen, materialist apologists regularly ignore logical coherence and simply assume that 'matter' can achieve the impossible and materialize consciousness!

One of the central issues that Le Fanu addresses is that of the issue of the origin of *order,* and this means that he is asking about the origin of *design*. A central issue, then, is that of intelligent design (ID). One thing that needs to be pointed out immediately is that in the materialist camp the ID perspective is generally *identified* with Creationism, which is the assertion that some kind of independent 'God' in some way created the universe. However, it is perfectly possible to have a non-theistic ID proposal. Mensky's quantum-psycho-metaphysical account, which asserts the presence of a Life-Principle involving consciousness unfolding quantum potentialities, is an example. And, as we have seen, the Hawking-Mlodinow (H&M) quantum psycho-metaphysical account presented in their book *The Grand Design,* which in essence is similar to Mensky's account, is also a version of a non-theistic intelligent design quantum psycho-metaphysics.

H&M tell us that the universe starts off "in every possible way," this means that all possible histories of the future development and evolution of the universe, including the organisms and the relationships between organisms and other organisms, and relationships between organisms and their environment, 'exist' as quantum potentialities at the dawn of time. In the H&M quantum psycho-metaphysical model the history for our universe is chosen over time and backwards in time by the collective consciousness of all sentient beings inhabiting the universe through time. This means that, if anything like the H&M quantum-metaphysical model, or Menky's or Stapp's, is correct then the absurd claims of materialist Darwinists, such as hippo-like creatures taking to the sea and then transforming, millimetre by painful millimetre, into whales, are clearly and irrefutably seen to be false. It must rather be the case that the patterns for

organic life are potential within underlying quantum fields.

Materialists such as Gefter talk about some kind of creation from 'nothing' or 'nothingness', but such talk is conceptually confused and does not conform to the evidence that the eternal backdrop to the process of reality is provided by quantum fields. As the physicist Lisa Randall tells us:

> Quantum field theory, the tool with which we study particles, is based upon eternal, omnipresent objects that can create and destroy those particles. These objects are the "fields" of quantum field theory. … quantum fields are objects that permeate spacetime … they create or absorb elementary particles … particles can be produced or destroyed anywhere at any time.[22]

The universe did not start off from 'nothing', it began as a quantum fluctuation in an eternally present quantum field of potentiality. As Vlatko Vedral in his book *Decoding Reality* asserts:

> The universe starts empty but potentially with a huge amount of information. The first key event is the first act of symmetry breaking…[23]

In this context it is worth briefly examining a controversy which was prompted by the claim by the physicist Lawrence Krauss, in his book *A Universe From Nothing: Why There Is Something Rather Than Nothing*, that the entire universe could have emerged from "nothing." By "nothing" Krauss is referring to quantum field theory. The physicist and philosopher of science David Albert rightly took Krauss to task for claiming that quantum fields are "nothing." Albert wrote in a New York Times Review of the book:

> The particular, eternally persisting, elementary physical stuff of the world, according to the standard presentations of relativistic quantum field theories, consists (unsurprisingly) of relativistic quantum fields. And the fundamental laws of this theory take the form of rules concerning which arrangements of those fields are physically possible and which aren't, and rules connecting the arrangements of those fields at later times to their arrangements at earlier times, and so on — and they have nothing whatsoever to say on the subject of where those fields came from, or of why the world should have consisted of the particular kinds of fields it does, or of why it should have consisted of fields at all, or of why there should have been a world in the first place. Period. Case closed. End of story. … Relativistic-quantum-field-theoretical vacuum states — no less than giraffes or refrigerators or solar systems — are particular arrangements of *elementary physical stuff*. The true relativistic-quantum-field-theoretical equivalent to there not being any physical stuff at all isn't this or that particular arrangement of the fields — what it is (obviously, and ineluctably, and on the contrary) is the simple *absence* of the fields! [24]

'Eternal' quantum fields are quite clearly not 'nothings' but are fields of potentiality for universes containing sentient beings to come into being. Such fields, which are immaterial fields of potentiality that are 'empty' of substantiality have a remarkable resonance with the Buddhist concept of emptiness – *shunyata*.

In his book *Life Without Genes* the biologist Adrian Woolfson endorses this viewpoint:

> In the beginning there was mathematical possibility. At the very inception of the universe fifteen billion years ago, a deep infinite-dimensional sea emerged from nothingness. Its colourless waters, green and turquoise blue, glistened in the non-

> existent light of the non-existent sun … A strange sea though, this information sea. Strange because it was devoid of location …[25]

Ignoring the apparently endemic misguided notion that a vast realm of the process of reality and experience can magically arise from complete "nothingness," Woolfson's suggestion is that there is a quantum field of potentiality at the inception of the universe. This quantum field of potentiality contains: "…all possible histories … through which the universe could have evolved to its present state…"[26] In the beginning, of course, the quantum potentiality field of the universe contains all future evolutionary possibilities: "The information sea is thus a quantum mechanical sea, composed from infinite repertoires of entangled quantum descriptions."[27] From out of the vast entangled web of infinite possibilities for manifestation only certain potentialities will actually make it into reality, so to speak: "An information space of this sort would furnish a complete description of all potentially living and unrealizable creatures…[28] It therefore follows that there is a "design" woven into the potentialities for evolution; it is a vast complex design of all possible manifestations for organic life written into the quantum field of potentiality. This design, however, is not evidence of a 'Creator' because it is a design written into the potentialities of the quantum ground of reality. Woolfson's suggestion, of course, matches that proposed by Hawking and Mlodinow, and is consistent with Mensky's perspective.

The quantum psycho-metaphysical account, shared by Woolfson, H&M, Mensky, Stapp and others, indicates a new worldview, based on the latest findings of quantum physics, a worldview antithetical to the current ridiculous and dogmatic materialist Darwinian account of evolution. It should not come as a surprise, then, that a great many modern discoveries within the biological sciences, such as the evolutionary-development ('Evo-Devo') revolution, epigenetics and the discovery of non-random directed mutation,[29] are now clearly indicating the completely ridiculous nature of the claims of crude materialist Darwinism. It is absolutely incomprehensible that anyone could hold to what, given what we now know about the deep levels of quantum reality, not to mention the discoveries of evolutionary-developmental biology, that any serious scientist or philosopher would hold such a childishly simplistic world-view, and yet it still remains a central dogma in Western intellectual and academic life. This desperate adherence to a completely nonsensical worldview derives from the equally desperate clinging to a materialist metaphysics which is motivated in large part by a determination not to allow "a Divine Foot in the door" as Richard Lewontin puts it.

The quantum psycho-metaphysical requirement that the structure of the organic world exists in some form as structures of potentiality within deep quantum levels of reality is consistent with viewpoints concerning the origin of organic forms that prevailed prior to the Darwinian highjack of academic biology. As Le Fanu points out, at the beginning of the nineteenth century the "presiding genius of natural history" was Baron Georges Cuvier who:

> ...proposed two laws of … 'formative impulse', the laws of *similarity* (homology) and *correlation*. First homology, Cuvier inferred from a detailed study of the ten thousand specimens in his collection that diverse forms of animals concealed an underlying 'unity of type', the paddle of a porpoise, the horse's legs and the human forearm were all constructed from the same bones, adapted to their 'way of life' – whether flying or swimming, running or grasping. His second law, of 'correlation', asserted that the various parts of every animal … all correlated together, being so fashioned as to fulfil its way of life.[30]

Cuvier's notion of a natural 'formative impulse' can be thought of as a forerunner of Mensky's 'Life-Principle.' Cuvier believed that all organisms must be considered to be functionally integrated wholes, wherein all parts were interdependent. Therefore it was not possible for one part of the structure to change over time whilst the rest remained static, changes to one part of an organism's structure over time would entail repercussions to its integrated system. If an organism's structure were to somehow transform piecemeal and slowly, as his contemporaries Lamarck and Geoffroy Saint-Hilaire suggested, it wouldn't survive in its environment. Cuvier therefore opposed the notion of species changing into new species and suggested a deep level of typological organic forms underlying the species. Of course, Cuvier could not have any idea that the structural similarities and correlations of organic forms are the result of the activation of a sequence of layered structural levels of quantum morphogenetic templates.

Darwin, of course, later asserted that evolution was the result of random variation and natural selection acting gradually over very long time scales. The American philosopher and cognitive scientist Jerry Fodor gives the following summary of the NS (natural selection) 'adaptationist' perspective which is the modern derivative of Darwin's proposal:

> Darwin's theory of evolution has two parts. One is its familiar historical account of our phylogeny; the other is the theory of natural selection, which purports to characterise the mechanism not just of the formation of species, but of all evolutionary changes in the innate properties of organisms. According to selection theory, a creature's 'phenotype' – the inventory of its heritable traits … is an adaptation to the demands of its ecological situation. Adaptation is a name for the process by which environmental variables select among the creatures in a population the ones whose heritable properties are most fit for survival and reproduction. So environmental selection for fitness is (perhaps plus or minus a bit) the process par excellence that prunes the evolutionary tree.[31]

In his book *What Darwin Got Wrong* Fodor (with Massimo Piattelli-Palmarini) refers to these two components as "the genealogy of the species" (GS), which is the recognition of the historical development of species; and "natural selection" (NS) which is the claimed mechanism of random mutation and environmental selection that materialist Darwinians assert to be fundamental. He gives the diagram shown in figure 5 with the caption:

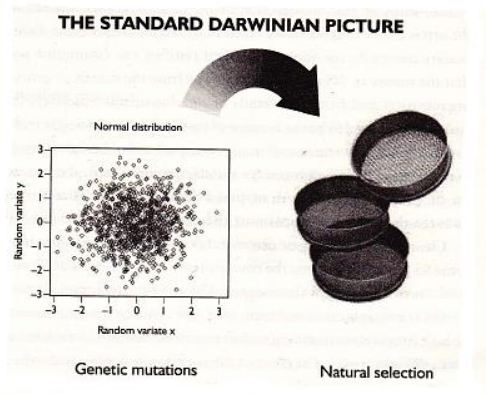


Figure 5

> A schematic representation of the standard neo-Darwinian model of evolution by natural selection. The square on the left represents random genetic mutations, the arrow the expression of those mutations as manifest traits (phenotypes), and the filters the action of natural selection.[32]

Thus we see that 'natural selection' is supposed to function as a kind of environmental 'sieve' supposedly weeding out poor random mutations and allowing 'advantageous' adaptations to survive.

Robert Owen, a British supporter of the Curvier 'typological' perspective (the notion that organic 'types' are potential within a deeper layer of the process of reality), made the obvious criticism that it is very unlikely that one tiny genetic change would produce an advantageous new animal trait which conferred any advantage, it would take a vast number of them. This in itself should indicate the unlikely nature of Darwin's proposal. To take one ridiculous example of the supposed transition of a hippo-like animal into a whale; the nose of a hippo is hardly likely to become the blowhole of a whale due to one genetic mutation. In fact it is hard to imagine the possibility of any sequence of random genetic changes causing such a movement, at the same time as changing blood chemistry in order to allow a hippo-whale to dive to bone crushing depths of the sea. The whole notion is childishly absurd, as absurd as the now discredited notion that giraffes 'evolved' long necks because of stretching for acacia leaves.

The giraffe is an excellent example of the absurdity of the neo- or ultra- Darwinian worldview. The biologists Davis and Kenyon summarize some of the crucial points of a giraffe's remarkable physiology as follows:

> When standing upright, its blood pressure must be extremely high to force blood up its long neck; this in turn requires a very strong heart. But when the giraffe lowers its head to eat or drink, the blood rushes down and could produce such high pressure in the head that the blood vessels would burst. To counter this effect, the giraffe is equipped with a coordinated system of blood pressure controls. Pressure sensors along the neck's arteries monitor the blood pressure and activate contraction of the artery walls (along with other mechanisms) to counter the increase in pressure.[33]

Such intricate details were not known about in Darwin's day, the giraffe's physiology is extraordinarily fine-tuned in order that its head does not explode. Furthermore, there is no fossil evidence of its supposed evolution. The researcher Wolf-Ekkehard Lönnig, an expert on mutation genetics, a researcher in the field for over thirty years, has published a long carefully researched paper entitled '*The Evolution of the Long-Necked Giraffe – What Do We Really Know*' which concludes:

> If, however, the general lineages for almost all modern groups of vertebrates are as uncertain as in the case of giraffes, then we are dealing with only suggestive evolutionary interpretations in most other groups as well, yet without solid scientific proof.[34]

Baron Georges Cuvier

Robert Owen

In this paper he demonstrates the lack of fossil record and the impossibility of the complexly coordinated giraffe physiology being the result of gradual random changes. The coordination required in order to keep its head intact is far too intricate and 'irreducibly complex'. As Goswami says of the Darwinian account of the evolution of the giraffe, it is "too simplistic" (and that is putting it mildly):

> Longer neck vertebrae require many concurrent modifications. As the vertebrae become longer, the head must become smaller, because it becomes more difficult to support the head atop a long neck. The circulatory system has to produce higher blood pressure, valves must originate to prevent overpressure when the giraffe stoops to get a drink. The lung size has to increase so the animal can breathe through a much longer pipe. Additionally, many muscles, tendons, and bones have to change harmoniously; in fact, the entire skeletal frame has to be restructured to accommodate lengthened forelegs. It goes on and on. Clearly, much more than neck-lengthening gene mutation have to be involved – and with what amazing coordination! All this through cumulative step-by-step chance and necessity? It's simply not credible.[35]

To be quite honest when one examines all the evidence available today, materialist Darwinism (Neo-Darwinism or 'Ultra-Darwinism' as Simon Conway Morris calls it) is just stupid. There is no other word to use, for example, for the notion that a random mutation in a giraffe might extend the neck a little and randomly put in a pressure valve in anticipation of future random extensions, random mutations creating further pressure valves and eventually a more powerful heart and so on.

Steven Jay Gould famously called many Darwinian accounts "just-so stories." And yet materialist Darwinism is consistently promoted and defended with pugilistic fervour. Why? According to Le Fanu:

> The imperative to believe in the principle of evolution by natural law more than outweighed its obvious deficiencies: 'We accept [the theory of natural selection] not

> because we are able to demonstrate the process in detail, nor because we can with more or less ease imagine it', observed … the zoologist August Weismann, 'but simply because we *must,* because it is the only possible explanation that we can conceive'.[36]

This can be compared with a more recent statement by Lewontin that scientists have "have a prior commitment, a commitment to materialism."[37]

It is clearly apparent that amongst committed materialists it is accepted that 'science' must ignore any evidence which threatens their worldview precisely because they believe any other worldview must be 'supernatural'. But where is the science in such a view? A non-theistic quantum psycho-metaphysical intelligent design perspective, such as Mensky's for example, considers that the internal intelligence is entirely ***natural***.

As Le Fanu points out, the end point of this dogmatic adherence to a materialist worldview is the complete devaluation of the human realm of awareness, culture and qualitative experience in general. In a materialist Darwinian metaphysical worldview all qualitative aspects of existence become devalued because they are asserted to be ultimately and ontologically unreal. This becomes clear in some of the more extreme and silly claims of Dawkins, wherein he asserts his view that 'genes' are the only entities which have ultimate ontological validity:

> Now they [the genes] swarm in huge colonies. Safe inside gigantic lumbering robots [ourselves] sealed off from the outside world, communicating with it by tortuous indirect routes, manipulating it by remote control. They are in you and in me; they created us, body and mind; and their preservation is the ultimate rationale for our existence. They have come a long way, those replicators. Now they go by the name of genes, and we are their survival machines.[38]

As Le Fanu rightly points out:

> Most people might reasonably suppose this to be some sort of playful joke, perhaps an *ad absurdum* argument to expose the folly of an exclusively materialistic view of man. But it is not, and nor is it just Professor Dawkins – for this represents mainstream conventional evolutionary thinking, taught in schools and universities, expounded in textbooks and popular science, the focus of numerous academic papers every year.[39]

And the assumed ontological primacy of the gene was extended, within the field of sociobiology, to aspects of qualitative experience and behaviour such as altruism, love, consciousness and awareness and the religious impulse. The problem with such sociobiological notions is the fact that there is absolutely no evidence for any of them, it's all speculative academic posturing and implausible story-telling in pursuit of ego-enhancement and academic advancement.

But it is not just sociobiology that lacks evidence and plausibility. The entire materialist account of Darwinian evolution also lacks evidence and plausibility. The claimed fossil evidence is sketchy and concocted. Fossils which appear as if they can be in a sequence are appealed to as being a direct material level evolutionary sequence. However, if the ultimate source of organic structure resides at quantum levels then such resemblances are likely to be due to deeper quantum processes rather than material level direct random mutation and natural selection. As Lönnig points out in his paper on the Giraffe "already in Darwin's day Galton warned of such

erroneous constructions when he pointed out, for example, that fire-arms and chinaware can be ordered in a continuous series, and that it is necessary to take care in dealing with the same phenomenon in biology." Figure 6 illustrates:

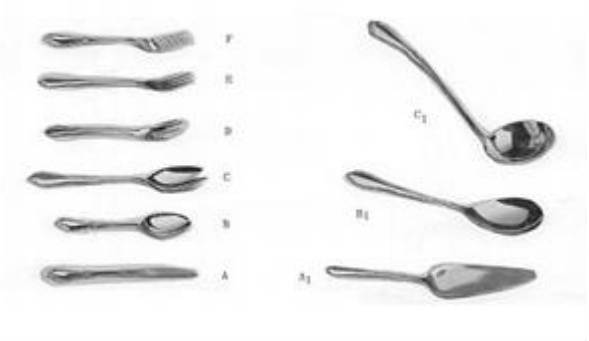


Figure 6

> Derivation of the fork from the knife, through the spoon, and the special evolution of the soup ladle from the cake slicer. One may note especially the stepwise perfection in the fork development from the 2-pronged meat fork (D) through the 3-pronged kitchen fork (E) to the 4-pronged dining fork (F). The salad server is the intermediate link between spoon (B) and meat fork (D) (mosaic evolution!). One only needs to assume that everything is derived from primitive knives.[40]

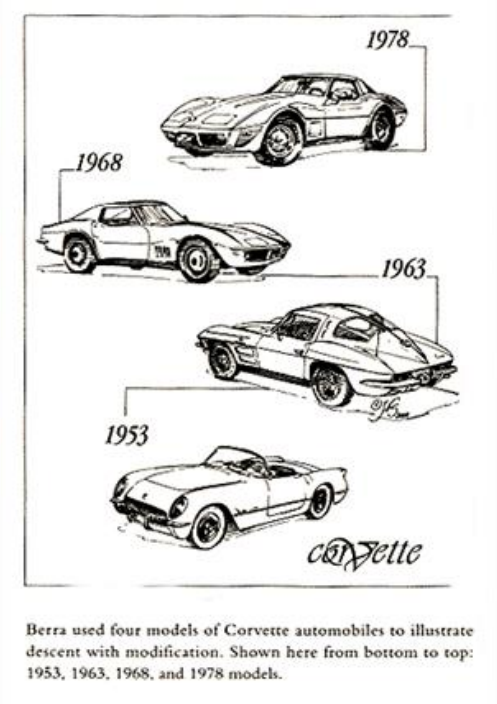
Thinking that there is an evolutionary development sequence underlying tableware of course would only be possible in the absence of significant information, i.e. they are designed by human beings in order to prepare food and eat.

Such is the depth of intellectual incompetence in materialist-Darwinian academic discourse that such idiotic oversights are regularly advanced as support for the Darwinian worldview. One particularly stupid example was concocted by Professor Tim Berra (this is so stupid it is almost impossible to believe the guy is actually a professor) in his book *Evolution and the Myth of Creationism* (figure 7):

> ...if you compare a 1953 and a 1954 Corvette, side by side, then a 1954 and a 1955 model, and so on, the descent with modification is overwhelmingly obvious. ... the evidence is so solid and comprehensive that it cannot be denied by reasonable people.[41]

In his book *Defeating Darwinism by Opening Minds* Phillip E. Johnson writes concerning this:

> Of course, every one of those Corvettes was designed by engineers. The Corvette sequence - like the sequence of Beethoven's symphonies to the opinions of the United States Supreme Court - does not illustrate naturalistic evolution at all. It illustrates how intelligent designers will typically achieve their purposes by adding variations to a basic design plan. Above all, such sequences have no tendency whatever to support the claim that there is no need for a Creator, since blind natural forces can do the creating. On the contrary, they show that what biologists present as proof of "evolution" or "common ancestry" is just as likely to be evidence of common design.[42]



Berra used four models of Corvette automobiles to illustrate descent with modification. Shown here from bottom to top: 1953, 1963, 1968, and 1978 models.

Figure 7

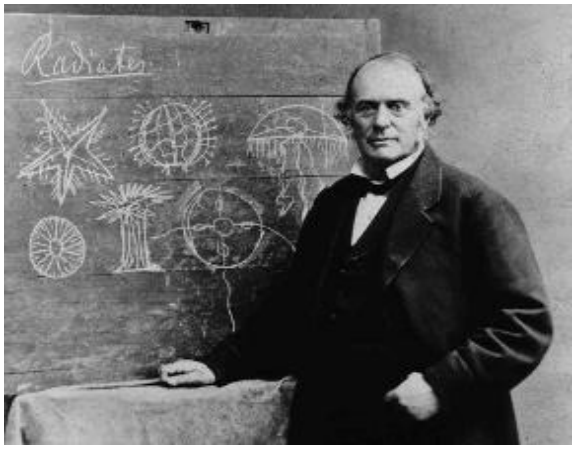
Such concerns also apply to the fossil record, it could perhaps have been the result of materialist evolution, although the mechanism proposed is highly implausible, but it could also have been produced by a creative force acting on quantum potentiality. The most recent evidence indicates the latter.

A lack of significant information contributed to the mistake that Darwin made. He thought that the world was ultimately comprised of 'matter' and that mechanical type explanations were the most appropriate for the phenomena he wanted to explain. However, as the philosopher of science Thomas Kuhn has pointed out:

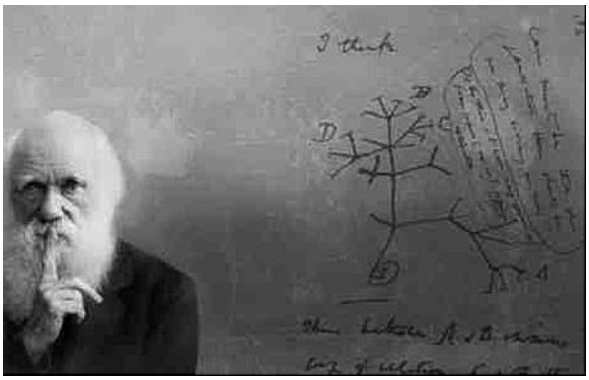
> The similarity of forms was explained by evolution, and evolution in turn was proven by the grades of similarities. That here one has fallen victim to circular reasoning was hardly noticed; the very point that one set out to prove, namely that similarity was based on evolution, was simply assumed, and then the different degrees in the gradation of the (typical) similarities, were used as evidence for the truth of the idea of evolution. Albert Fleischmann has repeatedly pointed out the lack of logic in the above thought process. The same idea, according to him, was used interchangeably as assertion and as evidence. However, similarity can also be the result of a plan, and morphologists such as Louis Agassiz, one of the greatest morphologists that ever lived, attributed the similarity of forms of organisms to a creation plan, not to evolution.[43]

According to the invertebrate paleontologist and translator of some of Agassiz's works, Paul J. Morris, Agassiz was:

> One of the great scientists of his day, and one of the "founding fathers" of the modern American scientific tradition, Louis Agassiz remains something of a historical enigma. A great systematist and paleontologist, a renowned teacher and tireless promoter of science in America, he was also a lifelong opponent of Darwin's theory of evolution. Yet even his most critical attacks on evolution have provided evolutionary biologists with insights.[44]



Louis Agassiz



Charles Darwin

Agassiz was entirely opposed to Darwin's proposals for some very good reasons which have now been validated by the Evo-Devo (evolutionary-developmental biology) revolution which has shown that there are common pre-formed deep morphogenetic templates underlying all organic forms. In his important work on the Evo-Devo worldview, *Endless Forms Most Beautiful*, the evolutionary biologist Sean B. Carroll writes that:

> The first shots in the Evo Devo revolution revealed that despite their great differences in appearance and physiology, all complex animals - flies and flycatchers, dinosaurs

> and trilobites, butterflies and zebras and humans - share a common "tool kit" of "master" genes that govern the formation and patterning of their bodies and body parts. … [This] discovery shattered our previous notions of animal relationships and of what made animals different, and opened up a whole new way of looking at evolution.[45]

The Evo-Devo revolution actually indicates that there are deep pre-formed morphogenetic 'template' potentiality structures underlying all organic forms and it indicates that Darwin got it wrong, and pre-Darwinian biologists such as Georges Cuvier, Richard Owen and Agassiz, who perceived layers of hidden structural form underlying the variety of organic forms, were closer to the truth. Richard Owen considered that the similarities and common structure underlying animal forms were due to a deep layer of 'archetypal' patterning:

> One of Owen's most notable accomplishments was his description of the vertebrate archetype. There he provided a theoretical framework to interpret anatomical and physiological similarities shared among organisms. Owen saw these mutual features as manifestations of a common blueprint. He defined the archetype this way: "that ideal original or fundamental pattern on which a natural group of animals or system of organs has been constructed, and to modifications of which the various forms of such animals or organs may be referred."[46]

However, despite the fact that the Evo-Devo revolution clearly undermines any Darwinian perspective, few biologists seem to have the integrity to face up to the fact that Darwin got it wrong, preferring instead to pretend that Evo-Devo is merely an extension of the Darwinian viewpoint.

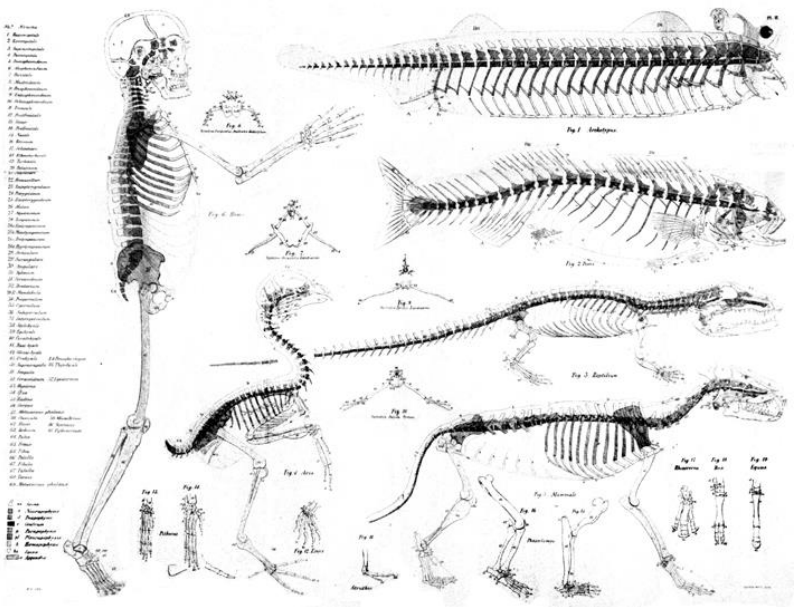


Figure 8. Richard Owen's derivation of animal structures from an archetype (upper right)

Agassiz was a staunch creationist who saw a Divine Plan everywhere in nature, and he could not reconcile himself to a theory that did not invoke design. He defined a species as "a thought of God." Thus he wrote in his *Essay on Classification*:

> The combination in time and space of all these thoughtful conceptions exhibits not only thought, it shows also premeditation, power, wisdom, greatness, prescience, omniscience, providence. In one word, all these facts in their natural connection proclaim aloud the One God, whom man may know, adore, and love; and Natural History must in good time become the analysis of the thoughts of the Creator of the Universe …[47].

However, we do not need to invoke a fundamentalist notion of God to see that that quantum psycho-metaphysical insights and the Evo-Devo revolution have clearly indicated a vast and intricate 'plan' written into the quantum ground of the process of reality. All organic forms are patterned by potentialities within the quantum realm of potentiality-possibility.

There are other serious problems with materialist Darwinism. No one has ever witnessed or demonstrated one species turning into another. The examples often given by Darwinian supporters, Darwin's Finches and Peppered Moths, are examples of variations within a species, not a transformation from one species into another. The geographical evidence, again, can have alternative explanations. The claimed Darwinian gradualism is refuted by the fact that the fossil evidence clearly indicates the sudden emergence of multiple phyla such as occurred in the Cambrian Explosion (542 million years ago), in which all the basic body plans of the major phyla spontaneously appeared in a relatively short evolutionary time period. The paleontologist Stephen J. Gould said of the fossils of the Cambrian Explosion:

> The Cambrian explosion is the key event in the history of multi-cellular animal life. The more we study the episode, the more we are impressed by its uniqueness and of its determining effect on the subsequent pattern of life's history. These basic anatomies that arose during the Cambrian explosion have dominated life ever since, with no major additions. The pattern of life's history has followed from the origins and successes of this great initiating episode.[48]

Furthermore, according to Gould:

> Contrary to Darwin's expectation that new data would reveal gradualistic continuity with slow and steady expansion, all major discoveries of the past century have only heightened the massiveness and geological abruptness of this formative event...[49]

And he also concluded that:

> The Cambrian explosion was the most remarkable and puzzling event in the history of life.[50]

Paleontologist Simon Conway Morris is a specialist and expert in the Cambrian period who has concluded:

> The Cambrian explosion is real and its consequences set in motion a sea-change in evolutionary history. Although the pattern of evolution is clearer, the underlying processes still remain surprisingly elusive.[51]

However, if we understand that evolution takes place within quantum levels before manifesting in the material realm such apparently sudden events wherein new organic forms come into being apparently all at once become comprehensible.

Amit Goswami, in his excellent book *Creative Evolution*, calls the way in which evolving morphogenetic structures develop within quantum levels of possibility a 'tangled hierarchy'; and according to Goswami the evidence of Wheeler's quantum 'delayed choice experiment', wherein a quantum superposition can be 'collapsed' backwards in time, shows that this process can operate backwards in time. Goswami points out:

> The lesson of the delayed choice experiment is profound. It solves the measurement problem for quantum cosmology - how the universe of possibility can be actualized even though no sentient being was present to observe the big bang. The universe remains in a superposition of baby universes that evolves in possibility until, in one of the possible universes, the possibility of sentience arises. The quantum consciousness … collapses the possibilities and the evolved first sentient being observes itself as separate from its environment, where upon simultaneously the universe manifests retroactively, going backward in time from the moment of collapse all the way to the big bang.[52]

This is close to the H&M account, wherein consciousness collapses quantum potentialities backwards in time. And this mechanism can be applied to the Cambrian Explosion, which has been called a biological 'Big Bang'. Goswami writes that:

> …quantum physics demands that biologists give up their materialist prejudice and base biology on the metaphysics of the primacy of consciousness. One of the most important rewards of such a change of paradigm is no less an accomplishment than being able, for the first time in biology, to clearly distinguish not only between the conscious and the unconscious, but also between life and nonlife. So, yes, not only we humans but cats and lizards and even one-celled organisms can collapse possibility waves into actual events of experience. Incidentally, this distinction will make use of the ... characteristic of consciousness introduced above, the characteristic of self-reference.[53]

It is this Wheeler-type ability of consciousness to act upon quantum potentialities through internal quantum 'self-reference' which unfolds the world of biological organisms in a 'top down' manner, starting with the fundamental quantum field of potentiality which has an internal aspect of primordial consciousness.

Thus, we see that Le Fanu's intellectual attack upon crude materialism and dogmatic Darwinism, which still has its fundamental assumptions and worldview stuck in the nineteenth century, is entirely justified. Getfer's claim that Le Fanu's viewpoint is nothing other than concealed religion lacks intellectual integrity. As Le Fanu replied to Gefter's unwarranted assertions:

> Ms Gefter's supposition that there is a genre of science books written by creationists 'disguising their true views' is, I would suggest, a mirage invoked to condemn by association those like myself who draw attention to the limits of science and its exclusively materialist explanations and theories. I believe that the New Scientist should do more to examine such ideas to promote the spirit of open and intellectual enquiry.[54]

Writers who use the intelligent design perspective to advance theistic worldviews, such as

William Dembski, actually do so quite openly and do not attempt to disguise their true views. Le Fanu's book on the other hand, as anyone who reads it with attention and integrity would conclude, simply attempts to, as he says, "draw attention to the limits of science and its exclusively materialist explanations and theories." A similar view has been expressed by the ***atheist*** philosopher Thomas Nagel in his book *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False*:

> Physico-chemical reductionism in biology is the orthodox view, and any resistance to it is regarded as not only scientifically but politically incorrect. But for a long time I have found the materialist account of how we and our fellow organisms came to exist hard to believe, including the standard version of how the evolutionary process works. The more details we learn about the chemical basis of life and the intricacy of the genetic code, the more unbelievable the standard historical account becomes.[55]

In her *New Scientist* review of Le Fanu's book Gefter concludes:

> I am all for a good mystery, but there is an important difference between revelling in the excitement of the unknown and turning away from knowledge because you simply don't like the facts.[56]

However, when one investigates "the facts" it turns out that it is Gefter who turns away "from knowledge because [she] simply [doesn't] like the facts."

Gefter indicates that her father was to some degree interested in Zen Buddhism in his youth, having read some books by Alan Watts such as *This is It* and *The Way of Zen.* According to Amanda Gefter it was her father's musings on Zen which led him to his notion of the 'H-State', the fundamental and foundational state of homogeneity which he thought must underlie the world of phenomena. In the opening pages of *TEL* the following remarks about "how you can get something from nothing" by her father are recorded:

> ...what if you had a state that was infinite, unbounded, and perfectly the same everywhere? … a 'thing' is defined by its boundaries. By what differentiates it from something else. … The edges define the 'thing'. But if you have a completely homogeneous state with no edges, and it's infinite so there's nothing else to differentiate it from … it would contain no thing, it would be nothing! … Usually people think that to get to nothing, you have to remove everything. But if nothing is defined as an infinite, unbounded homogeneous state, you don't have to remove anything to get to it – you just have to put everything into a specific configuration. … You take a blender to the world – you blend up every object, every chair and table and fortune cookie in this place, you blend it all until everything is just atoms and then you keep blending the atoms until any remaining structure is gone, until everything in the universe looks exactly the same, and this completely undifferentiated stuff is spread out infinitely without bound. Everything will have disappeared into sameness. everything becomes nothing. But in some sense it's still everything, because everything you started with is still in there. Nothing is just everything in a different configuration. … So to get a universe, nothing must become something … they must be two different states of the same underlying thing – the same underlying reality – it's a state of infinite unbounded homogeneity.[57]

Once again we find a strange misuse of language. As noted previously, a homogeneous state or

field, which must ultimately be a quantum field or set of quantum fields, which is "still everything" and is "completely undifferentiated stuff ... spread out infinitely without bound" is not actually a "nothing!" We previously noted David Albert rightly criticised Lawrence Krauss for his assertion that the universe creates itself from "nothing." In an additional preface added to the latest version of his book *A Universe From Nothing* Krauss has attempted to defend his position:

> Can we understand how absolute nothingness, without even the potential for anything at all to exist, does not still reign supreme? Can one ever say anything other than the fact that the nothing that became our something was part of "something", in which the potential for our existence, or any existence, was always implicit? In the book I take a rather flippant attitude toward this convention, because I do not think that it adds anything to the productive discussion … I discount this aspect of philosophy here because I think it bypasses the really interesting and answerable physical questions associated with the origin and evolution of our universe.[58]

Such a misguided "flippant" attitude to conceptual coherence indicates exactly why Steven Hawking's remarks concerning the irrelevance of philosophy are wrong. Speaking to a Google Zeitgeist Conference Hawking claimed that:

> ...almost all of us must sometimes wonder: Why are we here? Where do we come from? Traditionally, these are questions for philosophy, but philosophy is dead ... Philosophers have not kept up with modern developments in science. Particularly physics.[59]

However, a philosophical approach to the metaphysical conceptual systems developed by physicists, and conceptual use in general is vital when physicists and others are so often "flippant," wayward, incoherent and slapdash with their use of concepts and terminology. At some margin of his mind Krauss must be aware of his conceptual imprecision as in a question and answer session included at the end of the book he admits:

> Now, that state of no-stuff may not be "nothing" in a classical sense, but it is a remarkable transformation nevertheless.[60]

It may be a "remarkable transformation," but not as remarkable as an *impossible* transformation from absolute nothingness into lots of things. Krauss is admitting to using the term "nothing" in his own personal sense. This, however, is something that scientists and philosophers should avoid, if, that is, they wish to avoid misleading their audience.

Speaking of everything emerging from 'nothing' or 'nothingness' completely ignores the relevance of consciousness, a move, of course, acceptable to materialists. Stapp, however, describes the ground quantum "H-state" as follows:

> ... given the empirical fact that consciousness eventually did appear, it would seem that some seed of consciousness, or potentiality for consciousness, must have been there all along. In this connection it is worth noting that, as Heisenberg emphasized, the ontological character of the quantum state is like that of an Aristotelian "potentia", which Heisenberg described as an "objective tendency". The quantum state represents a collection of objective tendencies for various physically possible psycho-physical events to actually happen. This notion of "an objective tendency," as best I can conceive it in this quantum context, is something like a contemplated possibility

> coupled to an urge to raise this possibility into an actuality. So it would appear that something like a primordial consciousness was present already at the birth of the quantum mechanically conceived universe. Recognition or acceptance of this notion leads, in a quantum world devoid of even the most rudimentary life forms, to the ancient idea of a cosmic mind, and to the conception of the universe as more like a conscious organism than like a robotic machine. Mentality becomes primordial, not in the individual atoms, but rather at the level of an "over-mind". The emergence of conscious life forms would then become the creation, by this evolving psychophysical structure, of tiny substructures similar to itself.[61]

In other words an "H-state" must contain both potentialities and primordial consciousness. Furthermore, Stapp indicates that this ground state Mind-energy-potentiality operates in order to create "tiny substructures similar to itself." These, of course, are all the sentient beings within the universe. Such a view, of course, reiterates Mensky's assertion of a 'Life Principle' operating upon quantum potentialities.

Stapp and Mensky's accounts stand in marked contrast to that of Amanda Gefter, one of the advantages being that they are logically coherent! Gefter seems to propose that entirely non-conscious "frames of reference" somehow arise from the quantum realm of potentiality, then these "frames of reference," without a glimmer of consciousness, start "observing" an illusory 'material' world into existence, then this "observer-created" 'material' world starts, without recourse to consciousness, materialistically-randomly evolving initially non-conscious organic beings, which then magically produce consciousness. The notion, however, that observing "frames of reference," devoid of any aspect of consciousness or primordial awareness, observe the universe into illusory existence before the emergence of consciousness, is beyond absurdity. The correct perspective, as indicated by Mensky's account and in accordance with Stapp's viewpoint, requires that non-differentiated primordial consciousness unfolds individuated consciousnesses due to the operation of an internal "Life-Principle." And, as Mensky, Stapp, Goswami and others indicate, such a view is suggested by quantum discoveries.

Both Mensky's and Stapp's characterization of the fundamental ground state of the universe, which places primordial consciousness as a fundamental aspect, corresponds more closely to a Zen point of view than that of Amanda Gefter's father. As the Zen master Huang Po declared:

> This pure Mind, the source of everything, shines forever and on all with the brilliance of its own perfection. But the people of the world do not awake to it, regarding only that which sees, hears, feels and knows as mind. Blinded by their own sight, hearing, feeling and knowing, they do not perceive the spiritual brilliance of the source substance. If they would only eliminate all conceptual thought in a flash, that source substance would manifest itself like the sun ascending through the void and illuminating the whole universe without hindrance or bounds.[62]

Huang Po

Another term for this "pure Mind" energy is "Buddhanature." As Tulku Urgyen Rinpoche tells us, the original pure, or nondual, Mind-energy of Buddhanature loses recognition of its own infinite nature when it becomes involved in the manifestation of *samsara*, which is the dualistic cycle of the repeated death and rebirth of sentient beings:

> Buddhanature has lost track of itself and created samsara, but it is also Buddhanature, recognising itself…[63]

Within the cycle of the repeated death and rebirth within samsara, then, sentient beings cycle for vast time scales, taking various forms of embodiment dependent upon actions and intentions, until, that is, a sentient being becomes enlightened and thereby the Mind-energy of the universe recognises its own 'empty' self-luminous nature and becomes a buddha, an awakened or enlightened being.

In the closing pages of her book Gefter tells us that her father gave her a transcript of a talk given by the French astrophysicist Laurent Nottale at a conference at Oxford University on Buddhism and Science (a conference that I attended). The title of the talk was 'Relativity and Emptiness'. 'Emptiness' is the usual translation of the Sanskrit word *shunyata,* which is a Buddhist metaphysical term for the ultimate nature of reality. One modern Buddhist teacher points out that:

> Unfortunately, the word 'emptiness', which is used to translate the Sanskrit term *shunyata*, carries a connotation of a nothingness, or a void. Happily, there is a wonderful definition in Tibetan that captures its true meaning: *tak ché dang dralwa*, which translates as: 'free from permanence and non-existence.'[64]

This is an important point. There is no school of Buddhism which asserts that the ultimate nature of reality is an absolute 'nothingness'.

The *Madhyamaka*, or Middle Way, school asserts that the ultimate nature of reality is neither permanent nor non-existent, in fact according to this Buddhist school of metaphysics the ultimate nature hovers between extremes of existence and non-existence in exactly the same way as a quantum superposition. In other words, the ultimate nature, or *shunyata*, is a quantum superposition of existence and non-existence. This means that all phenomena lack 'intrinsic existence', they are empty of any permanent core of independent existence. They are not

substantial things, but neither are they absolute 'nothings'. They are appearances from the void of quantum emptiness-potentiality. "Form is emptiness, emptiness is form," as the Heart Sutra says. The root of the term *shunyata* is *sunya*, the zero point, the cosmic seed of emptiness which is 'swollen' with potentiality. One meaning of *sunya,* which is the Indian origin of the concept of zero, is 'the swollen', in the sense of an egg of potentiality which is about to burst into manifestation.

One of the central doctrines of the Buddhist *Madhyamaka* is that of the "two truths" or "two modes of reality" or "two modes of perception." This doctrine divides the process of reality into the spheres of the 'seeming', or 'conventional' or 'relative' and the 'ultimate':

> Thus two kinds of world are seen:
> The one of yogins and the one of common people.
> Here, the world of common people
> Is invalidated by the world of yogins.[65]

The 'seeming', 'conventional' or 'relative' mode of perception, which corresponds to the 'classical' realm of physics, is the way that the world of phenomena *appears* within the experiential continuums of unenlightened sentient beings, whilst the 'ultimate' is the mode of reality experienced by enlightened beings, 'yogins' and buddhas. Gefter's father says of this distinction:

> You could say that the origin of the universe comes from a point, but it is infinite in size…Homogeneity is ultimate reality. Patterns are conventional reality…Nothingness cannot exist. It is unstable.[66]

Whilst he is correct that the Buddhist ultimate reality of emptiness can be identified with quantum potentiality and that conventional reality consists of the patterned phenomena of the manifested world, he is wrong in his use of the term "nothingness," and he is incorrect in thinking that it is instability which causes manifestation. Manifestation occurs because of an internal cognitive 'pressure' of primordial consciousness:

> Both faculties and objects arise from the mind.
> The manifestation of sensory objects and faculties
> Is dependent upon an element that has been present
> Throughout beginningless time.[67]

Furthermore, within the Buddhist psycho-metaphysical worldview this fundamental cognitive pressure is ultimately in the direction of awakening and enlightenment. As Master Hsing Yun says:

> A buddha is a human being who has realised that he is a buddha; a human being is a buddha who has not yet realised that he is one.[68]

And this, of course, means that "observers" eventually become buddhas, embodying the most profound type of observership possible, a direct experiential observation of the ultimate nature of the universe.

One appreciative reader sums up the metaphysical implications of Gefter's book as follows:

> Throughout her book, Gefter asks "If observers create reality, where do the observers come from?" The answer is they come from the nothingness itself. Everything is

> ultimately nothing. The nature of that nothingness in its primordial, undifferentiated, unbounded state is pure consciousness, and so everything is ultimately consciousness. Consciousness in its differentiated, bounded state is the observer present at the center of its own world. ... Gefter tells us that "Nothing is ultimately real", which is exactly the same as to say "Ultimately, only consciousness is real." There is no contradiction, since the true nature of consciousness in its undifferentiated, unbounded state is the very nothingness that she acknowledges to be ultimate reality. Even the observer present at the center of its own world is not ultimately real, since the observer is consciousness in its differentiated, bounded state. … This explanation resonates deeply with the wisdom of nondual metaphysics.[69]

But, whereas Jim Kowall draws the necessary conclusion that primordial consciousness is a primary agency within the ground of the process of reality, Gefter, as we have seen, consistently denies this necessary conclusion and supports an incoherent materialist diatribe against any kind of spiritual implications of modern quantum discoveries. However, when we peel away the layers of her delusion it becomes apparent that, as the eighth century Buddhist practitioner-philosopher Shantarakshita wrote:

> All causes and effects
> Are consciousness alone.
> And all … abides in consciousness.
> On the basis of the Mind Alone,
> We should know that outer things do not exist.
> … [and]
> We should know that mind is utterly 'empty'.[70]

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(*The End*)