Article

The Falsehood of the Materialists' Mindless Evolution of Minds from Mindless Matter

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Abstract

Despite the fact that the advent of the quantum revolution indicates that the ultimate 'stuff' of the process of reality, made up of quantum fields, is insubstantial and immaterial, there seem to be a legion of past their sell by date pundits still championing the cause of a crude nineteenth century materialism. Materialists cling to the conviction that 'matter' is the ultimate constituent of the process of reality, as when Dennett asserts that a "mindless little scrap of molecular machinery" is the basis for the development of mind. However, the unfolding quantum teleological perspective suggests that that there is a mind-like inner teleological 'pressure' operating within the quantum realm of potentiality which functions in order to manifest the potentialities into experienced 'realities'.

Keywords: materialism, mindless evolution, mindless matter, quantum revolution, Darwinism, consciousness, quantum teleology, Dennett, Dawkins, Stapp, Mensky.

How … could mere 'appearances to consciousness' generate consciousness?[1]

- Bernard d'Espagnat (21st Century quantum physicist)

How can you say the elements, which are the object of your mind,
Compose the latter's nature? This surely cannot be!
And how can you with minds so thickly clouded
Ever comprehend aright what lies beyond this world …
The nature of phenomena you understand amiss.
Your view is based upon, coordinated with, the body you possess;
It's just as when you say the elements are all that is …
Dense ignorance enshrouds the world as though by massing clouds;
Because of this phenomena are misperceived.[2]

- Chandrakirti (6th Century Buddhist philosopher)

Philosophers of mind appear to have arrived, today, at less-than-satisfactory solutions to the mind-brain and free will problems, and the difficulties seem, at least prima facie, very closely connected with their acceptance of a known-to-be-false understanding of the nature of the physical world, and of the causal role of our conscious thoughts within it.[3]

- Henry Stapp (21st Century quantum physicist)

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What are we to make of the fact that currently there are many 'philosophers' and purveyors of consciousness studies safely ensconced in lucrative academic positions at some of the most prestigious centres of (putative) learning who are committed to misleading their students and the general public as to the ultimate nature of the process of reality? I speak of course of those academic reprobates who, in their determined quest to rid the world of a religious dimension and sensibility, regularly pen articles and books, and give lectures and sometimes radio and television programmes, proclaiming a fallacious materialist doctrine. Despite the advent of the quantum revolution, which now, with the findings of quantum field theory and the apparent validation of the Higgs mechanism, indicates that the ultimate 'stuff' of the process of reality, made up of quantum fields, is insubstantial and immaterial, there seem to be a legion of past their sell by date pundits still championing the cause of a crude nineteenth century materialism. Richard Dawkins, for example, suggests to his readers in his book *River Out of Eden* that a crude atomic view of the process of reality is an adequate 20th century metaphysics. He begins by quoting a verse by Piet Hein:

> Nature, it seems, is the popular name
> For milliards and milliards of particles
> Playing their infinite game
> Of billiards and billiards and billiards.

He then writes:

> Piet Hein captures the classically pristine world of physics. But when the ricochets of atomic billiards chance to put together an object that has a certain, seemingly innocent property, something momentous happens in the universe. That property is an ability to self-replicate…[which] is injected into the hitherto humble game of atomic billiards.[4]

The problem with this classically simplistic materialist vision, however, is that, as quantum physicist Henry Stapp has said: "this kind of 'matter' does not exist in nature."[5] When it comes to the notion that brains are ultimately comprised of atomic type stuff Stapp has written that:

> …no such brain exists; no brain, body, or anything else in the real world is composed of those tiny bits of matter that Newton imagined the universe to be made of.[6]

However, Dawkins' philosophical bulldog buddy Daniel Dennett has, in contrast to Stapp and many other physicists, pugilistically proclaimed the victory of the materialist cause:

> There is only one sort of stuff, namely *matter* – the physical stuff of physics, chemistry and physiology – and the mind is somehow nothing but a physical phenomenon. In short, the mind is the brain.[7]

And he appears to be a determined champion of mindlessness:

> An impersonal, unreflective, robotic, mindless little scrap of molecular machinery is the ultimate basis of all the agency, and hence meaning, and hence consciousness, in the universe.[8]

Dennett also endorses low-level idiocy; when discussing the capacities of the nerve cells and connections which underlie the operation of 'high-level' brain activity he tells us that they are like stupid 'homunculi', in contrast to notions of high-level intelligent 'fancy homunculi':

> …homunculi so stupid (all they need to do is say yes or no when asked) that they can be, as one says, 'replaced by a machine'. One discharges fancy homunculi from one's scheme by organizing armies of idiots to do the work."[9]

In other words (leaving aside his childishly simplistic notion of what neurons do), Dennett claims that all the scientific, artistic and cultural achievements of humanity can be ultimately traced to fundamental idiocy!

Dennett, despite his claim that 'matter' is the 'stuff' taken as fundamental by physics, does not seem to take account of the views of physicists but has his own version of physics, a version which has not taken steps beyond the nineteenth century; for it is now indisputable that the ultimate stuff of the process of reality are *immaterial* quantum fields:

> 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.[10]

And quantum fields are insubstantial and immaterial (assuming that we are using the notions of 'matter' and 'material' in the usual sense of 'solid stuff', which is what materialists actually do mean by these terms, although they have to use some hefty linguistic and philosophical tricks to argue the case):

> Now, from a philosophical point of view, this is rather big stuff. Our whole manner of speech … rather naturally makes us think that there is some stuff or *substance* on which properties can, in a sense, be glued. It encourages us to imagine taking a particle and removing its properties one by one until we are left with a featureless 'thing' devoid of properties, made from the essential material that had the properties in the first place. Philosophers have been debating the correctness of such arguments for a long time. Now, it seems, experimental science has come along and shown that, at least at the quantum level, the objects we study have no substance to them independent of their properties.[11]

The immaterial status of quantum field has certainly been reinforced by recent events at CERN where the discovery of the Higgs quantum field has been intimated:

> Our instinct is to equate inertial mass with the amount of substance that the object possesses. The more 'stuff' it contains, the harder it is to accelerate. The Higgs mechanism turns this logic on its head. We now interpret the extent to which the particles acceleration is resisted by the Higgs field as the particle's (inertial) mass. The concept of mass has vanished in a puff of logic. It has been replaced by interactions between otherwise massless particles and the Higgs field.[12]

As science writer Jim Baggott points out in his book *Higgs: The Invention and Discovery of the God Particle*:

> It seems logical that there should be some ultimate constituents, some undeniable reality that underpins the world we see around us and which lends it form and shape. If matter is endlessly divisible, then we would reach a point where the constituents themselves become rather ephemeral - to the point of non-existence. Then there would be no building blocks, and all we would be left with are interactions between indefinable, insubstantial phantoms which give rise to the appearance of substance. Unpalatable it may be but, to a large extent, this is precisely what modern physics has shown to be true. Mass, we now believe, is not an inherent property or 'primary' quality of the ultimate building blocks of nature. In fact, there is no such thing as mass. Mass is constructed entirely from the energy of interactions involving naturally massless elementary particles. The physicists kept dividing, and in the end found nothing at all.[13]

In the light of all this, it would seem that Dennett's assertion that matter "the physical stuff of physics" is as insubstantial as the quantum fields which give rise to the illusions of solid, material stuff.

In this context it is worth briefly examining a controversy which was prompted by the claim by Lawrence Krauss, a theoretical physicist and Director of the Origins Institute at Arizona State University, 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' what Krauss is referring to is quantum field theory. The respected 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! [14]

It is quite clear from this precise description of the situation that "*elementary physical stuff*" consists of quantum fields, not matter, and not "nothing". The notion that the process of reality is nothing else but an "infinite game of billiards and billiards and billiards" is, then, not just wide of the pocket, it is not even on the table.

In his excellent, although metaphyscically confused, book *Aping Mankind* Raymond Tallis, Profeesor of Geriatric Medicine at the University of Manchester, deconstructs and demolishes the twin supports of the current materialist madness – which he terms Neuromania and Darwinitus. Neuromania is the unsupported, and both scientifically and philosophically confused, dogmatic belief and academic craze which asserts that all the functioning of the mind and its scientific and cultural products can be accounted for purely on the basis of a materialist account of brain structure an functioning. Tallis lists some of the dismal and laughable academic products of this craze for a brain-only description of the mind and consciousness: neuro-economics, which claims that all economic behaviour such as pursuing short-term gains are directly linked, and entrely explained by brain structure and function; neuro-law, which claims that the brain makes people misbehave and there is no free-will involved; neuro-literary-criticism, which claims that the contents and structure of literary works are entirely explained by brain makeup; neuro-theology, which claims to have discovered the God-spot in the brain; neuroaesthetics, which reduced aesthestic sensibility to nothing more than vibrating brain-jelly; neuro-art-history, which asserts that even accounts of the development of art as well as art itself is written in the brain; and neurolinguistics, which asserts that language has been preprogrmmed by evolution into brain structure. In all of these supposedly academic disciplines it is asserted that the various scientific and cultural activities and products involved can be *entirely* accounted for by brain structure and function. One enthusiastic neuromaniac for instance has written:

> It may not be too much to say that sociology and all the other social sciences, including the humanities, are the last branches of biology waiting to be included in the Modern Synthesis.[15]

The 'modern synthesis' is the materialist Darwinian worldview within which all behaviour and all organic, mental and cultural phenomena, including consciousness itself, are claimed to be nothing more than the result of the processes of materialist Darwinian evolution involving "milliards and milliards of particles playing their infinite game of billiards and billiards and billiards." As Tallis points out:

> If the imperialist ambitions of Neuromania and Darwinitus were fully realised, they would swallow the image of humanity in the science of biology. Our distinctive nature, our freedom, our selfhood, and even human society would be reduced to the properties of living matter, and this would be reduced, via molecular biology, to matter period.[16]

Elsewhere in his book Tallis points out that:

> … to be identified with our brains is to be identified with a piece of matter, and this, like all other pieces of matter, is subject to, and cannot escape from, the laws of material nature. Everything that happens in our brains is the product of material events that impinge on them, and the events that result from brain activity … are wired into the endless causal net, extending from the Big Bang to the Big Crunch…[17]

This is certainly a correct conclusion based upon the materialist and deterministic worldview. However, it is also a necessary conclusion that completely undermines the deterministic materialist cause, this is because tracing this causal net back to the Big Bang takes us back to the initial

point in this universe wherein no matter, in the sense that materialists conceive of 'matter', existed.

Steven Hawking and Leonard Mlodinow tell us in their book *The Grand Design: New Answers to the Ultimate Questions of Life*:

> We are the product of quantum fluctuations in the very early universe. [18]

And, furthermore, according to H&M:

> In this view, the universe appeared spontaneously, starting off in every possible way. Most of these correspond to other universes …. Some people make a great mystery of this idea, sometimes called the multiverse concept, but these are just different expressions of the Feynman sum over histories.[19]

The Feynman sum over histories account of quantum behaviour accounts for the phenomenon of the famous double-slit experiment, wherein it appears that quantum 'particles' must spread out as probability waves and travel through both slits, by indicating that quantum 'particles' must take, as quantum potentiality, all possible paths between any two points. The 'classical' paths can be calculated by performing a sum over the histories of all possible paths. On a cosmic scale this perspective corresponds to the multiverse scenario, the spontaneous quantum creative burst of the point of the Big Bang creates the multiverse of all possible worlds. A hugely significant feature of the H&M presentation of Feynman's 'sum over histories' quantum presentation is the fact that the "observers are part of the system" and have serious work to do:

> The histories that contribute to the Feynman sum don't have an independent existence, but depend on what is being measured. We create history by our observations, rather than history creating us.[20]

In other words the observers, or what John Wheeler called 'observer-participants,' are able to weed out possible universes, and thereby select those which remain in the possibility mix, *even backwards in time*. Thus one of the central chapters in *The Grand Design* is entitled 'Choosing Our Universe':

> The idea that the universe does not have a unique observer-independent history might seem to conflict with certain facts that we know. There might be one history in which the moon is made of Roquefort cheese. But we have observed that the moon is not made of cheese, which is bad news for mice. Hence histories in which the moon is not made of cheese do not contribute to the current state of our universe, though they might contribute to others. This might sound like science fiction but it isn't.[21]

The Big Bang was the first cascade of 'creation operations' ('creation operators' are the mathematical representation of the creation of 'particles') within the insubstantial and immaterial pre-existing quantum field of potentiality which eventually gave rise to the current universe. On this view it is clear that consciousness cannot be a creation of the material brain because if the H&M view is correct, and it concords in broad outline, if not in detail, with most other quantum viewpoints, then it must be consciousness that creates the material of the brain, not the other way around as claimed by materialists. Quantum physics, therefore, tells us that the brain-only viewpoint which underlies the worldview common to Neuromania and Darwinitus *cannot be true*.

And yet it is stubbornly clung to by many academics who promulgate the most absurd notions and arguments that are in contradiction with established physical theory.

As Stapp has pointed out, such brain-only materialist views derive from the "acceptance of a known-to-be-false understanding of the nature of the physical world, and of the causal role of our conscious thoughts within it."[22] The astonishing fact is that, for some incomprehensible reason, the academic community has decided to allow some of its members, usually philosophers or purveyors of 'consciousness studies', to flagrantly misrepresent the truth of contemporary physics in order to defend obviously incorrect, 'classical,' positions which are redolent of the worldview of the late nineteenth century. As Stapp points out:

> …the re-bonding [between mind and matter] achieved by physicists during the first half of the twentieth century must be seen as a momentous development: a lifting of the veil. Ignoring this huge and enormously pertinent development in basic science, and proclaiming the validity of materialism on the basis of an inapplicable-in-this-context nineteenth century science is an irrational act.[23]

Indeed!

Stapp, like Hawking and Mlodinow, clearly tells us that consciousness has a role in performing 'choices' that impact upon the quantum realm and echo into the future in a manner reminiscent of Whitehead's 'Process Philosophy.' Stapp writes with great clarity and precision on such implications of quantum theory and extends his conclusions in a religious direction:

> I see no way for contemporary science to disprove, or even render highly unlikely, this religious extension of quantum theory, or to provide any strong evidence in support of an alternative picture of the nature of these "free choices." These choices *seem to be* rooted in reasons that are rooted in feelings pertaining to value or worth. Thus it can be argued that quantum theory provides a rational opening for an idea of nature and of our role within it that are in general accord with certain religious concepts…[24]

In this remarkable observation Stapp clearly indicates that quantum theory can have *religious* implications, a view which challenges some of the central dogmas of Neuromania and Darwinitus. As we shall see, a fundamental feature of the current materialist craze for Neuromania and Darwinitus amongst certain sections of the academic community is its anti-religious commitment. Dawkins goes so far as to characterize the materialist community as being in the midst of an intellectual war, declaring that "science has a battle for hearts and minds on its hands"[25] The battle he is alluding to is the stubborn and protracted commitment to an almost childishly simplistic materialism in the face of the profound and subtle discoveries of the quantum age which he and other are engaged in. And one of the reasons for this struggle is desire to stem the tide of intelligent design scenarios with the concomitant religious implications.

One aspect of the emerging quantum worldview is the fact that consciousness is entangled within the quantum realm. Wojciech Zurek, a leading physicist in the field of quantum decoherence theory, refers to the quantum 'stuff' or reality, which is the fundamental 'stuff' of reality as 'dream stuff':

> …quantum states, by their very nature share an epistemological and ontological role – are simultaneously a description of the state, and the 'dream stuff is made of.' One might say that they are *epiontic*. These two aspects may seem contradictory, but at least in the quantum setting, there is a union of these two functions.[26]

Here Zurek indicates that the details of quantum functioning require that the 'knowing' aspect of the process of reality and the ontological 'known' aspects are interconnected, the former determining the latter. The fundamental insight of this view, which Zurek terms 'quantum Darwinism', indicates that the epistemological function of consciousness, which is embodied in perception, has a role in determining ontology. As Zurek has pointed out:

> Measurement – perception – is the place where physics gets personal, where our role and our capabilities as observers and agents of change in the universe (and our limitations as entities subject to the laws of physics) are tested - or, rather, where we get put in our place. I believe that quick solutions, and I include both the Copenhagen interpretation and many worlds here, have a tendency to gloss over the real mystery, which is how do we - that is to say, how does life - fit within the quantum universe. I think we have managed to constrain the possible answers (for example, through research on decoherence), but I believe there is more to come. The virtue of the focus on quantum measurement is that it puts issues connected with information and existence at the very center. This is where they should be.'[27]

This is a view which places the perceptual activities of all sentient beings at the centre of the process through which the ontology of reality is etched out of the quantum dream realm of potentiality. As Wheeler remarked:

> Directly opposite to the concept of universe as machine built on law is the vision of *a world self-synthesized.* On this view, the notes struck out on a piano by the observer participants of all times and all places, bits though they are in and by themselves, constitute the great wide world of space and time and things.[28]

A viewpoint which, again, chimes in unison with the H&M quantum metaphysical model which requires that some kind of collective consciousness weeds out the quantum potentiality for a cheese moon.

So putting the insights of Stapp, Zurek and Wheeler together we arrive more or less at precisely the metaphysical perspective which lies at the heart of the Hawking-Mlodinow view: the quantum 'dream stuff' of potentiality contains all possibilities and it is, ultimately, *consciousness* that unfolds the world of experience which makes up the universe. This perspective obviously requires that consciousness in some form, a form not restricted to individuated consciousness but a primordial or collective form which constitutes the ground of individuated consciousness, must be an inherent and integral aspect of the fundamental quantum ground. So how can Dennett get away with claiming with utterly mistaken conviction, and in direct contradiction of the hard won insights of modern science, that "there is only one sort of stuff, namely *matter* – the physical stuff of physics…" Why isn't he laughed out of the academic profession and asked to resign his ill-gotten professorship to make way for someone who knows what he or she is talking about. It is a great mystery.

Dennett is one of the masters of materialist madness, but there are plenty of academic pundits banging the mournful materialist drum in various outdated rhythms. In the series of essays which will be published in this and forthcoming issues I intend to investigate the work of people such as Dennett, Jerry Coyne, Richard Dawkins, Susan Blackmore, Vilayanur Ramachandran, Antonio Damasio, Patricia and Paul Churchland, Nicholas Humphrey and David Papineau, and perhaps a few others, all of whom propose, in various degrees of implicitness or explicitness, that consciousness 'evolved' out of an absolute blankness of a pure material substratum because of some kind of evolutionary necessity. From this perspective the materialist fundamental fairy story is that at some point in the fairy tale account of a purely materialist evolutionary process 'matter' finds that it is not up to the task of keeping the process a going concern. Some aspect of the process becomes too complex and therefore the purely material processes of reality have to somehow manufacture some new kind of medium, a medium which, although still in its ultimate nature thoroughly material, is in its appearance and functioning utterly different, different in fact to the point of having completely immaterial capacities. Put in such terms, of course, the claim appears seems absurd. And, indeed, it is absurd, absurd to the point of being laughable.

In his book *Soul Dust* for example Nicholas Humphrey argues that consciousness emerges due to the necessity of having a more complex medium in order to manage social demands, he seems oblivious to the fact that organisms who are devoid of conscious awareness, as Humphrey conceives of his putative pre-social primitive beings, would not have the kind of 'social' requirements that we, as beings endowed with consciousness, have. As the philosopher Mary Midgley wrote in a review of this book:

> Humphrey's approach to this topic was, however, always slightly odd. He used these social needs to explain not just why consciousness has gone on developing but why it arose originally. Yet how could social needs – which don't seem to bother plants – ever have troubled creatures that were not conscious already? Humphrey's strange assumption that they could still do so haunts this book, in which he claims to have finally solved the "hard problem of consciousness" – the question of how our subjective life can exist at all in a world of matter that is supposedly fully described by the physical sciences.[29]

Here Midgely implicitly puts her finger on one of the self-deceptive mechanism which underpins materialist diatribes. The use of the term 'social', a term most generally applied in the context of organisms which have some form of consciousness, is applied to what should be, according to Humphrey's own argument, completely blank zombie-type creatures. Humphrey's first use of the term 'social' is in the mode of the way in which ants may be termed 'social' because they exist within interdependent but unconsciously mechanistic colonies (not because they are fully consciousness beings who like giving dinner parties):

> It appears that ants were the first, and remain the only, social insect predators to utilize the moist, dark dirt and rotting vegetation for nesting.[30]

However, the term 'social' when employed outside of such contexts does carry an implicit implication of the presence of consciousness, and Humphrey employs this implication to perform an intellectual sleight of mind. The presence of consciousness is illicitly introduced within the argument prior to its claimed emergence, an emergence which is supposedly *because* of the neces-

sities and exigencies of 'social' life. Unwary readers, often with a predisposition to accept materialist explanations, will generally fail to notice the sleight of mind generated by terminology. In the context of the complex social structure of ant colonies, if Humphrey's notion were to be correct then it would be truly amazing that ants has not evolved full-blown consciousness!

Tallis discusses this common materialist ploy in a chapter of his book *Aping Mankind* in a chapter entitled 'Bewitched by Language', a homage to Ludwig Wittgenstein who wrote:

> A picture held us captive. And we could not get outside of it, for it lay in our language and language seemed to repeat it to us inexorably.[31]

Tallis writes that:

> Neuromania demands of its adepts that they should ascribe human characteristics to physical processes taking place in the brain. This depends on a cavalier way with words that is now so universal as to have become almost invisible, making it quite difficult to see the unbridgeable gap between what happens in the brain and what people do. It illustrates the force of Wittgenstein's observation…[32]

In a quantum age, however, the captivating force of crude and childish materialism should surely have lessened somewhat. In fact Tallis does not even consider quantum evidence but examines some of the absurd claims made by materialists on philosophical grounds and concludes that: "the neuro-evolutionary approach to human consciousness and human life is wrong, and obviously so."[33] The respected quantum physicist Anton Zeilinger, a physicist who has carried out some of the most precise and subtle quantum experiments currently possible, has written in appreciation of physicist John Wheeler's work of Wheeler's:

> …realisation that the implications of quantum physics are so far-reaching that they require a completely novel approach in our view of reality and in the way we see our role in the universe. This distinguishes him from many others who in one way or another tried to save pre-quantum viewpoints, particularly the obviously wrong notion of a reality independent of us.[34]

A viewpoint derived from the evidence of quantum theory which, once again, confirms the insights of Hawking and Mlodinow, Stapp, Zurek, and others that consciousness is an inherent aspect of the quantum realm and the material world is derivative, dependent upon the 'epiontic' perceptions of sentient beings. And yet a debate still rages. Furthermore, the battle-lines of the intellectual war are generally drawn at extreme positions.

Materialists cling to the conviction that 'matter' is ultimate constituent of the process of reality, as when Dennett asserts that a "mindless little scrap of molecular machinery" is the basis for the development of mind. In her review of Humphrey's *Soul Dust* Mary Midgley suggests that a new understanding of the physical world, wherein matter has lost its appearance of traditional and 'classical' solidity and antipathy to mind-qualities, can account for the emergence of mind and consciousness:

> Matter is still often imagined, in 17th-century style, as an inert, passive stuff moved only by impact from outside. Since this view was deliberately designed by devout scientists

> to leave space for God as the source of all activity, it rather naturally becomes unworkable once that somewhat assertive God has been removed. Inert stuff could never have produced the crystals, the galaxies, the volcanoes and, above all, the living things that have evolved out of our original dollop of physical matter. And after those amazing achievements, why should it seem surprising for matter to have topped things up by adding consciousness? We need somehow to admit that matter has proved creative enough to do all these things. And since physicists no longer rule that matter is inert, that ought not now to be too difficult. Till this point is clear, the "hard" problem remains insoluble.[35]

The "hard" problem, of course, was posited by David Chalmers as the insuperable problem of how a material world conceived of as being entirely devoid of mind qualities could possibly produce those qualities. Midgley is suggesting that perhaps we should conceive of matter itself as not being entirely mindless, in contrast to the mindlessness of the Dennettian viewpoint. Such a view clearly moves towards an understanding which considers the ultimate 'stuff' of the process of reality as a kind of energetic 'field' with mind-like qualities. Which is, more or less, Stapp's perspective, amongst others such as the Russian physicist Michael Mensky. But this is not the 'matter' beloved by hardened and hard-headed materialists, who like their matter 'neat', with no added mind. As Jerry Coyne tells us:

> Naturalism is the view that the only way to understand our universe is through the scientific method. Materialism is the idea that the only reality is the physical matter of the universe, and that everything else, including thoughts, will and emotions, comes from physical laws acting on that matter. The message of evolution, and of all science, is one of naturalistic materialism.[36]

There are few academics more hard-headed than Coyne, and this hard-headedness includes the divisions between various brain compartments which seem not to interact in any meaningful way. If naturalism denotes the scientific method and the scientific method embodied in physics has shown us incontrovertibly that the ultimate stuff or the process of reality are immaterial quantum fields then naturalistic materialism is oxymoronic, although it is proclaimed by all proponents of the materialist ultra-Darwinist (MUD) worldview.

It is this kind of hardened materialism which underpins what Tallis refers to as Neuromania and Darwinitus, the former being the assertion that mind and consciousness are entirely reducible to movements of matter and the latter the notion that life, organisms and sentience evolved according to a materialist account of Darwinism, the 'ultra-Darwinism' of the 'modern synthesis'. It is the latter viewpoint which is deployed against the attempted encroachments of the ID perspective into the scientific fold. In its war against such encroachments, materialist ultra-Darwinism has no compunction against playing slightly dirty, it just about always presents ID as a thinly veiled front for a thoroughly nasty Christian theistic fundamentalism. Thus in a recent book of essays devoted to attacking and undermining the ID perspective, entitled *Intelligent Thought: Science verses the Intelligent Design Movement*, the editor John Brockman writes in his introduction that:

> …religious fundamentalism is on the rise around the world, and our own virulent domestic version of it, under the rubric of "intelligent design," by elbowing its way into the

> classroom abrogates the divide between church and state that has served this country so well for so long. Moreover, the intelligent-design (ID) movement imperils American global dominance in science and in so doing presents the gravest of threats to the American economy, which is driven by advances in science and in the technology derived therefrom. This book-sixteen essays by leading scientists from several disciplines-is a thoughtful response to the bizarre claims made by the ID movement's advocates, whose only interest in science appears to be to replace it with beliefs consistent with those of the Middle Ages. School districts across the country-most notably in Kansas and later in Pennsylvania, where the anti-evolutionist tide was turned but undoubtedly not stopped-have been besieged by demands to "teach the debate" to "present the controversy," when, in actuality, there is no debate, no controversy. What there is, quite simply, is a duplicitous public-relations campaign funded by Christian fundamentalist interests.[37]

The claims here are quite dramatic, the ID movement "imperils" American global scientific dominance and its economy, the claims made by the ID movement are said to be "bizarre" and tantamount to the beliefs of the Middle Ages and so on.

Fighting talk indeed! But if one bothers to pursue the issue by reviewing the evidence with honesty, clarity and precision one can only conclude that, even if it were correct to identify ID with fundamentalist religion (which it isn't – although as we shall see the presentation of the case for ID often leaves a great deal to be desired in this context), the same can certainly be said of the MUD case. Is it not "bizarre" to proclaim the primacy of matter when it is clearly known that the ultimate constituents of the process of reality are *insubstantial and immaterial* quantum fields? As Stapp has indicated: "proclaiming the validity of materialism on the basis of an inapplicable-in-this-context nineteenth century science is an irrational act."[38] So, whereas the MUD offensive on the ID perspective exaggeratedly claims that ID is a modern form of Middle Age beliefs, it is quite clear that the MUD worldview is certainly stuck in pre-quantum nineteenth century 'classical' beliefs.

Proponents of MUD (read 'Materialist Ultra-Darwinism' or 'Materialist Ultra-Darwinist' as the context requires) and opponents of ID regularly assert that ID is virtually identical to rabid theistic fundamentalism and Creationism, which is generally thought of as the notion that an independent self-contained divine being fashioned the universe in a miraculous way. The prominent proponent of ID Stephen C. Meyer, however, in his article 'Intelligent Design Is Not Creationism' argues that this is not the case:

> ID is not based on religion, but on scientific discoveries and our experience of cause and effect, the basis of all scientific reasoning about the past. Unlike creationism, ID is an inference from biological data. Even so, ID may provide support for theistic belief. But that is not grounds for dismissing it. Those who do confuse the evidence for the theory with its possible implications. Many astrophysicists initially rejected the Big Bang theory because it seemed to point to the need for a transcendent cause of matter, space and time. But science eventually accepted it because the evidence strongly supported it. Today, a similar prejudice confronts ID. Nevertheless, this new theory must also be evaluated on the basis of the evidence, not philosophical preferences.[39]

And, indeed, this is clearly the case. It does not follow from the *mere* assertion that there is some kind of intelligence operating within the process of reality, including those processes driving evolution, does not necessarily force us to conclude the existence of a divine creator. It merely asserts what it asserts, which is that there is a kind of inherent intelligence within the processes of reality. Any theistic conclusions clearly go beyond this bare conclusion, a conclusion fully in accord with the quantum evidence, which is that at the point of the Big Bang there is a quantum field of potentiality which has an internal energetic intelligence which unfolds those potentialities into manifestation, an assertion fully in accord with the quantum perspectives outlined previously. The reason that there is no "need for a transcendent cause of matter, space and time" is that the scientific evidence now clearly indicates:

1. The ultimate stuff of the process/processes of reality is immaterial quantum field stuff, or as Zurek terms this "quantum dream stuff."
2. There is an internal intelligence which is inherent and innate within the processes which unfold the potentialities within the quantum fields of reality.
3. Consciousness and awareness, in some kind of universal non-individuated form, must also be an innate aspect of quantum fields, if this were not the H&M and other quantum scenarios we have overviewed above could not be correct and, furthermore, sentient beings could not be sentient.

The term 'transcendent', however, has an application to emphasize that the ultimate stuff of reality 'transcends' the material stuff that materialists worship!

The first of the above points has been established previously, the next two points will be elucidated shortly. Before doing so it is necessary to make the point that, although it is clear that ID does not necessarily lead to Christianity or Theism, much ID discourse is couched in a form which does imply a theistic direction. In his significant and otherwise excellent book *Signature in the Cell*:

> …since the intelligent design hypothesis meets both the causal-adequacy and causal-existence criteria of a best explanation, and since no other competing explanation meets these conditions as well - or at all since the intelligent design hypothesis meets both the causal-adequacy and causal-existence criteria of a best explanation, and since no other competing explanation meets these conditions as well-or at all it follows that the design hypothesis provides the best, most causally adequate explanation of the origin of the information necessary to produce the first life on earth. Indeed, our uniform experience affirms that specified information-whether inscribed in hieroglyphics, written in a book, encoded in a radio signal, or produced in a simulation experiment - always arises from an intelligent source, from a mind and not a strictly material process. So the discovery of the specified digital information in the DNA molecule provides strong ground, for inferring that intelligence played a role in the origin of DNA. Indeed, whenever we find specified information and we know the causal story of how that information arose, we always find that it arose from an intelligent source. It follows that the best, most causally adequate explanation for the origin of the specified, digitally encoded information in

> DNA is that it too had an intelligent source. Intelligent design best explains the DNA enigma.[40]

Whilst this conclusion is not overtly supportive of a theistic interpretation, terminology such as "arises … from *a* mind" and "had *an* intelligent source" can give the appearance of moving in a theistic direction, especially to a MUD mind predisposed to identify ID with Creationism. In his book *Intelligent Design: The Bridge Between Science & Theology*, William A. Dembski, as his title indicates, argues that ID is a bridge between science and Christian Theistic Theology. In this book Dembski makes some startling statements:

> My thesis is that all disciplines find their completion in Christ and cannot be properly understood apart from Christ.[41]

And the following quotes from Dembski are cited by Coyne at the head of his essay 'Intelligent Design: The Faith That Date Not Speak Its Name' in the anti-ID *Intelligent Thought* collection:

> Intelligent design is not an evangelic Christian thing, or generally Christian thing or even a generically theistic thing. . . .Intelligent design is an emerging scientific research program. Design theorists attempt to demonstrate its merits fair and square in the scientific world-without appealing to religious authority.

And:

> [A]ny view of the sciences that leaves Christ out of the picture must be seen as fundamentally deficient. . . . [T]he conceptual soundness of a scientific theory cannot be maintained apart from Christ.

The first is from *The Design Revolution* which was published in 2004 and the second from the earlier work *Intelligent Design: The Bridge Between Science & Theology* written in 1999. It seems that in the space of five years Dembski has either modified his views remarkably or has decided to modify the *presentation* of his views. And it is this ambiguity which allows ultra-materialists like Coyne to mount attacks which cover over the massive implausibility in their own materialist positions:

> Well, which is it? Is intelligent design (ID) merely a sophisticated form of biblical creationism, as most biologists claim, or is it a science – an alternative to Darwinism that deserves discussion in the science classroom? As the two quotations above imply, you won't find the answers in the writings of the leading advocates of ID. The ambiguity is deliberate, for ID is a theory that must appeal to two distinct constituencies. To the secular public ID proponents present their theory as pure science. This, after all, is their justification for a slick public-relations campaign promoting the teaching of ID in the public schools. But as is clear from the infamous "Wedge Document" of the Discovery Institute, a right-wing think tank in Seattle and the center for ID propaganda, intelligent design is part of a cunning effort to dethrone materialism from society and science and replace it with theism. ID is simply biblical creationism updated and disguised to sneak evangelical Christianity past the First Amendment and open the classroom door to Jesus.[42]

And if one consults the "infamous 'Wedge Document'" one finds that Coyne does have a sort of point. As he indicates in a footnote this document states that:

> The social consequences of materialism have been devastating. As symptoms, those consequences are certainly worth treating. However, we are convinced that in order to defeat materialism, we must cut it off at its source. That source is scientific materialism. This is precisely our strategy. If we view the predominant materialistic science as a giant tree, our strategy is intended to function as a 'wedge' that, while relatively small, can split the trunk when applied at its weakest points . . . Design theory promises to reverse the stifling dominance of the materialistic worldview, and to replace it with a science consonant with Christian and theistic convictions.[43]

So it is clear that the ID movement as it is embodied in the aims and activities of The Discovery Institute is "*consonant*" with a theistic worldview. Coyne, however, distorts this situation. The fact that ID is *consonant* with a theistic worldview does not mean that is identical to fundamentalist theistic faith, it is entirely possible to hold an ID position which is entirely separate from theistic conclusions.

In this context it is intriguing to note that Stapp has clearly made some statements that support the theistic ID perspective. Referring to the implications of quantum theory he has written:

> This situation is concordant with the idea of a powerful God that creates the universe and its laws to get things started, but then bequeaths part of this power to beings created in his own image, at least with regard to their power to make physically efficacious decisions on the basis of reasons and evaluations.[44]

However, if we leave the theistic trappings out of the picture, the central issue becomes that of whether there are intelligent and mind-like aspects that are inherent to the fundamental processes of reality or, as the materialist worldview maintains, whether the fundamental processes of reality are, as Dennett puts it, "robotic" and "mindless". To put this another way, does it make sense to assert, and does the scientific evidence available to us suggest, that a completely blank, mindless, unintelligent fundamental materially based process give rise to the world of awareness, meaning and intelligence?

It is clear that the main concern of the ID movement as outlined in the "Wedge Document" is the dismantling of the worldview of 'scientific materialism', a worldview that asserts the "known-to-be-false" claim that the primary and ultimate 'stuff' of reality is matter. Stapp, alongside a good few other physicists such as Erwin Schrodinger, Max Planck, Werner Heisenberg, David Bohm, Roger Penrose, Andre Linde, Wojceich Zurek, Anton Zeilinger, has indicated the idealike nature of the quantum 'stuff' of reality:

> The evolving quantum state, although controlled in part by mathematical laws that are direct analogs of the laws that in classical physics govern the motion of 'matter', no longer represents anything substantive. Instead, the evolving quantum state would represent the 'potentialities' and 'probabilities' for actual events. Thus the 'primal stuff' represented by the evolving quantum state would be idealike in character rather than matterlike … quantum theory provides a detailed and explicit example of how an

> idealike primal stuff can be controlled in part by mathematical rules based in spacetime.[45]

On this view, as indicated by the H&M quantum metaphysical account, all possible futures, including the various species of plant and animal, must be potential in some way within the 'implicate order' of the potentialities of idea-like quantum 'dream-stuff.' As Adrian Woolfson, in his book *Life Without Genes*, tells us:

> 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 …[46]

At the dawn of time there 'existed' the quantum fields of potentiality. Although there was not a fully manifested and experienced reality there was, according to this picture, 'mathematical possibilities'. This is the wave-function of the universe, a universal wave-function which contains:

> …all possible histories … through which the universe could have evolved to its present state…[47]

In the beginning, of course, the wave-function of the universe would contain all the future evolutionary possibilities:

> The information sea is thus a quantum mechanical sea, composed from infinite repertoires of entangled quantum descriptions.[48]

And within this all-encompassing wave-function all possibilities for evolutionary manifestation are encoded. From out of the vast entangled web of infinite possibilities for manifestation only certain privileged members 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…[49]

It therefore follows that there is a sort of design woven into the potentialities for evolution; it is a vast complex design of all possible manifestations written into the wave-function of the universe. In the H&M account, amongst other quantum metaphysical formulations, it is the observational actions of collective consciousness which determines which of the potential species unfold from potentiality into manifestation.

This quantum Platonic metaphysical account, wherein all possible forms of life are potential in a quantum idealike realm of potentiality tallies precisely with the recent discoveries of Evolutionary Development Biology, or Evo-Devo, wherein it has been discovered that the fundamental gene structure underlying all organisms pre-dates the actual evolution of those organisms. As the Evo-Devo enthusiast Sean B. Carroll tells us:

> The surprising message from Evo Devo is that all of the genes for building large, complex animal bodies long predated the appearance of those bodies in the Cambrian Explo-

> sion. The genetic potential was in place for at least 50 million years. And probably a fair bit longer before large, complex forms emerged.[50]

If the "genetic potential was in place" prior to the emergence of bodies, exactly in what place was it in place? Certainly not in the bodies of the yet to emerge animals, precisely because they had not yet emerged. The most obvious place wherein this genetic *potential* could have been "in place" is the realm of quantum idealike potentiality. After all, the most obvious place for a potentiality to be in place is a place of potentiality.

Furthermore, this view precisely fits the quantum evidence we have surveyed. MUD enthusiasts, however, resiliently ignore the quantum evidence and proceed as if the material world were not ultimately quantum but more or less classically behaved (see the article on Jerry Coyne – *Why Evolution is False*). When dealing with the emergence of life and consciousness, however, such an assumption is unjustified. For as H&M say "we are the product of quantum fluctuations in the very early universe." Quantum processes, then, must be significant in the process of the evolution and development of sentient organisms.

In a section titled "Did Natural Selection Generate Consciousness", in his book *Aping Mankind*, Raymond Tallis writes:

> …evolutionary theory, although largely unaware of it, has a problem with consciousness of *any* sort. First, it has to begin with matter and somehow end up with mind. Second, it has to demonstrate that having a conscious mind would be something a replicator would be glad of, as a means of assisting its own senseless task of replication. … Darwinism cannot give a satisfactory answer to either of these two questions: how did consciousness emerge; and what is consciousness for anyway? … Was it the blind laws of physics that so organised matter that it came up with creature like us, that could see the laws of physics and that they were blind. … We need to ask (a) by what means consciousness could have come into being, if it was not there in the beginning, and (b) what advantages it confers.[51]

In a sense investigating these issues philosophically is otiose because the quantum evidence indicates that consciousness must have been "there in the beginning" and matter certainly was not. However, it is perhaps worth putting some philosophical nails in the coffin of materialism. As to the issue (a) Tallis observes that:

> …how is it that certain configurations of matter should be aware, should suffer, fear, enjoy and so on? There is nothing in the properties of matter that would lead you to expect that eventually certain configurations of it … would pool that experience and live in a public world. No wonder many materialistically inclined philosophers like to deny the real existence of consciousness.[52]

The very definition of matter excludes the quality or even the potentiality of consciousness in the type of ontological (actually non-existent) stuff cherished by materialists. As a result materialist apologists have to dream up spurious notions, given fancy labels, in order to hoodwink their audience.

The neurobiologist Roger W. Sperry, for instance, claims that 'mental properties in brain activity … supervene.'[53] The spurious technical notion of 'supervenience' is a convenient and useful sleight of mind for the sophisticated materialist; it is an example of the tactic of an appeal to imagined and fictional constructions of, on the face of it, plausible (but not very) apparently 'logical' configurations which are supposed to validate an *ontological* causal chain, in this case from mindless matter to mindful consciousness. The original statement of the 'supervenience' claim was made by Donald Davidson who introduced the term into contemporary philosophy of mind in the following passage:

> Mental characteristics are in some sense dependent, or supervenient, on physical characteristics. Such supervenience might be taken to mean that there cannot be two events alike in all physical respects but differing in some mental respect, or that an object cannot alter in some mental respect without altering in some physical respect.[54]

In other words Davidson thought that conjuring up fancy, yet meaningless, words was a useful and valid way of elucidating the metaphysical structure of reality. According to Sperry:

> [Conscious properties] encompass and transcend the details of nerve impulse traffic in the cerebral networks in the same way that … the properties of the molecule transcend the properties of atomic components…[55]

Another version of this viewpoint sometimes advanced is that the properties of water, for example, 'supervene' or 'transcend' the molecular structure of H_2O.

Such supervenience views, however, do not hold water as arguments for the notion that consciousness magically 'supervenes' upon brain structure. Stapp explains this by referring to Sperry's example of how 'wheelness' 'emerges' or 'supervenes' from the atomic components of the physical stuff of the wheel. Stapp explains that:

> The reason that consciousness is not analogous to wheelness … is that the properties that characterize wheelness are *entailed* … by properties specified in classical physics, whereas the properties that characterize consciousness … are not entailed … by the properties specified by classical physics.[56]

Stapp is indicating that the conceptual move to the properties which are embodied within 'wheelness' are *coherently entailed* within the conceptual framework of the classical physics of materiality in a manner that the properties of consciousness are not:

> This is a huge difference-in-principle that distinguishes consciousness from things that, according to the precepts of classical physics, are constructible out of the particles that are postulated to exist by classical physics.[57]

The way in which the material particles within the construction a wheel function as the wheel rotates quite naturally contribute to the overall functioning of the wheel in a manner that requires no discontinuous conceptual break. The properties of a wheel naturally emerge from the properties of materiality in a way that the properties of consciousness do not. In other words there is a

coherent explanatory chain of connection between the properties of the material wheel and the atomic (conceived classically as Sperry does) constituents of the wheel.

The same applies to the supposed 'supervenience' of wetness over and above the molecular makeup of water. We find that the property of 'wetness' is coherently entailed by the nature of the intermolecular forces between particles which are stronger than the kinetic energies of the molecules, which are thus held close together. But, on the other hand these forces do not hold the molecules in a rigid structure and hence the molecules can move around whilst being constrained to be close together. This explains the nature of the liquid state. Furthermore, when we consult an online chemistry exposition we find that:

> Water has long been known to exhibit many physical properties that distinguish it from other small molecules of comparable mass. Chemists refer to these as the "anomalous" properties of water, but they are by no means mysterious; all are entirely predictable consequences of the way the size and nuclear charge of the oxygen atom conspire to distort the electronic charge clouds of the atoms of other elements when these are chemically bonded to the oxygen.[58]

So even the more apparently 'mysterious' properties of water, being less dense in the solid form of ice for example, are "entirely predictable" from the molecular structure.

In both the 'wheelness' and the 'wetness' examples there is a clearly coherent conceptual chain of entailment from the basis to the property which is supposed to magically 'supervene.' In the case of consciousness, however, there is an unbridgeable gap which no sophisticated and sophistic juggling of spurious logical concoctions could ever bridge. As Tallis says:

> There is nothing … that will explain why matter should "go mental" once it assumes a certain form, *unless we anticipate and borrow, on account as it were, the very notion of an organism that is aware of its environment.*[59]

The italics are Tallis' and the highlighted section describes the general procedure by which materialists try to produce an illusion of consciousness emerging from mindless matter by smuggling it in at the outset, like Humphrey. Such materialist 'philosophers' often then proclaim that consciousness is an illusion, not realizing that the illusion is all their own.

An excellent example of the kind of sleight of mind routinely resorted to within this materialist discourse is supplied by Antonio Damasio, David Dornsife Professor of Neuroscience at the University of Southern California, with his account of the genesis of consciousness which he presents in his book *The Feeling of What Happens*:

> I propose that we become conscious when the organism's representation devices exhibit a kind of wordless knowledge – the knowledge that the organisms own state has been changed by an object – and when such knowledge occurs along with the salient representation of the object.[60]

In this case there is an attempt to convince the reader of the reality of the illusion of some kind of inner necessity for the arising of inner awareness, i.e. the direct experience of consciousness,

from the merely mechanical representational activities of the material organism. Damasio seems blissfully unaware that an as yet non-sentient organism is not capable of having 'knowledge', "wordless" or otherwise. But by using this term in two senses, without clarifying the different senses, he introduces consciousness by the back door, implying with the use of the term "knowledge" that it has already arrived.

As to Tallis' second issue of the biological advantages conferred by consciousness he points out that there is absolutely no reason to suggest that unconscious processes would not function equally well if all that was at stake was mindless survival:

> Think, after all, what *un*conscious mechanisms have actually achieved: the evolution of the material universe; the processes that are supposed to have created life and conscious organisms; the growth, development of most of the running of even highly conscious organisms such as ourselves. If you had to undertake something really difficult – for example growing *in utero* a brain with all its connections in place – consciousness is the last thing you would want to oversee the task.[61]

All of the accounts of why consciousness is useful for a materialist evolutionary process are desperately implausible. They have to be because all of the most recent evidence from quantum theory and various developments in neurophysiology such as the discovery of neuroplasticity indicate that consciousness is primary, not derivative. In the forthcoming essays I hope to bring out the absurd and laughable nature of the kind of claims being made by people who consider themselves serious academics and philosophers. I intend to try and make readers gasp and laugh at the absurdities which pass muster in today's absurd academic climate wherein logic and logical coherence, not to mention conformity to the scientific evidence, been side-lined in the cause of a materialist advertising campaign.

In his book *Signature in the Cell* Meyer discusses various attempts to simulate MUD evolution with computer programs. Dawkins proposed his 'weasel program' as a demonstration of Darwinian natural selection. In this simulation the computer program begins with a random sequence of letters and then implements a sequence of iterations, each iteration produces a set of 'random mutations' of the letter sequence and each set is compared to the target sequence "Methinks it is like a weasel" and the best fits are 'selected'. But what Dawkins conveniently overlooked in this simplistic simulation was the obvious fact that his program contains a *look-ahead-mechanism* that natural selection is not supposed to have. Other more sophisticated attempts at producing programs to simulate Darwinian evolution but all suffer this flaw, they all in some sense know where they are going so they do not simulate a "blind" process. An expert Microsoft programmer said to Meyer concerning such programs:

> There is absolutely nothing surprising about the results of these algorithms. The computer is programmed from the outset to converge on the solution. The programmer designed the code to do that. What would be surprising if the program didn't converge on the solution.[62]

Any competent programmer knows this, the only way that any such program can converge on a target is if somewhere in the code there is some kind of comparison with the target, there must be some kind of look-ahead-mechanism. Meyer says of this:

> As philosopher and mathematician David Berlinski has argued, genetic algorithms need something akin to a "forward-looking memory" to succeed. Yet foresighted selection has no analogue in nature.[63]

But Meyer is mistaken about this, for nature does have such a foresighted selection mechanism operating at the quantum level:

> By hitting single molecules with quadrillionth-of-a-second laser pulses, scientists have revealed the quantum physics underlying photosynthesis, the process used by plants and bacteria to capture light's energy at efficiencies unapproached by human engineers. The quantum wizardry appears to occur in each of a photosynthetic cell's millions of antenna proteins. These route energy from electrons spinning in photon-sensitive molecules to nearby reaction-center proteins, which convert it to cell-driving charges. Almost no energy is lost in between. That's because it exists in multiple places at once, and always finds the shortest path. "The analogy I like is if you have three ways of driving home through rush hour traffic. On any given day, you take only one. You don't know if the other routes would be quicker or slower. But in quantum mechanics, you can take all three of these routes simultaneously. You don't specify where you are until you arrive, so you always choose the quickest route," said Greg Scholes, a University of Toronto biophysicist. Scholes' findings, published … in *Nature*, are the strongest evidence yet for coherence — the technical name for multiple-state existence — in photosynthesis.[64]

The phenomenon of photosynthesis exploits a quantum look-ahead strategy in which, in the same way as the universe started out "in every possible way", the route of electronic energy transfer within photosynthesis operates by using quantum coherence to test out all possible routes simultaneously and then selects the most efficient route retrospectively. This is a quantum look-ahead mechanism which operates within one of the fundamental processes of life.

Physicist and Director of the BEYOND Center Paul Davies has suggested that this quantum look ahead mechanism underlies the 'emergence' of life:

> The hypothesis I am proposing is that the transition from non-life to life was a quantum-mediated process, and that the earliest form of life involved non-trivial quantum mechanical aspects. The power of quantum superpositions is that the system can explore many alternative pathways simultaneously, thereby potentially shortcutting the transition time by a large factor. Because life is a highly unusual state of matter, its formation from an arbitrary initial state is presumably extremely improbable. Quantum mechanics provides a way to drastically shorten the odds and fast-track matter to life by exploiting the parallel processing properties of superpositions. There is, however, a deep philosophical issue that must be confronted. I am defining "life" as a certain special state of low probability. Quantum mechanics enables the space of possibilities to be much more efficiently explored than a stochastic classical system. Now, if there are

> branches of the wave function "containing life" (e.g. a quantum replicator), they will, by assumption, have very small amplitudes. We must therefore explain why the wave function of the system "collapses" onto one of these states of such 1ow intrinsic probability. Expressed differently, how does a quantum superposition recognize that it has "discovered" life and initiate the said collapse? There seems to be an unavoidable teleological component involved: the system somehow "selects" life from the vastly greater number of states that are nonliving.[65]

Quantum evolutionist Johnjoe McFadden has suggested that a similar mechanism underlies the mutations of DNA, the molecular string which contains genetic coding. Such mutations, which were previously thought to be purely due to chance, are more likely to be quantum mechanical in origin:

> Quantum mechanics tells us that the protons in DNA that form the basis of DNA coding are not specifically in localised positions but must be smeared out along the double helix. … At the quantum mechanical level, DNA must exist in a superposition of mutational states. If these particles can enter quantum states then DNA may be able to slip into the quantum multiverse and sample multiple mutations simultaneously.[66]

Such a quantum mechanism supplies the means for a subtle teleology, or direction, towards the evolution of perceiving organisms to operate. Thus it appears that there is a teleology to unfold life operating within the quantum realm.

In the following observation it is clear that Davies is moving his perspective in the direction of a quantum teleological viewpoint:

> If life is not written into the laws of physics as we currently know them, is it possible that those laws can be augmented by some organizing principle which facilitates the emergence of biological complexity, fast tracking matter and energy along the road to life against the raw odds, and driving it to ever more complex forms. Such a principle has been suggested many times, but always in the face of fierce opposition from orthodox science. And the reason for the negative reaction is not hard to identify. Any sort of life principle or cosmic imperative reintroduces into science the dreaded t-word: *teleology*. [67]

The distaste for the "t-word" on the part of scientists is not a result of any experimental findings within science itself, it is, rather, a prejudice for a materialist metaphysical worldview. It seems that the notion that the universe might have a spiritual purpose strikes terror into the hearts of many scientists! For Davies and others, however, the evidence is overcoming the anti-spiritual materialist prejudice.

This unfolding quantum teleological perspective suggests that that there is an inner teleological 'pressure' operating within the quantum realm of potentiality which functions in order to manifest the potentialities into experienced 'realities'. According to the Russian quantum physicist Michael Mensky, the quantum realm has within it a 'Life-Operator' which acts within the quantum realm of potentiality in order to unfold life. There is a directed teleology which underlies the phenomenon of life which Mensky has elucidated in his Extended Everett Concept (EEC). In this

proposal Mensky suggests that living organisms are able to employ, mostly unconsciously, the quantum look-ahead mechanism to explore the quantum alternatives lying in the future in order to 'select' advantageous pathways:

> According to the EEC, the principle feature of consciousness (of human and, more generally, of any living being) is its ability, overcoming the separation of the alternatives, to follow each of them up to the distant time moment in the future, find what alternatives provide survival and choose these alternatives excluding the rest. The evolution of living matter is thus determined not only by causes, but also by the goals, first of all by the goals of survival and improvement of the quality of life.[68]

'Life' is a quantum phenomenon which develops out of a quantum 'Life-Operator' which supplies the pressure to drive the quantum process in the direction of the survival of quantum systems which embody ever greater qualitative expressions of awareness and consciousness. It is the operation of the intrinsic Life-Operator upon the nonlocal interconnected quantum field of potentiality which carves out a vast phantasmagoria of sentient life embodying individuated consciousness on a multitude of levels of qualitative expression. But this carving out of individualized consciousness does not break individuated consciousness entirely free of the collective levels of consciousness:

> In the framework of Extended Everett's Concept the (explicit) consciousness is identified with the separation of alternatives. In the transition to the regime of the unconscious ("at the edge of (explicit) consciousness") the separation of alternatives disappears, and the possibility arises to compare all alternatives between each other, select favorable ones and discard the rest. … Therefore "to stay in the sphere of life" means that only favorable (for life) alternatives are left in the picture appearing before consciousness…[69]

Mensky indicates that the kind of quantum look-ahead mechanism exhibited by photosynthesis is fundamental to process of life in general and operates through the deeper realm of quantum awareness-consciousness, levels which are usually considered 'unconscious'. In his paper *Post-correction and the mathematical model in Extended Everett's Concept* he presents a mathematical model of the mechanism by which the quantum-consciousness 'look-ahead' technique may be formalized, a mechanism which he calls 'postcorrection':

> In the present paper we shall introduce the mathematical formalism describing this principal feature of living matter (of its consciousness): the ability to correct its state making use of the information (about the efficient way of survival) obtained from the future. It will be assumed that the evolution of living matter includes the correction providing survival at distant time moments. This correction leaves in the sphere of life only those scenarios of evolution which are favorable for life. Unfavorable scenarios do not disappear from the (quantum) reality but are left outside the sphere of life (absent in the picture appearing in the consciousness).[70]

From this perspective, at the moment of the Big Bang the 'Life-Operator' was somehow triggered into action and began the process of unfolding the potentialities by exploring future pathways. As Davies suggests in his book *The Goldilocks Enigma*:

> …a good case can be made that life and mind *are* fundamental physical phenomena, and so must be incorporated into the overall cosmic scheme. One possible line of evidence for the central role of mind comes from the way in which an act of observation enters into quantum mechanics. It turns out that the observation process conceals a subtle form of teleology.[71]

This is because it has now been clearly shown that sentient observation involving consciousness is 'epiontically' entangled within the quantum level and is required for quantum potentialities to become experienced 'realities'. The physicist and philosopher Bernard d'Espagnat has indicated this in no uncertain terms:

> The doctrine that the world is made up of objects whose existence is independent of human consciousness turns out to be in conflict with quantum mechanics and with facts established by experiment. [72]

This process was 'unconscious', in the sense that no fully fledged individuated and embodied consciousnesses were manifested, for millions of years. During this time sentient organisms began to be prepared within the non-manifested 'implicate' levels of quantum potentiality. Prior to the Cambrian 'explosion', when the basic body structures of life suddenly burst onto the material evolutionary scene, the development of future organic sentient life took place within the quantum field of potentiality. This is why the evidence of Evo-Devo clearly indicates that body plans were in place prior to manifestation of organisms on the material level. Once sentient organisms came on the scene they unwittingly became implicated in the process of constructing the form of the universe they inhabited. This is indicated by the H&M quantum metaphysical perspective and by Wheeler's assertion that the universe is "self-synthesized" through the perceptual activities of "the observer participants of all times and all places."

In his recent book *From Quantum to Cosmos: The Universe Within* physicist Neil Turok, Director of the Perimeter Institute for Theoretical Physics, has written:

> Great mysteries remain. Why did the universe emerge from the big bang with a set of physical laws that gave rise to heavy elements and allowed complex chemistry? Why did these laws allow for planets to form around stars, with water, organic molecules, an atmosphere and the other requirements for life? Why did the DNA-protein machinery, developed and selected for in the evolution of primitive single-cell organisms, turn out to be able to code for complex creatures, like ourselves? How and why did consciousness emerge? At every stage in the history of the universe, there was the potential for vastly more than what had been required to reach that stage. Today, this is more true than ever. Our understanding of the universe has grown faster than anyone could have imagined a century ago, *way beyond anything that could be explained in terms of past evolutionary advantage*. … Are all these capabilities simply accidental? Or are we actually the door-openers to the future. Might we be the means for the universe to gain a consciousness of itself?[73]

The physicist Sean Carroll has suggested something similar, although in a materialistically perverse way:

> We are part of the universe which has developed a remarkable ability: we can hold an image of the world in our minds. We are matter contemplating itself.[74]

The notion that is must be a universal primordial energy-awareness-consciousness that is "contemplating itself" is still anathema to many physicists and philosophers so they will resort to all kinds of intellectual subterfuges to avoid the issue, such as overlooking the fact that matter, by definition, is not the kind of stuff which can contemplate itself. Erwin Schrödinger, one of the 'founding fathers' of quantum theory, suffered from no such prejudice for a 'known-to-be-false' materialist metaphysics when he said:

> Mind has erected the objective outside world … out of its own stuff.[75]

Other 'founding fathers' came to a similar conclusion. Max Planck started out his scientific career as materialist but towards the end of his life radically changed his ideas. He asserted that:

> All matter originates and exists only by virtue of a force... We must assume behind this force the existence of a conscious and intelligent Mind. This Mind is the matrix of all matter.[76]

And:

> I regard consciousness as fundamental. I regard matter as derivative from consciousness.[77]

Werner Heisenberg also saw that quantum physics clearly indicated that the process of reality is best viewed through the perspective of Platonic idealism:

> On this point modern physics has definite decided for Plato. For the smallest units of matter are in fact, not physical objects in the ordinary sense of the word; they are forms, structures, or in Plato's sense – ideas, which can unambiguously spoken of in the language of mathematics.[78]

Isn't it time for today's physicists and philosophers to be mindful of the scientific facts and implications and get honest about this matter?!

Professor Anthony Flew was a philosopher who changed his views concerning materialism, theism and intelligent design as the evidence for ID became more compelling. Professor Antony Flew was described as: "a legendary British philosopher and atheist" who was "an icon and champion for unbelievers for decades."[79] In his most famous book, *God and Philosophy*, Flew concluded:

> …though as always subject to correction by further evidence and further argument, that the universe itself is ultimate; and, hence, that whatever science may from time to time hold to be the most fundamental laws of nature, must, equally provisionally, be taken as the last words in any series of answers to questions as to why things are as they are.[80]

In other words, the universe itself is the ultimate reality and so there is no need to believe in any sort of Creator. Flew regularly debated against theistic philosophers and was considered to be "one of the most renowned atheists of the 20th Century."[81]

In 2004, however, Flew changed his mind let it be known that he had become a theist because: 'the case for an Aristotelian God who has the characteristics of power and also intelligence, is now much stronger than it ever was before."[82] He said that he simply: 'had to go where the evidence leads."[83] Flew's change of mind was big news because of his previous staunch atheism. ID proponent Jonathan Witt has said of Flew's turn-about that:

> Those who admired [Flew's] intellect when he was an atheist should listen carefully to his reasoning now - for if a man suddenly becomes *persona non grata* for changing his mind, then the possibility of reasoned civil discourse withers.'[84]

In his review of Dawkins' book *The God Delusion* Flew wrote that:

> The fault of Dawkins as an academic … was his scandalous and apparently deliberate refusal to present the doctrine which he appears to think he has refuted in its strongest form. Thus we find in his index five references to Einstein. They are to the mask of Einstein and Einstein on morality; on a personal God; on the purpose of life … and finally on Einstein's religious views. But (I find it hard to write with restraint about this obscurantist refusal on the part of Dawkins) he makes no mention of Einstein's most relevant report: namely, that the integrated complexity of the world of physics has led him to believe that there must be a Divine Intelligence behind it. (I myself think it obvious that if this argument is applicable to the world of physics then it must be hugely more powerful if it is applied to the immeasurably more complicated world of biology.)

Whilst Einstein's statements concerning religion are to a large extent ambiguous, he certainly made statements which do not chime in resonance with the hard-core materialist assertion that all intelligence derives from the profound unintelligence of blind and mindless forces. He came to believe in a "spirit manifest in the laws of the universe," in a "God who reveals Himself in the harmony of all that exists"[85], although he did not believe in a *personal* God. He wrote that:

> The religious inclination lies in the dim consciousness that dwells in humans that all nature, including the humans in it, is in no way an accidental game, but a work of lawfulness that there is a fundamental cause of all existence.[86]

In a 1930 essay entitled "What I Believe," Einstein wrote:

> To sense that behind anything that can be experienced there is something that our minds cannot grasp, whose beauty and sublimity reaches us only indirectly: this is religiousness. In this sense, and in this sense only, I am a devoutly religious man.[87]

Whilst it is clear that Einstein did not believe in a personal God, he also clearly did not believe in an essentially unintelligent universe.

In his excellent book *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False* the philosopher Thomas Nagel has written that:

> 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 historical account becomes …. it seems to me that, as it is usually presented, the current orthodoxy about the cosmic order is the product of governing assumptions that are unsupported and that it flies in the face of common sense.[88]

And one of the unsupported "governing assumptions" is that of materialism, a worldview which has been shown to be false and is yet promoted with vigour by a coterie of academics who seem unconcerned with the evidence. Nagel writes concerning the proponents of ID that:

> Even if one is not drawn to the alternative of an explanation by actions of a designer, the problems that these iconoclasts pose for the orthodox scientific consensus should be taken seriously. They do not deserve the scorn with which they are commonly met. It is manifestly unfair.[89]

However, as we shall see, the tactic of resorting to scorn can be used to conceal weakness, in fact scorn is the only recourse for those who need to avoid the evidence. Furthermore, we shall discover that many of the bizarre arguments and notions employed by materialist apologists in order to try and account for how utter mindlessness is supposed to produce consciousness, awareness and mind really are worthy of a degree of intellectual scorn.

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