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Theories of Consciousness and Death



What happens to the inner light of consciousness with the death of the individual body & brain? Reductive materialism assumes it simply fades to black. Other theories of consciousness indicate a continuation of the self, a transformation or awakening, or even alternatives based in life experience. In this issue, speculation based in theoretic research is explored.

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“To be immortal is commonplace; except for man, all creatures are immortal, for they are ignorant of death; what is divine, terrible, incomprehensible, is to know that one is immortal.”

(Jorge Luis Borges, *The Immortal*, 1943)

I Killed a Squirrel the Other Day...

Gregory M. Nixon*

I killed a squirrel the other day, or rather I was the instigator. At first, I refused to do it (despite the demands of my less scrupulous lady whose furniture was being ruined), but the little varmint had chosen our unsealed garden shed for his winter hideaway and was putting all his pinecones and birdseed and whatever else he could grab into storage there. Worse, he was tearing the stuffing out of our garden cushions from the lawn furniture, even gnawing through the bamboo that coated the chairs. Not ready for murder, I bought two live-catch traps and baited them with peanuts, but we – my lady, my stepdaughter, and our excited dog, Raksha – watched through the window while the squirrel entered into the cage we had placed on the cover of the hot tub and did a little tap dance on the trigger plate to grab the nut, sniff it, insert it, pause, and just as lightly dance away. Nothing happened. It was too light to release the trigger. I oiled the hinges, and we gathered again, but the same thing happened – nothing but nut theft. (Secretly, I kind of admired the panache of the furry critter.)

Being the man of the house, I knew my duty. The squirrel was an enemy, a home invader that had to be stopped. I bought two heavy rattraps. I put them in the shed baited with a dab of peanut butter to support a small peanut. The release was so hair trigger it slipped and smashed a peanut into powder, just missing my finger. I had no doubt the deadly plan would work. I set it on a table already full of bamboo shavings. (“*Do you feel lucky, squirrel?*”) There was no doubt. I went back in only 10 minutes and the trap I had put on a table near the wall was missing. Already dreading what I would see, I looked over the edge of the table into the darkness to the floor below. I saw the furry tail and knew the trap was sprung. I reached down and pulled up the unfortunate creature by the tail, which also pulled up the trap that had spring on its neck, sideways. To my horror, I saw the squirrel was still alive, barely, its neck unbroken, probably nearly suffocated by now. With an unmanly panic, I ran with it outside to the deck, calling for my 20-year old daughter, “Gracie! Gracie! It’s still alive.” I still don’t know why I called her (silly, really), but I placed the bulgy-eyed squirrel still trapped on the hardwood deck and ran to the garage to get a hammer. I returned just in time to see Gracie drop a large lava rock from the garden directly onto the little beast immediately stopping its suffering with a splat. She looked at me stoically and said without emotion, “It’s the circle of life.”

Now this may be a long and perhaps slightly ridiculous story with which to begin an Introduction to a JCER issue on “Theories of Consciousness & Death”, but it struck me later that this is exactly what I have been writing about for years. The circle of life, made famous in Disney’s “The Lion King” is the circle of time: from life comes death and death helps bring forth new life. Gracie had made a very simple point that all of Nature (except for a rare group

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of scientists who actually think the universe will expand in one-way time until all the lights go out) unquestioningly accepts: death is as much a part of life as the dark side of the moon is a part of the moon. In fact, you cannot have one without the other. Life on Earth would have suffocated and run out of food sources with the endless identical replication of amoebae in the same way mitosis would never have allowed evolution to begin. It took meiosis and death, not to mention sexual reproduction, for the evolutionary process to set forth. Life lives off life, and death and sex are necessary for that to happen. To begin the process of unimaginable differentiation that came to flourish across this planet (and possibly others) required the old or weak make room for the new and that sexual breeding allow for slow evolutionary mixing and unexpected mutations. In short, the first point I wish to make is that *death is good*, or at least a necessary part of life. It's especially good if we accept the recent philosophizing of Thomas Nagel (2012) that evolution has a *natural teleology* (undirected by deity), a purpose that is discovered by creating it. Evolution is basically competition, death, sex, and birth.

I want to make a few observations on consciousness and death, as I have often in my writings, before I give a general introduction to the widely divergent perspectives on these primary facts of life in this issue. The viewpoints vary widely, but I wish to express my own and add some wild guesses. I won't be writing a grand essay but may reference where I have examined these ideas before. There are three points I wish to make, which seem true to me.

1. Death is good. It is not the opposite of life but the necessary polarity of life: it is part of the life cycle and most entities in Nature simply live their cycles until those cycles cease to repeat. Nature does not question and Nature does not regret. Life goes on.

Of course, none of this is to deny the trauma of losing a loved one, or the horror of mass death caused by war, genocide, or natural disaster. Even the tragedy of accidental or early death leaving a life unlived strikes us as metaphysically unfair. Death can be cruel and cause great anguish. This is especially true for the living, but certainly the dying can experience such things too. Once death occurs, however, and biological functions cease, we must assume such physical pain ends.

Perhaps this is why our hints of submission to death are often sweet, especially for non-humans or early in life before we learn to fear the loss of self-control or the fearful *waste of time*. Our stories, poems, and songs often celebrate the pleasure of a long rest earned, pleasant intoxication, even the pleasure of just letting the time go by, and some even associate the shudder of orgasm with the sense of dying in bliss (see *la petit mort*). Edmund Spenser (1552-1599) expressed this rest from struggle in his oft-cited words:

*Sleep after toil, port after stormy seas,
ease after war, death after life
doth greatly please.*

The old moonshiner in the traditional song sometimes known as "Rye Whiskey" expressed the same peaceful acceptance of the end of things in this version (one of many):

*I'll eat when I'm hungry,
I'll drink when I dry,
And when I'm tired of living,
I'll roll up and die.*

I'll even admit it. On occasion, the mindless peace of deep, dreamless sleep sounds most inviting indeed.¹ Sometimes when the bills arrive or I watch the usual TV shows, final escape into oblivion seems desirable indeed.

But of course this is just talk, for we humans *know* of the finality of death. In spite of all the recycling we now engage in, we ourselves do not expect to return from the dissolution of death. We have learned through complex symbolism and the magic conjurations of language that we are individual selves that exist in time for a lifespan and that someday that time will end. Oh, other beasts know instinctively when the great tiredness comes and relax into it without bitterness or desperate prayers to get into heaven or out of hell (not to mention being strapped to a table to endure tubes in veins or jolts of electricity to our hearts or brains to keep us "alive"). We, however, are the only animals that know *conceptually* of our inevitable demise, yet despite our mortal knowledge we have devised brilliant or insane means of avoiding the truth – from religious denial to power hungry conquest, to human sacrifice (see, e.g., Becker, 1973; Brown, 1959; Burkert, 2002).

Yet, it is this knowledge of our own limits, of our mortality, that may drive us to seek beyond those limits, to produce wondrous works of art and fantastic civilizations, to dream vast, and imagine impossible things that may yet bring them into being. It is the dream imperishable perfection, always out of reach, that keeps us desiring for impossible perfection. Perhaps that is the meaning of the famous lines of Wallace Stevens in "Sunday Morning" (1923):

*Death is the mother of beauty; hence from her,
Alone, shall come fulfilment to our dreams
And our desires.*

In any case, it seems very likely that somewhere humans underwent an existential crisis when they realized that death was inescapable – for their despotic *Dear Leader*, for their loved ones, and for themselves. At the moment of potential despair, humans must have had a breakthrough in consciousness: to realize one must die is also to realize *one is now alive*. Now is the time of our lives: live now, for tomorrow we may die.² We are unlike any another

¹ I acknowledge that "deep, dreamless sleep" is the third deepest stage of mystical awareness amongst experienced meditators, implying timeless, empty awareness is not extinguished, though it may remain unconscious from the perspective of the self, as though for individuals it wasn't there (See, e.g., Thompson, 2015).

² For well-researched conjectures and excruciating detail on the symbolic awakening of humanity to self-consciousness through language, see Nixon, 2010a. For the prehistoric background how awakening to mortal knowledge brought upon the sense of the sacred and human consciousness, see e.g., Nixon, 2010b; Noble & Davidson, 1996; Pfeiffer, 1982; and Tattersall, 2002. It was mortal knowledge and self-consciousness that led us to believe in linear time, and linear time, of course, comes to an end. Nature knows only cycles.

animal in this respect. In some ways, it has drawn us together; however, in many others it seems to have driven us quite mad.

It was this sort of thinking that got me onto this project. All this talk about consciousness, brains, neuroscience, intersubjectivity, and even self-transcendent awareness getting more intense all the time but nobody asking what to me is the obvious question: *What does it all matter?* If consciousness (or selfhood or awareness-in-itself) simply ends at death, why we're back where we started: nowhere. Consciousness means nothing if "mind" is a bubble which pops in the sea of the universal mind, or if it's a brain byproduct, or if *my mind* just evaporates, disappears (either into oblivion or oneness), and just blinks out at death? Surely there is some implied relationship between the inner light of awareness and the end of physical life (even if they both go out together).

Since then, as all the world knows, science and, yes, New Age thinking have challenged organized religion for dealing with mortal knowledge and the resistance of the self to disintegration, and each of them have revealed an equal propensity for magical if not outright bizarre thinking. These extremes are evident in some of the essays that follow, but so is some very clear and open-minded thinking based in one of *disorganized* religion, the further reaches of science, philosophy of mind, or New Age spirituality.

For materialists, we each are our brain and we die with it. Interestingly, I sent out invitations to all sorts of authors and online groups whom I thought might be interested, but the one group of thinkers who disdained to take me seriously were those generally known as ontological materialists (aka reductive materialists, mechanist materialists, material physicalists, etc.), that is, those who believe matter evolved randomly yet somehow produced life that randomly produced complex bodies that randomly evolved brains that, probably accidentally, produced the side effect of consciousness. Most, of course, simply refused to answer because it was *obvious* that when the brain died, the self died, and the since the self (and self-consciousness) is all there is to being aware, that was the end of it. Well, that at least makes sense (if you think within a box).

What did irk me to no end was to face the madness that a few extreme materialists have chosen, and none of them submitted a paper either. There are two kinds of materialism; one is the materialism that sees the biological brain as identical with consciousness. When the brain dies, the self dies, so what's a rich egotist to do if s/he wants to continue living? The only answer, apparently, is to instantaneously freeze-dry the entire fresh corpse of the living for future awakening when medical science will have advanced far enough to carry out such operations, i.e., the merchandising known as *cryonics*. But, really, that's a lot of trouble and expense when who knows when that future will be and one will still be stuck with a really old or decrepit body anyway. So there are some macabre institutions that – for a significant fee – will remove only the head or even just the brain and instantaneously freeze-dry it for a future awakening; and the best part of this ghoulish scheme is that the head can then be transplanted onto a new youthful body. (Please don't ask where those new youthful bodies will come from.).

I don't find the other, now more popular choice much more palatable. It's for the materialists who believe the brain is like a wetware computer that runs the "mind-program" through its neural circuits, like software. They are called by several names, including Ray Kurzweil's *Singularity* group, the *transhumanists* (or on Facebook *Rational Transhumanists*, *Tranhumanist-Posthumanists*, or even the *Vegan Transhumanists United*). Despite my politest invitation, none of these people wanted to explain to us in a short paper how the "mind-program" in a human brain, which is part of a human body, which is embedded in a natural environment, and which is part of a symbolically interactive community could possibly be transferred to a computer or computer network and still be basically the same person. Yet I was the one accused of science fiction for even suggesting that an unobserved cosmos of dead material parts interacting randomly without purpose was not even imaginable (except by choosing an observational perspective *and imagining it*)!

"If consciousness *were* simply brain processes, it would not be able so to distance itself from brain processes to discover, or imagine that it has discovered, that it is brain processes" (Tallis, 2012, p. 338).

As has been said many times, our brains, bodies, environments, and symbolic cultures shape our minds and help determine our experience. But it is a complex interdependence in which, in mutual creation, our relationships, minds and experience shape and determine our symbolic cultures, our natural environments, our bodies, and even alter our brains through plasticity and, occasionally – through epigenetics – in one lifetime!³

2. Obviously, hard science cannot account for awareness (or explain *why* life would evolve). It has revealed many wonders and made incredible technologies possible, but it cannot prove its own assumptions upon which the whole materialist edifice is built. *Who can tell us what an unobserved universe looks like or even acts like* (except after the fact when we observe and probably change its telltale residues)? An unobserved, pre-mind, pre-life universe would have no form, no time, no substance, no ... anything since time is relative to observers, form relative to the sensory organs that view it, and the same thing applies to everything else we assume to be ultimately real like density, texture, sounds, distances, etc. And please don't say machines can measure all this for us, for such mechanical motions have to be built by human minds and have no *meaning* until they are read and interpreted by a mind. It's no used pleading we can extrapolate backwards from readings in the present for who is doing such readings? We are – in the present! What mind is extrapolating backwards to imagine what it would be like *if it were there*? Sorry, but an unobserved universe cannot exist, much less one that inexplicably produces life and various forms of awareness.

Galilean science (reductive materialism) has been the most successful worldview ever put into action in terms of production and technology. But what have we done to our world and life experience as a result? What sort of consciousness believes torturing other primates and mammals is necessary in laboratories throughout the world to help protect human beings from possibly dangerous ingredients in cosmetics? What sort of psychopathic paranoia

³ See Jablonka & Lamb, 2012.

drives a species to built such a stockpile of nuclear weapons and deadly viruses that it could it destroy all civilization and possibly all life many times over?⁴

There is no doubt in my mind that the chasm of perspective between objectivity and phenomenology (between experience and material) still stands firm. In the 90s, it was called the *hard problem* (Chalmers), before that, the *explanatory gap* (Levine), and way before that it was known as the *unthinkable passage* (Tyndall). Nothing can explain that first shudder of experience, which is simply not material. Science occupied with measuring the minutiae or cosmic grandeur of the external world cannot explain the inner light of consciousness in itself, though neuroscience has certainly demonstrated fascinating connections between the brain and mind. Obviously, without a brain, we could not be conscious in the way we currently are, but then all we know is our own consciousness. Still, as Tyndall wrote in 1879:

The passage from the physics of the brain to the corresponding facts of consciousness is unthinkable. Granted that a definite thought and a definite molecular action in the brain occur simultaneously; we do not possess the intellectual organ, nor apparently any rudiment of the organ, which would enable us to pass, by a process of reasoning, from one to the other.

Some of the more visionary scientists, like Freeman Dyson (1988), saw that consciousness or awareness or experience cannot simply be explained away but must accepted as original, if not eternal, as in pre-spacetime:

It seems more reasonable to think that mind was a primary part of nature from the beginning and we are simply manifestations of it at the present stage of history. It's not so much that mind has a life of its own but that mind is inherent in the way the universe is built. (p. 72)

Of course, for those who do not begin with the externalized scientific point of view, none of this was ever a problem or gap. The world is here because some form of deity or primal consciousness brought it forth. Those who begin with the reality of experience instead of matter assume (creative) awareness is primary, though it manifests in various forms according to the place, time, context, and powers of the vessel:

Consciousness is not tied down by the physical body. For the subtle body, things can move faster than the speed of light. There are two kinds of time: physical time and inner time. ... There are infinite universes and infinite time scales. (attributed to H.H. the Dalai Lama)

Matter is a manifestation of consciousness but not a product of it. As several papers in this issue indicate, the physical and the “mental” (for lack of a better term) are inextricably intermingled, perhaps in some form of what we poor wordsmiths call *dual-aspect monism*.

⁴ See Lorna Green for an all-out feminist condemnation of our currently desperate *man-made* situation, and Deepak Chopra puts the blame for our historically recent reduction to isolated egotism and stunted spiritual growth squarely on reductionist materialism (both statements in this issue).

3. How you live consciously is how you die consciously. This is my second speculation, which I regard as almost a revelation. It seems to me that both “life after death” and “oblivion after death” are true, or can be true. I am hardly the first to suggest it, but it bears repeating in this era when science sees us all dying the same, disappearing into oblivion. It is also suggested that *most* of those who experience NDEs find them delightful and look forward to losing themselves in the light (though there are exceptions). And, finally, mentioned in Iona Miller’s statement in this issue, are all those cheery New Agers who embrace only the bright part of spirituality and believe we will rejoin the blissful source from which we began, forgetting our lives. This hardly seems fair when, really, there are so many wicked, stupid, twisted, hateful persons living out their lives. This may not be a matter of ethics, as such, but a matter of quality of consciousness.

It seems certain to me that *I* will die and stay dead. By “I”, I mean me, Greg Nixon, this person, this identity. I am so intertwined with the chiasmus of lives, bodies, ecosystems, symbolic intersubjectivity, and life on this particular planet that I cannot imagine this identity continuing alone without them. Literary critic, Joseph Crapanzao (2004) has suggested it is not the loss of the self we fear, but the world of others, those *others* who originally drew my self-concept (ego) forth from embodied experience:

[Can we say that] the terror of death is a substitute for the terror of world-ending? Is it less our own dissolution than that of the world — our intimate and perduring connection with it — that terrifies us? The most frightening of nightmares is to be absolutely alone — deprived of all context, human or material. (p. 202)

However, I can imagine, and often do, that there is a core consciousness, an inner light, a soul if you wish, that has always been with me, that lies as deeply within my being as the farthest star without. Perhaps this inner *essence* can continue on as light energy or some such thing without my personal identity – but not necessarily without any of my memories.⁵ With the death of ego, of self, a new unimaginable awakening may occur, as Theodore Roethke expressed it so well in these lines of his poem “In a Dark Time” (1964):

*Death of the self in a long, tearless night,
All natural shapes blazing unnatural light.*

(The self dies, but some “blazing unnatural light” is born: my own interpretation of course.)

Surely if you have hated your own life or even that of all others because you see the ugliness of all things, wouldn’t it make sense to have your dreams come true when you died? This may not mean a hell of hatred, but simply oblivion, lights out. If you have been selfish all your life and only pretending to be interested in others only insofar as they may benefit you, surely you could not bear to let your dearly-beloved ego-self go. Since you called it into existence in life (ask any social constructivist) you will surely disappear with it when you die. On the

⁵ See Nixon (2010a) for details on how lived, yet impersonal, clouds of memories could enrich the Source of Being – or just read toward the end of T. S. Eliot’s extraordinary poem “Little Gidding” his *Four Quartets* (p. 59) on the next page.

other hand, If you have been curious, compassionate, open to new experience, and, most of all, courageous in life, you will probably be ready to face the most astonishing metamorphosis of conscious awareness than you have ever dared dream, a cosmic awakening or journey that begins *in the twinkling of an eye*.

Paul Ricoeur (1998) in one his last interviews put it as eloquently as anyone could have:

Afterlife is a representation that remains prisoner to empirical time, as an “after” belonging to the same time as life. This intratemporal “after” can concern only the survivors. ... Here I come back to...the hope, at the moment of death, of tearing away the veils that conceal the essential buried under historical revelations. I, therefore, project not an after-death but a death that would be an ultimate affirmation of life. My own experience of the end of life is nourished by this deeper wish to make the act of dying an act of life. This wish I extend to mortality itself as a dying that remains immanent to life. (p. 156)

He added significantly: "I consider life, almost eschatologically, as an unveiling in the face of dying" (p. 160).

One survives one's life by believing in universal awareness, perfection, and the peace that passes all understanding. Perhaps we bring this back with us to the Source from which we began, changing it, enriching it, which may be the implied meaning of T. S. Eliot's (1944) oft-quoted words (which I beg permission to cite just once more):

*And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.*

Once we have lived – if we don't choose the eternal silence of oblivion by life denial, vanity, indifference, or simple weariness – the Source learns and we awaken within it. Awareness, consciousness, is universal – it comes with the territory (in fact, *it must be the territory*, though it could be nothing like the reduced animal-symbolic consciousness as we humans practice it) – so maybe you will be one of the few prepared to become unexpectedly enlightened after the loss of self. You may discover your own apotheosis – something you always were, but after a lifetime of primate experience, now *much more*. Since you are *of* The Source and since you have changed from life experience and yet retained the dream of ultimate awakening, plus you have brought those chaotic emotions and memories back to the Source with you (though no longer *yours*), your life & memories will have mattered. Those who awaken beyond the death of self will have changed Reality. (As I see it anyway.)

Unfortunately, or perhaps not, mainly because of the weariness, stress, and frustration of life, I would wager the vast majority of individuals who die succumb gratefully to peaceful oblivion, and perhaps the dreams that come after shuffling off the mortal coil are made of swirling clouds of memories, as Hamlet surmised. The Big Sleep beckons, and one must rest. Cosmic consciousness continues, but for the sleepers, it won't matter.

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The writers that follow in this issue think against the grain of the times, that is, they dare to question the unearned closure of the universe to deterministic materialism. Each writer is extraordinary in their own way. All these questions will be approached with many answers daring to step beyond experimental science, logical positivism, medical limitations, and even the fear and repulsion of death – out into the thin ether of pure speculation, daring conjecture, or even explicate personal experience or esoteric texts that actually conceive awareness *after* the actual (not merely *clinical*) death of the body, to which NDEs are limited (though still very important sources of information). This issue goes places or dimensions or times – or perhaps none of the above – that consciousness studies has always avoided going. BUT why talk about consciousness if it's just that flash of activity between birth and death? I admit I had to encourage a few hesitant authors to take the leap from *writing of dying* to *writing of death*, and some of them actually did speculate on what a post-mortem situation might be like.

So, the writers herein are scholars, both well known and not-so-well-known, some independents, some well established in academia. Others are deep into the various sciences, others philosophical explorers, and others yet have tossed out dependence on objective facts alone and are openly seekers in esoterica or direct personal experience – what we might call spiritual but w/o a creed to which they adhere. It is quite a mix. We have a good discussion of NDEs and of mediumistic spiritualism, of other dimensions, of mystical breakthroughs, of quantum entanglement, of idealism, of a conscious universe in which the physical is a response, and a timeless present, which leaves the time of our lives an illusion. We have Jung from the West, addressing the question in his old age, and we have the ageless wisdom of Tibetan Buddhism from the East, distinguishing between *bardo* levels of consciousness after death and hinting at potentially awakening in the void state or clear light of pure consciousness, *Nirvana*, about which nothing can be said (but for which some can rehearse in life through deep meditation). I am pleased to note we have four women writers who offer the possibility of unique perspectives but whose science or philosophy is as strong as anyone's here. But, no, we do not have a committed hardcore reductive materialist among this group of writers, though I tried. The ultimate ontology of dead materialism simply will not stand as an explanation for life, for mind, or to explain the mind of this writer and editor who recently killed a squirrel with assistance (and a good degree of guilt).

The important writings that follow are divided into three sections. The first, **Research Essays**, are more formal academic essays with generous citing and referencing sources to give credit where credit is due. They are often more cautious in their conclusions, but some of them opened my eyes in wonder. **Explorations** are just that – more open-ended, less proscribed by academic limitation and thus with the individuality and freedom to let their imaginations soar; yet they remain tethered to logic and well-tested facts (facts not necessarily accepted by mainstream science). The five short pieces in **Statements** are the result of me asking well-known and widely published authors for their honest opinion on the possibility of some sort of continuing consciousness after bodily death. Instead of research, all they had to do was refer to their previous writings. Their answers were surprising, dealing with everything from spiritual awakening to the real possibilities of revenants or

ghosts that can reappear when called to, or into endless new incarnations in Nature. Each piece in *Statements* is followed by a short biographical note.

Respectfully,



Greg Nixon, December 17, 2016

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Research Essay

The Tilde Fallacy and Reincarnation Variations on a "Skeptical" Argument

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Introduction

What I will be calling the Tilde Fallacy, expressed crudely, is this:

My position uses the logical symbol known as the tilde (the logical symbol used for translating "not", "no", "it is not the case that", etc.). Therefore it is not really a position at all, but only a denial of some other position. Consequently, I can always invoke Occam's razor against the position I am denying, and my opponent cannot. The burden of proof is always on my opponent, not on me, because my position has no actual content (which follows from the fact that it has only negative content).

One way of diagnosing a case of the Tilde Fallacy is to show that a position claiming this privileged status can be restated without the tilde. In some cases, this restatement reveals that this position is self-contradictory, which of course refutes it. In other cases, this transformation merely refutes the Occam's razor argument that allegedly supported it, and thus reveals that it needs to be supported by further arguments and evidence. Although this transformation from negative to positive is often sufficient to demonstrate the presence of the Tilde Fallacy, it is not necessary. In most cases, a single negative claim implies numerous unstated positive claims, and in such cases it is equally invalid to assert that the negative claim requires no further support. The negative claim and its implied positive claims are a package deal, and any application of Occam's razor must consider the entire package when making judgments about relative simplicity.

The following four arguments support very different conclusions about very different topics, and yet all of them rely on the Tilde Fallacy. I will have to spend some time considering arguments other than the Tilde Fallacy, which support each of these conclusions, to bring the Tilde fallacy itself into greater clarity through contrast. The fact that these conclusions are often supported by the Tilde Fallacy does not mean that there aren't other stronger arguments available to support them. I don't find any of these arguments convincing myself, but I don't have the space here to make more than a few brief (and admittedly rather snide) comments against them, which I fully acknowledge are far from decisive.

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I will be discussing these different Tilde Fallacy arguments in increasing order of general acceptability. The first argument is, as far as I know, accepted by no one today who has seriously studied the subject. The next is accepted only by a small but vocal cult following. The third is accepted by a very large group probably including the majority of the academically employed. The last of these Tilde Fallacy arguments is acceptable to probably almost everyone except me (and perhaps you, gentle reader, if you find my arguments convincing). The topic of this argument is survival after biological death. The so-called "materialist" position, which I will call *mortalism*, relies heavily on the Tilde Fallacy. I will argue that once the Tilde Fallacy has been removed from the debate, the most ontologically parsimonious position is belief in reincarnation. I will also argue, at much greater length, that the mortalist position is self-contradictory, but that the contradiction is phenomenological, not logical.

The Tilde Fallacy and Logical Positivism

The Logical Positivist's version of the Tilde Fallacy was widely accepted for about a decade, and then was rejected by all of the philosophers who originally proposed it. This is perhaps the only time in the history of philosophy where everyone involved agreed about anything. This logical positivist version of the Tilde Fallacy is the prototype on which the other three arguments are based. I expect the majority of my philosophically trained readers to find the other arguments acceptable in direct proportion to how closely they feel they resemble that prototype.

The Logical Positivists tried to resolve the questions of metaphysics by saying "all metaphysics is nonsense." This claim was importantly different from the materialist commonsense feeling that all metaphysics is BS. "BS" is simply a term of abuse, but "nonsense" has a specific meaning. To say that a claim is nonsense is to say that it lacks sense, which must lead to theoretical questions about the relationships between sense, reference and meaning. The consideration of those questions eventually made the Logical Positivists realize that the claim "all metaphysics is nonsense" is itself a metaphysical claim. When pressed to define the term "nonsense", they implied it meant "any proposition which was neither empirically verifiable nor tautologous", which eventually made them realize that by these criteria their own position was nonsensical, and thus also self-contradictory.

The Logical Positivists thought at first that, because there was a tilde implied in their metaphysical claim, it was not a metaphysical claim at all. This was exposed as a fallacy by in effect removing the Tilde and stating the position in the positive, i.e., by unpacking and defending its metaphysical theory of the relationship between language and reality. Once they realized that it was a metaphysical theory, however, it became clear that this theory contained the only flaw that can decisively falsify a metaphysical theory. It was self-contradictory because by its own definition it was itself nonsensical. Thus the Logical Positivists realized that whatever the answer was to the big metaphysical questions, it couldn't be this. They reluctantly returned to asking the same

kinds of questions that had bedeviled Western philosophy since Descartes, becoming Logical Empiricists instead of Logical Positivists.

Libertarianism and the Tilde Fallacy

There are numerous objections to Libertarian political philosophy, some of which I have summarized in Rockwell (2013). Some of these objections are Utilitarian, i.e., based on issues of what would produce the greatest happiness for the greatest number of people. (A Libertarian society would be a bleak and joyless place for almost everyone because of a lack of infrastructure and extreme differences between wealth and poverty.) Other objections are Deontological, i.e., based on issues of justice: the networks of privilege that would inevitably emerge in such a society would falsify the Libertarian claim that each person had justly acquired everything they owned. In this article, however, I will be concerned only with the Libertarian use of the Tilde Fallacy. Here we find a parallel with Logical Positivism. The Tilde Fallacy is not as obvious in the common sense materialist view that metaphysics is BS, or in the rhetorical rants of Ayn Rand. It can, however, be revealed in the more explicitly theoretical writings of the Logical Positivists and also in the writings of Robert Nozick, who attempts to justify the Libertarian revulsion towards government as a positive principle.

Nozick's moral justification for Libertarianism can be seen as an extrapolation from the liberal principle of the separation of church and state. In a theocracy, the state has ideals and values set by the state religion and passes laws to insure that people live up to those ideals (no card playing or dancing on Sunday, women must dress modestly, etc.). In a liberal state, however, each individual has her own values and ideals, and the state's only job is to insure that each individual has the freedom to pursue those ideals. Nozick argues that this principle, when taken to its logical conclusion, requires the state to have no goals or ideals at all. Because "liberty upsets patterns" (Nozick 1974, p. 160), and the Government's sole job is to protect liberty, this means that the government has no right to consider what Nozick calls "end result principles" (Nozick 1970, p. 170). The State's only purpose is to protect the freedom of its citizens, and freedom, like the metaphysics of the Logical Positivists, is defined purely negatively. This means that government must be completely neutral as to the outcome of any actions by any member of society or even by itself. Physical force and the breaking of voluntary contracts are forbidden not because they interfere with the goals of government, but because they interfere with the freedom of individual citizens to pursue their own goals.

Just as Logical Positivism was the metaphysical position that said all metaphysics was nonsense, Nozick's Libertarianism says that the purpose of government is to have no purpose. Just as Logical Positivism thought it was superior to all other metaphysical positions because it enabled scientists and engineers to do their jobs without having to tangle with messy metaphysical conundrums, so Libertarianism thinks itself superior to other forms of government because it enables citizens to trade in the free market without messy governmental interference. One promises a metaphysics that is not really

a metaphysics, and the other promises a government that is not really a government. Both positions assume they are superior to their competitors because they define their position in exclusively negative terms, and thus both are guilty of the Tilde Fallacy.

However, as Colin Bird (1999) has pointed out, Libertarians do not actually treat freedom as something unconditional that can never be compromised to serve some government goal.

Suppose a wealthy self-owner wants to donate ... to the Lutheran Church ... but now suppose that the public agent taxes the wealthy self-owner in order to ... prevent a greater number of more serious violations of self-ownership in the future ... [In] this case, then, the public agent violates this self-owner's right to make the donation. ... Local violations are then justified when they would make it easier for everyone to live by the lights of their own consciences. (pp. 154-155)

In other words, Libertarianism, like all theories of government, posits an ideal society, and it must compromise the freedoms of its citizens to achieve that ideal society. The ideal society for the Libertarian is one in which people are free to exchange property and labor without fear of theft or swindle. In order to maintain that society, it is necessary to tax people to pay for an army, a police force, and a court system, which will inevitably compromise their freedom to spend their money elsewhere. Nozick's Libertarianism thus does presuppose an end result principle, which contradicts itself in much the same way that logical positivism contradicts itself. The Libertarian government must limit the rights of its citizens to defend the principle that rights must never be limited.

Unlike with Logical Positivism, the self-contradictoriness of this argument does not prove that Libertarianism is itself self-contradictory. The Libertarian still retains the option of admitting that she posits an ideal society, and then urges us to accept Libertarian policy as the best way of producing that ideal society. Libertarian literature contains many such panegyrics to the free market Eden that will arrive when the invisible hand is set free to bless us all. However, these panegyrics need additional support not required by Nozick's version of the Tilde Fallacy. These include 1) empirical arguments that prove that Libertarian policies will actually produce this kind of society, 2) ethical and/or aesthetic arguments that show why we should prefer the Libertarian ideal society even if it is produced by these policies, and 3) a recognition of the possibility that some non-Libertarian system might be better at fulfilling that ideal, and a willingness to embrace that other system if this turns out to be the case.

To clarify 3), let us suppose that the Libertarian ideal is a society in which all private property is safe from theft or swindle. Let us further suppose that the best way to protect property is to provide free education and good paying jobs for the unemployed *lumpenproletariat* that does most of the stealing. Anyone who sees the Libertarian ideal society only as a means to producing a society with free trade and safe property, rather than as an end in itself, would have to support these social programs if they come closer to fulfilling the Libertarian ideals. I think Nozick realized this, which is why he tried

to justify Libertarianism by claiming it had no social goals at all. This claim, however, was what led him into the contradictions of the Tilde Fallacy.¹

The Tilde Fallacy and Atheism

The Tilde Fallacy is probably the most popular defense of atheism, and my claim that it is fallacious will unquestionably be controversial. It is often argued that the atheist should start with some kind of home court advantage when confronting the theist in the Space of Reasons. The theist is claiming that something exists. The atheist is only claiming that something doesn't exist, and therefore her claim has negative content, and therefore no content at all. (It gives a stronger sense of necessity if you leave out that second "therefore".) The most popular atheist expression of this version of the Tilde Fallacy is Russell's teapot argument. We don't need reasons or evidence for disbelieving that there is a teapot rotating the earth that is always blocked by the moon. As Hermione Granger pointed out to Luna Lovegood (in the Harry Potter books), you don't need evidence against the existence of crumpled horn snorkacks to rationally disbelieve in them (Rowling 2007). The same is true for Bigfoot and the Loch Ness Monster. Why isn't this true of God? Isn't atheism the null hypothesis, and theism the positive hypothesis?

This argument appears compelling if you look at atheism and theism as each entirely captured and expressed by a single sentence. In that case you count up the entities posited by theism (world + God = 2), compare them to those posited by atheism (world = 1), and atheism wins the Occam's Razor derby with the lowest score. If we accept Russell's philosophy of logical atomism or the theory of language expressed in Wittgenstein's *Tractatus*, we could see every sentence as being completely independent of every other sentence in precisely this way. This would mean that Wittgenstein was right in claiming that "the world divides itself into facts. Anyone can be the case or not be the case and everything else remains the same" (Wittgenstein 1922, Para 1.2--1.21). This however, is another one of those logical positivist dogmas that has long since been

¹ Another way for Libertarians to escape the Tilde Fallacy is with Anarchist Libertarianism, which is not self-contradictory even though it is empirically delusional. Anarchist Libertarians say that because property rights are unconditionally inviolable, all taxation is theft, and therefore all government is morally indefensible. This position is consistent. Anyone who believes that government should have no purposes can get what they want by abolishing government, and a society with no government at all would not be vulnerable to the contradiction described above. This is one reason that Nozick felt compelled to devote almost half of *Anarchy, State, and Utopia* (1974) to defending his position against Anarchist Libertarianism. There is also no logical contradiction in a possible world in which government is unnecessary, such as a world where there is so much abundance that no one will starve or covet another's property, and/or a world in which property rights are so universally sacred that the poor will voluntarily starve rather than steal. That world, however, bears essentially no resemblance to our own, so there is really no point in bothering to refute Anarchist Libertarianism, despite the fact that there are a small number of people who actually defend it.

discredited, even by the people who originally proposed it. The rejection of this view of language is one of the main differences between early and later Wittgenstein, because it leads to undeniable absurdities.

Can anyone coherently assert that mountains exist, but that valleys don't? Or that aunts and uncles exist but that nieces and nephews don't? Or assert that nieces and nephews exist, but deny that people with children ever have siblings? If we are going to understand what any given sentence is actually asserting, we need to understand other sentences it necessarily implies. This total network of sentences is, as I said earlier, an ontological package deal. The network of sentences that gives meaning to the sentence "Bigfoot exists" is relatively small, which is why we can either remove or place Bigfoot in our possible universe and leave the rest of it relatively intact. Removing God from the Universe, however, has implications for almost everything else in it. This is why it is possible for writers like Richard Dawkins to write book after book articulating the numerous and important implications of God's non-existence. The arguments in these books are often original and thought provoking, and their conclusions might even be right. But their detailed thoroughness makes it impossible for Dawkins to claim that his position is ontologically simpler than theism.

The Blind Watchmaker (1986) is one of the most important theological tracts of our time, and Dawkins' denial that he is doing theology is based on the Tilde Fallacy. He is saying God doesn't exist, therefore his claim has negative content, and therefore no positive content. Nevertheless, Dawkins manages to evoke a very vivid and precise view of the nature of reality, even when using sentences heavily sprinkled with tildes. When he says, "Natural selection has no purpose in mind. It has no mind and no mind's eye. It does not plan for the future. It has no vision, no foresight, no sight at all" (1986, p. 5), his description creates a precise and memorable image in our mind, which is the positive content of his Atheist theology. To some of us, this may seem obvious, but for those who are still dazzled by Dawkins' tildes we can remove them and state his theology in the positive.

Here's a bit of metaphysics that I doubt my readers will question. There are two different kinds of entities in the world, conscious agents and mechanisms. We don't need a detailed definition of how they are different to recognize that they are different. The moral argument for vegetarianism uses this distinction to support the claim that no one should ever kill and eat a conscious being, as does anyone who understands this argument well enough to disagree with it. Dennett mentions that his brand of Darwinian atheism implies that we conscious agents possess "foresight: the realtime anticipatory power that Mother Nature wholly lacks" (Dennett 1990, p. 61). This is probably not all there is to being a conscious agent, but it is certainly an important part, and clearly implied in the ideas of many Darwinian atheists. With this distinction in mind, we can assert Dawkins' theology in the positive by saying, "The only conscious agents with foresight are medium sized biological creatures with very big brains. All other organized patterns, micro and macro, are mechanisms, not agents." There is no contradiction in this claim. It might even be true, and there are other arguments that support it (the

argument from evil, for example.) But Blind Watchmaker theology cannot claim a right to use Occam's razor because it is allegedly the null hypothesis. The fact that it has as much positive content as theism becomes clear once it is stated in the positive.

The Tilde Fallacy and Mortalism

Before I wrote this paper, I would refer to the following arguments as defending or attacking personal immortality, and did not name the position I was actually talking about and critiquing. The burden of proof is so widely assumed to be on the shoulders of the immortalist that we are forced to coin a new technical term – *mortalist* – for the position that rejects personal immortality. The assumption was that immortalism was a metaphysical and religious claim, but that mortalism was not a position at all. This shows how deeply this question has been obscured by the Tilde Fallacy. In fact, thanks to certain new developments in cognitive science and philosophy of mind, the Tilde Fallacy might be the only serious argument that the mortalist has left.

For many years, the most popular argument for mortalism was something like this: The mind is identical to the brain, the brain is a piece of meat that will eventually decay and pass out of existence; therefore, the mind will eventually decay and pass out of existence. If the first two premises were unambiguously true, the mortalist would have very strong biological evidence supporting her position. For many people, in fact, this argument still seems so unassailable that they assume it cannot be rejected unless we throw out all of modern science. Eugene Brody, after carefully analyzing the data in Stevenson (1966), concluded there was no actual evidence to discredit it, but also concluded that it would be more rational to accept unfounded speculations about alternative explanations, because "paranormal phenomena and the theory of reincarnation are intrinsically unacceptable – there is no way to make them compatible with the total accumulated body of scientific knowledge" (Brody 1979, p. 770). Stephen Hales (2001) makes a similar argument against Almader (1992), saying, "Reincarnation is not consistent with either our best empirical theories or with our best philosophical theories about the mind" (p. 338). Almader also cites both C.D. Broad and Paul Edwards as indicating this data should be rejected because it contradicts materialist metaphysics. Almader agrees, but grasps the opposite horn of the dilemma and says we should reject materialism.

Today, however, I argue that the orthodox scientific position is fully compatible with the existence of reincarnation. Modern Cognitive Science says that the mind is what the brain does, not the piece of meat that does it. The computer metaphor for mind, although somewhat problematic in certain respects, captures the fact that something like the hardware/software distinction accurately describes the relationship between mind and the matter that embodies it. Dennett (1991) refers to this "software" with the carefully ambiguous phrase, "...the organization of information that runs your body's control system" (p. 430). At that level of ambiguity, the consensus for this position is decisive. Roughly speaking, the mind is the software that runs on the brain/body's hardware, not the brain itself. But how soft is software, exactly? It is

obviously softer than tapioca pudding or cotton candy. Is it as soft as a ghost? Not quite, because there is a significant difference between this kind of materialism and hardcore dualism, and this difference is expressed by the technical term *supervenience*.

Supervenience requires mental software to always be embodied in some kind of physical hardware, unlike the disembodied spirits of dualism. Software possesses a kind of immortality because it can be uploaded and downloaded indefinitely, even after the first copy has long been destroyed. This is equally true of literary classics like *The Iliad*. Its first oral and written manifestations have been gone for millennia, and yet the books themselves are still very much with us. Philosophers describe this distinction by saying that the book is not identical with any individual volume, but only *supervenes* on that volume. Nevertheless the book does not endure eternally in Plato's heaven, according to this view. If all the physical volumes containing *The Iliad* were destroyed, the book would pass out of existence, as did most of the writings of Parmenides and Democritus.

Dennett (1991) argues that modern cognitive science grants conscious beings the possibility of the kind of immortality achieved by *The Iliad*. However, he also argues that Occam's razor requires us to assume that each human consciousness suffers the fate of Democritus' writings, rather than being immortalized as was *The Iliad*. Could this be an example of the Tilde Fallacy – the assumption that a negative claim is more parsimonious merely because it contains a tilde?

The question is more complicated in this case than in the three previous examples, but I think the answer is yes in two senses. First of all, the mortalist position is as speculative as the immortalist one, and consequently the mortalist, like the atheist, cannot win this debate using Occam's razor. Secondly, a good case can be made that the Tilde Fallacy as used by the mortalist is self-contradictory, and therefore necessarily false, although the contradiction is phenomenological, not logical. Phenomenological contradictions need to be treated with caution, for they are harder to bring to consensus than are logical contradictions. Dennett famously said that it is easy to confuse a failure of imagination for an insight into necessity. I would go further and claim that there is never any way of proving that phenomenological necessity is not mere failure of imagination. Nevertheless, the appearance of necessity is often all we have, and it seems rational to accept it at face value until someone dissolves it by expanding our imaginations.

Mortalism and “Extraordinary Claims”

Dennett says, "I don't believe that there is any reason to think that anybody yet has achieved the sort of immortality I allow for" (personal communication). This statement is strongly challenged by numerous historical books that offer such evidence (Almeder 1992, Braude 2003, Carter 2012, Stevenson 1966, Fontana 2004). These books look pretty convincing to me, as do the replies to attempted debunkings in Carter (2012). But I am a philosopher, not a historian, so I will limit myself to making a

philosophical point. Once we recognize that our current view of the nature of mind is fully compatible with the possibility of immortality, we can no longer dismiss the books cited above with Hume's argument against miracles, often paraphrased as, "Extraordinary claims require extraordinary proofs". Some of us believe that Hume's argument is perniciously fallacious and seriously interferes with scientific and historical objectivity (see Earman 2000). But those who still accept it must use it elsewhere, if they are permitted to use it at all. If the mind is software that supervenes on brains, rather than the brain itself, there is nothing miraculous about a mind supervening on some other physical substance after death, and then eventually downloading into some other body. This is arguably the most plausible explanation for the data in the above listed books (although I will show later that there are other explanations equally problematic for the mortalist.)

There are some other attempts to show that immortality contradicts known facts. Those arguments, when carefully scrutinized, often reveal themselves to be variations on the Tilde Fallacy. Consider the claim that reincarnation is impossible because there are so many more people now than there used to be. This argument is paraphrased and replied to in Carter (2012), but I have encountered it frequently elsewhere. Like Carter, I have several possible replies to this – perhaps more people from other planets are reincarnating on Earth, perhaps more mosquitos are reincarnating as people – which are usually met with derisive demands that I prove these claims. Those demands would be appropriate if I were claiming that these things actually happened, or if my opponents were claiming to have concrete evidence that Earth was the only planet with conscious beings on it. Then we could weigh the evidence for each of our claims and judge them on purely scientific terms. However, neither of us has any evidence for either claim, which is why we are talking only in terms of possibility, impossibility, and necessity.

The claim that reincarnation is factually impossible² can be refuted by showing that there are possible scenarios that permit reincarnation and are fully compatible with currently accepted scientific facts. The existence of life on other planets is fully compatible with our current state of knowledge (or ignorance) on this topic. Therefore, this argument's unstated but necessary premise is false. What is really going on in this argument is this: I am saying it is possible that there is life on other planets, and my opponent is implying that there must not be. Even if she doesn't explicitly assert or believe this, she must imply it, or her argument will not go through. A claim that X is possible is clearly weaker than a claim that X is impossible. This is especially obvious when both arguments are stated in the positive. If the evidence cannot resolve the question, it is surely more speculative to dogmatically assert that there cannot be life on

² Factual impossibility occupies the middle ground between logical impossibility and possibility. There are many things that are logically possible that are factually impossible. It is logically possible that the entire universe is made out of cream cheese, but no one has ever noticed. There are various facts about the universe in which we live that make this factually impossible. The main point of this section is that the "facts" about the mind/brain relationship, which allegedly made immortality factually impossible, have been revealed to be false.

other planets than to accept the possibility that there might be. But because my opponent's claim has a tilde in it, she reflexively assumes that my position needs further proof and hers doesn't.

What applies to this argument applies to mortalist arguments in general. Denying that there is life after death has tremendous implications for the rest of reality, and these implications have as much speculative content as the immortalist position. At this point I could add some sentences that followed the parallel structure of the previous three arguments and show why each side of this argument is implying and/or stating positive claims that are equally speculative. That project, however, would be hampered by the fact that those positive claims are rather muddled and confused – so much so that they seem to imply a much stronger argument. The libertarian and logical positivist versions of the Tilde Fallacy reveal that the positions they are defending are self-contradictory. The atheist version of this fallacy is not self-contradictory, only illegitimately employs Occam's razor. If I stop now, I could content myself with a parallel argument against the mortalist's use of Occam's razor. I think however that a case can be made that the mortalist position is as self-contradictory as Logical Positivism or Nozick's argument for libertarianism. When the mortalist does try to state her position in the positive, it is not at all clear that what she says even makes any sense. It might even be self-contradictory, in much the same way that Logical Positivism is self-contradictory. If this is the case, the mortalist position can be rejected for the same kinds of reasons that Logical Positivism was rejected, and some kind of immortalism would win by default. We may not know what does happen to us after death, but we can be essentially certain that we are not going to be reborn as four-sided triangles.

Mortalism and Phenomenological Necessity

If thoughtfully considered, the most common statements of the mortalist position reveal its incoherency. "When you're dead, you're dead." Like all tautologies, this is uninformative. We still haven't answered the question, "What happens when you're dead?" How about: "You lie very still, and eventually your body rots away"? But both the mortalist and the immortalist are in complete agreement about this. How can we express what it is that the two sides disagree about? This can be done only by referring to the first person perspective of the person who dies. That is the only question at issue here, and statements about biological decay are simply changing the subject. So are statements about radical changes in the abstract pattern of behavior we described above as "software". Both the immortalist and mortalist are providing answers to one question only: *What happens to me, from the first person perspective, when I die?*

The first person perspective always provides answers to questions of the form "What is it like to be X?" Consequently, the question that the mortalist and the immortalist are both attempting to answer is, "What is it like to be dead?", or, more precisely, "What is it like for *me* to be dead?" We all know what it is like for other people to be dead, if we have ever seen corpses and/or images of them. This is a different question. Every possible mortalist answer to that question is either an empty metaphor

or explicitly self-contradictory. You snuff out like a candle, cash in your chips, hand in your dinner pail. If you're there, then death isn't. (Great! That means I'm never going to die!) You wake up one morning and discover you are not there any more. All of the non-metaphorical formulations are as self-contradictory as "the ultimate metaphysical truth is that all metaphysics is nonsense" or "the purpose of government is to have no purpose". However, unlike the Logical Positivist and the Nozickian Libertarian, the mortalist's position is not *logically* self-contradictory but *phenomenologically* self-contradictory. The inherent contradiction of mortalism does not emerge from the syntax of the proposition that states it, but from fundamental structures in subjective experience.

I am leery of any claims of necessary structures in consciousness, and am open to any thought experiments that might reveal that any so-called impossibilities are possible after all. Nevertheless, there are certain claims about human experience that I believe are presupposed by both sides of this debate, and we must not doubt in our philosophy what we do not doubt in our hearts. Phenomenological necessities are few and far between, but there are some that are undeniable. There are no visible shapes without color², and no colors without shapes. Anyone who speaks of such things is talking nonsense. I argue that the mortalist position is revealed to be similarly self-contradictory, once we acknowledge that it must refer to my awareness of "what things are like for me". My knowledge that all Homo sapiens are mortal, and that I am a Homo sapien, gives me good reason to believe that I will eventually die, in the sense that eventually my body will stop moving, then gradually decay. But it tells me nothing about what it will be like for me to die, or what it will be like to be dead.

The mortalist claims that being dead won't be like anything at all, but we have no way of making sense of that claim. We may not know what it is like to visit Paris or to taste haggis. If somebody tells us that the taste of haggis is indescribable, and the only way to know it is actually experience it, we can make sense out of that claim. But if someone tells us that it isn't like anything at all to taste haggis, we would say that they are talking nonsense. And yet that is exactly the sort of nonsense that the mortalist is trying to pass off as down-to-earth scientific fact. The mortalist may reply that death is completely different from anything else that ever happens to us, so these analogies are not valid. But if this is the case, the burden of proof is on the mortalist to explain how it is different, and this is a burden she has not taken up. Within the phenomenological range in which we currently dwell, what the mortalist is saying makes no sense, and thus we must reject it until it is made more coherent. To accept mortalism in its present form would be like believing that we reincarnate as four-sided triangles. The contradiction inherent in mortalism is visible once we acknowledge the following premises:

³ I add the qualifier "visible" because a student pointed out to me that we can imagine shapes without color if we imagine them kinesthetically. Thus what once seemed to me to be a necessary truth turned out not to be necessary after all, until I limited it to visible shapes. A vivid example that illustrates the fragile nature of what we must take to be necessity.

- 1) The debate between the mortalist and the immortalist must concern death as experienced from the first person perspective. Anything else is changing the subject.
- 2) The first person perspective always provides answers to questions of the form, "What is it like to be X?"
- 3) The mortalist answers to the question "what is it like to be dead?" either change the subject or are self-contradictory. Therefore,
- 4) the mortalist position on death either changes the subject or is self-contradictory.

Those who have problems with this conclusion need to falsify at least one of these premises. They seem undeniable to me.

The Reductionist Defense of Mortalism

One possible mortalist strategy I will call *reductionism*. The reductionist in this context claims that the self is nothing but the sum total of its experiences, and thus there is no such thing as a subjectivity that is distinct from the experienced world. David Hume was the first to make this assertion, claiming that introspection reveals the contents of consciousness, but not a subject that experiences those contents. Hume's justification for his claim is thus, like mine, based on phenomenology. When two phenomenologists disagree, they are often reduced to asserting that "my intuitions can beat up your intuitions". Dennett (1991) avoids this cul-de-sac by relying not on phenomenology but on contemporary neuroscience and cognitive psychology. He claims that these new scientific developments support what he calls a *multiple drafts theory of consciousness* that, like Hume's theory, suggests that we should deny the existence of a "central meander". For Dennett, the subjective self is a verbal construct, not a privately experienced reality. This is what Dennett calls *first person operationalism*: my self is what I say it is when I tell the story of myself to myself. If he is right about this, doesn't this mean that there is no such thing as a distinct self, and therefore no first person perspective and no "what-it-is-like-to-be"-ness? This is the strongest argument against my position, but ultimately I do not think it can prevail. When all of its implications are followed to their logical conclusions, the result is a rat's nest of absurdities that could be summed up with the following question: if the central meander doesn't really exist, how can it die?

The "middle way" Buddhist philosophy of Nagarjuna has a theory of self very similar to Dennett's and Hume's (Varela Thompson, & Rosch 1992), but this school of Buddhism saw this fact about the self as support for the existence of reincarnation, not mortalism. Buddhism recognizes that the empirical self – the self to which we are so attached and in which we take such pride – is nothing but an aggregate of contingently clustered traits and qualities. The deep recognition of this fact is what enables the Buddhist practitioner to maintain the state of equanimity that liberates the practitioner from suffering. However, if our consciousness is nothing more than an aggregate of experiences, wouldn't this imply that when that aggregate disintegrates into its parts,

consciousness would disappear as that aggregate disappears? Buddhism does not accept that conclusion. Instead, it asserts that there is a consciousness which is distinct from the aggregate of experiences we call the self. Consciousness is a kind of emptiness, but it is also accompanied by the qualities of clarity and unimpededness, which can be most clearly seen when we are not distracted by the numerous qualities and character traits we ordinarily call the self. The mortalist will dismiss this as speculative mystical nonsense, but her alternative has serious problems of its own.

If we are nothing above and beyond our various experiences and character traits, then each of us died sometime during our first decade. This is equally true whether we consider the outdated idea that we are nothing more than the meat we are made of, or the more sophisticated claim that we are the pattern that supervenes on that meat. As we pointed out earlier, software can endure *in principle* forever by being replicated in a variety of hardwares. We, however, have the ability to endure even when our software becomes completely unlike our earlier software. It is not just that all of the molecules of the four-year-old boy I once was have now been completely replaced. The formal structures that determined the size, shape and temperament of that boy have now vanished as decisively as have his molecules. And yet here I am, in some strange sense the same person now that I was then. How am I able to pull this off if I am nothing but a pattern supervening on some material stuff, and both the original pattern and the original stuff have passed out of existence?

The immortalist claims that when our current body is destroyed our consciousness continues on somewhere else. The mortalist claims that the self is nothing but the form and matter of our current physical body – and yet somehow our consciousness endures even when the matter and form have been transformed into something completely different. The mortalist position as it stands is thus self-contradictory, unless we deny the universally accepted proposition that I am the same person that I was when I was five years old. If the mortalist bites the bullet on this, and concedes that I am not same person as that five year old, the immortalist wins even more decisively. The mortalist is in effect conceding that I have already died, and still managed to carry on. That may not be immortality by some definition or other, but it's good enough for me.

Mortalism and Reincarnation

These problems come into sharpest focus when we consider the type of immortalism known as reincarnation. In the western Abrahamic traditions, immortalism usually is bundled with the claim that there is a separate place or places where the conscious self continues to have experiences after the destruction of the body (Heaven, Hell, Purgatory, etc.). That is a much harder position to defend because of Occam's razor issues. Belief in Heaven, etc. requires both a belief in the endurance of the soul and an unseen place where the soul endures. Reincarnation only claims that the soul returns "here" in some sense, and we already know that "here" exists because here we are. This argument for the reincarnation alternative is decisive as far as I am concerned, although it is wise to be tolerant of other conclusions when our ignorance on this subject

is so vast. Accepting reincarnation, however, brings with it a variety of implications that cannot be ignored. The Abrahamic immortalist does not have to deal with hard questions about the nature of the self that survives. At least in the popular versions, I remain essentially the same person in life and death, with a few moral purifications to bring out my best qualities more vividly. On the other hand, it's an empirical fact that most of us have no memory of previous incarnations. Consequently, if immortality is produced by reincarnation, it does not require any formal or material components from our previous lives. In the yogic traditions that accept reincarnation, we do not reunite with our long dead friends and relatives in a celestial home. There are some tales in those traditions about people who reincarnate repeatedly in interlocking relationships, sometimes reversing roles such as master and servant, or pet and owner, or parent and child. But the sentient beings in these relationships have no awareness of their identities in previous lifetimes, and the various personalities of each reincarnation are radically different from each other.

This creates problems for the possibility of verifying any possible case of reincarnation. It is obviously impossible to prove that currently living X is a reincarnation of deceased Y, if X has no memories whatsoever of having been Y. Indeed from the third person point of view, the idea makes no sense at all. How can something be the same as something else if the two items share no characteristics? It's rather like the Catholic Idea of the Eucharist, in which bread and wine is the body of Christ, without having any of the characteristics of the body of Christ – an idea which most Catholic theologians recognize as a self-contradictory paradox that can only be believed on faith. Actually, this rhetorical question underestimates the problem. Reincarnation doesn't just imply that two individuals are in the same category. It implies that these two individuals are the same individual, even though they have nothing in common. Although this idea makes no sense from a third person point of view, it is easily imaginable from the first person point of view. Imagine you are given a choice of either 1) having your memories and personality completely removed and replaced or 2) being completely annihilated. Both alternatives would be disastrous, but we have no trouble realizing that they are different. This is partly illustrated by the fact that most people would choose 1) over 2), but more strongly illustrated by the fact that even if someone chooses 2) or is indifferent to either, it is still phenomenologically obvious that these are two different choices. Perhaps you want to argue that this is a pseudo-problem, and neither of these alternatives are acceptable? This may be true, but this won't help the mortalist. She is irreparably committed to alternative 2) in this debate, just as the reincarnationist is committed to alternative 1). Throw out this debate, and mortalism goes with it.

Once we accept the inevitability of these problems, it seems that the only possible proof for reincarnation would come from those anomalous souls who allegedly remember their past lives. Unfortunately, serious philosophical problems arise from the fact that there are always alternative explanations for any empirical data based on these alleged memories. Robert Almeder (1992) proposes a criterion for proof of reincarnation paraphrased from A. J. Ayer: "It would be sufficient for the truth of the belief that the man beside you is Julius Caesar reincarnated if that man had all the memories that one

would ordinarily expect of Julius Caesar, and if he had some verified memories that appealed to facts that were not in any way items of public information" (p. 60). Nevertheless, Almeder also quotes Stephen Braude (2003) and others, who propose a variety of counter-explanations to cases of this sort. Even if we can prove that our subject's knowledge of Julius Caesar's life could not have been acquired by the usual means, how can we be sure that the subject didn't acquire that knowledge through ESP? Just because she knows a lot about Julius Caesar's life doesn't mean she actually lived it, and this is true no matter how much she knows. Braude acknowledges that ESP, as we currently know it, could not deliver the detailed acquisition of skills and personality traits so often described in the literature. He says, however, that there is no reason to deny the existence of what he calls super ESP, a power that goes far beyond what has been documented in the PSI laboratory. The evidence that allegedly supports reincarnation could also be used to support claims of something like exorcist-style *possession*. In other words, a person who claims a new identity and is manifesting new skills and personality traits and knowledge could just as easily have been taken over by a completely different person, rather than revealed to have been a different person in the past.

I must ask my readers who are equally repulsed by all of these explanations to bracket their repugnance and just consider this as a thought experiment. My point is that even if all of these alternatives deserved to be taken seriously, it would still be impossible to distinguish between them in any individual case. The problem is this: The fact that *someone has extensive knowledge of a person's life can never prove that she has actually lived that life. Knowing something (or even everything) about a person does not make you that person.* This is not just the problem of Mary the Color Blind Neuroscientist. Even if we accept Dennett's (1991) conclusion that knowing all the neuroscientific facts about a color is the same as experiencing that color, we cannot apply this conclusion to the reincarnation problem. In most of the cases discussed by Almeder (1992) and Carter (2012), the subjects remember both propositional facts and experience. The problem is that it is impossible to tell the difference between experiences that are actual memories of having been there and experiences that are imaginative fabrications, even if those fabrications are crammed with true facts. That's because, once we strip away the memories and personalities of the person having the experience, it becomes clear that "being there" is nothing more and nothing less than the first person perspective.

Almeder and Carter both try to draw the line clearly amongst the alternatives of reincarnation, memory and possession – and indeed there are clusters of behaviors that make certain cases somewhat more amenable to one description rather than another. But it seems necessarily true that any possible set of facts that could be explained by reincarnation could also be explained by either super ESP or possession, if one were more inclined towards either of those alternatives. This has two very important implications. 1) It is not just difficult, but impossible, to use scientific methods to decisively decide between these explanations. 2) Therefore, science can neither prove nor disprove the existence of reincarnation. Here, of course, is where the Tilde Fallacy

usually rears its head. If we cannot scientifically prove that something exists, doesn't Occam's razor require us to assume that it doesn't? No, because negative claims still need some kind of evidence to back them up. Bigfoot and the Loch Ness Monster have partial evidence against them, based on the fact that many people have diligently looked for them and not found them. There is no such evidence against life in other galaxies, because we don't have resources that could search for them. However, it is still possible that life from other galaxies might show up in good Hollywood fashion, and that hope, slim though it may be, is not an option for reincarnation research. Evidence for or against reincarnation is not just non-existent. It is impossible, as far as we can tell, to find evidence one way or the other because of the presuppositions of our research methods. Science cannot be said to have answered a question that it has never asked.

Who am I?

What are the presuppositions that hamstring the study of reincarnation so inexorably? I think it has to do with the fact that subjective experience is necessarily linked to our experience of ourselves as particulars, and there can be no such thing as a science of particulars. Subjective experience is what gives us our awareness of this-here-now, and there can be no such thing as a science of this-here-now. It was Kant's awareness of this fact that made him write an entire critique on the problem of judgment – applying a rule to a case – and the depth of this problem is why so much of *The Critique of Judgment* is evocative handwaving. It is not possible to scientifically prove or disprove that I will survive after death, any more than there can be a science of this table. Those aspects of me that are abstract are the only aspects that are scientifically comprehensible, and they are not me, because my being, as Heidegger rightly pointed out, is in each case mine.

Although the mind-as-software theory is a great improvement over the mind-as-two-pounds-of-meat-between-the-ears theory, it still has some serious problems. The mind is paradoxically both abstract and concrete, universal and particular. It's true that the self has no necessary connection to the particular stuff on which it supervenes. However, the mind-as-software theory cannot account for the fact that the mind also has no necessary connection to its abstract qualities. It's not just that the self can remain the same even when all its abstract qualities change, as when a child becomes an adult. These problems with the reincarnation data show that it's also possible to have all the abstract qualities of a particular self and not have that self present. Furthermore, we don't have to consider the data on reincarnation to see this problem. Although Hofstadter and Dennett have created a renowned version of the mind-as-software theory, their classic anthology *The Minds I* (1981) contains two compelling counterexamples to that theory.

1) Stanislaw Lem tells a story of a man who wishes to live happily-ever-after with a tiny princess who lives inside a box. A helpful wizard starts with the assumption that the man's mind is nothing but the abstract patterns of his mind and then duplicates those abstract patterns in a tiny copy of the man. The tiny copy of the man embraces

the princess and strolls off with her towards the tiny sunset. When the man protests that he is not in the box, because he is here observing, not there, the wizard offers to solve that problem by killing him with a large hammer. (In Hofstadter & Dennett 1981, pp. 96-98).

2) Dennett offers an alternative explanation for the teleporter beams that appear in science fiction stories. The usual assumption is that "the teleporter will swiftly and painlessly dismantle your body, producing a molecule-by-molecule blueprint to be beamed to earth, where the receiver, its reservoirs well-stocked with the requisite atoms, will almost instantaneously produce from the beamed instructions – you!" (Ibid., p. 3). But is there any reason to doubt the possibility that the machine is not actually a teleporter, but rather what Dennett calls a "murdering twin maker"? From a purely physical point of view, what the machine is doing is destroying your body and then making an exact copy of it somewhere else. Because this copy has all of your memories and emotions, this distinction makes no difference to the organism that emerges from this device. But it makes a tremendous difference to the organism that enters the device. If you think this difference is trivial semantics, consider the following variation. Suppose that the teleporter only travels from one side of a room to the other, and instead of vaporizing the body immediately, you get to stare at your new clone for a few seconds? Would you be willing to be killed with the hammer in the previous example, secure in the knowledge that you will survive because your abstract form has been preserved? According to the terms of the thought experiment, no one else but you can ever know whether you survived or were merely murdered and duplicated. And yet anyone who refuses to be killed by that hammer is acknowledging that this difference is real, even though it is completely subjective.

There is no logical contradiction in claiming that you are the person "over there", and consequently you are willing to have the self "over here" killed with the hammer. If there is anyone out there who answers affirmatively to that question, I have nothing to say to them. For the rest of us, however, I think these examples show phenomenologically that my personal identity is not constituted by my abstract form. I think the most effective way to resolve this phenomenological paradox is to say that there is an aspect of my being which is completely concrete that cannot be identified with any abstraction, and therefore always escapes the universal laws that are the tools of science and other forms of knowledge. That is why there can be no first person science that completely closes the explanatory gap separating it from its subject matter. We can of course talk and write about concepts that deal with what I call the third-person-first-person. That's part of what I am doing in this essay. But the first person perspective cannot be reduced without remainder to those concepts.

These diversions into philosophy of mind and ontology are not really diversions, because without them it is impossible to uncover the phenomenological structures that reveal the mortalist position to be self-contradictory. If the first person perspective is reducible to an abstract pattern, there is no need to ask the question, "What is it like to be dead?" However, if it is not so reducible, then we must ask that question. We can

then see that the mortalist answer to it makes no sense. If we don't ask that question, we can only talk about death in general, which changes the subject away from metaphysics to biology and/or psychology. That is the heart of the argument in this section: that when we ask "what happens to me when I die?" that question is not answered by saying some abstract pattern identified with you either lives on or is destroyed. People are often not aware of this. That is why they sometimes say things like, "Beethoven lives on in his music." This is a charming metaphor, but we should not permit it to muddy up the discussion of this very different topic. Many of us would love to have our creations remembered long after we have died, even if the mortalists are right about what happens when we die. But that is not the same thing as actually remaining alive and/or conscious. As the Monty Pythons pointed out in their song, "Decomposing Composers," the fact that you can still hear Beethoven does not imply that Beethoven can hear you. The fact that the mind-as-software theory implies something like this could be seen as making this idea into a *reductio ad absurdum*.

Hofstadter Bites the Bullet on Immortality

Hofstadter recognizes that he must take this metaphor of "Beethoven lives on in his music" as a literal truth because it is necessarily implied by his mind-as-software theory. In *I am a Strange Loop* (2007) he bites the bullet on this issue with heroic consistency and embraces a variety of counterintuitive conclusions. These conclusions, however, are as critical of mortalism as are my arguments, despite the fact that they deny one of my essential premises. My argument is that the irreducibility of the first person perspective requires us to conclude that mortalism is self-contradictory. Hofstadter says that there is no first-person perspective that is distinct from the content and character of my personality. However, he also points out that this content and character endures after the person dies, often taking root in the minds and behaviors of other people that live on. Consequently, if I am nothing but my thoughts and behavior patterns, and my thoughts and behavior patterns survive my biological death, then I survive my biological death. Hofstadter seems to almost say, contra the Pythons, that Beethoven literally lives on in his music! Usually, however, he limits this claim to a kind of abstract pattern with a distinctive self-referential structure that he calls a strange loop (hence the title of the book). This structure has a peculiar kind of complexity that Hofstadter spends most of the book describing, and Hofstadter thinks that this kind of structure is all that there is to the first-person perspective. In other words, he does not accept my claim that there is something irreducibly *particular* about the first-person perspective that cannot be reduced to any abstract principle.

Hofstadter admits that when strange loops are transferred from brain to brain, the resulting copy is usually very "grainy" and inaccurate. A strange loop is a very complicated structure that doesn't transfer from one brain to another as easily as a Beethoven symphony. Sometimes, however, two or more people can be in such close synchrony that they see the world from essentially the same perspective. In that case, they become a "we" instead of a cluster of "I"s. When one of the persons in this kind of group dies, Hofstadter claims it is literally true that the deceased continues to think and

live, using the brains of the survivors who continue to see the world from her point of view, and thus continue to participate in her strange loop.

It would probably be more accurate to describe the result of this process as survival rather than immortality. It offers us no guarantee that survival will go on forever. If the mind is nothing but software, there is no contradiction in the possibility of software having nothing to supervene on, and thus passing out of existence. It is only when you accept my claim of the irreducibility of the first-person perspective that the mortalist position becomes self-contradictory. I think Hofstadter needs to pay more attention to the implications of the examples of the tiny princess and the murdering twin maker, and to the factors that make it impossible in principle to either prove or disprove the existence of reincarnation. I think that these factors require us to accept an immortalist position, not just a survivalist position. Nevertheless, Hofstadter and I are in agreement that the mortalist position is not the only one acceptable to a rational person in touch with the latest scientific facts. The fact that mortalism has managed to maintain this reputation, while doing essentially nothing to earn it, is one more example of the seductive strength of the Tilde Fallacy.

Furthermore, as far as I can see, our two positions provide a dilemma from which the mortalist cannot escape. If the mortalist is unpersuaded by my phenomenological arguments, she will have to agree with Hofstadter that the self is nothing more than the abstract behavior that I have metaphorically called mental software. Because these abstract patterns survive our bodily death, this would imply that our selves survive bodily death. This survival would perhaps not be technically the same thing as eternal life, because these patterns do pass out of existence eventually (at least this appears to be true of the ones of which we are aware). But because we have gone through this particular extinction process several times since childhood, it doesn't appear that death has the sting we originally attributed to it (in so far as what we thought about it made any sense at all). In other words: Either 1) the first person perspective is genuinely irreducible, in which case it makes no sense to say we could wake up one morning and discover we are not here any more, or 2) The first person perspective has no separate existence of its own, in which case each of us has already died many times.

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Research Essay

Death, Consciousness, and Phenomenology

Steven Bindeman*

Introduction

In philosophy, the way a problem is framed has a lot to do with what questions are asked about it and how these questions are resolved. The study of the mental framing of the way things exist in the world, the questioning of the nature of their being, is called ontology. The ontology of consciousness, therefore, is the examination of the “being” of consciousness, the way it exists in the world. In this paper I will examine how contrasting ontologies of consciousness determine in significantly different ways how the human relationship with death is to be addressed. Thus, when the materialist view of consciousness is compared with the phenomenological perspective, we will find ourselves comparing a predominantly medical model which essentially views the human body in terms of its consisting of replaceable or fixable parts, with an experiential model which emphasizes the experiential quality of human life over its objective quantifiable aspects.

The gist of this paper will be my exploration of the kinds of issues that emerge when existentially-grounded phenomenologists confront the issue of death. After briefly examining the materialist perspective on consciousness, we will concentrate our attention on how the recognition of different levels of consciousness can show us how we can relate to death in different ways. We will proceed from examining the impossibility of the death of the self, to the possibility of transcendence through experiencing the death of the other. We will turn to Merleau-Ponty’s concept of bodily knowledge for help with the matter of how consciousness constitutes the world around itself and enables the possibility of transcendence. We will also examine passages from Nietzsche’s philosophy (with guidance from Heidegger and Blanchot) that cover the transition from viewing time as linear to viewing time as circular, and the transition from understanding our place in the universe in a passive, accepting way which leads inexorably to nihilism, to the possibility of making a decision to relate to our

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situation in a more dynamic and creative way, by directing our will to the ecstatic experience of the eternal return.

The materialist perspective on consciousness

For an example of the materialist perspective on consciousness, we discover how David Chalmers (1995) frames his examination of the ontology of consciousness in terms of what he calls the easy and the hard problems of consciousness. The comparatively easy problems concerning consciousness, he says, are those that represent some ability of consciousness, like its performance of some function or behavior. They include, among other things, “the ability to discriminate, categorize, or react to environmental stimuli, the integration of information by a cognitive system, the ability of this system to access its internal states and to focus its attention, etc.” (p. 200). While it is obvious even from the materialist point of view that some organisms (like human beings for example) are subjects of experience and not mere objects, the question of how they come to be this way remains unresolved. If experience arises from a physical basis, why and how should physical processing give rise to such a rich inner life at all? “The really hard problem of consciousness, then,” says Chalmers, “is the problem of experience” (p. 201). But how can we get from “the whirl of information processing” (p. 201) to the actuality of rich, subjective, conscious experience? Chalmers’s way of framing the ontology of human consciousness, then, presents an *explanatory gap*, similar to Levine’s (1983) use of the term to refer to the separation between materialism and qualia. Thus, if we begin with the materialist assumption that what is primary is the empirically measurable external world of scientific investigation, then the existence of the internal world of conscious awareness becomes problematic.

The materialist view of Chalmers and his associates also leads to the ongoing and extensive examination of the possibility of human immortality. However, while life extension might be an achievable goal in the near future from improvements in medical knowledge about the mechanisms of various diseases, ultimately the problem of aging would still need to be resolved as well. Alternatively, advances in AI research could lead to the possibility of mind uploading, in which the transference of brain states from a human brain to another medium would occur, providing immortality to the computational processing of the original brain. Such is the belief of the futurist Ray Kurzweil (2005), who names *the singularity* as the moment in the future when artificial brains reach full consciousness.

Technological advances in a broad variety of fields, like nanotechnology, genetics, biological engineering, regenerative medicine and microbiology could easily provide the basis for extending the span of human lives, which are already longer than ever before due to better nutrition, greater availability of health care, higher standards of living throughout the world, and advances in bio-medical research. An important aspect of current scientific thinking about immortality is that some combination of human cloning, cryonics or nanotechnology will play an essential role in its realization as well. Some scientists believe that gene-therapies and nanotechnology will eventually make the human body effectively self-sustaining. This supports the theory that we will be able to continually create biological or synthetic replacement parts to replace damaged or dying ones. From this point of view, we are merely biological machines in need only of periodic maintenance. Future advances in nano-medicine could also give rise to life extension through the repair of the many processes believed to be responsible for aging. For humans to be able to survive death completely its three main causes – namely aging, disease, and physical trauma – would all have to be resolved. Even then, the environment would have to continue to provide nourishment, for without this we would still die. (See “Immortality,” Wikipedia.) Nevertheless, whether all consciousness dies along with the body remains an open question.

The constellation of these issues revolves around what has been called the medical model for scientific research. First identified by the humanist psychologist R. D. Laing (1972), the medical model focuses on the physical and biological aspects of specific diseases and conditions. The human body is characterized as a kind of sophisticated living machine whose symptoms can be traced back to biophysical causes that in turn can be repaired with replaceable parts, surgery, or biochemical procedures. This is the materialist view of the human body and human disease that dominates the medical establishment today, especially but not exclusively in the developed world. In large part, though, the subjective experience of the individual patient is marginalized throughout this orientation.

The phenomenological approach to consciousness

Conversely, Husserl with his phenomenological approach to experiential reality argued that empirical science simply isn't rigorous enough to account for such a phenomenon as consciousness. Empirical science in his view misses the central defining essence of consciousness because the physical model of the world cannot provide a direct description of lived experience. However, the dualist

model that is behind empirical science has dominated our thinking for over 400 years. Positivist philosophers have put forth a rigorous physicalist point of view, which, as a form of materialist monism, views the mind as a mere side effect (see, e.g., Neurath, 1931; Carnap, 1933). By practicing Husserl's phenomenological epoché, though, a procedure which requires that we bracket out all such knowledge and limit ourselves to investigating the world only in terms of how it is given to us through our direct experience of it, we can stop putting into play these preconceived ideas about the nature of reality, and this will provide a result which he calls the phenomenological reduction, whereby the basic phenomena of consciousness are identified.

Heidegger (1982) described Husserl's phenomenological reduction as

the method of leading phenomenological vision from the natural attitude of the human being whose life is involved in the world of things and persons back to the transcendental life of consciousness and its noetic-noematic experiences, in which objects are constituted as correlates of consciousness. (p. 21)

Furthermore, according to Husserl our direct experience of the world is a temporal process, involving the ongoing correlation between the passive acquisition of noematic experience (the object as such, as it appears to consciousness) along with the active interpretation of this information through the noesis (conscious acts directed at the unfolding meaning of the object, as it undergoes changes over time). Consciousness for Husserl (e.g., 1982, pp. 59-62) is an ongoing relationship between individuals and the world they inhabit. Thus, even though the phenomenal objects of consciousness are named, they avoid being mere objects because they are situated within the temporal framework of the intentional consciousness.

The existentialist approach to death

The phenomenological perspective on the nature of human consciousness has created a more existentialist approach toward the human experience and its place in medical practice than has the materialist approach. *Existentialism* was made famous through Jean-Paul Sartre's (e.g., 1956) use of the term to mean that, in the case of human experience, "Existence precedes essence." He had encountered this theme through his reading of Martin Heidegger's work *Being and Time* (1962), in which Heidegger coined the term "thrownness" in order to refer to the idea that Dasein (by which he meant human situatedness) is "thrown"

into a world. Dasein, then, is not a mere object but a state of mind; Dasein is also always in a “mood,” and a central theme of this orientation is that Dasein’s life-long project is to discover which of its moods are the most authentic, and then learn how to *attune* itself to them. However, an important part of our everyday situatedness, or what Heidegger calls our “being-in-the world,” is our constant state of anxiety. The source of this anxiety, he asserts, is our having allowed our “they-self” (society, the crowd, the medical establishment) to define who we are, and what we should strive to be. It is this “they-self” that introduces the *enframing* implications of the materialist worldview, with which Heidegger refers to the mindset of the human drive for a precise, controllable knowledge of the natural world, where things exist and come into existence only insofar as they can be measured. We feel anxious, in Heidegger’s view, due to the inauthenticity of this self-orientation. We also feel anxious due to our feeling connected to the world, because we care about things. Our situatedness, which exists in consequence of our having been rooted in a past and placed into a present that faces a future, comes to the center of our being. We discover this feeling of connectedness when we are led to confront the necessity of our own death, a state of mind that Heidegger calls “being-unto-death.” In contrast, the medical model’s approach to death and dying can be shown to lead to feelings of increased anxiety for its patients, in part due to its comparative negligence of these psychological and philosophical components.

From this existentialist perspective, how we come to view the ultimate meaning of our own death becomes of central importance. When we turn in this direction, the more quantifiable and measurable aspects of our physical condition, such as the possibility of the extension of our consciousness into the indefinite future, fade into the background. We turn then to the existentialist viewpoint on the ultimate meaning of death, in order to discover how existential narratives regarding the meaning of death exhibit the potential to contribute to the mental stability of individuals in ways that are in stark contrast to the kinds of solutions introduced by the medical model. The question we want to keep in mind with regards to any of these narratives concerning the meaning of human death is not, “Is it true?” but, “What does it reveal about ourselves?” In this way, the meaning of our death ceases to be a mere incontrovertible fact, and becomes instead a matter of existential choice.

Accordingly we discover how Kierkegaard (1992, 2009) placed emphasis on personal faith over the various options for certainty with which he was aware. In response to the typical 19th century Danish Christian’s quest for personal immortality or for an assurance of survival of the self after death, Kierkegaard

responded that there is no absolute proof but only the consequences of the option we choose to accept. Death in itself explains nothing, Kierkegaard insisted, since on a physical level everything, including individuals as well as the human race as a whole, passes away. Kierkegaard pointed to the example of Socrates as someone, like himself, who refused to dabble in speculation about life after death but still kept the question open. Through such learned, ironic ignorance — Socrates claimed ignorance of many things, but because he knew this about himself he was widely known as the wisest of all Athenians — Socrates philosophized in the direction of truth. In so doing, he turned away from the values sanctioned by the State, which claimed to guarantee happiness in this life if only one acted obediently and in accordance with the demands of civic morality. Socrates, though, by making his individualist subjectivity a universal starting point for philosophy, freed himself from the demands of such civic dictates (see Kierkegaard, 1992, p. 49).

When Kierkegaard (2009) identified three stages in life (the aesthetic, the ethical, and the religious), he discovered that a confrontation with nothingness forces the individual to take a stand and make a choice, between the despair that leads actively to suicide or passively to madness, or to a leap of faith. These leaps were either out of the aesthetic way of life into the ethical sphere, or out of the ethical way of life into the religious. Both ways of life for Kierkegaard lead inexorably to suffering, and both require an irrational choice in order to overcome it. Since both the aesthetic and the ethical ways of life lead to despair and suffering, it would seem for Kierkegaard that the common human condition is relegated to negativity, since only the courageous few, the single *ones*, have the will to overcome and throw off their former selves. In a sense, only they will have learned how to confront their own death — and then learn how to overcome it.

The death of the self and the death of the other

There is also the possibility that death is “totally other” — a mystery that cannot be solved by rejecting or accepting it or by hating or desiring it. As the Franco-Russian philosopher Vladimir Jankélévitch says in *La Mort* (1977), in death there are no elements to affirm or negate anything, rational or irrational, spiritualistic or materialistic, immanent or transcendent. Death drives us to a condition of complete theoretical uncertainty, a constant oscillation that cannot fix on a determinate thesis, since nobody has returned from the *other shore* to explain how it is. We do justice to death only if we recognize this fundamental inability of ours to discover its essential nature. Neither sense (scientism, spiritualism), nor non-sense (nihilism, absurdism) can lighten such a darkness. We face death correctly only when we realize that death is truly enigmatic and impenetrable (cf. Cestari, 2016).

Since Jankélévitch’s thought is strongly dependent on the perspective of the first person speaking subject, its temporal dimension too is analyzed from the standpoint of the *I*. For Jankélévitch, then, the three temporal dimensions of death are equally unknowable. Future death is the non-sense of sense or the non-being of being; the mortal instant is an “outside-category” since the moment only exists outside of the flow of time; and past death is absolutely nothing to me since once I am dead I will no longer remember anything. Subjectively the *I* can only experience defeat in the face of death (Jankélévitch 1977; Cestari, 2016). Even though Jankélévitch grounds his argument concerning the unknowability of death from the particular perspective of the experiencing subject, this experience is severely limited since the subject experiences death only as a true impossibility, due to its realization that death and consciousness are radically incompatible. This is so because knowledge is possible only when the subject clearly knows the object of cognition.

Even outside the point of view of the experiencing subject, though, there are insurmountable problems with regards to understanding the nature of death since my knowledge of another person’s experience of anything must remain hypothetical, so that person’s death must be unknowable as well. Thus death in itself cannot be known by anyone. Death in the first person remains a paradoxical object of thought whose sense is completely impossible to find, since I am and always will be completely ignorant about it. Nothing can be said about my death, since my death points to the unspeakable silence of the complete nothing, the total lack of any relations. Here, sense is completely obstructed and affirming or negating it is impossible (Jankélévitch, pp. 67-91; Cestari, p. 24).

Death in the first person remains an objective limit to my efforts to understand it. Death in the third person is equally problematic, though, since it is little more than an abstract concept, a kind of indeterminate category, and it is meaningful only in a very generic sense since it explains death according to rational, scientific, religious, mythical, or social explanations, and only these kinds of answers can derive from such an impersonal framing of death.

If death is knowable only as an empty concept, and my death cannot be known in any case, perhaps there exists an intermediate death that can be experienced. This is *your* death, the death of people whom we personally know and love, death in the second person. “Between the anonymity of the third person and the tragic subjectivity of the first person [...], between the death of the other, which is far away and indifferent, and one’s own death, that touches our own being, there is the nearness of the near” (Jankélévitch as cited in Cestari, 2016, p. 20). While your death may seem almost as painful as my death, it is not my death. Still, its effects on my world are deep and durable and underline the essentially social and relational character of death. And yet, my death and your death are equally unknowable, if for different reasons: the first because my very end coincides with the missed object of knowledge; the second because I cannot become you. Still, such an approach is grounded on the assumption that real knowledge can only be clear and distinct if it originates from the subject. This knowledge would be human and finite, and thus *far* from being absolute. But this would be the only manner by which human beings could perceive death. Your death is my first real experience of death. I realize that what happened to you also can happen to me, even if my death is destined to remain an undetermined state for me. Your death remains the only limited possibility I can have to come to grips with my death. Your death therefore lies at the foundation concerning how I approach my own death. In fact, the possibility of thoroughly realizing that I will die is generally impossible until I come to experience your death in some way (Jankélévitch as referenced in Cestari, 2016, pp. 20-21).

This confrontation of the self with the death of the significant other (or with *your* death, as Jankélévitch puts it) is further explored by Emmanuel Levinas (2000) in an essay entitled “Death of the Other and My Own” (pp. 16-21). From the death of the other, he says, pure knowledge (which is for him the same as lived experience) retains only the external appearances of a process of immobilization whereby someone whom you have known comes to an end. Any emotional rapport we might have with death, he continues, is due to its being an exception, and this is what confers on death its depth. We recognize this depth in the form of a disquietude within the unknown. But beyond our compassion for and

solidarity with the other, we discover a responsibility for him even within the unknown. Levinas, echoing Heidegger, goes on to suggest “that our affectivity [the fact that we *care*] is awakened only in a being persevering in its being”; he adds, “intentionality is the secret of the psyche” (p. 18). From this perspective time emerges not as the limitation of being but in terms of its relationship with infinity, and the meaning of death is now uncovered not as annihilation but as an open question produced by this relationship.

When one speaks of *my* death, Levinas continues, this cannot be a matter of knowledge or experience. He quotes Epicurus in this context: “If you are there, then death is not there; if it is there, you are not there” (p. 19). He adds, “My relationship with my death is a nonknowledge on dying itself, a nonknowledge that is nevertheless not an absence of relationship” (p. 19). The nature of this relationship stems back to the death of the other, an eventuality that is transferred back to oneself. This transference, though, is not merely a mechanical one, but rather “comes to cut the thread of my own duration” (p. 19). This transference also belongs to what Levinas calls “the intrigue of the I” (p. 20), which for him is a matter of recognizing the uniqueness and the singularity of one’s identity and refers to the possibility of someone being able to escape from his concept. He would accomplish this by making a nonsense of his own death: “This is,” says Levinas, “a nonknowledge that translates into experience through my ignorance of the day of my death, an ignorance by virtue of which the ‘me’ writes checks on an empty account, as if he had eternity before him” (p. 21). For Levinas (1969), then, it is precisely the contingency of one’s own death, its nonknowability, its “not yet” that is the source of one’s freedom to pursue “the intrigue of the I” (p. 224)

What Levinas referred to as “the intrigue of the I” bears a striking resemblance to Karl Jaspers’s (1955) notion of Existenz philosophy, concerning which he speaks of individuals’ journey towards transcendence in terms of their ability to continue overcoming their limitations in order to transform themselves into an “authentic” person. He thus identified three levels of being: Dasein, by which he means objective being, or being-in-the-world; Existenz, or subjective, nonobjectifiable being-as-such; and the Encompassing of Transcendence, or the unattainable limit of all being and thought. The human person as Existenz claims her or his own uniqueness as a human being through the quality of the choices s/he takes. Jaspers believes that in the course of one’s life one encounters certain limiting situations, which push a person toward transcendence and authenticity. These limiting situations consist of the experiences of death, suffering, struggle and guilt. When one is confronted with any one of them, one is forced to confront

one's own existence, and one can no longer remain in a complacent state. For example, when a person is confronted by the reality of death, either through the death of someone with whom they were very close or even with their own approaching death, its reality cannot be ignored. In other words, when death becomes a reality and not just a concept, the person is forced to face their present situation. The same is true with the other limiting situations: one's guilt brings the person to their present, as no one can totally escape guilt once it has stricken them; while suffering and struggle similarly bring the person to an undeniable yet uncomfortable present. These realities impose the present situation onto the affected individual, and as limiting situations bring the person to their Existenz. Thus, no one can continue to simply drift away when death is approaching, since its approach will force the person to ask vital questions about the sense of their life and the meaning of their existence. Either these limiting situations bring the person to their Existenz or the person becomes Existenz. Either way, the person has become aware of their potential for spiritual growth as Existenz through the encompassing power of transcendence (cf. Jaspers, 1969, pp. 76-89).

It is also in this context that Peter Sloterdijk (1989) announces that the unknowability of one's death has unnerving social and political implications: "The inability of any modern, post-metaphysical, scientized thinking to conceive of any death as one's *own* leads to two obviously ubiquitous attitudes" (p. 346): either death does not belong to life even though we cannot avoid confronting it, or our thinking clings to the only death that remains objectively thinkable, the death of the other. The primacy of self-preservation becomes the consequence of such thinking. Furthermore, if the subject is the one thing that cannot die, the world becomes the domain in which the struggle for survival takes place, and the other emerges as my enemy. In order to avoid this death of self, the technical-logical nature of instrumental reason is allowed to dominate everything that is not the ego. Then, it's just a matter of either them or us; or as in the mindset of the James Bond films, *live and let die* (p. 346). Thus, "the incapacity to die subjects the world, in its visible and invisible areas, to a radical transformation" (p. 347). But this does not solve the problem; the need for transcendence remains. Sloterdijk clearly believes that if we are to be able to survive modernity, we will have to disidentify from everything that *arms itself* (p. xxiii). In fact, Sloterdijk presents the intriguing idea that "the concept of substitute transcendence could ground a phenomenology of modernity" (p. 348).

The dynamic approach to creating new levels of consciousness

Merleau-Ponty is yet another important phenomenologist who believed that materialist thinking cannot do justice to the discontinuous aspects of human experience, since it is unable to encapsulate the contingent and nonconceptual character of our ongoing relationship with the world and with other conscious beings. This is why he advocated “a new idea of reason, which does not forget the experience of unreason” (as cited in Spiegelberg, 1971, p. 525). He also did not wish to lose sight of the ambiguity that he believed was as central to understanding the human condition as was clarity. In fact, our understanding of death might well fit into this conception of the need to accommodate the experiences of unreason and ambiguity. Death may just be the “great unknown” for phenomenology, even if Merleau-Ponty’s related notions of *wild nature*, the *flesh of the world* and the *intertwining* indicate a dynamic relationship between the earth and its conscious inhabitants. Nevertheless, the “impossible” creative dynamism of the *chiasm* – “[W]e are the world that thinks itself, or the world is at the heart of our flesh” (Merleau-Ponty, 1968, p.136) – is present before the particularity of embodied experience, as well as during it, and after it, too — since even before the birth as well as after the death of the individual self, the earth continues its dialogue with the others that remain.

For Merleau-Ponty (1964), the conscious ego and its situatedness in the world are recognized and defined only in terms of their relationship with one another. “The world is not an object such that I have within my possession the law of its making,” he writes. “...Truth does not ‘inhabit’ only the ‘inner man,’ or more accurately, there is no ‘inner man.’ Man is in the world, and only in the world does he know himself” (p. xi). But who does this knowing? Or is it the world coming to know itself through us? In contrast to the standard understanding of transcendence as passage from self to other, perceptual transcendence for Merleau-Ponty does not stop at the exteriority of the outside world but loops back. This is the case for his notion of the *chiasm*, which moves from self to world and from world to self via the mediating elemental flesh of the world.

Similarly, Stéphane Lupasco, a Franco-Rumanian philosopher who is a proponent of a quantum-type logic (as cited in Brenner, 2008), believes that consciousness results from the antagonistic relativization between biological matter and physical matter. He argues that this relativization engenders a matter of a third kind and he calls it *psychic matter* or *quantic matter* (Lupasco, 1951). This position concerning the origin of consciousness links nicely with the dynamic views of creative consciousness developed by both Merleau-Ponty (see above) and Nietzsche (see below).

Finally, there is the perspective on the constitution of a new level of consciousness introduced by Nietzsche and analyzed in detail by Heidegger (1968). In Heidegger's view, there is a necessary contradiction between Nietzsche's central concepts of *will to power* and *eternal return*. They move in different directions and want different things. When we confront the will to power with the embrace of the eternal return, he argues, we confront a will to control with a will to destroy. This is also the confrontation between the linear view of time of the will to power, and the circular view of time of the embrace of the eternal return. Can these seeming contradictions be resolved?

In order to resolve these contradictions, the subject has to *will non-willing*. This is a creative act of the will. The will has to say "yes" to the "it was" of time. It has to say "yes, this is how I will it" — again and again throughout the eternal return of the same event. Here, the will to power acts as a *synthesis of forces*. Since the eternal return implies that time is circular and not linear, when the subject gets back to the same place, it discovers that its consciousness has changed — each time. And once the will learns to will backward — this is the highest expression of the will to power. "That everything recurs is the closest approximation of a world of becoming to a world of being — high point of meditation" (Nietzsche, 1967, p. 617).

The will also wants something further. As Nietzsche (1967) puts it: "The will to destruction (is) the will of a still deeper instinct, the instinct of self-destruction, the will for nothingness" (p. 55). When nihilism, the will for nothingness, is confronted with the eternal return, it is itself negated. When the subject actively affirms its own reactive forces, these forces become neutralized and disappear. With its discovery of the eternal return, the human subject redeems itself from its past and frees up its future — through *amor fati*. By an act of the creative will, it breaks the chain of causality that determines the everyday world of becoming, and through its artistry creates a meaningful world for itself to live in. We recall from Nietzsche's first book, *The Birth of Tragedy* (1968), that for him the creative will has two aspects, the Apollonian and the Dionysian, the restraint of form working against the excess of content. In the case of the experience of the eternal return, the Apollonian force provides the structural form of the circle, while the Dionysian force provides the joyous exuberance of repetition.

With his conceptualization and experience of the eternal return, Nietzsche introduces the possibility that the limitations of linear time can be overcome through an act of the creative will. This creative act, in turn, with its capacity to

break the chain of causality that determines the nature of the human self, initiates a liberating force on the self.

Others add to this perspective. In the view of the Japanese philosopher Keiji Nishitani (1990), “The so-called ‘I,’ what we normally take as the self, is merely a frame of interpretation added to this life process after the fact. The true self is the source of the life process itself, the true body of the will to power” (p. 97). According to Stambaugh (1999), this true self involves “an ultimate self-awakening that is beyond ordinary consciousness and self-consciousness” (p. 101). On the other hand, it is precisely the so-called “I”, inhabited by ordinary consciousness and self-consciousness, that discovers the threat of nihilism. If consciousness turns away from this threat, however, it will become mired in its pursuit of worldly, everyday things. “What consciousness ultimately must do is to *become* that nihility, and in so doing, break through the field of consciousness and self-consciousness” (p. 101). This confrontation with nothingness was also familiar to the Christian mystic Meister Eckhart. As Nishitani (1982) explains: “The subjectivity of the uncreated *I am* appears in Eckhart only after passing through the complete negation of — or detachment from — the subjectivity of egoity” (p. 65). This negation, in turn, leads to a moment of ecstasy, where the self takes a stand outside of itself. Nishitani explains: “Ecstasy represents an orientation from self to the *ground* of self, from God to the *ground* of God — from being to nothingness. Negation-*sive*-affirmation represents an orientation from nothingness to being” (p. 68). This experience leads to a shift, a conversion, from the traditional self, as person, to the self-revelation or transcendence of the “true self” through its manifestation of absolute nothingness — or as what the Buddhist seer Nagarjuna referred to as its realization of “emptiness” (Nagarjuna, 2016).

There can be little doubt that Nietzsche’s experience of the eternal return was an extraordinary event for him — in fact, his was an experience inaccessible to an ordinary state of consciousness. He even coined a term for any individual who underwent this experience: the *overman*. It was a gift brought by Zarathustra to man, whom, he feared, wasn’t ready for it yet. In Blanchot’s (1993) view:

[T]he overman is the being who has overcome the void (created by the death of God and the decline of values), because he has known how to find in this void the power of overcoming. ...The overman is he in whom nothingness makes itself will and who, free for death, maintains this pure essence of will in willing nothingness. This would be nihilism itself. (pp.147-148).

Nietzsche explains this further: “Let us think this thought in its most terrible form: existence, as it is, without meaning or aim, yet recurring inevitably without any finale of nothingness: the eternal recurrence ... the most extreme form of nihilism” (as cited in Blanchot, 1993, p. 149). This is a bit confusing, though, since we might initially have thought that nihilism was tied only to a belief in the pervasiveness of nothingness; now we are being told that nihilism is also connected to being. Blanchot provides an answer: “Nihilism is the impossibility of being done with it and of finding a way out. ... Nothing ends, everything begins again; the other is still the same” (p. 149). Blanchot (1982) also links the phenomenon of personal death to Nietzsche’s experience of the eternal return:

One dies: he who dies is anonymous, and anonymity is the guise in which the ungraspable, the unlimited, the unsituated is most dangerously affirmed near us. Whoever experiences this suffers an anonymous, impersonal force, the force of an event which, being the dissolution of every event, is starting over not only now, but was in its very beginning a beginning again. And in its domain, everything that happens happens again. From the instant “one dies,” the instant is revoked. (p. 241).

The American post-phenomenologist Mark Taylor (1987) elaborates on this point: “Since it is never present, death as such cannot be thought. Death, in other words, is unthinkable” (p. 242). But we seem to still need a way to think past or think through this impossible event, even if it is unthinkable.

Conclusion

So, then, how do we break out of nihilism’s vicious circle? If nihilism is inseparable even from being and not just from nothingness, are we necessarily condemned to living in an absurd universe for all of eternity? The only authentic answer to this would seem to be self-annihilation, or suicide. But Nietzsche rejects this. Instead, the secret is found in forgetting. Blanchot again explains:

[W]elcome to the future that does not come, that neither begins nor ends and whose uncertainty breaks history. But how do we think this rupture? Through forgetting. Forgetting frees the future from time itself. ... This desire to be ignorant by which ignorance becomes desire is the waiting welcomed by forgetting... (p. 280).

Our only viable choice, then, is to learn how to live within the timelessness of the present moment. For, as Nietzsche (1980) says, “Without forgetting it is quite impossible to live at all” (p. 10).

As long as we are caught up within the limiting framework of linear time, we are forced to confront the singular inevitability of our own impending death. This bare fact has the power to paralyze us, since it forces us to contemplate the essential nihilism of all conscious life: that all living things inevitably die. Even if we turn to the liberating framework of circular time, to the expanding ecstatic moment of the realization of the eternal return, we find that we still cannot escape from the suffocating nausea of our very being. There is no way out of the circle of the passage from becoming to being, with each inextricably following the other throughout eternity. The answer is again found in the will. We will ourselves to forget, to forget our knowledge of the past and the future, and to forget that everything returns. We choose instead to live within the endless moment, in a willful ignorance which awakens our desire — we *will non-willing*, and thus choose life.

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Research Essay

The Idealist View of Consciousness After Death

Bernardo Kastrup*

Abstract

To make educated guesses about what happens to consciousness upon bodily death, one has to have some understanding of the relationship between body and consciousness during life. This relationship, of course, reflects an ontology. In this brief essay, the tenability of both the physicalist and dualist ontologies will be assessed in view of recent experimental results in physics. The alternative ontology of idealism will then be discussed, which not only can be reconciled with the available empirical evidence, but also overcomes the lack of parsimony and limited explanatory power of physicalism and dualism. Idealism elegantly explains the basic facts of reality, such as (a) the fact that brain activity correlates with experience, (b) the fact that we all seem to share the same world, and (c) the fact that we can't change the laws of nature at will. If idealism is correct, the implication is that, instead of disappearing, conscious inner life *expands* upon bodily death, a prediction that finds circumstantial but significant confirmation in reports of near-death experiences and psychedelic trances, both of which can be construed as glimpses into the early stages of the death process.

Keywords: ontology, metaphysics, mind-body problem, death, near-death experience, psychedelics, quantum physics

1 Introduction

Our capacity to be conscious subjects of experience is the root of our sense of being. After all, if we weren't conscious, what could we know of ourselves? How could we even assert our own existence? Being conscious is what it means to *be* us. In an important sense—even the *only* important sense—we are first and foremost consciousness itself, the rest of our self-image arising afterwards, as thoughts and images constructed *in* consciousness.

For this reason, the question of what happens to our consciousness after bodily death has been central to humanity throughout its history. Do we cease to exist or continue on in some form or another? Many people today seek existential solace in body-self dualism, which opens up the possibility of the survival of

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consciousness after bodily death (Heflick et al, 2015). But is dualism—with the many serious problems it entails, both philosophical and empirical (Robinson, 2016)—the only ontology that allows for this survival?

Although consciousness itself is the only directly accessible datum of reality, both dualism and the mainstream ontology of physicalism (Stoljar, 2016) posit the existence of something ontologically distinct from consciousness: a physical world outside and independent of experience. In this context, insofar as consciousness is believed to be constituted, generated, hosted or at least modulated by particular arrangements of matter and energy in the physical world, the dissolution of such arrangements—as entailed by bodily death—bears relevance to our survival. This is the root of humanity’s preoccupation with death.

However, the existence of a physical world outside and independent of consciousness is a theoretical inference arising from *interpretation* of sense perceptions, not an empirical fact. After all, our only access to the physical is through the screen of perception, which is itself a phenomenon of and in consciousness. Renowned Stanford physicist Andrei Linde (1998) summarized this as follows:

Let us remember that our knowledge of the world begins not with matter but with perceptions. ... Later we find out that our perceptions obey some laws, which can be most conveniently formulated if we assume that there is some underlying reality beyond our perceptions. This model of material world obeying laws of physics is so successful that soon we forget about our starting point and say that matter is the only reality, and perceptions are only helpful for its description. This assumption is almost as natural (and maybe as false) as our previous assumption that space is only a mathematical tool for the description of matter. (p. 12)

The physical world many believe to exist beyond consciousness is an abstract explanatory model. Its motivation is to make sense of three basic observations about reality:

- (a) If a physical brain outside experience doesn’t somehow generate or at least modulate consciousness, how can there be such tight correlations between observed brain activity and reported inner experience (cf. Koch, 2004)?
- (b) If the world isn’t fundamentally independent and outside of experience, it can only be analogous to a dream in consciousness. But in such a case, how can we all be having the same dream?
- (c) Finally, if the world is in consciousness, how can it unfold according to patterns and regularities independent of our volition? After all, human beings cannot change the laws of nature.

Nonetheless, if these questions can be satisfactorily answered *without* the postulate of a physical world outside consciousness, the need for the latter can be legitimately called into question on grounds of parsimony. Moreover, while

physicalism requires the existence of ontological primitives—which Strawson (2006, p. 9) called “ultimates”—beyond consciousness, it fails to explain consciousness itself in terms of these primitives (cf. Chalmers, 2003). So if the three basic observations about reality listed above can be made sense of in terms of consciousness alone, then physicalism can be legitimately called into question on grounds of explanatory power as well. And as it turns out, there is indeed an alternative ontology that explains all three basic observations without requiring anything beyond consciousness itself. This ontology will be summarized in Section 3 of this brief essay.

In addition, the inferred existence of a physical world outside and independent of consciousness has statistical corollaries that can be tested with suitable experimental designs (Leggett, 2003; Bell, 1964). As it turns out, empirical tests of these corollaries have been carried out since the early eighties, when Alan Aspect performed his seminal experiments (1981). And the results do *not* corroborate the existence of a universe outside consciousness. These seldom-talked-about but solid empirical facts will be summarized in the next section.

Without a physical world outside consciousness, we are left with consciousness alone as ground of reality. In this case, we must completely revise our intuitions and assumptions regarding death. After all, if consciousness is that within which birth and death unfold as phenomenal processes, then neither birth nor death can bear any relevance to the existential status of consciousness itself. What does death then mean? What can we, at a personal level, expect to experience upon bodily death? These questions will be examined in Section 4 of this essay.

2 The empirical case against a world outside consciousness

A key intuitive implication of a world outside consciousness is that the properties of this world must not depend on observation; i.e., an object must have whatever properties it has—weight, size, shape, color, etc.—regardless of whether or how it appears on the screen of perception. This should clearly set the physical world apart from the sphere of consciousness. After all, the properties of a purely imagined object do not exist independently, but *only insofar as they are imagined*.

As mentioned earlier, the postulated independence of the world from observation has certain statistical corollaries (Leggett, 2003) that can be directly tested. On this basis, Gröblacher et al. (2007) have shown that the properties of the world, surprisingly enough, *do* depend on observation. To reconcile their results with physicalism or dualism would require a counterintuitive redefinition of what we call *objectivity*. And since contemporary culture has come to associate objectivity with reality itself, the science press felt compelled to report on this study by pronouncing, “Quantum physics says goodbye to reality” (Cartwright, 2007). Testing similar statistical corollaries, another experiment (Romero et al, 2010) has confirmed that the world indeed doesn’t

conform to what one would expect if it were outside and independent of consciousness.

Other statistical corollaries (Bell, 1964) have also been experimentally examined. These tests have shown that the properties of physical systems do not seem to even exist prior to being observed (Lapkiewicz et al., 2011; Manning et al., 2015). Commenting on these results, physicist Anton Zeilinger is quoted as saying that “there is no sense in assuming that what we do not measure about a system has [an independent] reality” (Ananthaswamy, 2011). Finally, Ma et al. (2013) have again shown that no naively objective view of the world can be true.

Critics have deeply scrutinized the studies cited above to find possible loopholes, implausible as they may be. In an effort to address and close these potential loopholes, Dutch researchers performed an even more tightly controlled test, which again confirmed the earlier results (Hensen et al., 2015). This latter effort was considered the “toughest test yet” (Merali, 2015).

Another intuitive implication of the notion of a world outside consciousness is that our choices can only influence the world—through our bodily actions—in the present. They cannot affect the past. As such, the part of our story that corresponds to the past must be unchangeable. Contrast this to the sphere of consciousness wherein we can change the whole of an imagined story at any moment. In consciousness, the *entire* narrative is always acquiescent to choice and amenable to revision.

As it turns out, Kim et al. (2000) have shown that observation not only determines the physical properties observed at present, *but also retroactively changes their history accordingly*. This suggests that the past is created at every instant so as to be consistent with the present, which is reminiscent of the notion that the world is a malleable mental narrative.

Already back in 2005, renowned Johns Hopkins physicist and astronomer Richard Conn Henry penned an essay for *Nature* (2005) wherein he claimed that “The universe is entirely mental. ... There have been serious [theoretical] attempts to preserve a material world—but they produce no new physics, and serve only to preserve an illusion” (p. 29). The illusion he was referring to was, of course, that of a world outside consciousness.

Thus from a rigorous empirical perspective, the tenability of the notion of a world outside and independent of consciousness is at least questionable. The key reason for resisting an outright abandonment of this notion is the supposed lack of plausible alternatives. What other ontology could make sense of the three basic observations about reality discussed in Section 1? In the next section, I will attempt to answer this question.

3 A simple idealist ontology

The ontology of idealism differs from physicalism in that it takes phenomenal consciousness to be the only *irreducible* aspect of nature, as opposed to an

epiphenomenon or emergent property of physical arrangements. It also differs from dualism in that it takes all physical elements and arrangements to exist *in consciousness*—solely as phenomenal properties—as opposed to outside consciousness.

Historically, idealism has had many different variations labeled as *subjective idealism*, *absolute idealism*, *actual idealism*, etc. It is not my purpose here to elaborate on the subtle, ambiguous and often contentious differences among these variations. Instead, I want to simply describe the basic tenets that any plausible, modern formulation of idealism must entail, *given our present knowledge and understanding* of the world. What follows is but a brief summary of a much more extensive derivation of idealism from first principles (Kastrup, forthcoming).

The defining tenet of idealism is the notion that all reality is in a *universal* form of consciousness—thus not bound to personal boundaries—arising as patterns of excitation of this universal consciousness. Our personal psyche forms through a process of dissociation in universal consciousness, analogous to how the psyche of a person suffering from dissociative identity disorder (DID) differentiates itself into multiple centers of experience called *alters* (Braude, 1995; Kelly et al., 2009; Schlumpf et al., 2014). Recent research has demonstrated the literally *blinding* power of dissociation (Strasburger & Waldvogel, 2015). This way, there is a sense in which each living creature is an alter of universal consciousness, which explains why we aren't aware of each other's inner lives or of what happens across time and space at a universal scale.

The formation of an alter in universal consciousness creates a boundary—a “Markov blanket” (Friston, Sengupta & Auletta, 2014, pp. 430-432)—between phenomenality internal to the alter and that external to it. Phenomenality external to the alter—but still in its vicinity—impinges on the alter's boundary. The plausibility of this kind of phenomenal impingement from across a dissociative boundary is well established: we know, for instance, that dissociated feelings can dramatically affect our thoughts and, thereby, behaviors (Lynch & Kilmartin, 2013), while dissociated expectations routinely mold our perceptions (cf. Eagleman, 2011).

The impingement of external phenomenality on an alter's boundary is what we call sense perception. The world we perceive around ourselves is thus a *coded phenomenal representation* (Friston, Sengupta & Auletta, 2014, pp. 432-434)—which I shall call the *extrinsic appearance*—of equally phenomenal processes unfolding across the dissociative boundary of our alter.

A living biological body is the extrinsic appearance of an alter in universal consciousness. In particular, our sense organs—including our skin—are the extrinsic appearance of our alter's boundary. As such, our brain and its electrochemical activity are part of what our inner life *looks like* from across its dissociative boundary. Of course, *both* the extrinsic appearance and the corresponding inner life are phenomenal in nature. They are both experiences.

A person's brain activity correlates with the person's reported inner life because the former is but a coded representation of the latter. We all inhabit the same world because our respective alters are surrounded by the same universal field of phenomenality, like whirlpools in a single stream. And we can't change the patterns and regularities that govern the world—i.e., the laws of nature—because our volition, as part of our alter, is dissociated from the rest of nature.

See Figure 1 for a graphical depiction of all this.

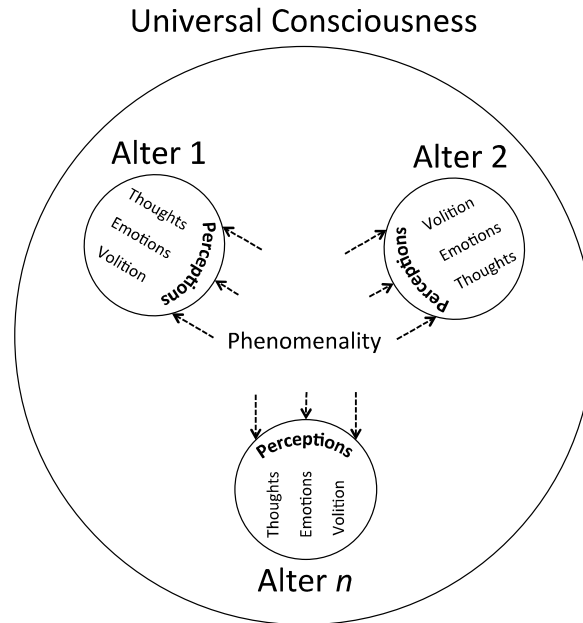


Figure 1. Idealism in a nutshell.

Clearly, all three basic observations about reality discussed in Section 1 can be rather simply explained by this parsimonious idealist ontology. Moreover, unlike physicalism and dualism, the ontology can also be reconciled with the empirical results discussed in Section 2. It thus offers a more promising alternative for interpreting the relationship between body and consciousness than physicalism and dualism. The question that remains to be addressed is this: if idealism is true, what can we then infer about consciousness after bodily death? This is what the next section will attempt to answer.

4 What idealism says about consciousness after death

The idealist ontology briefly summarized in the previous section asserts that the physical body is the extrinsic appearance—the *image*—of a dissociative process in universal consciousness. In other words, a living body is what dissociation—meant simply descriptively, not as something negative or pathological—in universal consciousness *looks like*. Therefore, the death and ultimate dissolution

of the body can only be the image of the *end* of the dissociation. Any other conclusion would violate the internal logic of idealism.

The reasoning here is rather straightforward but its implications profound. The hallmark of dissociation is “a disruption of and/or discontinuity in the normal integration of consciousness, memory, identity [and] emotion” (Black & Grant, 2014, p. 191). Therefore, the end of dissociation can only entail a *reintegration* of “memory, identity [and] emotion” lost at birth. This means that bodily death, under idealism, must correlate with an *expansion* of our felt sense of identity, access to a broader set of memories and enrichment of our emotional inner life.

This conclusion is the exact opposite of what our mainstream physicalist ontology asserts. Moreover, there is nothing in the popular dualist alternative—mainly found in religious circles—that requires it either. So idealism is not only unique in its ability to explain reality more parsimoniously and completely than physicalism and dualism, it also offers a unique perspective on death.

Circumstantially but significantly, much of the literature regarding near-death experiences (NDEs) seems to corroborate this prediction of idealism (Kelly et al., 2009). To mention only one recent example, Anita Moorjani (2012) wrote of her felt sense of identity during her NDE: “I certainly don’t feel reduced or smaller in any way. On the contrary, I haven’t ever been this huge, this powerful, or this all-encompassing. ... [I] felt greater and more intense and expansive than my physical being” (p. 69). It’s hard to conceive of a more unambiguous confirmation of idealism’s prediction than this passage, although Moorjani’s entire NDE report echoes the prediction precisely.

Moreover, as recent studies have shown (Carhart-Harris et al., 2012; Palhano-Fontes et al., 2015; Carhart-Harris et al., 2016), psychedelic drugs *reduce* brain activity. This suggests that psychedelic trances may be in some way akin to the early stages of the death process, offering glimpses into how death is experienced from a first-person perspective. And as we know, psychedelic trances do entail an unambiguous expansion of awareness (Strassman, 2001; Griffiths et al., 2006; Strassman et al., 2008), which again seems to circumstantially corroborate idealism’s prediction.

5 Conclusions

To make educated guesses about what happens to consciousness upon bodily death, one has to have some understanding of the relationship between body and consciousness during life. This relationship, of course, reflects an ontology. So the question of what happens after death can be transposed into the question of which ontology is most plausible for making sense of the world during life.

While physicalism is our culture’s academically-endorsed, mainstream ontology and dualism a popular alternative in religious circles, neither ontology seems tenable in view of recent experimental results in physics. Moreover, both

ontologies suffer from problems such as lack of parsimony or limited explanatory power.

A third ontology, known as idealism, overcomes not only these problems but can also be reconciled with the available empirical evidence. It elegantly explains the three basic facts of reality: (a) that brain activity correlates with experience, (b) that we all seem to share the same world, and (c) that we can't change the laws of nature at will.

If idealism is correct, it implies that, instead of disappearing, conscious inner life *expands*—whatever new phenomenology this expansion may entail—upon bodily death. This prediction finds circumstantial but significant confirmation in reports of near-death experiences and psychedelic trances, both of which can be construed as glimpses into the early stages of the death process.

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Research Essay

Consciousness, a Cosmic Phenomenon—A Hypothesis

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Abstract

A new physical worldview is introduced, which shows that mental operations are analogous to the physical world, and that just like photons, emotions carry energy. Photons are the fundamental interactions of fermions, and in the brain, sensory stimulus triggers energy imbalances, called emotions, the forces of mental interaction. Therefore, emotions motivate thoughts and actions that recover the energy-neutral state of the brain. Material interaction generates a temporal evolution that culminates in the emergence of the intelligent mind. The entropy of both elementary constituents (material and mental particles) of the universe continuously changes between the poles. Throughout life the mind maintains a low-entropy state due to constant interaction with the outside world via the sensory organs. The death of the body permits the entropy of the mind to increase. Depending on the mind's energy state, the mental entropy will either accumulate information or energy, while maintaining a constant alignment with the temporal field in its time-travel, ending at one of the poles. The energy-rich mind converges towards expanding white holes, whereas an information-saturated mind becomes part of the black hole horizon. In the expanding white hole, space is infinite, yet everything feels neighborly and the infinite feels like a moment. In black holes the moment feels like eternity, yet it imposes a two-dimensional tightness, where everything is far and beyond reach. Matter and mind are the prime building blocks of the universe, which also displays elementary particle characteristics. The three interconnected, interdependent building blocks formulate the organizational unity and fractal structure of the universe. Intelligent life is a microcosm of the universe, and the mind is an active participant in cosmic evolution.

Key words: consciousness, evolution, emotion regulation, string theory, self-regulation, free will

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Introduction

Numerous unexplained phenomena in physics as well as experimental contradictions with accepted theories indicate that the current physical view needs updating or reformulated anew. A new physical view is expected to form a seamlessly interconnected system that incorporates consciousness, yet it is based on the smallest unit of energy, the elementary particle. The foundation of the present physical understanding is the Standard Model. In this, elementary particles are classified and fitted into a regular and well-characterized grid. Fermions, called matter, form space. Bosons are the go-between fermions by executing the changes and rhythms of the universe. In other words fermions are subjects, whereas bosons can be considered the verbs of the physical world. In the material world, decoherence (i.e., the collapse of the wave function of elementary particles) produces measurable changes in physical qualities, such as speed or position, and in the brain stimulus changes neuronal activation pattern and leads to cognitive, behavioral changes. Evolution has increased neural complexity and produced the mind-blowing intricacy of the human brain, which regulates itself and organizes the whole body into a seamless orchestra. Immense energy consumption of the brain cannot be accounted for simply by the maintenance of the electric potential of neuronal cells and management of their synaptic activity. For over a century the electromagnetic activity of the brain has been measured by placing electrodes over the scalp, and more recently science has learned that external magnetic and electric fields can change brain activity. Complex electromagnetic flows and oscillating rhythms conspire to make the mind much more than simply the cortex, the amygdala, and the other structures that constitute the brain. Sensory stimulus increases oscillation frequencies, a syntactic coding for projecting information about the environment to the cortex and back.

The non-intuitive and multifarious nature of mental operation has been discussed by philosophers and sages over the millennia of human civilization, whereas neuroscience and psychiatry studies the brain. Scientific considerations of the brain's operation regarding conscious experience are often based on the electromagnetic activity of neuron assemblies. The global workspace theory proposes that a central global workspace, constituted by long-range cortico-cortical connections, assimilates mental processes according to their salience (Baars, 1988). According to multiple drafts theory, distributed neural/cognitive models manifest the greatest impact from highly diverse, parallel content (Dennett, 1991). Tononi's (2004) information integration theory (IIT) considers consciousness as the capacity of a system to integrate information. Other notable approaches attempt to relate sensory, motor, and cognitive functions to the appearance of an inner mental world based on neurological or electromagnetic patterns of the brain. However, an accepted theory on consciousness is missing. In the absence of accepted scientific consensus on the mind the question of consciousness after death has remained the subject of religious beliefs, speculation and superstition, without any scientific validity. Here I propose a novel and unitary approach to consciousness that allows a surprisingly meaningful investigation of the mind concerning both life and death.

1. The foundation of the hypothesis

1.1 The deep structure of space

String theory proposes that microdimensional energy vibrations makeup particles. The particle wave function is insulated from gravity, making it orthogonal to the macrodimensions of space. As a result, the particle wave function is formulated independent of its spatial coordinates and modification of the energy function spreads instantly between entangled sister-particles. Changes in spatial curvature force interaction that equalizes the energy-information state between micro and macrodimensions via the collapse of wave function. Thus the wave function develops by the Schrödinger equation, whereas decoherence is an energy jump that coevolves the particle wave function and the field. Because the energy cost of interaction stabilizes the structure of the universe, the formation of microdimensions can be considered the birth of the cosmos.

According to general relativity the universe is a fluid spatial net that has exact, well-defined geometry or curvature at every point of space. According to the principle of static time, proposed by Page and Woottter in 1982, the global picture of the universe remains static, lacking outward change. The unchanging nature of cosmos was proven recently by Moreva and colleagues (2013). For the global state to remain constant, every curvature change must be balanced by an opposite yet equal transformation. Therefore entanglement is like a see-saw, in which opposite, equal transformations result in zero sums. This way entanglement begets time, which is measurable and relevant for internal participants only. The field's increasing curvature differences constitute a temporal evolution, where the edges of the field degenerate into poles, such as the unapproachable (two-dimensional) horizons of black hole singularities (Almheiri et al., 2012). The principle of static time requires that black hole horizons must be balanced by a four-dimensional pole, called a white hole, which was predicted by Einstein's field equations (Figure 1). The negative field curvature white holes expand space, whereas the galactic environments gradually absorb spatial volume (indicated by white arrows) by building manifold area (Figure 2). Black holes form the edge of space; their great field strength stabilizes the universe and prevents runaway expansion. Almheiri's work, which demonstrates that black hole horizons are impenetrable firewalls, gives strong supports to this conclusion. The AdS/CFT correspondence, which recognizes a mirror symmetry between the field and its lesser dimensional horizon (Maldacena, 1997), also opens the possibility to dimensionality differences in cosmic topology. Due to the dimensional anisotropy between the black and white holes the degrees of freedom increase in white holes and decrease in black holes. The existence of gravitational waves and analysis of many years of sky surveys confirm the universe's topological simplicity and organizational predictability. Because the Schrödinger equation applies for both individual particles and the universe, the cosmos shows a fractal structure. Amazingly, consciousness forms an organic part of this highly congruent and interconnected cosmos.

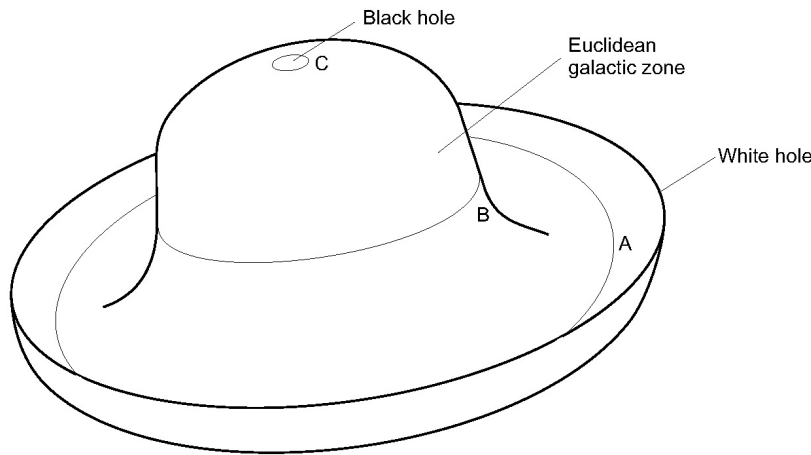


Figure 1. The topology of the universe. The breton hat shows the spatial anisotropy of the universe between its poles: positive field curvature black holes (shown at top) and negative field curvature white holes (brim of the hat). The positive field curvature of the black holes lose dimensionality, but expands time to infinity. In white holes space expands into the fourth dimension by forming hyperbolic geometry. White holes are devoid of information, which corresponds to zero time. Euclidean field is three dimensional and highly unstable. The microdimensions, indicated by concentric circles, form minimal surface latitudes of specific field curvature (and corresponding particle energy level). Large latitude (i.e., curvature) jumps, such as great acceleration, is energetically expensive and prohibitive.

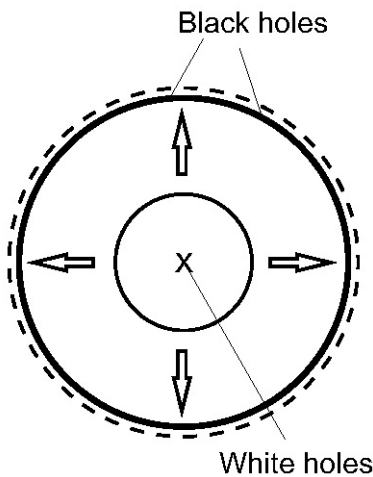


Figure 2. The structure of cosmos with white holes and black holes. The microdimensions of the cosmos (indicated by thin circle) can be visualized as concentric circles, which form closed minimal surface. White holes (in the center) expand space, which pushes against the black holes (indicated by dotted line), and generates a pressure of excess gravity (thick line). The galactic environments (region of white arrows) gradually absorb the expanding volume by building manifold area. The great field strength of black hole horizons forms the outer boundary of space and slows expansion.

1.2 The unity and elementary character of the mind

Elementary particles, the smallest units of energy, cannot be subdivided and appear stable and constant from the outside. Unity also being an essential feature of the mind has been recognized in philosophy by Descartes, Kant, and others. The mind is a cacophonous sensory kaleidoscope, peppered with transient ideas and possibilities that distill into a single decision or understanding. The sensory forest coalesces a single, unified experience. Fractured perception is inhibited: ambiguity forces a non-deterministic, quantum-like fluctuation between two possibilities (images, ideas, or concepts). Indeed, although we can contemplate many possibilities, once we decide on a problem all other options cease to exist. Ideas and thoughts form a highly fluid, malleable, constantly changing, complex and elaborate mental background, over which interaction with the outside world becomes possible. The mental world can only be accessed from the inside; for outside observers it is a holographic projection, which however appears strangely constant from childhood to old age, even if dramatic changes affect the body or the brain. Festinger's cognitive dissonance theory (1957) shows that even core beliefs might be sacrificed in order to maintain mental congruency.

According to string theory, particle vibrations are motions of loops within a Calabi-Yau manifold, where field curvature changes are recorded by a holographic organization. In the brain the appropriate temporal order of the cortical neuronal activation pattern forms a "temporal horizon" of memories or experience. Since the constantly changing cortical projection can be replayed repeatedly, past experiences inform present behavior and lead to far superior responses (Carillo-Reid et al., 2016). However, of the billions of photons hitting the retina and the millions projected to the optic nerve, less than a few thousand bits of information produce the conscious perception of the moment. Therefore, consciousness forms on a highly subjective (holographic) mental landscape: the momentary projection of the temporal manifold (subconscious) depends on both the viewer and the self.

In animals, bodily functions and interaction with the environment are centrally regulated from the brain, which uses electromagnetic means to achieve an intricate regulation of the body based on sensory information, nutrient needs and survival interest of the individual or the species. Animals with limbic brains respond to environmental stimuli in a linear fashion; their behavior is regulated exclusively by genetically choreographed program and basic bodily needs. The evolution of the cerebrum introduces a nonlinear regulation. In birds the cerebrum is modular, whereas in mammals the neocortex has a laminar structure. The evolution of the cortex dramatically changes the dynamics of the brain and forms an advanced homeostatic regulation, which always recovers an energy-neutral resting state, known as the default mode network (DMN), which turns it into a self-regulating system. There is a strong correlation between intellectual abilities and the complexity, convolution, and overall size of the neocortex (Deaner et al., 2007; Deli, 2015, Chap 2). Since old associations can be reconnected in a novel way, experience can accumulate in the immensely complex neuronal connections of the cortex. Hence, large mammals with convoluted cortices display emotional stability, compassion and kinship, and form close-knit, stable social groups. The neuronal activation pattern of the brain gives rise to thought processes, the manifestations of consciousness. A ball rolling down the hillside is following a determined path depending on its speed, the slope of the hill and the characteristics

of the ball itself. Likewise, energy balances of the brain change according to physical laws, the principle of least action, and dictate animal behavior. Hence, free will might be an illusion.

The mathematical formalism of quantum mechanics describes the non-intuitive behavior of elementary particles. In contrast to classical systems, where measurement merely observes a preexisting quality, quantum measurement entails decoherence, which actively changes some property of the system being measured. Probabilistic assessment is often strongly context and order dependent, and individual states can form entangled, composite systems. Remarkably, the same principles – that measurement (i.e., interaction) corresponds to a cognitive change (i.e., decoherence) – appear to apply to the mind as well. Mental operation is contextual and the context of measurement influences the outcome, which includes almost all cognitive processes, such as decision making, memory, perception, and judgments. Quantum theory became a mainstream, accepted scientific idea for modeling mental phenomena (Khrennikov, 2015) and the mind's quantum-like behavior is exploited in fields as diverse as search-engine optimization, psychology, economy, and sociology – in some cases for nearly a century. Quantum probability can successfully model not only elementary particle behavior, but the organizational intricacy of the brain as well (Brembs, 2011; Pothos & Busemeyer, 2009). The mind displays entanglement and hysteresis-like behavior and the context of judgments and decisions form in analogue to quantum interference of elementary matter particles, because the presumed context of the first judgment or decision interferes with subsequent judgments or decisions. These and other similar findings arise from the brain's structure and characterize the elementary particle-like behavior of the mind. As successive regulatory layers in the brain unbalance due to stimulus, emotions, the energy states of the brain form. In turn, emotions trigger actions that restore the energy-neutral state, while changing the neural landscape (such as the strength of neuronal connections). This way, mental operation is reflected in the ebb and flow of our emotions, as the brain changes and adapts to its constantly changing environment. Therefore, the brain processes information on a temporal language, and the laws that govern the physical world, such as the Newton's Laws or the Laws of thermodynamics, dictate temporal relationships over the mental world (Deli, 2015, chap 3).

According to general relativity, material interactions and physical processes are governed by the spatial field curvature and here I will show that the temporal field, which is organized orthogonally to space, is structurally identical to the field of gravity. As the spatial field controls matter, the temporal field governs social interactions. Currently the understanding of time is highly insufficient and the special importance of the temporal field in biological processes and evolution has been overlooked. Rather than energetic changes occurring in ecosystem or society, the temporal field manifests as momentary differences in the comfort and wellbeing of the organisms. While matter takes shape in space, life is a function of time due to biological dependence on air, water, rest, and food. The temporal field underlies society and its unique flavor is felt as soon as one steps out of the airport of any country. The temporal field forms our beliefs and our uncertainties, which give rise to the cultural habits, customs, and the palpable social fabric of society. Just as gravity is the most important force in the material world, emotional (temporal) gravity permeates society and the individual's place in it. Gravity is the ever-present force of the physical world that holds onto matter, and temporal gravity is the

strength of relationships. People who are enclosed within greater curvature are *squeezed for time*; this temporal pressure leads to rigidity and turbulent, chaotic emotional life. Lack of time, which is appropriately called stress, forces a constant struggle for everyday needs and even survival. A lesser curvature temporal field is often associated by financial means, as it provides the luxury of time, allowing greater freedom and flexibility. Social evolution is the evolution of the temporal field, manifested as a decreasing social distance (decreasing temporal field curvature differences of society). Hence, the temporal field produces revolutions, social or economic changes and spurs individual social mobility.

The increasing complexity throughout evolution is a perplexing and undeniable fact, and it is especially difficult to explain the high organizational complexity of the human brain. However, brain organization evolved via increasingly precise responses to stimuli, turning the brain into a better and better organizational reflection of the material environment, even operating by the same governing principles. The holographic principle recognizes the importance of the horizon as the information record of interaction. In the brain, experiences and memories form as a holographic record in the neuronal connections of the cortex. As microdimensional toroidal energy resonances manifest as fundamental particle behavior in physical (macro) space, emotional particles form an orthogonal, folded manifold in the temporal space of emotional functioning. In material fermions information accumulation parallels a loss of dimensionality of space, whereas information accumulation in the mind robs time. Stimuli unbalance successive regulatory layers in the brain and generate an electromagnetic potential that forces changes that recover the neutral state. Energy neutrality means discrete energy processing that also leads to the quantum character of material fermions. In the 21st century the time has come to consider the mind as a physical entity. The possibility that matter fermions and the mind have identical structures and identical operation could open the book of insight into human motivation and behavior.

2. Energy neutrality through self-regulation

2.1 The mind as a temporal (emotional) fermion

According to string theory, energy vibrations take shape as matter, but the material brain projects stimulus as oscillations that form a fluid, inner world based on energy. Environmental changes constantly modulate brain frequencies via the sensory organs. The importance of brain oscillations in consciousness is unequivocal. In the brain the direction of information (energy) transfer in the limbic structures is highly dependent on frequency, neocortical-limbic transfer occurs during slow theta waves (4–10 Hz), and data transfer reverses during gamma frequencies (30–130 Hz), as reported by Buzsaki (2011). The frequency dependence of energy flow means that low brain frequencies intuitively increase the degrees of freedom; whereas high brain frequencies are more deterministic and therefore allow fewer degrees of freedom (Buzsaki et al., 2013). Since low- and high-frequency bands determine opposing energy-information flow, they can be considered as opposite energetic poles of the brain's operation. Highly structured frequencies reveal nonlinear complexity due to dimensionality differences between neural

modules. Rhythmic neuronal activation extinguishes the energy of stimulus, but generates an electromagnetic potential difference between the limbic brain and the cortex, which, although being relatively small, cannot escape into the environment, but initiates a flow reversal that recovers the DMN (Figure 3). The automatic recovery of energy neutrality due to such energetic insulation forms standing waves, the basis of the brain's self-regulation. Based on the frequency of oscillations, only positive (characterized by low frequencies) and negative emotional states (characterized by high frequencies) are possible. The connection of smaller oscillations with positive emotions and enhanced brain frequencies with negative mental states has been corroborated in numerous studies (Bethell et al., 2012; Seo et al., 2008).

Elementary particles interact by fundamental forces. The elementary forces of the mind are energy imbalances, called emotions, which are inextricable phenomena of life and whose intensity can only change through interaction. Just as for matter, life hinges on interactions, which sections our mental life into a progression of discrete *states of feelings and beliefs* and which give life an irreversible directionality. Thus interaction reformulates standing waves by increasing or decreasing mental energy. As the photon's energy reflects the energy of its source, the intensity of negative emotions corresponds to some past temporal field strength (i.e., specific negative events). Despite matter and mental fermions having identical energetic structures, several important differences separate them. Perhaps the most important difference between matter and emotional fermions is their size, which effectively determines their energy level. The diminutive matter fermions give rise to enormous frequencies, which produce an impressive punch. The much larger mind forms far lower frequencies and energy levels that are many orders of magnitude smaller. The wave function of material fermions vibrates over space, whereas mental quantum waves exist unlimited in time (the past and the future). The temporal freedom of mental energy function endows emotions with a sense of permanence. Pain or joy feels as if it would exist forever, but when emotions depart, their experience evaporates, as if they never existed. This fact is all-important in motivation. By feeling permanent, emotions propel actions, but their fleeting nature allows us to find new strength even after immense pain and suffering. While decoherence gives matter volume, the mental scope, expanse, and understanding are temporal. The difference between the manifestations of matter (space) and mind (time) effectively has hidden the symmetry between the two systems.

2.2 The anatomy of decoherence

The mind forms energy-neutral standing waves over time. Thus, brain oscillations can be viewed as a spring that moves energy (and information) in the form of electric current between the limbic brain and the cortex, always restoring an equilibrium position, called the DMN. The innate drive toward energy neutrality leads to a subtle regulation by the continuous and pervasive electromagnetic flows of the intact brain, giving rise to inexplicable, mysterious and highly involuntary mental processes. Beyond sensory and motoric operation, the mind is primarily a temporal compass, which has an uncanny ability to automatically (independent of consciousness) reorient itself against disturbances imposed on it by the environment. The mechanism of decoherence in the mind is detailed below.

(1) The low brain frequencies of positive stimulus flows information away from the cortex (but flows energy toward the cortex) toward the limbic areas and the environment (Figure 3). Energy imbalance is unstable; it leads to joy, laughing, kindness, relaxing, playing, embracing, and generosity, which projects emotional energy into the environment to recover the DMN and form up-spin decoherence in the mind. Outward energy flow turns positive emotional states transient. The temporal spaciousness of lesser temporal field curvature enhances mental energy (i.e., *g* factor suggested by Spearman, as cited in Deary, 2010), which corresponds to confidence, trust, mental flexibility, congruence and clear conscience. The degree of confidence, emotional stability, and belief increase the degrees of freedom through long-term depression of synaptic strength (Dudek & Bear, 1992), for example. Therefore learning, which requires energy, is dependent on erasure of hippocampal memory (Madroñal et al., 2016).

(2) Sensory information is energetically expensive. The brain *pays* for sensory stimuli through greater energy requirement of high brain frequencies. The limbic system channels incoming stimuli (information), as fast oscillations, to the sensory cortex, where they spread as electric currents that accentuate or subdue each other through field effects. The brain's highly fluid neural organization allows fast, although not instantaneous, rebalancing of electromagnetic gradients based on charge conservation. From the sensory cortical surface the oscillations further propagate toward the frontal associative regions. As the energy requirement of neuronal activation gradually extinguishes the information flow, an electric potential difference, such as readiness or *Bereitschaftspotential*, forms between the limbic and cortical areas, which reverse the energy flow via slow oscillations as shown in Figure 3 (Kornhuber & Deecke, 1965). The information flow from the frontal toward occipital direction, and back toward the limbic region recovers the DMN. The sensory transmission toward the sensory cortex by fast oscillations and response by slow oscillations was confirmed in humans (Buzsaki et al., 2013), but should be typical in all mammals. The existence of potential build up by sensory stimulation has been tested in the laboratory in the resting brain. Liu and colleagues (2015) have found that high frequency (40-100 Hz) stimulation of rat central thalamus relay neurons drives widespread forebrain activation *in vivo*, but low frequency oscillations (in the absence of sensory flow to the cortex) generate a jerking strain, potentially leading to convulsion. The down spin decoherence of enhanced brain frequencies decreases degrees of freedom, through long-term potentiation for example (Bliss & Lomo, 1973). Negative emotions dictate actions that over time recover the energy neutral state. Therefore, down spin accumulates information in the mind.

According to general relativity, elementary fermions form the spatial field curvature, but quantum mechanics dictates that some quality of the particle must change as well. This is also true for temporal fermions: the mental energy and the environment (i.e., field curvature) are intertwined and mutually determine each other. When the mind and the field are incompatible, emotional reaction is triggered. As the mental energy changes and adapts to the field, emotional reaction ceases. Repeated activation of the same neuronal connections requires less energy, resulting in less and less emotional involvement, forming automatic activation expressed by Hebb's law (Hebb, 1949), and hedonic adaptation (Schultz, 2007). Both examples clearly demonstrate the effect of the changing temporal field curvature on the mind. These processes give the cortical mind an immense advantage to adapt to environmental changes, to learn, and to

form intellectual abilities. By changing its mental energy, the mind (brain) remains congruent with the constantly changing environment. Manipulating the energy balances of the brain (by electrode stimulation or magnetic means) verification of the hypothesis will be possible.

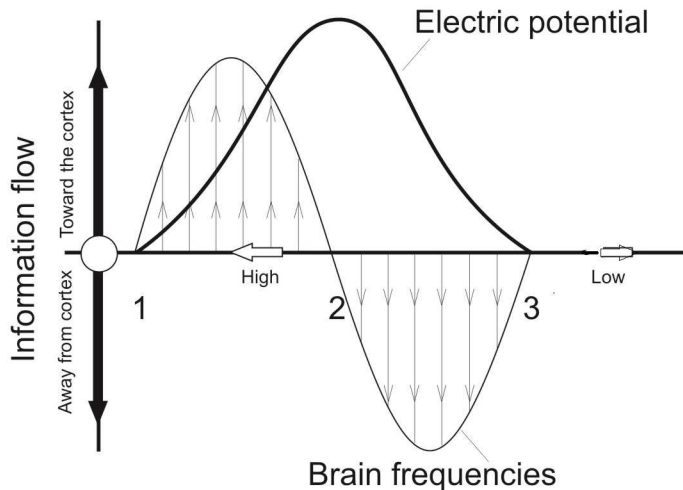


Figure 3. The brain's changing energy balance due to stimulus over time (between 1, 2 and 3). The brain frequencies change from high, on the left (#1), to low, toward the right (#3) and determine the direction of information flow in the brain (shown by thin line). The potential difference between the cortex and the limbic brain is indicated by thick line. The brain is energy neutral before stimulus (#1) and after a response (#3), but stimulus induces a potential difference between the cortex and the limbic brain (indicated by 2). The high energy need of enhanced brain frequencies curtails the volume of vibrating brain tissue, limiting information transmission capacity (indicated by 1), whereas the energy transmission capacity disappears during the lowest frequencies (indicated by 3). Cortical activation extinguishes the energy of the stimulus (#2), but it generates a potential difference, which initiates a flow reversal that recovers the DMN (#3).

2.3 Temporal elementary particles

A gyrocompass is a compass based on a gyroscope. As the planet turns, misalignment causes tilting to minimize the potential energy, which orients the gyrocompass toward true north. Likewise, the mind shows a cunning ability to restore the stability of the inner world of consciousness against varying temporal curvature, manifested as relentless bombardment by outside stimuli. By changing the mental energy balance (the connections of the neuronal landscape) the mind accumulates energy or information and forms standing waves that are true to the local field. *In this way the mind changes constantly and gradually with its environment.* The outermost layer of the temporal gyrocompass is the brainstem, which has essential function in the regulation of body and survival as it integrates the mind into the environment. Neurotransmitters interact to generate rhythmic firings across neurons, giving it an important gatekeeper role in influencing higher brain functions based on biological regulatory needs. Information transfer toward the cortex is regulated in the limbic brain, which, through sensory

and motor regulation forms the middle layer. Cortical activation forms the third, innermost layer. This is the transient, unknowable, and magical inner world of consciousness, which, through sensory processing, identifies itself with the body and becomes the source of self-awareness and the ego (Guterstam, 2015). Via its temporal orientation the mind interprets stimulus as a binary code, either past or the future. The mental states also form either positive or negative attitude (i.e., spin direction). Their combination form complex, nonlinear regulation, so response of cerebral animals cannot be easily predicted: depending on expectation or attitude, the same stimulus can produce diametrically opposing results, the hallmark of spinor operation. Evolutionary progression of the organism's ability to respond to stimulus permits temporal fermions to be classified into families, which represent increasing neural complexity:

EMOTIONAL NEUTRINO: Simple organisms with linear neural regulation form emotional neutrinos. Evolution increases the organization of the limbic brain, making responses to stimulus more congruent, and precise. Behavior has a genetic origin and learning remains rudimentary. Emotionless behavior makes it difficult to relate to these animals.

EMOTIONAL ELECTRONS: Animals with well-formed cerebrums (mammals and birds) that populate most regions of Earth are emotional electrons. Cortical insulation gives rise to the self, or ego, the source of cognition and self-awareness. Emotional electromagnetism (i.e., attraction and avoidance) aids the formation of complex social, often hierarchical structures. The dominant, emotionally supported motivation is the preservation of the ego. Emotions are the tools of survival; with them dangers can be avoided or overcome, and opportunities can be found. Animals with more sophisticated emotions appear later in evolution, and these animals exhibit great evolutionary advantages. The discrete energy changes lead to the Heisenberg uncertainty principle, and the Pauli exclusion principle that drives territorial needs and competition. Emotions dramatically improve homeostatic regulation, such as the ability to maintain constant temperature. Emotional electrons form a trusting state, allowing the feeling of oneness in mating as well as birth and care of their offspring.

3. Predictions and consequences of the hypothesis

The mark of a serious hypothesis is its predictive ability. Shockingly, provided appropriate considerations and adjustments are made (the most important adjustment is that the mind operates over temporal coordinates), every quality of elementary fermions can be recognized in mental behavior. Material fermions exhibit classical behavior, which involves temperature and pressure. Likewise, individual quantum uncertainty gives way to societies, where conflicts and interactions are manifested as emotional temperature and pressure.

3.1 Understanding and classification of emotions

The peak of cosmologic evolution is the cortical brain, which forms a self-regulating, insulated system, called the mind. Cortical insulation leads to consciousness (i.e., awareness of being separate from the environment), which is the exclusive privilege of emotional animals. Therefore emotions are energy states that are part of the general neural architecture of the brain (Touroutoglou et al., 2015). Such sophisticated homeostatic regulation allows mammals and birds to be warm blooded, form the mysterious inner world of consciousness, display impressive learning ability and develop complex social life (McNally et al., 2012). Through emotions we recognize ourselves in others (and emotion forming animals), which lends all minds a particle-like uniformity and indistinguishability. The above understanding allows true categorization of emotions as the fundamental interactions of the mind; the myriad specific mental phenomena can be intuited as the emotional equivalents of gravity, electromagnetism, and the strong and weak nuclear forces.

Because it is impossible to shield against it, gravity, the most pervasive fundamental force holds together the large scale structure of space and determines time's arrow. Gravity forms the curvature of space, and emotional gravity forms the socioeconomic layers of society. As entanglement pushes away from the equilibrium point, it increases field curvature differences (i.e., inequality) and lead to a bell-curve distribution in economies and societies (Koonin, 2011). The layers of temporal gravity are felt as differences in financial means, education, location, position, sex, race, and even age. People constantly and carefully monitor others' and their own social position and status, indicating its ubiquitous importance in any economic structure (Oveis et al, 2016; Smith & Magee, 2015). For this reason, individuals guard and actively promote their social position (field curvature) and react defensively to status threats, such as shame, criticism or any form of disrespect (Anderson, et al., 2015).

Due to the Pauli exclusion principle, the minimal-energy configuration of temporal fermions within temporal proximity is to have opposing spin. Entanglement ensures energy conservation between interacting particles by oppositely changing their mental energy. As the temporal gyrocompass strives to reorient itself to the temporal field, it recovers the DMN by either sacrificing or gaining mental energy, which actually changes the mind. In this way, the mind adapts to the curvature of the local field. The curvature differences of the temporal field reveal differences in trust and emotional sophistication (financial, social, cultural distinction) even in democratic societies. The innermost curvature layers of society are occupied more by mental-energy-poor, insecure, 'older' minds, than are the regions having smaller field strength. Since attachments are proportional to the temporal field strength, conflicts are more vicious in poverty and encounters remain more civil among members of the upper classes. However, it is a great oversimplification to associate temporal curvature with financial means!

3.2 Emotional temperature and emotional pressure

The inverse relationship between pressure and temperature in gases was recognized in the nineteenth century and led to the universal gas law. Surprisingly, the same relationship regulates emotional behavior. Because particle collisions create pressure, emotional confrontations create temporal confinement and lead to emotional pressure. In gases temperature is proportional to internal energy, whereas interpersonal and societal tension corresponds to the thermodynamic

energy of the mind. The temporal excess of positive emotions, faith, love, courage, and awe bubble up with the enthusiasm of the instant; by eliminating details they fuel enthusiasm, generosity, trust, the energy for happiness and joy. The increasing confidence and trust lower emotional temperature and pressure. Because elevated brain oscillations enhance the willingness for interaction, emotional temperature can be measured by the magnitude or degree of negativity, the extent of sadness, criticism, sarcasm, anger, or physical brutality. The negative energies are just mental tools to expand the boundaries of the temporal confinement. Criticism and anger provoke retaliation and reactions from the environment, which actually maintains the temporal pressure or temperature over time. Modulation of neuronal connections and the sensitivity of the brainstem structures (i.e., the temporal field curvature) manipulate time perception. The longer time perception of constricted and painful negative emotions leads to impatience, and stress. As time slows in both gravity and acceleration, *time perception elongates* within both negative (corresponding to positive temporal curvature field) and positive emotional states, corresponding to negative-curvature temporal fields (Neupert & Allaire, 2012; Rudd et al., 2012; Yamada & Kawabe, 2011)! Negative curvature temporal field increases confidence, whereas positive curvature reduces it. The unintuitive and puzzling characteristics of mental operation are an outgrowth of the mind's often tentative seeking of the energy neutral state by self-regulation.

3.3 Free will

It is hard to fully appreciate the environment's ability to direct our lives by regulating our emotions. Although we have little or no power over our own thoughts, which ultimately determine our actions and behavior, the brain's control over the body creates the belief in free will. The mind forms a unified experience by connecting sensory perception with mental states based on event related potentials (Guterstam et al., 2015; Mancini et al., 2011). Whether action occurs due to priming by conscious or unconscious (subconscious) stimuli, the mind presumes its ultimate causative role. Nevertheless, the common belief that our life is governed by conscious thinking has been increasingly challenged. As early as 1965 Libet questioned the existence of free will by showing that thinking and conscious actions are signaled by preceding unconscious brain activity. In addition, the sluggish conscious decisions have vastly longer time requirements from the fast, automatic actions. Conscious processes take a second or longer, but our fluid, fraction-of-a-second mental operation is overwhelmingly automatic. Conscious focus also becomes quickly tiring, but the automatic mind operates over the long term and remains stable in the face of environmental changes. We have to consider that our automatic mind, highly influenced and regulated by the environment and operating behind (sometimes against) conscious awareness, determines the course of our lives.

Parasites exploit their host and can fully manipulate host behavior in support of their life-cycle. For example, *Toxoplasma gondii* infection will spur a feline attraction in rodents which, assuredly deadly for the rodent, helps to complete the parasite's life-cycle in the body of the cat (Sugden et al., 2016). Behavior manipulation is also possible by an implanted electric sensor in the brain. A properly implanted remote control device in the animal's brain can be essentially used to drive the animal around as a car, at will, by electric regulation. This occurs, because the brain operates via electric impulses, which activate appropriate neuron assemblies and trigger

well-choreographed muscle movements (Carillo-Reid et al., 2016). A wide range of drugs as well as various brain stimulation techniques can radically change behavior, in some cases the changes lasting beyond the expected affective term (Fitz & Reiner, 2013). Yet addicts and other substance abusers claim to be in full control of their lives. Conscious decisions enhance brain frequencies and lead to information overload, a selfish down-spin state (stress), which distorts mental vision and twists memories. Detailed focus wastes time, distorts reality, and turns experience into a house of mirrors. Thus, the mind becomes partial and acts contrary to its own best interest, by forming back-and-forth emotional swings, leading to regret or remorse. The constantly changing attention eliminates freedom. As a result, people with negative attitude are enslaved by their circumstances and behave as puppets on a string. Their conscious minds are employed as public relation agents, to constantly explain away previous behavior. Like the distractive turbulences of a fast-flowing river, conflicts destroy mental progress and life suffers a gradual decline (Fredrickson & Joiner, 2002). Being in tune with the environment is the ability to sense and the flexibility to follow the flow of events. The mind with high mental energy (confident and calm mind) is satisfied, trusting and happy, is having no emotional incentive for change, which translates into satisfaction, private and professional success – possibly even on the trading floor (Kandasamy et al., 2016).

3.4 Heisenberg uncertainty principle

Primitive animals with a limbic brain display fairly predictable behavior; but the cortical manifold retains a memory and its response is heavily influenced by past experience. The response's nonlinear nature becomes especially prominent with enhanced stimuli, which produce polarized and even extreme reactions. The Heisenberg uncertainty principle, which prohibits the position and momentum of the particle from being known simultaneously, regulates the behavior of complex animals. In the mind the opposite poles of uncertainty are the temporal position and the extent of emotion. As a cocked gun, which easily fires, down spin decoherence only discharges the enhanced brain frequencies' accumulated pain and negative energy. This way the extent of anger or negative mood (how far one is willing to go) is uncovered, but its temporal position (origin) remains hidden. In contrast, up spin decoherence uncovers the temporal position. The transient positive emotions bubble up in the present moment. However, the extent of joy is unknowable, because there is no partial happiness.

3.5 Pauli exclusion principle

Through extensive connections to a host of brain structures, the amygdala has a central and powerful role in emotional regulation and fear conditioning (Dolan, 2008). By modulating emotions, it controls behavior and memory, often outside of conscious awareness. Being activated by perceived proximity and emotionally charged images (even if we are not consciously aware of them), the amygdala regulates personal space and boundaries by moving us (emotionally) closer to others or further away from them. The Pauli exclusion principle states that fermions cannot occupy the same quantum state. For matter fermions, the principle is valid in space, but for temporal fermions (animals and people) it prohibits temporal closeness and generates a conceptual (i.e., emotional) distance. Manifested as distrust, this leads to territorial

needs, or to avoiding eye contact in the elevator. Because the Pauli exclusion principle is responsible for the structure of matter, it also creates the structure of society or of ecosystems. People with low emotional temperature are satisfied and happy. Their mental calm makes them flexible and accepting (trusting) toward others. As in colder matter, the Pauli exclusion principle is muted. The opposite is also true. In nervous, stressed individuals the Pauli exclusion principle, manifested as critical tendency, is strong. However, critical tendency only applies to emotionally close situations (i.e., temporal closeness). For example, eye contact shortens emotional (i.e., conceptual) distance and thus enhances the potential for conflict (or connection) between conversation partners. Anxious people create conceptual distance by avoiding eye contact (Chen et al., 2012). When faced with increasing emotional distance, we intuitively move closer in an attempt to maintain the emotional distance (Lenz's law in the mind). Emotionally distant people (if spending time together) tend to approach each other emotionally, but loving partners tend to become distant. As with matter, societies and ecosystems are also regulated by the second law of thermodynamics; without outside influence (such as wars or natural disasters) emotional distance decreases over time and leads to democratization, culture and congruence of society.

3.6 Cognitive interference

The famous double-slit experiment in physics is described by quantum probability. Its mental analogue demonstrates irrational behavior, the so-called disjunction effect. The famous example is: one will do A given event E occurs and will do A given event E does not occur, yet will not do A when the outcome of event E is unknown – which violates Savage's *Sure-Thing Principle* (Savage, 1954; Tversky & Shafir, 1992). Without feedback the possibilities remain open; the mind, ignorant about the implications of its decision, is in a quantum limbo. The phenomenon is analogous to quantum interference, which occurs during the double-slit experiments in physics. Information on the score collapses the wave function and liberates the mind from interference. Mental interference, which occurs *instantaneously* and without any conscious involvement, exaggerates or extinguishes (by adding or subtracting from the temporal wave form of the stimuli) personal emotional tendencies. Thus temporal interference produces temporal waves and bursts. Positive interference often leads to exaggerated interest, such as an investment bubble. However, over time, negative interference extinguishes enthusiasm and can even lead to avoidance. Therefore, in analogue to interference in quantum theory, the presumed context of the first judgment or decision interferes with subsequent judgments or decisions.

3.7 Quantum entanglement

Quantum mechanics considers events to be subspaces (or orthogonal projections on these subspaces) of a vector space. In quantum entanglement observation on one part of the system instantaneously affects the state in another part of the system, even if the respective systems are separated by space-like distances. Entanglement entails a common wave function, which cannot be decomposed into separate subsystems. The same phenomenon transpires in emotional fermions over conceptual distance, i.e., over time. In word association experiments entanglement activates associative target words simultaneously, thus can be modeled by quantum theory (Busemeyer & Bruza, 2012; Pothos & Busemeyer, 2013). Word associations often defy logic

(analogue to “spooky action at a distance”) and there is a conceptual resistance to ambiguous situations (such as the Necker cube). The delayed choice quantum eraser, proposed by Scully and Druhl in 1982 and verified some years later, investigates the paradox of the photon’s path to the detector. Changing the experimental apparatus while the photon is in mid-flight, the photon was able to modify its state between a wave and a particle (cf. Kim et al., 1999). Analogous to the above experiment, a cemented mental reality can be completely overturned by new information. With temporal fermions, the Bell nonlocality means that present comprehension is updated retroactively, as recognition miraculously expands understanding in time, pushing it into the past (to the time of the first experience) and the future. Discovering a secret expands comprehension over time, so childhood experiences can only be viewed later by the mind of the adult. The Bell nonlocality means that decoherence can be influenced from great spatial distances (for matter) or temporal expanses (i.e., for the mind). Ideas in the hidden corners of the mind can be activated and manipulated by quantum entanglement years or even decades later. In many ways the study of quantum phenomena in the mind is still an uncharted territory. Experimental designs are often difficult or impossible due to the conceptual insufficiencies in the understanding of the nature of consciousness.

4. Cosmologic evolution

The organic unity of cosmos

Like atoms in chemistry, prime numbers form indivisible and deterministic building blocks in number theory. The existence of prime structures in nature might be more general however. Material fermions and consciousness form the essential, fundamental and exclusive constituents of the universe. Originating at zero time, matter fermions use up space to produce temporal evolution, which culminates in the emergence of the mind. In turn, the mind originates at zero volume and interacts with time to build mental volume in mental fermions. Thus, the orthogonal elementary fermions (matter and mind) are the indivisible building blocks of the universe; forming predator-prey relationship, they embrace as yin and yang and determine each other’s future and past. White holes infuse a creative potential of cosmologic expansion throughout the cosmos and lead to the experience of expansion we call dark energy, which presses against the immediate proximity of black holes, forming excess gravity, called dark matter. Both the spatial and temporal fields are oriented between and bounded by the poles (Figures 1 and 2), but interaction fuels their low entropy states. With death interaction seizes up, eliminating the local vision and experience of consciousness. The fundamental connection between the mind, the material fermions and the universe lead to their energetic and structural similarity, coherence and unity. Moving between matter, mind and the universe the frequencies (energy levels) decrease, whereas increasing degrees of freedom manifest increasing complexity. The physical laws are limited to and characteristic of the universe, which cannot be divided and from which nothing can escape.

Awareness is associated with the highly organized neuronal assembly of the brain. However, unhindered awareness has been shown to exist during clinical death, when the EEG is

flat and brain activity is absent (Borjigin et al., 2013; Parnia, 2014). Death halts brain activity and sensory interaction, allowing the mind to increase its entropy as it transverses the temporal field of the cosmos. People with negative attitude accumulate information and converge toward the black holes; those with positive attitude mind congregate along white holes. Black holes represent a mental world consumed by details, problems and obstacles; the proximity of white holes means an elimination of details, leading to mental expansion with unlimited possibilities. Since entropic changes occur over time, movement toward the black holes stretches time into infinity, whereas progression toward the white holes rewinds time to zero.

Conclusions

Material interaction forms a cosmologic evolution that culminates in the emergence of the intelligent mind. Material fermions, which situate along space, and the emotional mind, which aligns according to time, are necessary, inherent and organic energy building blocks of the universe. Matter fermions are directly regulated by the environment, whereas consciousness is integrated into the environment via the body. As the energy of photons betrays variations in spatial volume, emotions testify about mental change. A positive stimulus forms positive emotions by accumulating energy via low frequencies (negative temporal field curvature), whereas negative stimulus (positive temporal field curvature) involves the sense of temporal shortage due to detail oriented high frequencies, which parallels negative emotions. Emotions force actions that modify the neuronal connections (modulating mental energy). Fermions (matter and mind) are energy formations that accumulate information via interaction. Death ends biological life and sensory interaction, but the intelligent mind, as the essential ingredient of the cosmos, stretches into a temporal infinitum. Via a journey through time energetic changes increase mental entropy that culminates at one of the poles of the cosmos. High entropy is the ability to predict the next element, which is satisfied by both maximal (black holes) and zero information (white holes) content. The high entropy fermion merges with the corresponding pole: the information saturated black holes or the energy rich white holes. This guarantees the global conservation of information. The two dimensional confinement of the black holes is dark, hot and non-moving. Everything feels unapproachable, difficult and heavy due to infinite information content. White holes are infinitely spacious, yet everything feels close, full of possibilities, youthful energy and light. White holes are the light itself. This way the individual mind becomes part of the cosmos, and actively participates in its evolution.

The Big Bang gives birth to material particles and evolution begets consciousness. The universe's energy and information states vary smoothly between the poles. However, conditions are fine-tuned for life (and consciousness) only within mild gravity, which fits our world. Significant changes of field curvature are energetically prohibited: it would first destroy life and later would destroy material structures as well. Evolution appears to be a random process, but over time it forms an arch that spans between the formation of material fermions and the emergence of intellect. The Pauli exclusion principle increases the differences in field curvature (spatial or temporal) of the universe, creating its poles, which form its unapproachable

boundaries. The microdimensions (both time and space) form a closed minimal surface through entanglement. The opposing dynamics of macro and microdimensions lead to self-regulation, which is a continuous fine-tuning of the physical parameters of the universe.

Intelligent life arises wherever the necessary minimal conditions for biological evolution are met. Intelligent occupants of the cosmos should be similar not only in the structure of their minds, but in the biological building blocks of life, and in their emotional sophistication as well. The hypothesis sets up an intuitive and organically connected worldview. The physical basis of consciousness opens a new dimension of understanding that can revolutionize the social sciences and technology as well as the healing of mental diseases. The realization that the mind is an inalienable part of the infinite universe, therefore itself is infinite, will increase social cohesion and goodwill. The human mind operates according to the same organizational principles, the same physical and mathematical laws, as the cosmos, which is the monotheistic God of worship. This tells me that there is some form of cosmic intelligence, which manifests in sophisticated self-regulation.

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Research Essay

The Theory of a Natural Afterlife A Newfound, Real Possibility for What Awaits Us at Death

Bryon K. Ehlmann*

Abstract: For centuries humans have considered just two main possibilities for what awaits us at death: a “nothingness” like that of our before-life or some type of supernatural afterlife. The theory of a natural afterlife defines a vastly different, real possibility. The natural afterlife embodies all of the sensory perceptions, thoughts, and emotions present in the final moment of a near-death, dreamlike experience. With death this moment becomes timeless and everlasting to the dying person—essentially, a never-ending experience. The relativity and timelessness of the natural afterlife must be clearly understood to appreciate why it’s not supernatural yet indeed an afterlife and potentially the optimal heaven. The theory of a natural afterlife is now only a hypothesis; however, science, human experience, and logical deduction suggest that it’s extremely plausible and advances in science and technology could someday make it a scientific theory. This paper states the theory, describes the unconventional afterlife it defines, extensively analyzes its validity, and briefly addresses how it can significantly impact how people view death. Analytical tools, typically used for system modeling and language definition, are applied here to present an abstract model of a lifetime within time eternal. The model is used to support and explain the theory.

Keywords: afterlife; natural afterlife; human mortality; death and dying; near-death experience; imperceptible death

1 Introduction

Many claim that near-death experiences (NDEs) provide proof of a supernatural afterlife—i.e., that human consciousness continues after death. Books making this claim, each based on a personal NDE, have become bestsellers. Examples are *Proof of Heaven: A Neurosurgeon's Journey into the Afterlife* by Eben Alexander (2012) and *Heaven is for Real: A Little Boy's Astounding Story of his Trip to Heaven and Back* by Todd Burpo (2011). Other books, each based on studies of numerous individual NDEs, also make the claim. Examples include those by Raymond Moody (2001), Jeffery Long (2010), and Pim van Lommel (2010).

Many, however, dispute that NDEs provide proof or even evidence of an afterlife. Several articles in popular scientific publications point to scientific research showing that the common features of NDEs are explainable as natural physiological responses, which can be replicated by brain stimulations, certain drugs, or diseases. Such responses are believed to be induced by the brain as it senses disaster or goes into shut down. Based on this research, the claim is made that near-death experiencers (NDErs) are just mistaking a natural *hallucination* (as some call it) for a supernatural afterlife. For example, see “Why a Near-Death Experience isn’t Proof of Heaven” by Michael Shermer (2013).

The *theory of a natural afterlife* brings a new interpretation to this scientific research and a middle ground regarding both claims concerning NDEs. It does so by defining a newfound possibility for what may happen to us—more precisely, to our conscious self—when we die. The

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theory, a hypothesis in a scientific sense, suggests the existence of a natural, versus supernatural, “afterlife”—one amazingly created within the mind, perhaps but not necessarily induced by brain physiology as some scientists suggest. The possibility of this *natural afterlife*, which seems an oxymoron, has never been mentioned in scholarly publications. More surprisingly, until recently it hasn’t even been part of the conversation regarding an afterlife.

Admittedly, the natural afterlife is unconventional, as indicated by the quotes around *afterlife* in the previous paragraph. It requires no belief in anything supernatural, including a God. Thus the theory of a natural afterlife is religiously neutral; however, like the NDE, its defined afterlife can be interpreted as a spiritual “heaven” (or “hell”). Here, quotes enclose *heaven* (and *hell*) as they too are unconventional. The heaven, though unconventional, is at least philosophically consistent, unlike the conventionally envisioned heaven associated with many, yet mainly Western faiths; that is, logical conflicts among perfection, time eternal, free-will, evil, and boredom do not exist.

Hopefully, all of this is clarified in the remainder of this article, organized as described below. Quotes around *afterlife* and *heaven* are hereafter not used since the natural afterlife is indeed an afterlife and possibly a heaven to the dying person, which in the end is what really matters.

- Section 2 states the theory and explains the essence of the natural afterlife it defines.
- Section 3 elaborates on important aspects of the afterlife and theory.
- Section 4 addresses the theory’s validity and verifiability. It provides supporting evidence and a *near-proof*, indicates future advances that would allow for testing, underscores the theory’s explanatory power, and deals with some likely challenges to the theory and obstacles to its acceptance and appreciation.
- Section 5 concludes by summarizing the essential claim and credibility of the theory and by touching on its scientific, philosophical, and religious significance.
- An appendix expounds on how humans perceive time, comparing the natural afterlife to permanent anesthesia and formally defining it in the context of life and time eternal.

2 Statement and Explanation: The Essence of the Natural Afterlife

In its most inclusive form, the theory of a natural afterlife can be stated as follows:

The natural afterlife of a NDE-enabled creature is the NDE from which it never awakes—essentially, a never-ending experience (NEE) relative to the creature’s perception.

The theory defines the natural afterlife, implying its existence by its association with the NDE—a phenomenon evidenced by numerous accounts recorded across cultures and throughout history as far back as the oral tradition (Holden, Greyson, & James, 2009b; Moody, 2001). Here, the NDE is assumed to be a *near-death* experience, not an *after-death* experience as some postulate. It occurs in an altered state of consciousness, as do dreams, and is thus dreamlike to some extent.

To accept this seemingly implausible, NDE-based NEE and *natural* afterlife as plausible, one must fully understand its essence. To do so, one must be able to imagine what may be in their mind at near-death *and think of nothing else*. So, imagine this scenario:

You are having what will be called your NDE should you recover. In this very profound, all too real experience, you’re overcome by marvelous feelings of wonder, love, and

contentment. You truly believe that you have arrived and are experiencing heaven, and you're excitedly anticipating the next moment and an eternity of joyful experiences.

With death and the end of consciousness, this is your natural afterlife. You perceive nothing more, *yet nothing less*. Everything else that happens thereafter is totally irrelevant *to you*. However, very relevant and *relative only to you*, is that the moment described above goes on forever. Your NDE consciousness, your sense of self, and, if one exists, your soul has entered a timeless dimension. You are finally, fully, and forever "living in the moment." You believe you're in heaven, and for all eternity you never know otherwise.

Ironically, this afterlife is possible not because individual consciousness continues after death but because with death, when *and if* such consciousness ends, you won't know that:

- you've died. You won't see the "NDE screen" go blank.
- your NDE has ended. You won't notice that nothing more happens in your NDE.
- an eternity is fleeting by. Is this happening just before or after you died? You can't tell. *Relative to you*, it's irrelevant, time is suspended, and your NDE is essentially timeless and everlasting, i.e., an *NEE*.

Analogies along with thought experiments (those carried out only in the imagination) are helpful towards understanding the natural afterlife. First, it's like the most realistic, intense dream you've ever had except that you never wake up from it. This scenario can only be imagined as no living person has ever experienced it. Second, the natural afterlife is like the following scenario, enhanced only slightly from real human experience:

You're totally engrossed in watching an extremely exhilarating movie. Then, without knowing: you unexpectedly, without any perceived drowsiness, fall asleep; for you the movie has been paused and time is fleeting by. Until you wake up, you still believe you're watching that movie.

When you do finally wake up, you're shocked that you fell asleep and that the movie has continued on. Of course, with the natural afterlife, you just never wake up.

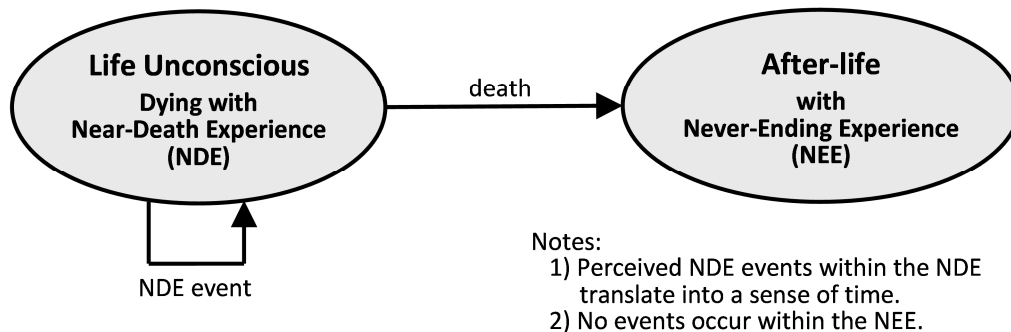


Fig. 1. A state diagram showing the transition in the state of mind upon the event of death assuming an NDE. An oval denotes a state. A directed line (arrow) labeled with an event description denotes a state transition resulting from the event.

When the NDE ends in death, the dying person simply transitions from a dynamic into a static state of mind. The final moment of the NDE becomes the NEE. Fig. 1 gives a state diagram

showing the final two states of mind and the transition assuming an NDE, death, and with death the loss of all consciousness.

A statement given earlier and repeated below describes the heavenly natural afterlife in a nutshell and can be used to both stress its relativity and explain Fig. 1.

You believe you're in heaven, and for all eternity you never know otherwise.

The "believing you're in heaven" with a sense of self and all that the NDE offers, exists only in your mind within the **Life Unconscious, Dying with NDE** state. It's only relative to you because those living don't know "you're in heaven." It becomes timeless, relative to you, because with the loss of consciousness and death you don't know that nothing more will happen in your NDE, while those living do. It's "for all eternity," i.e., everlasting, because your "never knowing otherwise" extends beyond the event **death** into the **After-life with NEE** state. It's everlasting, however, only relative to you because you will never know that your NDE ended with death, while those living do. So, it's timeless and everlasting and *it's all relative!*

What's peculiar about the natural afterlife and key to understanding it is this: it's not about realizing you're in the afterlife *after* you've died, as humans have always imagined, but about realizing you're there *before* you've died and then never knowing otherwise.

3 Elaboration: Aspects of the Natural Afterlife

Important aspects of the natural afterlife and the theory, which can be called the *NEE theory* for short, need to be emphasized, clarified, or expanded upon.

3.1 Relative

The relative essence of the natural afterlife cannot be emphasized enough. The theory of special relativity asserts that time is relative to one's velocity. The NEE theory asserts it may also be relative to one's being alive or dead. In life one perceives time as a marching parade of events, while in death one may perceive only a forever moment of time, not realizing it is eventless.

Humans have always been solely transfixed on a *sustained* conscious afterlife that must be seen as such by everyone, especially the living. Thus hidden from view has been an afterlife that is only *momentary* to the living yet *to the dying person alone* is timeless and everlasting.

3.2 Timeless and Everlasting

The eventless, thus timeless, and everlasting essence of the natural afterlife also cannot be emphasized enough. Death is an event that is only perceived by others. At death, a person is simply left in a pleasant (or unpleasant) instance of time—i.e., $\Delta t = 0$ (delta t , meaning change in time, equals zero). The loss of memory is irrelevant since memory is only necessary when time elapses, i.e., when $\Delta t > 0$. Zero energy is needed for any sustainability because, again, $\Delta t = 0$.

Again, using analogy and imagination, the natural afterlife can be likened to your before-life *except* for a hugely significant difference. It begins with you being "paused" in an NDE-conscious state of mind. Then, like your before-life, billions of years pass by without your knowledge "in no time at all," literally. The one other difference is that, unlike your before-life, your natural afterlife has no terminating event, like birth. Thus, it is everlasting.

3.3 Logically Consistent

Since $\Delta t = 0$ in the natural afterlife and one is just “living” in a moment, no decisions are made and thus free-will is not an issue. Also, one can never *become* bored. In contrast, in any time-perceptive ($\Delta t > 0$) perfect world, free-will is impossible as imperfect decisions would introduce imperfection, perhaps even evil. Though without free-will in such an infinite ($\Delta t = \infty$) world, boredom is most likely as there will be no decisions to make and no challenges. Apparently, *any* eternal afterlife where a time-perceptible consciousness survives death must be either imperfect or logically inconsistent. The conventionally envisioned heaven is the latter, while the NEE heaven is neither for within it one can logically experience a forever, perfect moment.

3.4 Dreamlike and Spiritual

The natural afterlife is dreamlike in that NDEs and dreams are somewhat similar. Both provide alternative, spiritual experiences to the fully conscious, awake one. Both can be very intense and indistinguishable from reality. Both seem mysteriously produced in content and have been historically viewed by many as providing a potential passage into a transcendental realm. *Oxford Dictionaries* defines a dream as “a series of thoughts, images, and sensations occurring in a person's mind during sleep,” which also describes the NDE except that it normally occurs during a brain diminished state rather than during sleep. Other notable differences are 1) the NDE can be even more intense than a dream and so have a more lasting impact (Noyes, Fenwick, & Holden, 2009), so much so that many claim their NDE was not dreamlike (Long, 2008), and 2) the NDE can occur during general anesthesia whereas dreams cannot (Greyson, Kelly, & Kelly, 2009, p. 226; Hameroff, 2010b), implying a differing production mechanism or source.

In regard to whether a natural afterlife results with death, some differences between NDEs and dreams may not be that important (but certainly not #2 above). The possibility exists that a dying person has no brain-diminished NDE but instead dies in their sleep interrupting an intense dream. Vivid and meaningful end-of-life dreams and visions (ELDV's) have been recorded throughout history. A recent study found ELDV's to be very common and also found that comforting perceptions of meeting deceased loved ones within them were more prevalent as participants approached death (Hoffman, 2016; Kerr et al., 2014). It seems very plausible that such vivid, “near-death” dreams have been reported as NDEs and with death also result in NEEs.

Given that the natural afterlife is NDE-based, it is spiritual. All beings—the NDEr, other humans, and nonhumans—are present only in spirit, certainly not in body, perhaps just as they are in normal dreams or perhaps not. Nevertheless, no physical objects of any kind and no physical space are involved. The natural afterlife exists beyond both time and space.

3.5 Varied and Personalized

The theory does not say what the content of the NEE will be or whether it will be pleasant or a nightmare. It could be a celestial communion with angels, a glorious day on the beach, or an eerie encounter with demons. The most common features of pleasurable NDEs are well documented: OBEs; heightened senses; guided or surrounded by light; otherworldly; feelings of peace, joy, and/or cosmic unity; and encountering mystical and/or familiar human beings (Kellehear, 2009; Zingrone & Alvarado, 2009). Variations, however, abound. Indeed, variations include *distressing NDEs (dNDEs)*, a term used by Nancy Evans Bush (2009) to describe “‘frightening,’ ‘negative,’ or ‘hellish’” NDEs. Based on many NDE studies, she concludes that

the percentage of such NDEs among those reported is “possibly in the mid- to high teens” but also that likely “dNDEs are underreported” (p. 81).

Variations in NDEs may result from a person’s life experiences, beliefs, culture, their interpretations of the experience, and/or near-death brain physiology. However, research on reported NDEs has shown that none of these factors can reliably predict the content of an NDE (Greyson et al., 2009, p. 226; Holden, Long, & MacLurg, 2009). Whether the natural afterlife is a gift from God or nature and whether a God (versus nature) plays a role in fashioning it may forever be a matter of one’s religious or spiritual faith or lack thereof. The fashioning, however done, permits the natural afterlife to be profoundly personalized. The human beings that often appear in NDEs, who may be deceased or still living, are most often those who were emotionally close to the NDEr (Zingrone & Alvarado, 2009).

3.6 The Optimal Heaven

The natural afterlife can provide the most heavenly afterlife possible given the extremely pleasurable features of many NDEs, as has been reported, and the natural afterlife’s timeless, everlasting, logically consistent, spiritual, and personalized aspects. This statement may seem incredible since within the natural afterlife nothing happens! As humans we are so addicted to happenings—i.e., events and thus human-time—that it’s hard to appreciate the happiness that is possible in an eventless afterlife. We think we need events, i.e., perceived change, to make us eternally happy—hence the illogical longing for the supernaturally *perfect*, everlasting, *and yet changing* thus time-perceptive afterlife. But do we really need events? First, in the heavenly natural afterlife one doesn’t know that nothing more will happen and thus won’t miss a thing. Instead, humanly habituated by the experience of time always marching on, one is left in a state of exuberant, unspoiled anticipation of many more heavenly moments to come. Second, are life’s events what give us pleasure or is it the feelings aroused by these events? The natural afterlife can be a moment where, based on past NDE events, one feels the ultimate in happiness, knowing they’re in heaven forever, immersed in love (in the absolute presence of God as the theist would believe). Once this happens, exactly what more needs to happen?

3.7 Not Guaranteed but Perhaps Prevalent and Apparently Unbiasedly Bestowed

The theory does not guarantee a natural afterlife. Clearly, the percentage of people having an NDE before dying is unknown. The percentage of near-death survivors reporting an NDE varies widely among studies. A 1981-82 study found that 47% of near-death survivors of attempted suicide reported an NDE (Zingrone & Alvarado, 2009). Though this result is high relative to other studies, reports of NDEs only grow as advances in medicine—e.g., cardiopulmonary resuscitation (CPR)—continue (Brennan, 2014, p. 329; Holden, Greyson, & James, 2009a, jacket summary). Also, studies of survivors thought “near-death” likely underestimate the frequency of NDEs among the dying because such survivors may not wish to divulge their NDEs or, more significantly, may not have been quite *near-death* enough to have one.

Suppose there’s no NDE at death? The after-life (with hyphen) could be just like the before-life, often described as “nothingness.” However, the NEE theory doesn’t address this question.

Though the natural afterlife isn’t guaranteed, it appears to be unbiasedly bestowed, at least based on one study of NDErs (Holden, Long, & MacLurg 2009). After reviewing research on the characteristics of NDErs—e.g., age, sex, race and ethnicity, education, religious affiliation and

religiosity, sexual orientation, and psychological factors—the study concludes NDEs appear to be “equal opportunity transpersonal experiences” and that “everyone is a potential NDEr.”

3.8 Independent of NDE Explanation

Some scientists think that NDEs are purely the creations of brain physiology, perhaps involving similar mechanisms as dreams, while others contest such views. Dr. Kevin Nelson (2011), a neurologist who studies NDEs, thinks NDEs employ the same brain apparatus that is used for dreaming within a REM (rapid eye movement) state of mind. Also, the out-of-body experience (OBE), sometimes an initial part of the NDE, is thought by some to be related to lucid dreaming (Green, 1995; Levitan, 1991; Nelson, 2011). However, Bruce Greyson, Emily Williams Kelly, and Edward F. Kelly (2009, pp. 213-244) provide a credible rationale as to why current physiological “explanatory models” (i.e., explanations) cannot account for some NDE features. They argue that serious consideration should be given to a transcendental explanatory model where “some level of reality transcends the physical world.”

Explanations of how NDEs and OBEs occur, however, are immaterial to the validity of the NEE theory. Also immaterial is evidence that similar experiences happen to people when they are not near death. The only thing that is material is that NDEs provide “thoughts, images, and sensations” very near to death that are “even more real than real”—a phrase used to describe the NDE by neurologist Steven Laureys based on a study of NDE memories (as cited in Thonnard et al., 2013) and quoted in Brumfield (2013). Thus, they provide the prerequisite final, intense, perceptive moment that with the loss of all subsequent perception becomes a forever present, i.e., the NEE.

3.9 Applicable to Other Creatures

The theory applies to any “NDE-enabled creature”—i.e., those capable of a near-death dreamlike experience. Research has shown that REM sleep, conducive to dreaming, occurs in higher level mammals, including rats (Bekoff, 2012; Louie & Wilson, 2001). Moreover, rats have shown a surge in brain activity just prior to death, which could be indicative of NDEs (Borjigin et al., 2013) and thus NEEs. Thus, there may be a dog heaven after all!

3.10 Natural but Nonexclusive

The NEE theory uniquely labels the natural afterlife as *natural* since, unlike others, its definition and associated explanation, now completed, are presently within the scope of conventional scientific understanding. As such, and likely shocking to its adherents, the theory provides religious naturalism (Crosby, 2008; Stone, 2008) with a spiritual afterlife.

The theory, however, merely defines this afterlife and implicitly claims its existence. It does not deny the existence of any supernatural afterlife, no matter how apparently illogical or (at least for now) unscientific. This afterlife could be an after-death type of NDE (e.g., Long, 2008), or an afterlife that immediately or subsequently overrides the NEE, thus providing a new perceived present—e.g., the initial moment of a judgment day or a reincarnation.

4 Validation: Can the Theory Be Verified?

4.1 Near-proof

The natural afterlife results from the conjunction (\wedge) of three natural phenomena. First is the ability to have an NDE. Label this *NDE*. Second is the animalistic perception of time as relative only to perceived events. Label this *event relative time*. Third is the *imperceptible death*, which is the inability of a dying creature to perceive their moment of death, however inexact the event. Label this *imperceptible death*. The NEE theory can now be logically expressed as

$$(NDE \wedge \textit{event relative time} \wedge \textit{imperceptible death}) \rightarrow (NEE \Leftrightarrow \textit{natural afterlife})$$

where each phenomenon is treated as a proposition. To prove the theory, one must show that all three propositions and the implication (\rightarrow) are true. The equivalence (\Leftrightarrow) is true by definition.

The ability of humans to have NDEs is beyond question based on numerous reports (Holden, Greyson, & James, 2009a; Long & Perry, 2010; Moody, 2001). Thus, *NDE* is true for humans and perhaps for other NDE-enabled creatures (Borjigin et al., 2013).

Also, well established is our animalistic perception of time as relative to and dependent on an observable, ordered sequence of events, real or imagined. Einstein revealed that “time has no independent existent apart from the order of events by which we measure it” (Barnett, 1964, p. 19, 47). Philosophy also acknowledges the dependency of our perception of time on “changes or events *in time*” and our perceptions of “their temporal relations” (Le Poidevin, 2015). Accordingly, current dictionary definitions reflect an event relative time. Merriam-Webster, for example, defines *time* as “a nonspatial continuum that is measured in terms of events which succeed one another from past through present to future.” Thus *event relative time* is true.

The dependency of time on events implies that when events cannot be perceived within a state of mind—e.g., dreamless sleep—we experience timelessness, not nothingness. That is, timelessness trumps nothingness. We only lose our sense of time, not our senses of self and being, which are very important things. To be perfectly clear, within an eventless state of mind, our senses of self and being are lost (or more precisely, become inactive) *in the minds of the time perceiving awake* (i.e., in reality); however, *in our minds*, relatively speaking, we never lose them. They were present in the last event experienced before entering the eventless state, nothing happens in this state to tell us we’ve lost them (not even total darkness), and so they become timeless until another event is experienced. The Appendix further elaborates on how our perception of time and timelessness supports the NEE theory.

Fig. 2 shows a simplified, abstract model of life including the before and after, giving major states of mind, or consciousness, and the transitions (arrows) between them. The rightmost two states (ovals) are the same states shown in Fig. 1, except an NDE is not assumed. A time-perceptive state has an arrow that is labelled with a type of *event* and loops from and into the state. Time is perceived to advance within such states as these perceived internal events occur. States that are timeless have no such looping arrows. Examples of perceived events are the tick of a clock, a spoken syllable, the flap of a wing, a blink of the eye, and a new thought or feeling.

Assume temporarily that *imperceptible death* is true. Then, when an NDE ends due to death, one isn’t informed in any way that “You’re dead, NDE over.” And clearly, once dead, one never notices that no more NDE events occur. Also, no perceivable event will ever occur to end the ensuing timelessness. Hence, one’s mind is suspended in the last NDE moment with senses of self and being both intact. Such suspension results in the NEE. Thus the implication (\rightarrow) is true.

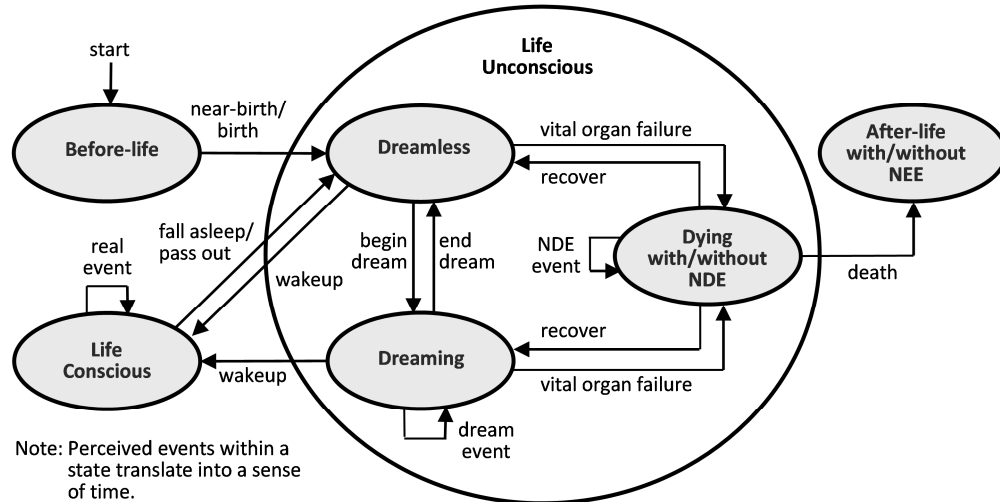


Fig. 2. Major states of mind in life and state transitions—an abstract model where dreams and NDEs are given more prominence. Again, an oval denotes a state and a directed line (arrow) denotes a state transition resulting from the described event.

Now only *imperceptible death* remains a proposition to prove. If until regaining consciousness, i.e., coming to, humans never perceive the moment of

- 1) falling asleep while watching a movie or just lying in bed,
- 2) passing out while being given a general anesthetic, and
- 3) ending a dream,

then it is extremely likely they never perceive the moment of

- 4) death while unconscious and dying, with or without the NDE.

Item 4 seems especially true given that brain cells are being deprived of oxygen and electrical signals in the brain are fading.

Indeed, with the model in Fig. 2 an imperceptible death can be seen as consistent with a more general phenomenon and proposition. Call this the *imperceptible loss of time*. It states that a person can never perceive the moment of transition from a time-perceptive state into a timeless state. The reason is obvious. No perceptible event indicates the transition, neither the transitioning event (in Fig. 2 *fall asleep, pass out, end dream, and death* for items 1-4 above, respectively) nor clearly any event afterwards within the timeless state (*Life Unconscious, Dreamless* for items 1-3 and *After-life* for item 4).

From the above analysis of human experience, *imperceptible death* is *nearly* certainly true.

Therefore, since *NDE, event relative time*, and the implication (\rightarrow) are all true, the NEE theory is *nearly* proven by logical deduction. ■ (Nearly!)

4.2 Testability

Unfortunately, it seems that unless science can someday resuscitate those beyond the “moment of death” to verify the imperceptible death proposition (and the NEE itself), the NEE theory cannot be tested. However, is this really the case?

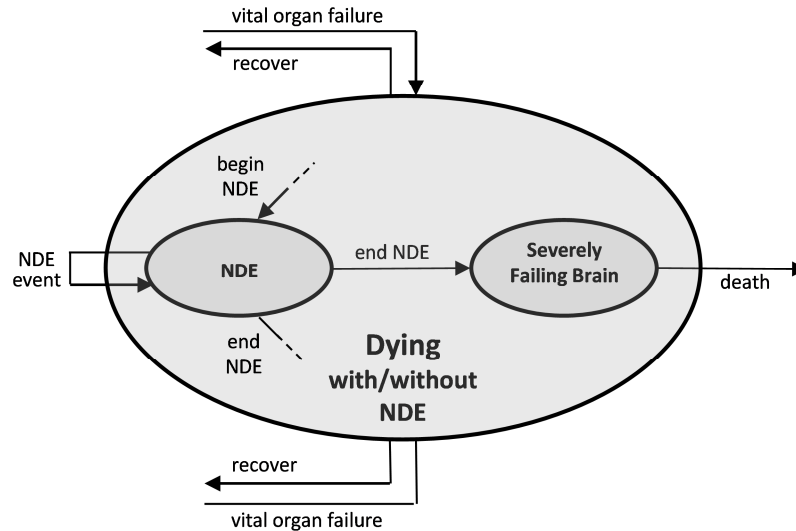


Fig. 3. A zoom-in to the Dying State of Fig. 2 that focuses on the two internal states most relevant to the NDE and death.

Or, could advancements in medical science and technology allow the theory to be tested and thus verified or possibly falsified in the future? The key to this possibility lies in the fact that most likely *a person never really dies in the midst of an NDE*. Instead, as indicated in the Appendix, a span of time follows the last NDE event and precedes the actual event **death**, as shown in Fig. 2. This time span is timeless relative to the dying person and can be viewed as occurring within a state of mind that is internal to the **Dying** state of mind shown in Fig. 2. This internal state of mind is shown in Fig. 3 within the **Dying** state and labelled **Severely Failing Brain**. It exists because brain death is a gradual process that can be viewed as ending only after the last detectable moment of any brain activity. The **Severely Failing Brain** state is entered in the case of **Dying with NDE** when the deterioration of brain cells at some point ends the NDE. Given the existence of this state, the following sequence of science and technology breakthroughs and research results may be within the future realm of possibility:

- 1) Technology allows close and detailed monitoring of the condition of brain cells and brain activity within dying patients.
- 2) Such brain monitoring along with interviews with NDE survivors reveal the signature brain activity within certain regions of the brain that identifies the NDE.
- 3) Brain activity in dying patients is monitored to detect the beginning and end of NDEs.
- 4) Testing reveals the levels of brain cell functionality (BCF) typically remaining just prior to when all NDE brain activity ceases as brain cell deterioration progresses. Let $minBCF_{NDE}$ represent these levels.
- 5) Testing also reveals the levels of brain cell functionality that are required in order to think—i.e., to consciously entertain a thought (T), any thought but especially one like “I’m awake.” or “My NDE has ended.” or “I’ve died.” Let $minBCF_T$ represent these levels.
- 6) The conclusion is reached that $minBCF_{NDE}$ falls well below $minBCF_T$, which verifies the imperceptible death proposition and thus the NEE theory.

- 7) Medical science and technology allows some dying patients to be resuscitated who are within the time period after NDE brain activity had ceased and $minBCF_{NDE}$ had been detected.
- 8) Interviews with these survivors surprisingly reveal that they perceived the moment when their NDE ended. *If true, this finding would falsify the imperceptible loss of time proposition and thus the NEE theory*, since the theory depends on the dying person not knowing their NDE has ended.

The above sequence provides one possible future scenario, and perhaps there are others, that would allow the NEE theory to be verified or falsified—making it a scientific theory, someday.

4.3 Supporting Evidence and Explanatory Power

Though the theory cannot *yet* be verified, the given proof shows how near it is to being certain, or at least extremely plausible. Moreover, the theory is supported by and consistent with the existence of an amazing dreaming and NDE capability within the human mind, the reported scientific explanations for NDEs, and the intensity and reality of them. As such, it offers greater explanatory power over other theories about an afterlife.

4.3.1 An Amazing Dreaming and NDE Capability

The ability of our minds to create dreams and NDEs is a little understood and under-appreciated phenomenon. The model in Fig. 2 was designed to emphasize the role of dreams and NDEs in our lives. In these spiritual altered states of consciousness and in our material awake state, we experience objects, events, thoughts, and emotions. Most often, we can't distinguish the spiritual states from our material one. In the spiritual ones we are not in control, yet we never lose our sense of self. In our dreams, our self is in some ways our super self. For our mind can almost instantaneously paint beautiful landscapes, design and decorate rooms, create new faces, compose plots, and create dialog and events. Such rapid creativity is likely well beyond our talents and abilities while awake. Though exactly how dreams and NDEs relate is not yet understood, they are truly another dimension of being.

Why does such an incredible dimension exist? The NEE theory provides an answer. It posits at least one momentous purpose—namely, the natural afterlife, perhaps evolved in conjunction with evolved intellect, senses, and emotions. Science, on the other hand, has yet to provide a better answer. While some purposes for dreaming have been posited, no scientific theory yet exists (Breus, 2015; Lewis, 2014), and no purpose for dreams or NDEs has been posited that is commensurable to their amazing features or as momentous as the natural afterlife.

4.3.2 Reported Scientific Explanations for NDEs

If a number of scientists are to be believed, our brains seem to have a natural propensity for producing NDEs and thus NEEs. As mentioned previously, the scientific explanations for this propensity—essentially brain physiology—have been reported by many articles in popular scientific publications. The aim of the authors has been to explain NDEs as just a natural phenomenon, not proof or even evidence for any afterlife. All make the same problematic assumption, however, about an afterlife.

“Peace of Mind: Near-Death Experiences Now Found to Have Scientific Explanations” (Choi, 2011), largely based on the work of Mobbs & Watt (2011), describes the common

features of NDEs and explains how each might be the result of “normal brain function gone awry.” He suggests the features can be caused by certain diseases, by artificially stimulating parts of the brain, by high-level releases of a stress hormone in the brain during trauma, by medicinal and recreational drugs that affect the brain in a similar manner as does trauma, and by the depletion of blood and oxygen flow that can happen with extreme fear and oxygen loss when dying. Choi’s main thesis is stated in his first sentence: “Near-death experiences are often thought of as mystical phenomena, but research is now revealing scientific explanations for virtually all of their common features.” The implicit claim here is that NDEs *do not* provide evidence of an afterlife. This claim is made explicit in *The Death of “Near Death”: Even If Heaven Is Real, You Aren’t Seeing It* by Kyle Hill (2012).

The assumption, however, made by Choi and Hill as well as Shermer (2013), cited earlier, and by many others is that an afterlife must be *supernatural*. Remove this assumption, and the research that supports a *materialistic* explanation for NDEs ironically supports the likelihood of having a *spiritual* natural afterlife.

4.3.3 *The Intensity and Reality of NDEs*

The intensity and reality of the experience provided by most NDEs, as revealed by scientific research, begs the question: “Why such an intense, all too real, dreamlike experience just before death?” Again, science has no answer, yet the NEE theory may provide one. How better to imprint a moment into the mind so that it will never be “forgotten”?

4.4 Likely Challenges and Obstacles to Acceptance and Appreciation

Two likely challenges to the NEE theory deserve consideration. Neither, however, concerns its plausibility.

The first concerns its applicability to the situation where death is so sudden—e.g., one is blown apart in a blast—that the NEE seems impossible. But is it really?

Research on rats, cited earlier, showed a surge in brain activity for up to 30 seconds after their heart stops beating and blood flow to their brain ends, i.e., clinical death. Again, such activity was seen to have features providing a scientific foundation for NDEs (Borjigin et al., 2013). But in humans is even one second of brain activity needed for the NDE? In an NDE, our brain can likely paint a complex heavenly scene almost instantaneously. Also, if an NDE can make “one’s life flash before one’s eyes” as has been reported (Moody, 2001), perhaps in shutting down, our brain can create an NEE in nanoseconds.

Another challenge to the NEE theory concerns its significance. Some may claim that the heaven it makes possible, even if optimal, isn’t real—i.e., it’s only a delusion—and thus not particularly intriguing or desirable as an afterlife. Since this claim involves opinion, it can’t be entirely refuted. However, the following should be considered.

- As already stated, NDEs have been described as “even more real than real,” based on studying the NDE memories of coma survivors (Brumfield, 2013; Thonnard et al., 2013). Elaborating, neurologist Steven Laureys states “To our surprise, NDEs were much richer than any imagined event or any real event of these coma survivors. The difference was so vast.” Thus in the NEE heaven, one very likely believes it real and experiences its bliss. Believing now that it’s delusional and thus undesirable likely won’t change this, making

such belief in the end irrelevant. Besides, if the natural afterlife were a *real* afterlife, how would one experiencing it know that it's real and not just an NDE leading up to an NEE?

- What is a “real afterlife” anyway? One definition would relate *real* in this context to human, earth-bound, materialistic, real life experiences. No afterlife, except for perhaps reincarnation, can be real in this sense. The conventional, time-perceptive, perfect world afterlife can't be truly real if it's illogical. On the other hand, a broader definition of *real* would include dreams and NDEs as they are in fact real life experiences.
- Although the sensory perceptions and events within dreams and NDEs are not real in a material sense, the very intense emotions they can invoke are real (McNamara, 2014; van der Linden, 2011), which is why people wake up from dreams immediately feeling the dream emotions, for example fear. When a heavenly NDE ends with death and events have ceased, likely the most important part that remains in the NEE are the heightened emotions—often love, joy, and peace (Zingrone & Alvarado, 2009). *And they are real!*
- Finally, how can a phenomenon, a particular state of mind, that has evolved by nature, is produced by nature (whether or not via a God), and isn't fabricated by humans—versus, for instance, a movie or a drug-induced hallucination[†]—not be considered real?

Despite the above considerations and the arguments for the natural afterlife, some will still think it unreal, thus undesirable; simply undesirable; implausible; or even absurd. For instance, despite various descriptions of the natural afterlife given in this paper, all stressing its reliance on consciousness ending with death, several journal reviewers have thought it implausible because, generally stated, “with death a non-functioning brain cannot sustain any experience,” when no such *experience*, i.e., consciousness, or *sustaining* (implying a $\Delta t > 0$) is needed. Such thinking is likely due to one or more obstacles to accepting and then appreciating the natural afterlife. As already indicated, its relativeness and timelessness ($\Delta t = 0$, *not* > 0), if misunderstood or ignored, can block acceptance, and its eventless-ness and dream likeness can block appreciation.

Yet, the biggest obstacle to accepting the natural afterlife can sometimes be one's close-mindedness. After all, when first encountering the natural afterlife, one must deal with its *prima facie* outlandishness. It's a phenomenon that's way “outside the box.” Hence, it can be too readily dismissed without serious thought. Also, the NEE theory can *seemingly* pose a threat to one's current after-life beliefs—which may have been strongly held for years, into which much may have been heavily invested, and from which a sense of certainty and comfort ensues. Hence, a strong bias toward not wanting to accept the natural afterlife is quite understandable.

Finally, still one more obstacle to accepting and appreciating the natural afterlife is its content uncertainty and everlastingness. Like other supernatural afterlives, it can possibly be everlastingly hellish. Nothingness can no longer be a reassuring certainty.

Oddly, evoking this hellish possibility in a terrifying thought experiment may help some more appreciate a heavenly *eventless, dreamlike* afterlife. So, just imagine its exact hellish opposite: you're dying while believing you're in hell and for all eternity nothing will happen to make you believe otherwise. This is certainly as awful an NEE as the heavenly NEE is magnificent.

[†] Hallucinations occur when awake or semi-awake, often as a result of drugs or mental illness. For the purpose of simplification, the events and moments of such hallucinations are not represented in the state diagram of Fig. 2 and the NEE notation in Fig. 4 of the Appendix.

5 Summary and Significance

When the NDE ends in death, the natural afterlife almost certainly results unless replaced by another afterlife that is currently beyond scientific understanding. To understand and appreciate this default, NDE-based, natural afterlife one must focus on only what their mind can perceive when they're dying. This may include an NDE. If so, and they were somehow resurrected after a billion years, the NEE theory claims they would report having an NDE, and, if not resurrected, they would still believe they were "living" their NEE. Unfortunately, the dead cannot be resurrected to tell us if this is true, but perhaps in the future, testing on the near-dead can.

This audacious claim, made by the NEE theory, is based on how consciousness is assumed to end in the process of dying, or possibly transition in a relative manner. First, sensory perceptions are lost and all awareness of the physical world ends based on the physical senses. Then, near death an altered state of consciousness, a new awareness, possibly awakens and an intense, all too real experience begins within the mind. Then, due to brain deterioration, the experience ends and with it the sense of time is lost—though most significantly, not the senses of self and being. Consequently, the experience, as embodied in its last moment, becomes timeless. Finally, with an imperceptible death, it becomes never-ending as death is nothing more than an eternal continuation of this timelessness. *To the dying person*, the new awareness in the altered state of consciousness and the experience has transitioned into a static, everlasting state of mind.

For centuries humans have pondered and debated just two possibilities for what they may encounter at death: a kind of nothingness like that of their before-life or some type of supernatural afterlife. The significance of the NEE theory is that those now living have a third possibility to consider, the natural afterlife. In doing so:

- Those claiming that heavenly NDEs provide "proof of heaven" and a time-perceptible consciousness that continues after death may want to more justifiably claim that *at the minimum* they provide *evidence* of a relativistic heaven and altered state of consciousness that with death is made timeless and eternal.
- Those claiming that scientific research shows that NDEs provide no evidence of an afterlife should instead unassumingly claim that they provide no evidence of a *supernatural* afterlife.
- Theists may question their conventional view of heaven and perhaps welcome one that is scientifically and philosophically defensible—a timeless heaven, personalized by God, and one that can provide a realistic answer to the age-old question: "Where is heaven?"
- Atheists may question their conventional view of an after-life of nothingness and welcome the possibility of a credible, heaven-like afterlife—one created and personalized by nature and thus one that doesn't require believing in a God.
- Those who believe that one's actions in life matter not at all since in the end all merely "return to dust," may wonder how one's beliefs, morals, and memories impact the contents of an NDE—i.e., if what "is within you" determines what your natural afterlife will be like.[‡] Stated more philosophically, will nature or God deliver justice in the end?

[‡] The words here are purposely suggestive of certain religious teachings: "... the Kingdom of God is within you." [Luke 17:21] and the principle of karma, that one's actions determine what one's next life will be like.

- And finally, those who simply find it difficult, scientifically or philosophically, to believe in any kind of afterlife may find new hope and comfort in the natural afterlife, especially in their dying moments.

Given the above, the theory of a natural afterlife can have a huge impact on how individuals view death and hence life (of which dying is a part). The strong possibility that at death one is forever frozen in a dreamlike yet very real, sensually and emotionally intense, heavenly (or hellish) state of mind would seem hard to ignore.

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Appendix

Our Perception of Time: Anesthesia Analogy and Formal Definition

Our animalistic perception of time is fundamental to the NEE theory. Understanding it is crucial to understanding the natural afterlife. Previously, to help explain the natural afterlife, an analogy was used—that of falling asleep during a movie. Here, to further help explain it and our perception of time, a better analogy is used—that involving general anesthesia.

Perhaps you've experienced this. One moment you're lying on an operating table with a mask over your nose and mouth, someone telling you to breathe in and out deeply. The next thing you know you're surprised to find yourself in a recovery room, perhaps with a loved one beside you. Stuart Hameroff is a professor of anesthesiology and psychology and director for the Center for

Consciousness Studies at the University of Arizona. After 35 years of administering anesthesia, he states in (Hameroff, 2010b): “It’s still incredible that they’re awake, they go to sleep, and come back the same person. Where do they go?” He goes on to state that “we can learn a lot about consciousness from anesthesia.”

And consequently, we can learn a lot about the natural afterlife from anesthesia. Of course, with any afterlife we never “come back.” Thus, some have likened the natural afterlife to permanent general anesthesia. This analogy can be helpful towards understanding how a time-perceptive consciousness followed by an everlasting timeless unconsciousness creates the natural afterlife. The analogy, however, offers insight only when analyzed from the perspective of the anesthetized and the dying person. Again, imagine in both cases that this person is you.

Your natural afterlife, then, is *like* being permanently anesthetized for with both:

- Your last perceived moment includes an anticipation of more such moments to come. When saying “92” in counting backwards from 100 on the operating table, you fully anticipate within that moment to next be saying “91” in the same room to the same people—even despite knowing that your experience here will soon end in an unconscious state (which you will not know in an NDE). However, unknowingly, you never say “91”.
- Your mind never gets the message that “you’ve passed out” (more precisely “passed away” with the natural afterlife). Instead, you merely lose your sense of time.
- You never lose your sense of self. You remain “the same person,” never having to ask “Who am I?” (likewise with dreaming and dreamless sleep).
- You won’t experience nothingness, the concept is meaningless. Hameroff states that patients under general anesthesia experience no passage of time. Thus both are timeless and there is simply no time to experience nothingness.
- You won’t dream. Hameroff states that patients don’t dream under general anesthesia (making it an internal state within the **Life Unconscious Dreamless** state of Fig. 2). Such dreams would create another moment of time replacing the moment last experienced on the operating table, likewise with the natural afterlife last experienced in the NDE.
- Your memory, whether taken offline by anesthesia or wiped out by death, is useless and anyway superfluous. Memory fragments need not be accessed since you’re not dreaming (Lewis, 2014) and besides, timelessness makes such access purposeless.
- Your last perceived moment, on the operating table or in your NDE, is timeless and everlasting since you never wakeup.

The lack of dreaming (which is not true with sleeping) makes the permanent anesthesia analogy excellent for understanding the concept of a timeless, forever moment.

This concept can be expressed as follows: a moment in time is suspended and perceived as lasting forever, i.e., a forever present, when there’s no next moment in time to replace it. Prior to the moment a person awakes from anesthesia, the moment perceived as suspended is the moment just before passing out. And this moment is perceived as lasting forever until the person wakes up or has some type of NDE. No intervening stuff is being perceived by the person, not even nothingness. Robert Lanza, a world renowned scientist and stem cell researcher, defines our sense of time as follows:

[T]ime is the *inner* form of animal sense that animates events—the *still* frames—of the spatial world. The mind animates the world like the motor and gears of a projector. Each weaves a series of still pictures—a series of spatial states—into an order, into the “current”

of life. ... Spatial units are stagnant and there is no “stuff” between the units or frames.
(Lanza, 2009, pp. 100, 101)

Hameroff (2010a) identifies the “still frames” as “conscious moments” and “snapshots”: “Normally we have about 40 conscious moments per second ... each of these seems to be ... a snapshot, a moment of consciousness.”

The above statements can also be extended to dreaming and NDEs. There is no time and thus no “stuff,” not even nothingness, between dreaming frames. And at death, when the “projector” finally breaks down, we may merely be stuck on an “NDE frame”—a timeless “snapshot” capturing not just the visual but every sense, thought, and emotion.

Fig. 4 precisely defines the natural afterlife by putting this final NDE moment into the context of a lifetime within time eternal. Fig. 4 can be viewed as a detailed extension to the model of Figs 1, 2, and 3, breaking down life’s events into life’s moments. Using a formal notation, time eternal is represented by variables, symbols, and just ten equations. Nine of these represent a lifetime. The final NDE moment, when it’s the final moment in a lifetime due to death, is represented by the variable m_{nde} in equation 10, repeated below for easy reference.

$$(10) \text{ natural-afterlife} = NEE = m_{nde} \sim \text{timelessness} \sim \text{after-life}$$

This m_{nde} encompasses the sense of self and all of the brain-induced sensory perceptions that are present within the NDE at its ending. It also includes the thoughts, beliefs, and emotions formed from past m_{nde} s, i.e., NDE moments. One such belief is most likely of a future consistent with the NDE’s past and present. Thus, in the mind of the NDEr, the m_{nde} in equation 10 essentially represents the NDE itself.

What then follows and transforms the NDE into the NEE and natural afterlife is simply an eternity of imperceptible timelessness, as indicated by equation 10. First, it’s the timelessness that is represented by *timelessness* and occurs in the **Severely Failing Brain** internal state (Fig. 3) after the NDE ends due to brain deterioration. The first \sim in the equation represents the event **end NDE**. Then, it’s the timelessness that is represented by *after-life* and occurs in the **After-life with NEE** state after death (Figs. 1 and 2). The last \sim represents the event **death**. Relative to the dying person’s perception (or, more precisely, lack thereof), the timelessness within the **After-life** state is no different than that within any other state of mind.

More insight into the now formally defined natural afterlife can be gained by returning to the anesthesia analogy. The natural afterlife is *not like* permanent anesthesia in some very important ways—but again, only from the perspective of you, the dying and the anesthetized person.

- First, your NDE is not like the tedium of counting backwards from 100 while people hover over you. Rather, NDEs are often described as more intense than a party drug hallucination and seem to pack a wallop on the people experiencing them, often having a tremendous impact on the rest of their lives. So, the last moment of the NDE surely provides a much sharper “imprint on the mind” than does the last moment of counting backwards.
- Second, in your NDE you may firmly believe that “I’ve arrived” and my future is here. Not so in counting backwards from 100 and believing this monotony will be short-lived.
- And finally, with an imperceptible death, you likely feel no grogginess, the going in and out of consciousness, as you may experience in passing out under anesthesia. (You also feel no grogginess in transitioning from dreaming into dreamless sleep.) Thus, there’s no hint whatsoever that your NDE is over—which again, relatively speaking, makes your natural afterlife everlasting.

The Natural Afterlife in the Context of a Lifetime within Time Eternal

Equations (the NEE notation)

- (1) *time-eternal* = *before-life* ~ *life* ~ *after-life*
 (2) *life* = *timelessness* [(~ *E* ~ *timelessness*) ...] (3) $E = E_r | E_d | \mathbf{E}_{nde}$
 (4) $E_r = e_r \dots$ (5) $E_d = e_d \dots$ (6) $\mathbf{E}_{nde} = \mathbf{e}_{nde} \dots$
 (7) $e_r = m_r \dots$ (8) $e_d = m_d \dots$ (9) $\mathbf{e}_{nde} = \mathbf{m}_{nde} \dots$
 (10) *natural-afterlife* = *NEE* = \mathbf{m}_{nde} ~ *timelessness* ~ *after-life*

Explanations

- (1) The variable *time-eternal* is (represents) all of time—past, present, and future. *before-life* is the span of time before a person’s lifetime, timeless relative to the person. *life* is a person’s lifetime. *after-life* is the time span after this lifetime, here presumably timeless relative to the person. A ~ represents the appropriate state changing event as described in Figs. 1-3. The equation states that *time-eternal* is (equal to) *before-life* followed by ~ (here birth) followed by *life* followed by ~ (here death) followed by *after-life*.
- (2) *E* is a sequence of perceived events, which define a span of time, in a time-perceptive state of mind, e.g., Life Unconscious Dreaming in Fig. 2. *timelessness* is a time span when a person is in a timeless state of mind, e.g., Life Unconscious Dreamless in Fig. 2. []’s mean that what’s inside may (or may not) follow. A ... means what’s given just prior—one item or many items grouped within ()’s, e.g., ~ *E* ~ *timelessness*—may be repeated one or more times.
- (3) *E_r* is a sequence of real events. *E_d* is a sequence of dream events. \mathbf{E}_{nde} is a sequence of NDE events, the boldness indicating heightened intensity. A | means “or.” An \mathbf{E}_{nde} that does not occur near death is extremely rare.
- (4) *e_r* is a real event. (5) *e_d* is a dream event. (6) \mathbf{e}_{nde} is an NDE event.
- (7) *m_r* is a real moment. (8) *m_d* is a dream moment. (9) \mathbf{m}_{nde} is an NDE moment. These moments are the “still frames” or conscious moments described by Hammeroff (2010a) and Lanza (2009). A perceived event unfolds (i.e., time marches on and life is experienced) over the span of one or more such moments.
- (10) Given equations 1-9, *natural-afterlife* is an *NEE*, which is \mathbf{m}_{nde} ~ *timelessness* ~ *after-life*. (*m_d* ~ *timelessness* ~ *after-life* may also result in an *NEE* but hasn’t been |’ed onto the equation.) The *timelessness* here occurs in the Severely Failing Brain state shown in Fig. 3. The first and last ~s represent the imperceptible events end NDE and death, respectively.

Example:

A person wakes up, falls asleep (in time), dreams, dream ends, wakes up, passes out, has heart failure, has NDE, NDE ends, and dies with an NEE as shown below. *tl_n* abbreviates *timelessness*.

$$\dots \text{tl}_n \tilde{m}_r \tilde{m}_r \dots \tilde{m}_r \tilde{tl}_n \tilde{m}_d \tilde{m}_d \dots \tilde{m}_d \tilde{tl}_n \tilde{m}_r \tilde{m}_r \dots \tilde{m}_r \tilde{tl}_n \tilde{tl}_n \tilde{\mathbf{m}}_{nde} \tilde{\mathbf{m}}_{nde} \dots \tilde{\mathbf{m}}_{nde} \tilde{tl}_n \tilde{\text{after-life}}$$

← NEE →

Fig. 4. Ten equations, representing the *NEE notation*, that formally define a lifetime and a natural afterlife at the most minute level in the context of time eternal. They extend the model given in Figs. 1 - 3 by adding life’s *moments* and are defined using a modified Bachus-Naur Form, a notation normally used to define formal languages.

Research Essay

**Near-Death Cases Desegregating Non-Locality/Disembodiment
via Quantum Mediated Consciousness:
An Extended Version of the Cell-Soul Pathway**

Contzen Pereira* & J Shashi Kiran Reddy

Abstract

The word *soul* in the cell-soul pathway does not have a scientific definition but has been hypothesized to be an indefinite, non-structured, massless energy made up of electromagnetic radiations that is confined in the cytoskeletal network of a living cell. It is a coherent, imperceptible, uncontainable and recyclable support pathway, which uses energy to promulgate consciousness in the cell supporting its functions (Pereira 2015). The pathway currently provides a mechanistic explanation of the flow of consciousness within the body, but the intent of this paper is to provide an arduous explanation of non-local consciousness or disembodiment observed in near-death experiences. The paper hypothetically subsets the cell-soul pathway with the presence of two forms of consciousness, consistent with a recently developed model by Reddy (2016b): bodily consciousness, which manages functions only at cellular level, and functional consciousness, which is present in the body but can get disembodied and perform non-locally; the two forms of consciousness represent the overall state of consciousness. The non-locality of subjective experiences observed in near-death cases can be related to the realm of quantum physics – quantum entanglement between the two forms of consciousness that can demonstrate the capability of storing information holographically within the void or vacuum with the ability to create memories beyond the limitations of the brain and body.

Key Words: Cell-Soul Pathway, Consciousness, Entanglement, Near-Death, Experience, Disembodiment, Zero Point Field

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Introduction

Consciousness is an enthralling topic in the field of science and various disciplines, but being conscious minus a body when clinically dead is abstruse to apprehend and recognize. Several near-death cases have been recorded and studied. In many cases the individual is conscious outside the body with a capacity to conceive and store memories when clinically dead and can recount these experiences when resuscitated. Non-local consciousness has been defined as a state, where consciousness occurs beyond the physical boundary of the body (Van Lommel 2013), otherwise known as disembodiment. Consciousness in this view is divided into two forms, wherein one form remains identified with the body while the other can be non-material aspect; when the body loosens the other form takes up the task and therefore resulting in retention of memory of a subjective experience. Disembodiment is an ambiguous term rarely accepted in the scientific community but commonly defined as, “A soul, spirit, or consciousness that has been disembodied, or which lacks a physical form” (in Wiktionary). It is therefore an immaterial state, most often invisible to others, so it is ignored by science and only accepted in philosophy as ontological dualism, religious or otherwise. Descartes called the immaterial aspect of consciousness *res cogitans* – in other words, mind, soul or spirit, in which form it correlates with near-death, out-of-body and end-of-life experiences.

Studies conducted by Dr. Sam Parnia and group (2001, 2002, 2014), Dr. Pim van Lommel and group (2001, 2014), Dr. Kenneth Ring and group (1999, 2001, 2006) and Dr. Janice Holden (2009) have provided significant evidence of survival of consciousness after death and has been presented in the form of several near-death cases. Dr. Sam Parnia and group have confirmed that approximately 9% of adults have a near death experience after a cardiac arrest (Parnia et al. 2014). Von Lommel and group (2001) claimed this number to be 18% while IANDS (International Association for Near-Death studies) published that approximately 85% of children have near-death experiences (Long & Holden 2007; Holden 2009). Dr. Bruce Greyson, a well know researcher in near-death studies, has the following opinion about near-death studies: “Our mind-brain identity model works fine for everyday walking and talking, but when you’re looking at times when the brain is not functioning and the mind seems to function quite well, you get into that extreme area where we need to look at some other models” (as cited in MacIssac 2015).

Near-death and out-of-body experiences have been termed absurd by some and hallucinatory or illusory by others (e.g., Mobbs & Watt 2011). Recently, respected philosopher and Buddhist, Evan Thompson (2015), contended such experiences are scientifically unproven so must be considered dreams of the brain. Near-death experiences have some common facets which involve a feeling of peace and tranquillity, a sensation of floating through a tunnel towards a bright light while undergoing a complete life review, etc.

Sometimes near-death experiences can be horrific, caused by unpleasant feelings of fear or panic which may or may not be associated with a life review (Blanke & Dieguez 2009). These common features in near-death experiences have been challenged by sceptics, who claim these features to be caused in the brain by factors such as, anoxia or hypercarbia in the dying brain, insufficient administration of general anaesthesia, release of endorphins in brain during stress, high level of serotonin, resident brain electrical activity, administration of painkillers, etc. (Blackmore 1993; Blackmore 1998; Carr 1981, 1982; Judson & Wiltshaw 1983; Morse et al. 1989). Most of these claims by the sceptics have been ruled out by critics, but there are some of them that are still under evaluation (Parnia et al. 2001; Shulman et al. 2003; White & Alkire, 2003;). During cardiac arrests, the brain is presumably dead and both human and animal studies have provided extensive supporting data on cerebral physiology during and after cardiac arrest (Parnia & Fenwick, 2002). However, as Thompson (2015) and others have noted, brains completely without measurable activity during a cardiac arrest when the NDE presumably is occurring have never been observed under clinical conditions, so it is possible brains continue less visible activity at the crucial time.

The cell-soul pathway is a hypothetical pathway and has been defined as a coherent, imperceptible, uncontainable and recyclable support pathway, which uses electromagnetic energy in the form of photons to promulgate consciousness in a living cell. (See Fig. 1, from Pereira 2015). The pathway is currently limited to the propagation and functioning of consciousness within the microtubular network of the cell, but with further backing from a quantum physics perspective, an attempt is made to understand and justify non-local consciousness or the state of conscious disembodiment, as well as its vivaciousness and richness through the experiences observed in some exceptional near-death cases.

How is it possible for a conscious essence to exist without a physical host? To avoid the purely religious explanations of a separable *soul* or *spirit*, we offer our research into quantum mediated consciousness: an extended version of the cell-soul pathway.

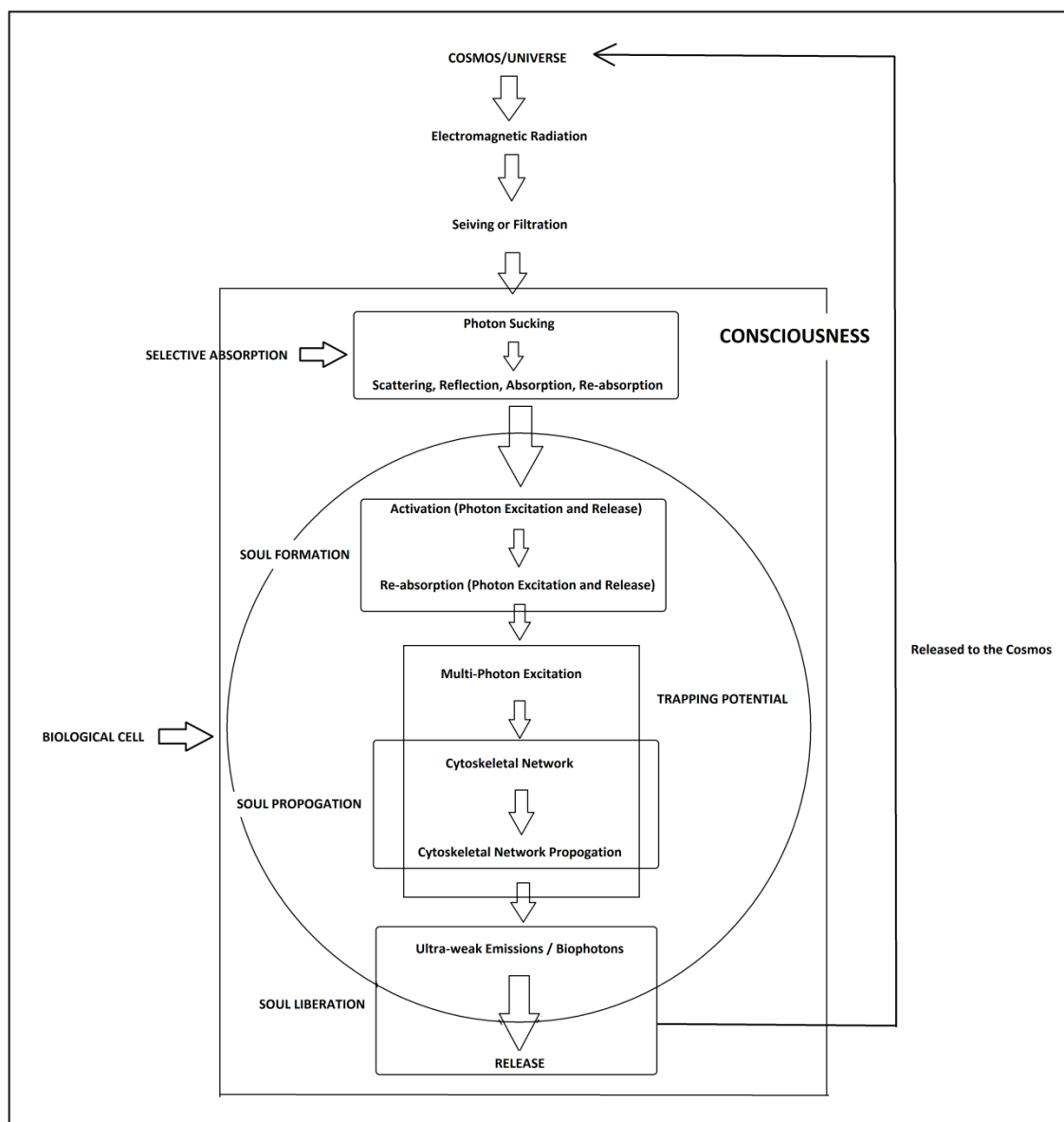


Figure 1. The Schematic Representation of the Cell-Soul Pathway (Pereira 2015)

Intriguing Experiences in Near-Death Cases Supporting Disembodiment or Non-Locality of Consciousness

Cardiac arrest patients are one of the most studied cases with regards to near-death and out of body. When resuscitated, patients provide a narration of their experience. The fullness associated with the experience implies that during a near death experience the non-local conscious component or disembodied conscious state leaves the body, but remains in the resuscitation room or in close proximity to the body. Many of these characteristics can be verified by doctors and independent researchers after patients return to their bodies to tell their experience. The capacity of being out of the body and simultaneously being conscious in a near-death state has never been accepted by the scientific community and

has often been categorized and disregarded by sceptics as a neuro-psychological state associated with the dying brain (cf. Blackmore 1998). Several near-death cases have demonstrated this phenomenal state of being disembodied, but there are a few cases that stand-out from the regular cases and thus pose a challenge to the scientific community. The case studies presented in this paper are exceptional near-death cases that provide a substantiation of the existence and rationalized approach of consenting non-local consciousness. The case studies presented here are not *proven beyond all doubt* as they have been criticized for various reasons by several sceptics, yet they still support the idea of non-local consciousness and disembodiment.

The first case is of Kimberly Clark (e.g., Rivas 2015; Sharp 2007) who had an experience that changed her life and her belief in the existence of consciousness after death. One morning, as part of her daily work schedule at the Harbour View hospital, she was working with a team of doctors who were trying to save a woman who had been brought to the intensive care ward as she was suffering a massive heart attack. As the doctors tried to save the woman, her heart stopped several minutes; she was clinically dead for those few minutes and it was a miracle that the doctors could bring her back. When the woman calmed down she explained to Kim, that during her resuscitation she had found herself at the ceiling level and could accurately point at the corner of the room from where she was observing her own resuscitation. But this was not all; she had also felt herself three storeys above the ground from where she could see a tennis shoe sitting on a ledge. The tennis shoe was dark blue, worn with a scruff by the little toe and the lace going under the shoe heel; she felt agitated because she wanted someone to get the shoe.

When Kim checked the ledge of the patient's window there was no shoe, but when a through search of all the ledges in the hospital was conducted, on the opposite side of the hospital on a different floor, in a room with a window facing to the west there was a tennis shoe on the ledge with the same description that had been provided by the woman. Kim could not believe her eyes as she opened the window and reached down and picked up the shoe which bore the scruff on the opposite side. There were no other buildings on that side of the hospital and the details of this shoe as described by the woman could definitely not have been seen from the ground or from anywhere inside the hospital. To add to that, it was the first time that this woman had ever visited this hospital. To know that a shoe is lying on the ledge with its nearly perfect description, she should have either seen the shoe before the operation or she should have been there in the same room much before the operation, as there was no possibility of viewing the shoe from an opposite building. Then how did she see this shoe and experience its pattern and colour especially during a situation when she was dead?

Hovering above her body and viewing the shoe from three storeys high was possible only if she was suspended from that height or if she was flying. This case clearly reveals a state of

disembodiment, where the individual could move out of the body, rise up to a level of three storeys and observe a shoe placed on a ledge with a scruff on the side not facing the window (see Rivas 2015; Sharp 2007). Under no circumstances, can this experience can be considered as a dream or hallucination, as the shoe that was described by the woman was found later on the ledge with the same features. In this disembodied state the woman was conscious, as she was aware of her surroundings where she could even describe the colours and texture of the shoe. There seems to prove that there is a form of consciousness that can be non-localized in a situation like death, which is evident in this experience. The fact that this form of consciousness can become re-localized in the body (return to the body) proves that even when disembodied, it is still connected in some form to the body and can enter back into the body with memories that were created in the disembodied state.

Another interesting case study is of Vicki Noratuk, who has been blind from birth and was terribly injured in a car crash (Stroganoff 2010; Ring & Valarino 2006). She had a skull fracture, concussion, neck injury, back injury, leg injury and, worse, her heart stopped rendering her clinically dead for approximately 4 minutes. At that very moment she felt her back against the ceiling and she kept looking at everything that was happening on the hospital table. She even heard a doctor say that it was unfortunate that she would now also be deaf along with being blind, because there was blood on her left ear drum. She even recollected one of the lady doctors mentioning that even if she survived this coma she would be in a vegetative state. As she fought for her life something extraordinary was happening – she could see for the first time in her life, but she felt was a nightmare, as she had never before perceived anything beyond the reach of touch. The blind usually touch things to feel them; therefore, this woman's world was always at an arm's length. This frightened her as she could now perceive things through sight that were beyond reach.. In this state she could see her left hand and the ring on her left finger; she even felt her shortened hair that had been shaved off; she was conscious without her body which lay on the operation table.

She had never dreamed in visual images, but now she was actually experiencing them She could not differentiate between the colours that she was seeing for the first time and considered them different intensities of light. She survived and returned to her world of darkness yet she has no doubt that for just a few minutes she could see. This case study strongly supports the state of conscious disembodiment – a woman who was blind from birth could see and experience in full consciousness and in her disembodied state could create and retain memories that could be narrated once she was back into her body. Experiencing her senses in such a state must be overwhelming, but it provides us with an explanation that the senses can be experienced even in a disembodied state and by some means get transmitted to the sense organs of the body, which is in a state of suspended animation while being refurbished. Being conscious in a disembodied state confirms the non-locality of consciousness which differs from the grounded state of consciousness.

Many such cases have been reported in blind subjects and none of the explanations or models proposed to explain them provides an in-depth understanding of such phenomenon. To explain such happenings in the blind, Ring and Cooper (1999) coined the term *mindsight* and sees it as a form of transcendental knowing often reported by both blind and sighted during extrasensory or out-of-body experiences (cf. French, 2005; Ring, 2001; Ring & Cooper, 1999).

The next case study is of 55 year old truck driver, Al Sullivan, who was undergoing a triple by-pass surgery (Kelly et al. 1999; Sullivan, 2013). This was the first time he had met his cardio-vascular surgeon on the operating table. As the anaesthesia took effect the surgeon introduced himself and kept explaining the whole operation procedure which involved removing his veins from the leg and the arteries from chest wall in order to perform the planned 4-5 bypasses. Suddenly, he felt that he did not have to listen to the surgeon anymore, as he was no longer in his body and did not need his ears to listen, for he had left his body and could watch the whole procedure from above. He saw the team covering his eyes with tape and placing all sorts of drapes and blankets around him, with the surgeon and his team getting ready to operate on him.

Hovering above his body he saw his surgeon standing alone over his opened chest, which was being held open by metal clamps while two other surgeons were working over his leg. He recalls being puzzled at the time about why they were working on his leg when the problem was with his heart, but he now knows that at this point in the surgery the surgeons were stripping the vein out of his leg to create the bypass graft for his heart. At one point he observed the surgeon take a step back, place his arms near his armpits and move his folded hands in an unusual manner that looked as if he was flapping his arms. This was later confirmed by the surgeon and his team: when the surgeon was not operating he had a habit of placing his hands close to his chest and point with his elbow to prevent contaminating his hands. He could not have known this peculiar behaviour of his surgeon unless he was conscious in the room or someone would have told him that way before the operation, which was next to impossible. When he came back to his body after the surgery was over, the surgeon was startled that he could describe his own arm flapping, which was his idiosyncratic method of keeping his hands sterile.

This case confirms that in a disembodied conscious state the individual can experience his surroundings as if he were in his conscious body. The connection between the body and the disembodied conscious state seems to be so enduring that it can create and store these memories, which can be revived once consciousness re-enters into the body. Observing the operation, providing details about the procedure and observing the behaviour of his surgeon could not have been possible when his eyes were taped and he was in a state of unconsciousness. During a near-death experience the brain is apparently inactive and there seems to be no activity in the vision centre of the brain (Parnia & Fenwick, 2002), so how

can memories be created without the presence of active brain in a body? How is the individual conscious, when clinically dead? There should be a mechanism that creates these memories within the realms of the world that lay beyond the imagination of oneself.

The above cases strongly support the possibility of a disembodied state during a near death experience, but we also need a more physical-mechanical explanation of how this is possible. It is a difficult task to prove the existence of the experience as well as the mechanism that made it possible, but it can be hypothesised. The next section attempts to understand and provide an explanation to this form of conscious state from the perspective of a hypothesised pathway known as the cell-soul pathway (see Fig. 1 above, Pereira 2015), which we feel indicates the flow of consciousness within the body. The existence of a conscious state other than the body and its interaction with the circulating consciousness within the cellular network of the cells in the body as described by the cell-soul pathway could provide a convincing explanation of non-locality of consciousness.

The Extended version of the Cell-Soul Pathway

The word *soul* in the cell-soul pathway does not have a scientific definition but has been hypothesized to be an indefinite, non-structured, massless energy made up of electromagnetic radiations that is confined in the cytoskeletal network of the biological cell. The cell-soul pathway is a hypothetical pathway that helps in the propagation of consciousness to support the functioning of the body at the level of a biological cell by means of immeasurable assortment of photons of different frequencies and wavelengths within the cytoskeletal network of a single cell (Pereira 2015). Consciousness propagated by this pathway is a form of consciousness which we now propose as “bodily consciousness”. Bodily consciousness is circulated within the cell and the cells of the body and together keeps the cells and the bodily functions going (see Fig. 2). This form of consciousness is involuntary and is dependent on the individual cells and their individual consciousness. Aging, malfunctioning, sudden death or damage of cells and cellular function can impair the flow of bodily consciousness which may or may not result in death but brings about a change in the overall consciousness of the body. Bodily consciousness is propagated by means of photons and has been well explained by the cell-soul pathway which involves trapping and circulation of electromagnetic radiation that prevails in the universe resulting in the formation of consciousness that wholly depends on the organization of matter that makes up the cell, its components and biochemical systems (see Fig. 1, Pereira 2015).

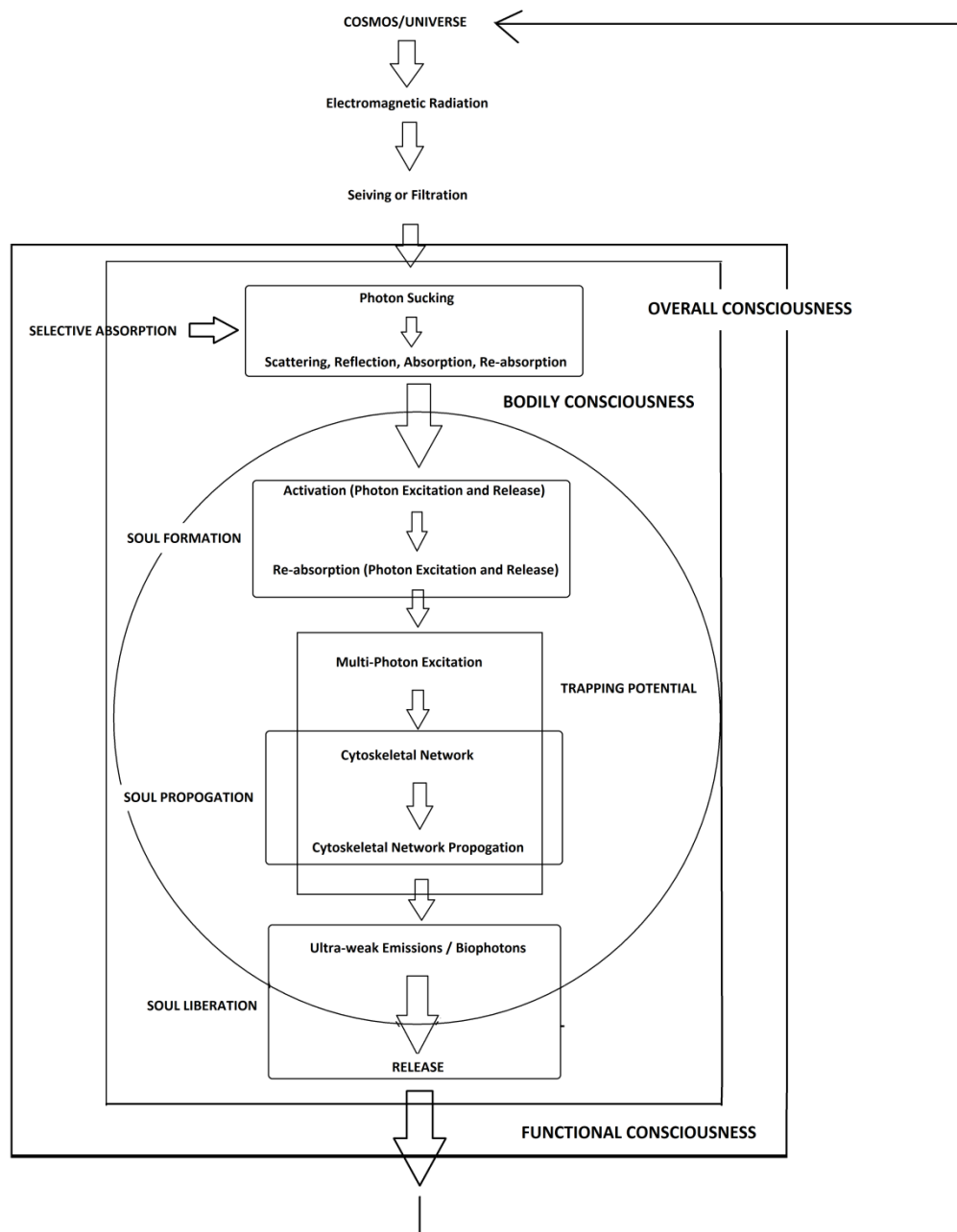


Figure 2. The Schematic Representation of the Extended Cell-Soul Pathway (Embodied State)

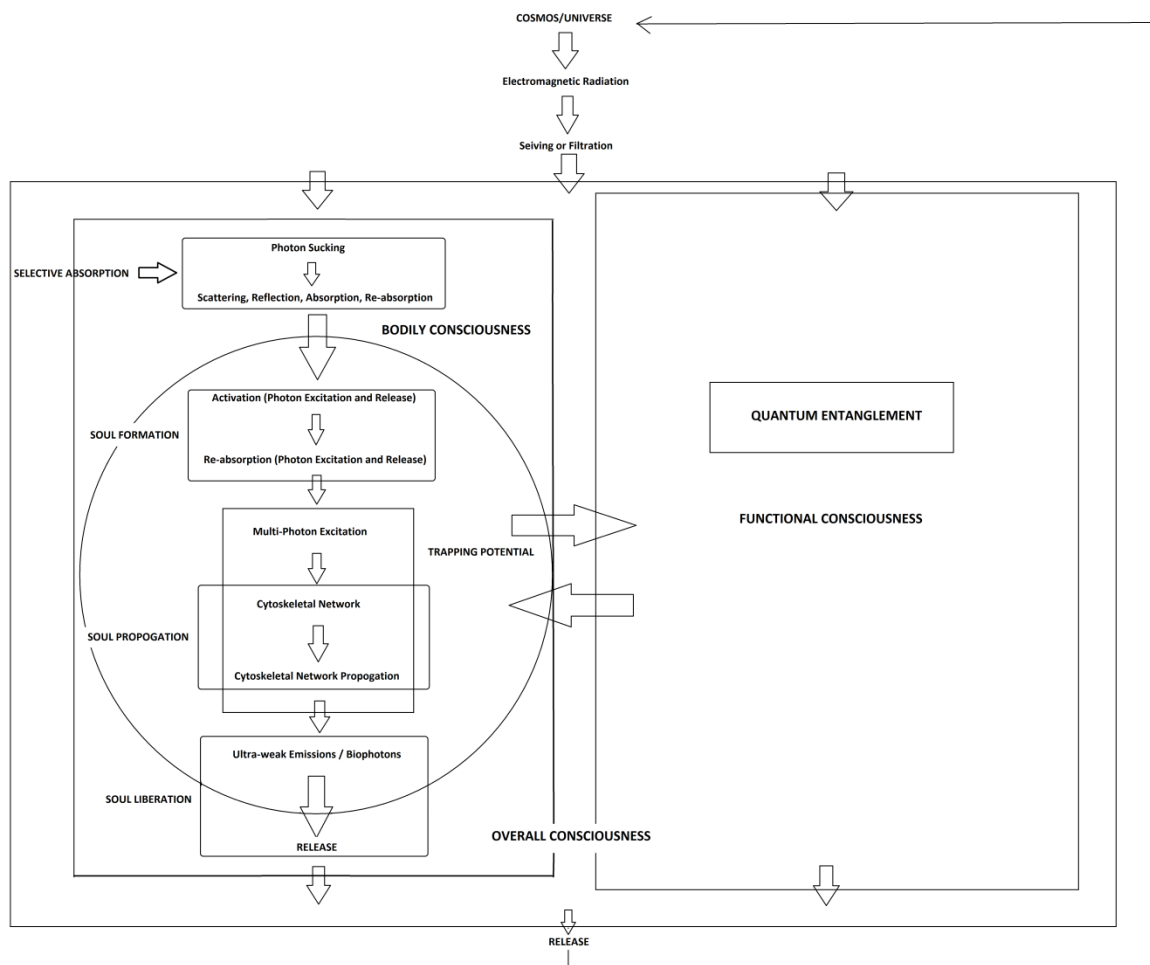


Figure 3. The Schematic Representation of the Extended Cell-Soul Pathway (Disembodied State)

In order to support the non-local consciousness that is effective during near-death experiences we propose the presence of another form of consciousness that exists within the body along with the bodily consciousness. As part of the extension to the cell-soul pathway we call this form of consciousness the “functional consciousness”, which originates and terminates by means of the same process as that of the cell-soul pathway (Fig 2). The functional form of consciousness immediately detaches from the body during death and is likely the main cause for the non-local conscious experiences during a near-death experience (Fig. 3). This form of consciousness can also support the conscious states observed in rapid eye movement sleep or end-of-life experiences, but we would need further sources of information to claim it exists after actual death, so such explorations are beyond the scope of this paper (and any conceivable paper at this time). The bodily and functional forms of consciousness together form the overall state of consciousness of a body and therefore support this unique and untouched pathway that has been prevailing since life came into existence that maintains obedience in its interaction with various cellular, bodily and out-of-body functions.

Photons play an important role in the cell-soul pathway. Gradual release of photons has been demonstrated in dying biological cells that shows a rapid increase in ultra-weak emission, an activity termed the “flash of death” (Reddy 2016a; Slawinski 2005). Biophotons are known to show increased intensity when they undergo physiological changes under chemical or physical stress (Slawinski 1990) or when the cells get damaged beyond repair (Reddy 2016a; Scheminzký 1916) indicating increased absorption of electromagnetic radiation leading to amplified cell-soul pathway activity under cellular stress. A breach in the cellular process or clinical death as observed in cardiac arrest patients can lead to an obstruction in the flow of bodily consciousness via the cell-soul pathway which may recover by increased absorption of electromagnetic radiation or photons from the environment, but until then the functional form of consciousness may remain dissociated but conscious. If this exchange or recovery is not swift, it may lead to cell death, which will result in a gradual release of the bodily consciousness from each and every dying cell and a complete severance of the functional consciousness from the body.

In a near-death experience, the functional consciousness resides outside the body and seems to be an exploratory state but stays connected to the body. At this moment the functional consciousness is fully aware as even though it is out of the body it still stays connected to the body. The connection of the functional consciousness to the body can be better explained by quantum entanglement, wherein the photons of the functional form of consciousness are entangled to the photons of the bodily form of consciousness that resides with the body. This entanglement which is better explained in the next section sustains until the body is in a state of return, where each damaged cell of the body tries to revive the rhythmic biochemical cycles that manage the cellular process within each cell from the exterior. The cell soul-pathway supports several conscious roles in cell functions, including cell proliferation and differentiation, apoptosis, DNA synthesis, RNA transcription, protein expression, ATP synthesis and metabolic activity and the overall consciousness of the body. The pathway is an ultra-fast networking pathway in gigahertz, megahertz and kilohertz frequencies and is required for the propagation and integration of both forms of consciousness (Pereira 2015).

The disembodied or the non-local form of experience in the near-death cases is conscious or aware to a level that memories can be created and stored and later recalled and narrated is supported by the ultra-fast processing of the cell-soul pathway. Bokkon and team (Bokkon et al 2013). have already provided a biophysical visual representational model to show the involvement of low-energy quantum entanglements during near-death experiences. Whether these processes are conducted within the bodily consciousness or the functional consciousness is difficult to answer, but the exuberance or richness of the experiences are similar to those created in a state of deep dream or meditative consciousness. Despite of the existence of the various forms of consciousness, consciousness functions as a whole unit

when it comes to an experience. The working of the senses in a non-local or disembodied state supports the hypothesis that the body though technically (no blood circulation) dead is still conducting consciousness externally by means of the cell-soul pathway; awaiting an assurance of the death or return to life of the body.

Consciousness is therefore an indefinite form of energy that propagates via the cell-soul pathway and in the process creates experiences within and outside the body. During a near-death case, the bodily consciousness is in a process of recovering with the recovery of the body and its cellular functions, but the functional consciousness can experience the whole recovery process of the body and therefore is more interested in the resuscitation process.

Quantum entangled states of consciousness

Self-sustaining quantum generated energy through entanglement is the answer to all mystical realities and the answer lies in believing in its existence in and around us (Pereira & Harter 2015). Based on our extended hypotheses, it is now well established that the cell-soul pathway supports two forms of consciousness, functional consciousness and bodily consciousness. These forms of consciousness have the same source of energy supply; the electromagnetic radiation that manages the cell and its functions thus supporting the bodily form of consciousness which interim creates the functional form of consciousness (Fig. 2). The way of life in living systems, is trapping of electromagnetic radiation energy, its conversion into chemical energy and its use for cellular maintenance and growth (Overmann & Garcia-Pichel 2006) which is the basis of the energy flow system for this pathway. The Planck postulate, which describes how all matter absorbs and re-emits photons, i.e., quanta of energy, from and into the quantum foam of the zero-point field that pervades all matter and even the vacuum of space (Haisch et al. 1997). Normally these emissions are random exchanges of energy between particles and the zero-point field but in living tissue have been shown to exhibit quantum coherence and also carry information non-locally i.e. instantaneous transmission of information across space and time (Darling 2005).

Physicists have experimentally demonstrated the entanglement of two particles no matter how far apart they are (even a billion miles apart, in theory), so a change in one particle instantly creates a simultaneous change in the other as if they were connected or in some way the same particle. This phenomenon is called quantum entanglement which Einstein dismissed as "spooky actions from a distance" and is suggestive of an underlying reality that physicists have not yet been able to explain although there are many theories. A biological cell demonstrates consciousness built by the quantum principles of entanglement, coherence and non-locality as explained by the cell-soul pathway (Pereira 2015) and its extended version. There is a vice versa interaction between the functional and bodily forms of consciousness which supports consciousness outside and inside the body (Fig. 3).

Quantum entanglement is a unique property in quantum physics that best describes the mysterious behaviours that take place at a quantum level with its effects observed at a macroscopic level (Peres 1993). When two particles are entangled, they behave as one and not as two separate particles, so what happens in the quantum world is completely different from what we perceive in the macroscopic world, and this also holds true for the world of quantum biology. In an entangled state of photons there will be a constant exchange of energy between these particles which interacts with one another resulting in information gathering. Hameroff and Chopra (2012) suggest that quantum entanglement of low-energy particles could interact even outside the body suggesting a near-death experience; therefore the existence of a quantum soul.

According to physicist Fred Alan Wolf (1994), near-death experiences can be explained using a holographic model in which death is merely a shifting of a person's consciousness from one dimension of the hologram to another. Based on the cell-soul pathway hypothesis, it can be further hypothesised that the information creation, gathering and transfer during a near-death experience or in a state of disembodiment, may occur as a result of quantum entanglement of the photons present between the two states of consciousness resulting in a photon cloud that acts as a holographic image processor (Fig. 3). The cloud of energised photons is therefore in a constant state of exchanging energy with the cosmos with an ability to retain memory through holographic processing to teleport consciousness outside the body. Creating a hologram of a single photon was believed to be impossible due to the fundamental laws of physics. However, scientists at the Faculty of Physics, University of Warsaw, have successfully applied concepts of classical holography to the world of quantum phenomena (Chrapkiewicz et al. 2016). A new measurement technique has enabled them to register the first-ever hologram of a single light particle, thereby shedding new light on the foundations of quantum mechanics. This experiment is a major step toward improving the understanding of the fundamental principles of quantum mechanics and supports the hypothesis of creation of memories beyond the limits of the body.

In quantum theory, the *zero-point field* (ZPF) is a quantum vacuum state or void which generally contains nothing but electromagnetic waves and infinitesimal particles popping into and out of existence (Caligiuri & Musha 2015). The cell-soul pathway along with the forms of consciousness functioning within the zero-point field supports the entanglement that occurs during a near-death experience, wherein the entangled photons of the two forms of consciousness result in creation of memories of their experiences by means of the holographic principle. Marcer and group had hypothesised the existence of a holographic memory and holographic image that is stored in the zero-point field (Marcer & Schempp 1997). The information, its storage and its access is nature's information transfer mechanism and has been explained by the quantum hologram concept laid down by Mitchell and Staretz (2011) and others. The quantum hologram and its information is

therefore contained in the amplitude, frequencies and the relationships with the phases and their interference patterns of the photons emitted and absorbed in the four dimensional space/time reality.

A zero-point field of the universe is supportive of the holographic principle where consciousness and memories are not localized in the body but are distributed within the conscious disembodied state. The discovery of an *electromagnetic zero-point field* lends credibility to the possibility of having vast memory storage capabilities outside of the physical body and supports the functioning of the functional consciousness during a near-death experience. Phenomena such as these can be best understood if the zero point fields can be *tapped* as a storage location for information and energy which can be accessed at any time. The zero-point field is ubiquitous, nonlocal, cannot be attenuated, lasts indefinitely with no loss of coherence and can store unlimited information processed non-locally as a quantum holographic processor (Mitchell 2016), which is an ideal location to process information non-locally during a near-death experience. When the disembodied state or functional consciousness restores back to the body or rather merges with the bodily state of consciousness, the memories stored within the holographic field created during this process can be revived by the body and appears as vivid as it would be in a fully functional conscious body.

Conclusions

Non-local consciousness or disembodiment is a unique characteristic state observed in near-death experiences, where an individual is conscious in that state and generates memories that are rich and vivid to be remembered when back into the body. The extended version of the cell-soul pathway explains this feature from a point of quantum entanglement within the zero-point field where the photons within the functional form of consciousness are connected to the bodily form of consciousness resulting in an energy exchange. The non-localized subjective experience in a near-death experience has therefore been hypothesised to be a characteristic within the limits of quantum physics; quantum entanglement a property that can demonstrate the capability of storing information holographically within the void or vacuum with the ability to create memories beyond the limitations of the brain and body, thus supporting the state of conscious disembodiment or non-locality.

Finally, I do not believe that functional or disembodied consciousness survives after death (not near-death), the End-of-Life situation. Consciousness of any form converts its self to simple energy (cosmic energy) and is returned back to where it belongs, supporting the first law of thermodynamics. In accordance to the second law, the entropic change is managed by the retention of a holographically created memory of the mind within the matrix of this cosmic energy. This hologram can be reactivated if tapped by an individual who has learned

the art of interacting with cosmic energy, in a good way or a bad way. These individuals (shamans, mediums, channelers, etc.) can utilize their functional consciousness to intermingle with the holograms of specific individuals. In a dying situation, the functional consciousness exists in the same state and therefore taps into the cosmic energy and starts seeking the memories of its loved ones, etc.

Consciousness stays so long as the body stays; this condition is supported by quantum entanglement. During an NDE, the embodied and disembodied consciousness stay connected and the memories are revived only after the individual comes back to the body. Death of the body will release consciousness in the form of energy that will be a gradual process for embodied consciousness as compared to the disembodied functional consciousness.

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Research Essay

On the Possible Existence of Quantum Consciousness After Brain Death

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Abstract: One of the main clinical signs of irreversible human death is the flat EEG. It means that in this condition neurons do not generate action potentials, and therefore cannot control body movement and vital physiological functions. However, after brain death, the rate of destruction of cerebral and other cells is different in the several body districts. We consider at least two approaches to the physical correlates of quantum consciousness in that condition. The first one is related to quantum effects in proteins, which can maintain unchanged their folding and water environment in several cells after brain death. The second one considers a part of conscious activity related to the formation of potentials in electrolyte systems containing water, ions and proteins, which can maintain charges (difference of potentials) after brain death. In the first approach the Schrödinger proteins can be considered the basis of quantum information; therefore, quantum consciousness may remain until the last folded protein exists in the body. In the second approach, since the flat EEG comes from a disturbance in the flux of some ions (mostly Na⁺ and K⁺, affecting neuronal firing), but not necessarily other ions (mostly Ca²⁺ in glial cells), which may still maintain a low entropy distribution, some instantiation of feelings and other conscious phenomena would take place until the system achieves a Gaussian ionic distribution, in which any functional charge is absent. On these bases, we argue for the possibility of fading quantum consciousness aspects after brain death. This claim deserves more thorough investigations, not only for its scientific boldness, but also because of the legal consequences that could be of considerable interest in a not too far future, when taking into consideration the aims of transhumanism.

Key Words: Brain Death, Quantum Consciousness, Proteins, Ions, Transhumanism.

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Introduction

We start by noting that the concepts of brain death and death are not synonymous. Brain death, as discussed with more detail in the next section of the paper, refers to the absence of neuronal action potentials, as revealed physiologically by the "flat EEG" and behaviorally by the absence of voluntary movement. Our claim in this paper is that some modality of consciousness is possible in the absence of action potentials and voluntary movement, while other vital activities remain in the brain/body of a person.

After brain death, there is a degenerative process that (in our current biomedical technological capabilities) irreversibly leads to the complete death of the body. The latter is here understood as the death of every cell, or, in other words, the complete absence of metabolism in the disintegrating body. It is very unlikely that in this condition any aspect of consciousness could remain, at least if we do not assume a dualist view of consciousness as being completely independent of the living body.

In this paper we will not discuss the metaphysical mind-body problem, but focus on the possibility of the existence of a quantum-based aspect of consciousness in a phase that begins soon after brain death while some cells and tissues of the body still present metabolic activity, keeping proteins and ionic solutions in functional states. In this kind of state, the system may still be conscious, but unable to express the conscious states behaviorally. This phase raises an ethical issue about how to treat people in this condition. For instance, it does not seem completely implausible that during the cremation the quantum consciousness of a recently brain-dead person would record that experience literally like being in hell. This condition would cause her extreme suffering that could be avoided if she is kept safe for some time after brain death, as practiced in some cultures.

The Concepts of Death and Brain Death

In the biomedical context, *death* is conceived as “the irreversible cessation of cardiopulmonary or neurological function” (Kirkpatrick, Beasley, & Caplan, 2010). The problem with this definition is that it focuses on the outcome of the process (the body

becomes dead), but does not identify the phases that lead to the result. Noting the phases, *brain death* is conceived, by the same authors, as “the irreversible loss of the brain’s ability to regulate the organism”. This condition “signals death, even if constituent parts can continue to function independently or with assistance”. The question that emerges from these concepts is: what happens to the system while it is *signaling* death, but is *not (completely) dead* yet?

In order to answer this question, it is necessary to discuss brain physiology and our technology to measure and register it. The electroencephalogram is a century-old technology to measure brain activity and afford our interpretations of the inner state of the brain/mind. Bioelectric activity – as measured by the EEG – depends on electromagnetic fields produced by *a class of coherent ionic movements*. The absence of such movements, or their reciprocal cancellation (as in thermodynamic equilibrium) produces a flat EEG (Figure 1). There are other functional ionic movements and resulting bioelectric fields, as well as protein activities, which may continue to exist in the brain/mind system of a person, while her EEG is flat.

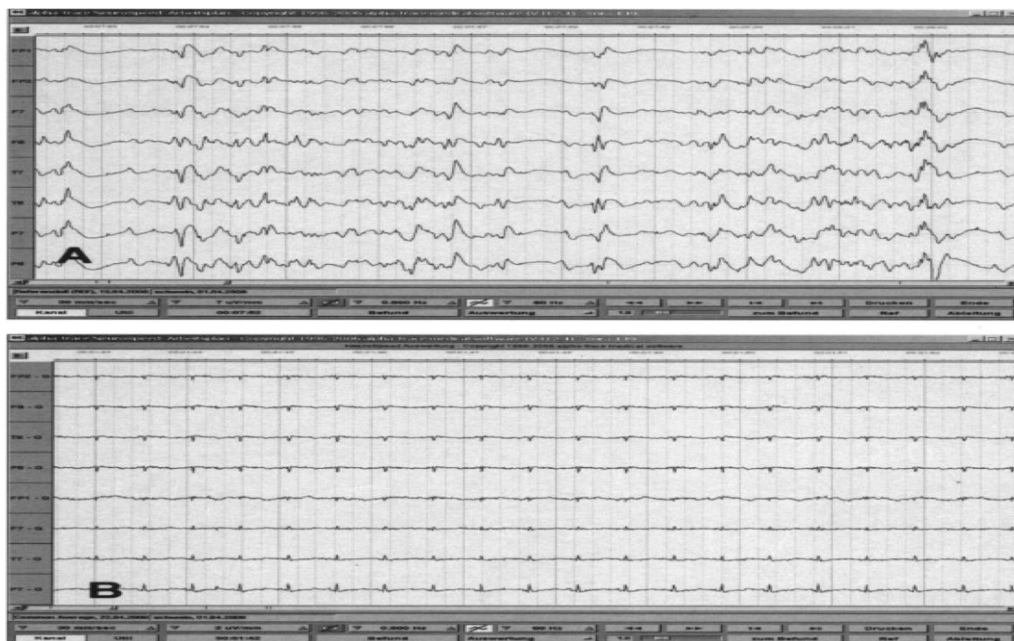


Figure 1 - Comparison of a normal and a flat EEG.
A: Normal; B: Flat EEG (Adapted from Sereinigg, 2012).

There are well known mechanisms that can produce a flat EEG while billions of brain cells are still alive. For instance, astrocytes control the homeostasis of extracellular

potassium ions. An astroglial dysfunction may cause an abnormal increase of extracellular potassium concentration, and then, neuronal repolarization, a necessary phase in the generation of action potentials (Figure 2), cannot occur. In this condition, neurons are still alive, but do not repolarize to generate action potentials.

Human life crucially depends on coherent movements of Ca^{++} , Na^+ and K^+ ions bound to proteins and water (Mentré, 2012), composing self-organizing processes. Coherent ionic movement is essential to heart and brain functioning, and cellular coordination of replication of macromolecules (Greer & Greenberg, 2008).

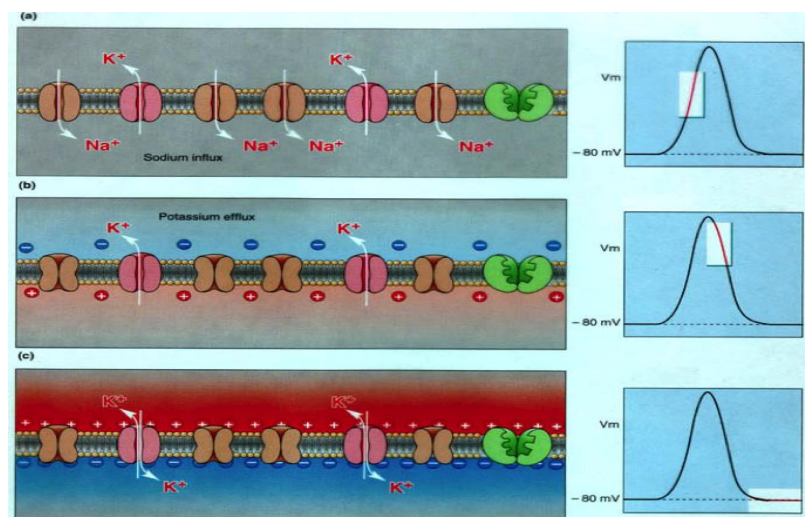


Figure 2: Neuron electric activity: a) depolarization; b) repolarization; c) resting potential
(Source: <http://biologyclass.neurobio.arizona.edu/images.jpg>)

Enzymes are catalysts that facilitate reactions, but they can act in both directions of the reactions, forward or backward. The actual direction is defined by a stream installed in the systemic context in which the catalysts are inserted (Guimarães, 2012). When the protein-ion-water system is disturbed, a process of irreversible death can be triggered.

A mildly depressed level of consciousness or alertness may be classed as lethargy; someone in this state can be aroused with little difficulty (Kandel, Jessell, & Schwartz, 2000). People who are obtunded have a more depressed level of consciousness and cannot be fully aroused (Porth, 2007). Those who are not able to be aroused from a sleep-like state are said to

be stuporous. Coma is the inability to make any purposeful response. Scales such as the Glasgow coma scale have been designed to measure the level of consciousness.

A lower level of consciousness can result from a variety of factors, including alterations in the chemical environment of the brain (e.g., exposure to poisons or intoxicants), insufficient oxygen or blood flow in the brain, and excessive pressure within the skull. Prolonged unconsciousness is understood to be a sign of a medical emergency (Pollak & Gupton, 2002). A deficit in the level of consciousness suggests that the cerebral hemispheres or the reticular activating system have been injured. A decreased level of consciousness correlates to increased morbidity (sickness) and mortality (death) (Scheld, Whitley, & Marra, 2004). Thus it is a valuable measure of a patient's medical and neurological status. In fact, some sources consider the level of consciousness to be one of the vital signs (Forgey, 1999).

The Body After Death

Post mortem interval (PMI) is the time that has elapsed since a person has died. If the time in question is not known, a number of medical/scientific techniques are used to determine it. This also can refer to the stage of decomposition the person is in. Many types of changes to a body occur after death (ceasing breathing, cessation of metabolism, no pulse) and some of those can be used to determine the *post mortem* interval:

- *Pallor mortis*: paleness which happens in the 15–120 minutes after death;
- *Livor mortis*: a settling of the blood in the lower (dependent) portion of the body;
- *Algor mortis*: the reduction in body temperature following death. This is generally a steady decline, until matching ambient temperature;
- *Rigor mortis*: the limbs of the corpse become stiff (Latin *rigor*) and difficult to move or manipulate
- Forensic entomology: insect activity on the corpse;
- *Vitreous humour* changes – changes in eye chemistry;
- State of decomposition – autolysis (process of self digestion) and putrefaction (process caused by bacteria found within the body). Putrefaction is the decomposition of animal proteins – especially by anaerobic microorganisms (putrefying bacteria).

Decomposition is a more general process. Putrefaction usually results in amines such as putrescine and cadaverine, which have a putrid odor. Material that is subject to putrefaction is called putrescible.

The putrefaction of a human body with respect to time of death occurs in phases:

- 2–3 days: Staining begins on the abdomen. The body begins to swell, owing to gas formation.
- 3–4 days: The staining spreads and veins become discolored.
- 5–6 days: The abdomen swells with gas (produced by the bacteria that decompose the body), and the skin blisters.
- 2 weeks: The abdomen becomes very tight and swollen.
- 3 weeks: Tissues begin to soften. Organs and cavities are bursting. The nails fall off.
- 4 weeks: Soft tissues begin to liquefy, and the face becomes unrecognizable.

The exact rate of putrefaction is dependent upon many factors, such as weather, exposure and location. Thus, refrigeration at a morgue or funeral home can retard the process, allowing for burial in three days or so following death without embalming.

Two Models of Quantum Consciousness

According to the current neuroscientific view, consciousness fails to survive brain death and, along with all other mental functions, is irrecoverably lost (Laureys & Tononi, 2009). Nevertheless, as we read in a recent, very exhaustive review by Bob Davis (2016), the scientific principles and studies that may fall within the domain of quantum mechanical processes may eventually provide evidence to demonstrate how consciousness relates with the brain during life, as well as during brain death, to better understand the possibility of conscious activity after death.

In the literature, there are many quantum models of consciousness, some advocating a radically revisionist metaphysics and others not. It would be impossible to catalog them here or even explain in any substantial way the key features of quantum **theory** to which they appeal. Among them, we find those that build on findings on oscillatory synchrony (Engel &

Singer, 2001; Singer, 1999), which can be putatively related to the Orch-OR microtubule-based theory (Hameroff & Penrose, 1996, 2014; Hameroff & Powell, 2009) and astroglial calcium waves (Pereira Jr., 2012; Pereira Jr. & Furlan, 2009, 2010). The connection between the existence of oscillatory synchrony in different frequencies and conscious activity is well established in neuroscience, while the mechanism underlying the generation of conscious states and episodes is a controversial issue addressed by both the microtubule and the calcium wave approaches.

Proteins and Consciousness After Brain Death

The Penrose-Hameroff "Orchestrated Objective Reduction" (Orch-OR) model of consciousness was first proposed in 1995 and more recently revised in 2014 (Hameroff & Penrose, 1995, 2014). Orch OR asserts that microtubular protein polymers inside brain neurons act as quantum computers. Tubulin components of microtubules are understood to constitute a "Schrödinger's protein" existing in quantum superposition of different states and hence encoding quantum bits, or qubits of information. They argue that quantum-superposed states are developed in a tubulin that gradually recruits other superposed tubulin over a time interval lasting up to 500 msec until a mass-time-energy threshold, related to quantum gravity, is finally reached (without the intervention of an observer or measurement, as in most of quantum mechanics models). This results in "objective collapses" involving the quantum system passing from a superposition of multiple possible states to a single definite state.

This model predicts dendritic webs of approximately 100,000 neurons subserving discrete conscious moments, or frames, occurring every 25 ms in gamma synchrony. According to Penrose and Hameroff, the environment internal to the microtubules is especially suitable for objective collapses, and the resulting self-collapses produce a coherent flow regulating neuronal activity and making non-algorithmic mental processes possible.

Science can measure brain electrical activity known to correlate with consciousness, for example high frequency synchronized electroencephalography (EEG) in the gamma range (*gamma synchrony*). Monitors able to measure and process EEG and detect gamma synchrony and other correlates of consciousness have been developed for use during anesthesia to provide an indicator of depth of anesthesia and prevent intra-operative

awareness, i.e., to avoid patients being conscious when they are supposed to be anesthetized and unconscious. The BIS monitor (Aspect Medical Systems, Newton, MA) records and processes frontal electroencephalography (EEG) to produce a digital *bispectral index*, or BIS number, on a scale of 0 to 100. A BIS number of 0 equals EEG silence, and 100 is the expected value in a fully awake, conscious adult.

Chawla et al. (2009) observed that in brain tissue that is metabolically dead, receiving no blood flow nor oxygen, a further end-of-life activity occurs. The BIS and SEDline numbers, indicators of level of awareness, are near zero, but then a burst of synchronized, coherent bifrontal brain activity occurs, seemingly EEG gamma synchrony (an indicator of consciousness). As marked by BIS and SEDline numbers near 80, the activity persists for a minute or more, then it abruptly ceases. They speculate that this level of BIS/SEDline activity is related to the cellular loss of membrane polarization due to hypoxemia, but there are other proposed explanations for the end-of-life brain activity as non-functional, generalized neuronal depolarization.

Chawla et al. (2009) suggest that excess extracellular potassium causes last gasp neuronal spasms throughout the brain, but that couldn't account for the global coherence – synchronized, organized. Another suggested cause is calcium-induced neuronal death, which could implicate disruption of cytoskeletal microtubules inside neurons as the precipitating factor. But again, how and why the bifrontal coherent synchrony? According to Hameroff's approach, neuronal hypoxia and acidosis would disable sodium-potassium ATPase pumps, preventing axonal action potentials, but temporarily sparing lower energy dendritic activity, which may correlate more directly with consciousness (Hameroff, 2010). Another possibility is that consciousness is a low energy quantum process (Hameroff, 1998), in which case reduced molecular dynamics may limit thermal decoherence, providing a temporal window for enhanced quantum coherent states and a burst of enhanced consciousness. The Hameroff-Chopra (2010) approach to quantum consciousness after death explains this burst of enhanced awareness at death as the preliminary for further awakening to extraordinary levels of consciousness possibly beyond the body.

An expanded level of consciousness (ELC), also named altered state of consciousness (ASC), is any condition that is significantly different from a normal waking beta wave state.

The expression was used as early as 1966 by Arnold M. Ludwig (1966) and brought into common usage from 1969 by Charles Tart (1969). It describes induced changes in one's mental state, almost always temporary.

Altered states of consciousness can be associated with artistic creativity. They also can be shared interpersonally and studied as a subject of sociological research. Higher consciousness is a concept of a spiritual transcendence of human consciousness in various traditions of mysticism. Within monotheism, it also refers to the awareness or knowledge of an *ultimate reality* sometimes known as God. Alternative terms with similar meanings include super consciousness (Yoga), objective consciousness (Gurdjieff), Buddhist consciousness (Theosophy), cosmic consciousness, God-consciousness (Sufism and Hinduism) and Christ consciousness (New Thought). An ASC can sometimes be reached intentionally by the use of sensory deprivation, an isolation tank, lucid dreaming, hypnosis, prolonged meditation, and psychoactive drugs.

The ordinary levels of consciousness or ego can be represented (Figure 3) as a set of communicating levels (Cocchi et al., 2011):

1. Pure biological level or “primordial ego”: the proto self of Damasio (1999), attributing in a rudimentary form to his own body, feelings of hunger, thirst, pleasure, pain;
2. Bio-eco-logical level: on the conscious interaction between subject and environment, but set only the *hic et nunc* with no extension project.
3. Extended mnemonic level: belonging to a consciousness that, while expanding *back and forth*, does not yet embody in a language its being as a continuous narrative, preserved by the memory as a place of meaning of life.
4. Level of identity sense: from its original roots in biology the ego has gradually expanded to the ecological dimension or mnemonic short-range, is then passed to the mnemonic long-haul dimension, and now, through language, produces an accomplished culture.
5. Mystic level of consciousness or abyss of consciousness. The presence in humans of a prophetic intuition, of an abyss of consciousness opens the way for intellectual freedom as liberation from the outer limits (subject, *obstacles* to overcome

in pursuit of their projects) and internal (indefinitely biological determinism or panbiologism).

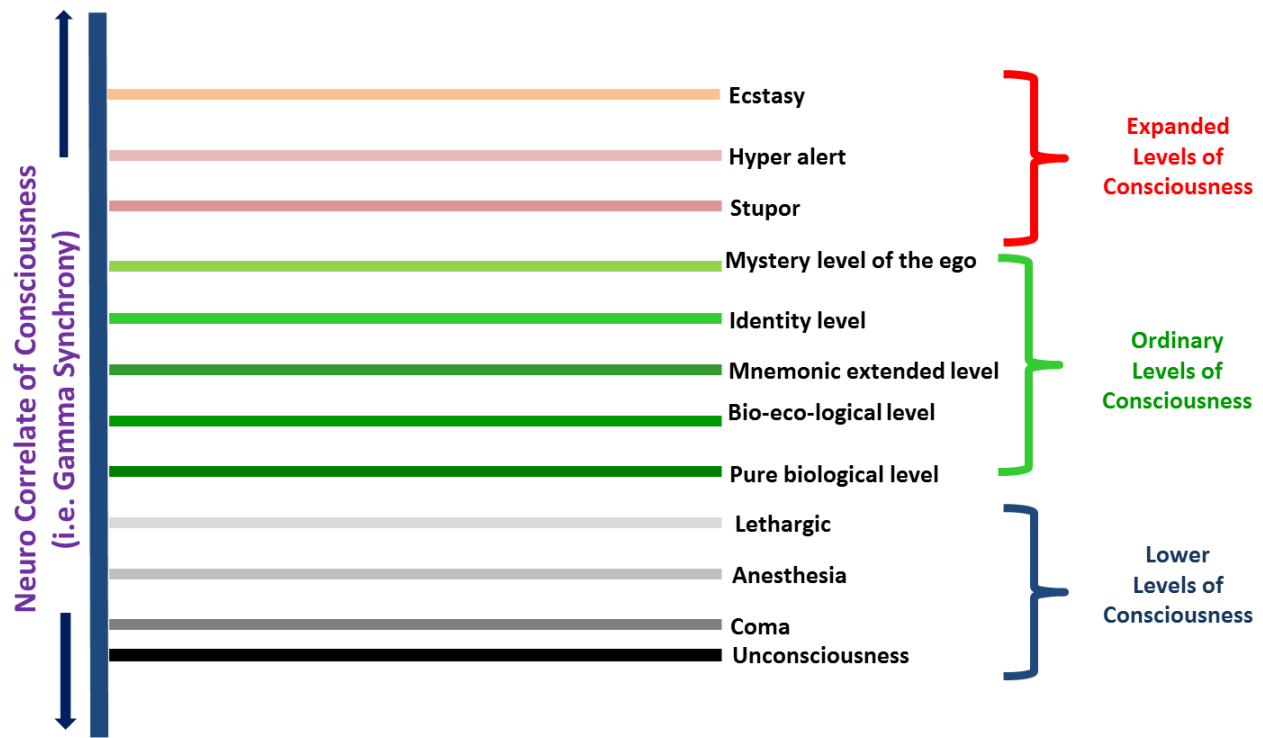


Figure 3: Levels of consciousness. (Revised from Cocchi et al., 2011).

In other words, the ego produces articulations of sense about oneself and the world that incorporates into one’s experiences and one’s acting out, in a narrative, intellectual and emotional, irreducible to any other, world views, social stress, scientific and cultural expressions.

According to the model of Computational Loop Quantum Gravity (CLQG) (Zizzi, 2005), the quantum extension of digital physics states that the concept of reality can be expressed as: “It from qubit”, namely, reality is quantum information, QI.

Classical Information, I

$I = N$ (N = number of bits)

Classical digital reality (Classic truth)

$N = 1, I = 1$ (Yes = 1 or Not = 0)

Quantum Information, Iq

$Iq = \sqrt{N}$ (N = number of qubits)

Quantum digital reality (Quantum truth)

$N = 1, Iq = 2$ (Yes = 1 and Not = 0)

A quantum biological system, which is a particular type of complex system based on quantum information, is a site of quantum computation. Later Zizzi (2010) showed that quantum superposition and entanglement, which characterize quantum computing, can be formalized by a particular quantum logic named Lq. The latter in turn was used (Zizzi, 2012) to describe the quantum mental processes of the unconscious mind. This was done in the framework of the quantum theory of mind of Penrose-Hameroff (Hameroff, 1994; Hameroff & Penrose, 1995) where the units of quantum information (qubits) are biologically implemented by tubulin units of brain's microtubules.

Zizzi (2012) suggests that the Mind has three different operational modes:

- 1- the quantum computational mode
- 2- the classical computational mode
- 3- the non-algorithmic mode.

The quantum and classical computational modes pertain to ordinary thought processes, while the non-algorithmic mode (Zizzi & Pregolato, 2012) pertains to metathought, which is the peculiar process of thinking about our own ordinary thought. In Figure 4 we represent the hypothetical variations of quantum information contents in microtubules during the lifetime in correlation with the different consciousness states and in the birth and death phases.

For those who dare follow the implications of such thoughts this far, a quantum basis for consciousness also raises the scientific possibility of an afterlife, of an actual soul leaving the body and persisting as entangled fluctuations in quantum spacetime geometry (Hameroff & Chopra, 2010). According to this theory, when people enter clinical death, the microtubules lose their quantum state but don't lose the information they contain. Some of this quantum information might not be lost or dissipated or destroyed but could persist in some way in this fundamental level of spacetime geometry, which, it seems, is not local but more like a holographic repetition in scale and distances that persists perhaps even indefinitely at a finer scale, which would be a higher frequency – a smaller scale but also lower energy. In this way, it could continue to exist almost indefinitely.

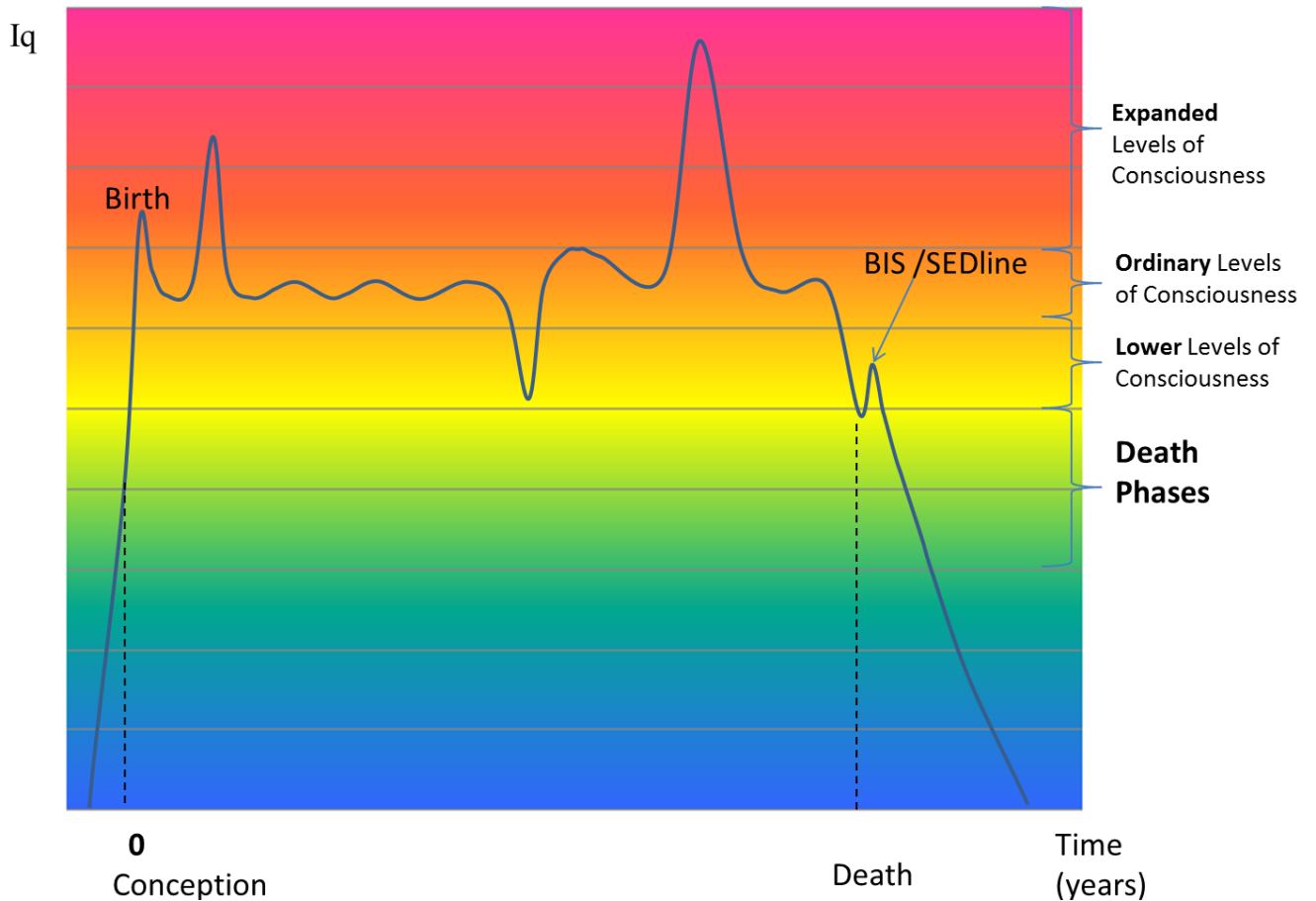


Figure 4: Scheme of possible consciousness states variations in a lifetime period (Pregolato et al., original scheme). Iq = quantum Information.

Ions and Consciousness

There are two kinds of information processing in the brain. One (discrete) is by means of electric pulses (action potentials) in neuronal networks. The other (continuous) is by means of hydro-ionic waves guided by proteins, in glial cells, extracellular medium, cerebrospinal fluid and blood flow. Beyond the *Neuron Doctrine* formulated by Ramón y Cajal – proposing that neurons are the structural and functional unit of the mind/brain – our current theoretical framework has been updated to include neuro-glial interactions and the putative contribution of the astroglial network for conscious processes.

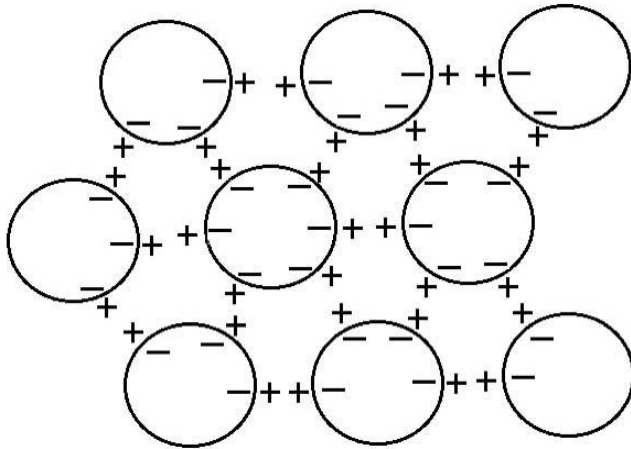
The complex interactions of ions, water and proteins in the brain, supporting conscious functions, have been deeply discussed since the work of Loeb (1900, 1906).

In the model of neuronal membrane excitation proposed by Tasaki and Chang (1958) and Tasaki (1999), consisting of a water gel inside lipid layers that is swollen and contracted according to changes in the concentration of sodium and calcium ions, it is assumed the existence of electromagnetic potentials generated by an ionic mechanism. This mechanism is different and possibly parallel to the well-known Hodgkins-Huxley mechanism based on ion pumps, binding of transmitters and sodium-potassium exchanges that generate the spike trains that control muscles and glands. The Tasaki work opens the possibility of existence of electric potentials dedicated to cognitive and affective processes (covert behavior), but not to responsive action in the environment (overt behavior).

The work of Tasaki was complemented by innovative research made by Pollack (2010), revealing the existence of a negative "exclusion zone" in water that can be regarded as adequate to attract ions from the extracellular milieu and compose a *biological battery* inside the neural membrane (Figure 5). According to Ho (2014),

Stable water clusters tens of nanometres to millimetres in dimensions can be seen under the microscope. ... The clusters consist of millions to billions of water molecules and come in a wide variety of shapes and sizes. ... They make up structures that are flexible, and can be deformed. ... Otherwise, they remain stable for weeks, even months at room temperature and pressure. They have all the characteristics of "soft matter" – liquids, liquid crystals, colloids, polymers, gels, and foams – that form mesoscopic structures much larger than the molecules themselves, but small compared with the bulk material.

Structural changes in water are related to the loss of consciousness in general anesthesia (Kundacina & Pollack, 2016). General anesthetics also change the state of astrocytes (Thrane, 2013). Considering that the energy and the information present at hydro-ionic waves is closely related to the conscious state, we can hypothesize that in the case of brain death the *biological battery* can keep and regenerate useful energy, and use it to support consciousness for some time after the shortage of supply from mitochondria. (The independence from metabolism was suggested to APJ by Vera Maura Fernandes de Lima, personal communication).



“Coherent oscillations maintained by the electromagnetic field...produce correlations as large as several hundred microns, giving rise to a common dipole orientation...resulting in stable supramolecular clusters”

Pollack's theory of the fourth state of water (gel, crystal) and formation of exclusion zones from the dynamics of attraction and repulsion

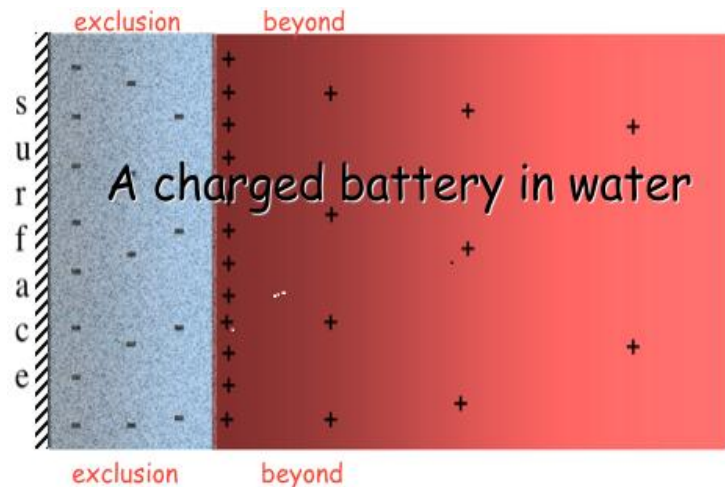


Figure 5: Structured Water (Pollack, 2010)

Tasaki and Chang (1958), soon followed by Galambos (1960), were probably the first neuroscientists to suggest that brain slow potentials related to cognitive and affective processes are mediated by glial cells. The kind of glial cells that forms a brain wide network able to propagate electric potentials is the astrocyte. Astrocytes do not have excitable membranes, but can communicate signals and exchange energy by means of calcium ion waves. These waves are generated by neural local fields potentials in tripartite synapses (composed of two neurons and one astrocyte). The local field produced by the presynaptic neuron, as well as the transmitters it releases, impact on the glial neighbors, producing small

waves that reach the astroglial network. Gap junctions between astrocytes allow the passage of the ions, and even boost their signal by means of ATP mechanisms. Astroglial intercellular communication by means of gap junctions allow the interference of the smaller waves, resulting in global wave patterns that feedback on the neurons that produced the smaller waves. This cycle of action and reaction between neurons and astrocytes has been proposed to support the formation of conscious episodes in the temporal window of 2 seconds (Pereira Jr., 2015).

The astroglial calcium wave is a very complex phenomenon, having including both travelling and standing waves. The smaller waves generated at tripartite synapses are travelling ones, based on changes of concentration of calcium ions inside individual astrocytes and in the network. Inositol triphosphate and its receptors proteins prompt the release of calcium ions previously stored in deposits and their movements through the cytosol, reaching astroglial distal branches, and then moving to other cells in the network. The result of the interference of these smaller waves is a standing waveform across brain tissue, composed of temporal patterns of vibrational energy. The structure of this waveform fits well the description made by Mentrè (2012):

A given ion (phosphate, Ca^{2+} , H^+) seems to be transported along a chain (cascade) of macromolecules containing this ion (or another one) in a sequestered form. A signal (calcium, for example) occurring at the entry of the chain induces the liberation of the sequestered ion from the first element of the chain and this one, in its turn, induces the liberation of the ion from the following element, etc.: the ion entering the chain remains sequestered by the first element of the chain. The ion appearing at the end of the chain is liberated by the last element of the chain. This type of transport differs deeply from diffusion. It is not a transport of matter but a transfer of a level of energy (transduction).
(p. 19)

As a consequence of the above discoveries and theories, it is possible to conjecture that the neuron has a double life. Dendrites participate in the tissue function, generating graded potentials that induce hydro-ionic waves by means of both chemical and electromagnetic signaling; the axon produces spike trains that execute cognitive and motor functions. The scalp EEG mostly captures the dendritic potentials that induce both hydro-ionic waves in brain tissue and action potentials, but not the electric potentials endogenous to the hydro-

ionic waves, which may remain active and carrying their functions for some time after the scalp EEG becomes flat and the subject is diagnosed with brain death.

The Vimal, Pereira and Pregolato Approach

Current approaches to consciousness tend to abandon both materialism and idealism, as well as interactive substance dualism, moving towards multi-aspect monisms. In a collaborative book chapter (Pereira Jr., 2016), we proposed a qualitative biophysics helping to solve the *hard problem of consciousness* (Chalmers, 1995, 1996). The idea is that elementary waveforms (EW) that compose quantum microstates contain the *potential* for qualitative macrostates (QMSs), as those observed in the morphology and physiology of living systems. We further claim that the subjective qualities experienced in conscious episodes can be described by a hypermatrix/hypertensor composed of QMSs.

In the nervous system of living individuals, including the human brain, the instantiation of macrostates is spatially distributed and unconscious. The formation of conscious episodes requires the formation of a recoherent collection of these macrostates. When all necessary conditions of consciousness (such as activation of neural-networks, wakefulness, reentry, attention, activation integration, working memory, stimulus contrast at or above threshold, and potential experiences embedded in the neural network) are satisfied, a recoherent state (corresponding to a conscious episode) emerges, from a collection of nonconscious QMS instantiated in spatially distributed neural circuits. In this context, “recoherence” means that qualities instantiated in unconscious brain macrostates are integrated into conscious experiences when a set of conditions are fulfilled, as distance from thermodynamic equilibrium, operation of biological self-organizing mechanisms and information integration by quantum gates.

Brain recoherent macrostates result from the activity of entropy reducers, as ion channels and proteins composing intracellular signal transduction pathways. These mechanisms possibly instantiate quantum computing gates (Rocha, Pereira Jr., & Coutinho, 2001; Rocha, Massad, & Pereira Jr., 2005). The operation of these gates form recoherent states, by means of informationally integrating a collection of QMS. We note that this concept of recoherence is

different from the conceptual framework of Penrose-Hameroff; the recoherence phase after the decoherence process generates the conscious state, while in the Penrose-Hameroff model the orchestrated collapse of the wave function generates a conscious state without the recoherence phase.

Using this explanatory strategy, we can explain why some natural systems have subjective conscious experiences, while others do not. The progressive interaction of EWs generate a complex state space, of which some regions correspond to the first person conscious activity of living individuals. The existence of these regions is derived from the potentialities of EW, in a strongly emergent process. Other regions do not display conscious activity, because the necessary conditions of consciousness (such as formation of neural-networks, wakefulness, reentry, attention, information integration, working memory, stimulus contrast at or above threshold, and potential experiences embedded in neural-network) are not satisfied.

The dynamical process above occurs in a temporal continuum. At one side of the continuum, there are forms in a potential state. When actualized, they compose physiochemical properties of substances and processes. In the middle, there are forms in an intermediary stage, such that they have mental but unconscious functions. At the other side, there are forms actualized in conscious episodes experienced by a living individual.

What's after death?

The mystery of what happens to quantum consciousness after physical death of the body is still far from being scientifically elucidated. Depending on the approach to quantum consciousness and interpretation of quantum theory adopted, several authors have sketched a possible answer to this question.

According to Penrose-Hameroff's Orch OR theory, consciousness occurs as a process on the edge between quantum and classical worlds. After the death of body, the quantum information (which constitutes consciousness) could shift to deeper planes and continue to exist, outside the brain, purely as patterns in nonlocal fractal/holographic-like space-time geometry. This could be defined as a "quantum soul" interconnected *via entanglement*

among beings and the universe, able to exist at deeper planes and scales independent of biology. Thus after life an actual soul as quantum information leaving the body and persisting as entangled fluctuations in multiple scales, or planes in quantum space-time geometry, may be scientifically possible.

Teodorani (2015) extended this hypothesis by introducing the concept of a “Cosmic Library” that exists everywhere throughout the universe, including the quantum vacuum and all atoms with their subatomic units. “Souls” exist in the form of a quantum field that can become manifest as consciousness in any biosystem that has the property of quantum coherence (such as the brain) and acts as the *terminal* of a big *supercomputer* to work as software controlling the hardware of the body to collect information about the physical world. This information is automatically and non-locally *uploaded* on a hard *disc* located in the quantum vacuum at the Planck scale (10^{-33} cm). The hypothesis is that *the void* contains or is the memory of everything thought and felt by everyone downloaded into the universal Big Library (BL) of pure information (Charman, 2016).

Robert Lanza (2010) claims that space and time are simply the tools our mind uses to weave information together into a coherent experience and adopts the *many-worlds* interpretation, where universes contain multiple ways for possible scenarios to occur. In one universe, the body can be dead and in another it continues to exist, absorbing the consciousness migrated to this universe. This means that a dead person, while traveling through the ‘tunnel’, ends up in a similar world he or she once inhabited, but this time alive, and so on, infinitely.

Concluding Remarks

The conjectures raised in this paper, if proven to be valid inferences, have serious ethical implications. Even in the absence of voluntary movement and in a process that irreversibly leads to death, a person may still experience *conscious* feelings. How to treat people in this condition? Even in the absence of a proof of our hypothesis, according to the precautionary principle of ethics any external intervention that may cause pain should be avoided, until signs of complete death (complete absence of metabolism; general loss of vital activity in all cells of the body) are evident.

Do the human rights and bioethical principles that apply to the normal functioning person also apply to the brain dead person? This is another ethical issue, with juridical implications, to be better discussed. The recognition of existence of feelings in non-human animals has led to the implementation of ethical rules in scientific experimentation. For the same reason, special rules could be applied to post-mortem care in the hospital, funerary, prison, battlefield and any other place where a recently dead person is sheltered.

Another problem is the lack of belief in an afterlife of transhumanists who have, among other objectives, the plan to change the *mind map* of the brain to a computer. This has an undeniable appeal for both religious and non-religious people, who are likely to delegate the commitment to defeat death to medical science and the rise of technology. The main problem is to delineate the line between perceptible and imperceptible reality, communicable and non-communicable feeling, conscious and unconscious states.

On the basis of what we exposed in this paper, the actual definition of death does not take into account the state of consciousness of the human being. The lack of knowledge of the mechanisms of consciousness, together with the (apparently obvious) feeling that our inner experience can continue after death, no doubt has led to the formulation that there must be a *soul*, and from this idea many religious approaches are still accepted by so many people, even though they are expressed in a diverse phantasmagoria of beliefs and rituals.

It may be impossible for anyone to really come to terms with the idea of life after death, and so most people easily accept a theological explanation or prefer to ignore the problem of consciousness after biological death. While theological philosophies try to assure people that death is not the end, with a supreme being that holds the answer to eternal life, atheistic philosophies are not able to comfort people with regard to the death with the same ease. This could explain the growing (almost desperate) belief in the transhumanist movements (only one step removed from the morbid fantasy of freezing the head of a dead rich person to later be transplanted back onto a renewed or entirely new body when science catches up). Transplanting a mind without a body onto a computer network is no *transplant* at all – the mind could never be the same disembodied as when it was part of a body – but a *transmogrification*, something akin to loss of identity from joining the Borg Collective from the Star Trek series.

We can conclude that a transcendent consciousness might be possible based on quantum physics. However, our first attempt to understand the evolution of the states of consciousness after biological death need to be better explored and considered for future research, in order not to confine a important issue to the beliefs held in the various movements, like the immortalists of the singularity (Ray Kurzweil) or transhumanism.

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Research Essay

Science and Postmortem Survival

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The rise of modern science, accompanied by its many technological triumphs, has led to widespread acceptance among opinion elites of a worldview that conflicts sharply both with everyday human experience and with beliefs widely shared among the world's institutional religions – including belief in the possibility of postmortem survival.

Most contemporary mainstream psychologists, neuroscientists, and biologists in particular, along with many philosophers of mind, subscribe explicitly or implicitly to some version of *physicalism*, the modern philosophical descendant of the *materialism* of previous centuries. It comes in a variety of subtly different shadings, but the basic story common to all goes like this: *All* facts are determined in the end by physical facts alone. Reality consists at bottom of tiny bits of self-existent stuff hurtling around under the influence of fields of force in accordance with mathematical laws, and everything else we observe must derive somehow from that most basic underlying stuff. In particular, we human beings are nothing more than extremely complicated biological machines, and everything we are and do is explainable, at least in principle, in terms of our physics, chemistry, and biology. Some of what we know, and our capacities to learn more, are built in genetically as complex resultants of biological evolution. Everything else comes to us through our sensory surfaces, by means of energetic exchanges with the environment of types already largely understood. Consciousness and its contents, and all other aspects of mind, are generated by (or in some mysterious way identical with, or supervenient upon), neurophysiological events and processes occurring in the brain. Our everyday experience of ourselves as effective conscious agents equipped with free will is mere illusion, a by-product of the grinding of our neural machinery. And of course since consciousness, mind and personality are entirely products of that machinery; they are necessarily extinguished, totally and finally, by the demise and dissolution of the body. On a more cosmic

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scale there seem to be no such things as final causes or a transcendent order; the overall scheme of nature appears utterly devoid of meaning or purpose.

This bleak worldview has permeated the intellectual elites and educational systems of all advanced societies and is undoubtedly a principal driver of the pervasive *disenchantment* of our modern world with its multifarious and rapidly worsening ills. It has also driven progressive erosion of traditional forms of religious belief. Indeed, recent years have witnessed a series of all-out attacks on everything religious by well-meaning defenders of Enlightenment-style rationalism such as Richard Dawkins and Daniel Dennett, who clearly regard themselves and current mainstream science as reliably marshaling the intellectual virtues of reason and objectivity against retreating forces of irrational authority and superstition. For them the truth of physicalism has been demonstrated beyond reasonable doubt, and to think anything different is necessarily to abandon centuries of scientific progress, unleash *the black flood of occultism*, and revert to primitive supernaturalist beliefs characteristic of our intellectual childhood.

However, reasons for skepticism regarding this physicalist worldview are rapidly gaining cumulative force. In the first place, classical physicalism is not merely incomplete (which no serious person can deny) but incorrect at its very foundation, essentially the physics of the late 19th century. Major tectonic shifts have subsequently occurred within physics itself. Newton's conception of absolute space and time as a pre-existing container for events, for example, has been replaced by Einstein's experimentally confirmed theories of special and general relativity. Even more fundamentally, with the rise of quantum theory nearly a century ago the deterministic clockwork universe postulated by Newton and Laplace has been overthrown, *matter* as classically conceived shown not to exist, and consciousness implicated as a fundamental player in the manifestation of the experienced world (Rosenblum & Kuttner, 2011; Stapp, 2007). These seismic events within theoretical physics have somehow not yet fully registered with the scientific community at large.

Classical physicalist brain/mind theory now seems headed in the same direction. At present we have no understanding whatsoever of how consciousness could be generated by physical events in brains, and recent theoretical work in philosophy of mind has convinced many, including at least a few prominent neuroscientists, that we can never achieve one.

Let's go back to the basics here. Any contemporary discussion of brain/mind relations must take as its point of departure the strong correlations that unquestionably exist between

mental and physical events. New manifestations of mind appear everywhere to be closely associated with modifications of structure or process in brains. In biological evolution, for example, we see an overall correlation across animal species between behavioral complexity and the level of organization of the nervous system. The rapid post-natal development of the human infant is likewise associated with massive structural and functional changes in its maturing brain. Neuropsychologists have catalogued numerous specific and sometimes very peculiar perceptual and cognitive deficits that are reliably produced by brain injuries of particular sorts, and we are all presumably familiar as normal human adults with numerous additional facts – the customary daily cycle of consciousness and the effects of mild cerebral trauma induced by alcohol and other psychoactive substances, fatigue, thumps on the head, and so on – that also reflect this generalized dependence of mind on brain.

All of the traditional philosophical positions on brain/mind relations arise from different ways of interpreting this basic fact of correlation. Contemporary mainstream physicalists assume that brain processes unilaterally cause mental phenomena, and as indicated above there are certainly numerous situations in which that seems to be exactly what happens. But what about the other way around? It seems equally obvious, naively, that mental events can cause physical events too; I decide to raise my hand, for example, and up it goes. But there is a hitch here, an asymmetry in the causal structure. The physicalist response to this challenge is simply to assert that the causality in such cases resides not in the mental events *per se* but in their physical equivalents or accompaniments in the brain. In sum, we can cleanly, simply, and directly manipulate the *physical* side of the correlation, but not so the *mental* – at least under ordinary conditions.

However, as I will next explain, strong empirical evidence has accumulated for a wide variety of human mental and behavioral capacities that outstrip in principle the explanatory potential of physical processes occurring in brains. I will discuss these under two main headings.

I. “Psi” Phenomena, Including Direct Evidence for Postmortem Survival.

Here I’m referring to experimental and field observations adduced in the course of systematic scientific effort, beginning roughly with the formation of the British Society for Psychical Research (SPR) in 1882, by workers in psychical research and its narrower modern descendent, experimental parapsychology. The basic phenomena in question involve, by

definition, correlations occurring across physical barriers that should be sufficient on presently accepted physicalist principles to prevent their formation (“basic limiting principles” as formulated by Broad, 1962, and refined by Braude, 2002). Popular terms for the main classes of relevant phenomena are *extrasensory perception* (ESP) and *mind-over-matter* or *psychokinesis* (PK). ESP itself is sometimes broken down into subtypes such as *telepathy* (unmediated awareness of the mental state or mental activity of another person), *clairvoyance* (of distant or hidden events or objects), and *precognition/retrocognition* (of future/past events). It is widely recognized by researchers that these popular terms are unduly theory-laden and probably do not correspond to real differences in underlying process, and many therefore prefer the more theory-neutral terminology introduced by Thouless and Wiesner (1947) – *psi* for paranormal phenomena in general, occasionally divided into *psi gamma* for the input (ESP) side and *psi kappa* for the output (PK) side.

A large amount of peer-reviewed research involving experimental, quasi-experimental, and case studies of various kinds has produced cumulative results more than sufficient to demonstrate beyond reasonable doubt – at least to most open-minded persons who actually take the trouble to study it - that the sheer existence of the basic input/output phenomena is a fact of nature with which we must somehow come to scientific terms (Radin, 2006; Tart, 2009). Indeed, I predict with high confidence that future generations of historians, sociologists, and philosophers of science will make a good living trying to explain why it took so long for scientists in general to accept this conclusion.

All psi phenomena are theoretically important by virtue of providing examples of human behavioral capacities that appear impossible to account for in terms of presently recognized psychological, biological, or classical-physics principles. Two special subcategories stand out, however, in terms of the magnitude of the theoretical challenges they pose.

First is *macro-PK*, psychokinesis involving human-scale physical objects. There are many sources of credible evidence for such occurrences, including individual spontaneous PK events, often associated with extreme emotions of one or another sort; recurrent spontaneous PK (RSPK or *poltergeist* cases), typically involving disturbed adolescents; and various kinds of physical manifestations, including levitation, associated with trance mediums such as D. D. Home, Eusapia Palladino, and Indridi Indridason (Braude, 1991). I will illustrate the subject here with a case that exemplifies the theoretical challenges in particularly stark form.

Levitation, a phenomenon reported of mystics from many traditions, was a principal feature in the case of Joseph of Copertino, a seventeenth-century Franciscan monk for whom “ecstatic flight” was a literal reality. Joseph was observed levitating in broad daylight on hundreds of occasions that cumulatively involved thousands of witnesses of varied types including skeptical and even hostile witnesses. Sworn testimony was obtained within a few years from scores of these and exhaustively reviewed in connection with the formal investigatory processes leading to Joseph’s canonization. His flights occurred both indoors and outdoors, covered distances and altitudes ranging from a few feet to thirty yards or more, and went on for periods ranging from a few seconds to many minutes at a time. The reported phenomena, in short, were anything but subtle, and not glibly dismissible in terms of global allegations about “inattentive blindness” (Simons & Chabris, 1999), “mass hypnosis” or other possible errors of observation and/or memory. Of special significance is the fact that during his canonization proceedings the *promotor fidei* – the “Devil’s Advocate” or defender of the faith – was none other than the great humanist (and acquaintance of Voltaire) Prospero Lambertini, later Pope Benedict XIV, who was also the principal codifier of the Church’s rules of procedure and evidence for canonization. Lambertini himself was initially hostile to Joseph’s cause, but upon thorough and searching examination of all details of the case, including the sworn depositions, he concluded that the ecstatic flights must have occurred essentially as reported. Subsequently, as Pope, he published the decree of Joseph’s Beatification. A definitive treatment of this extraordinary case has recently become available in the form of the book by Grosso (2016), who not only provides a thorough and detailed account of Joseph’s own well-documented phenomena but situates them in the larger history of macro-PK and related psychic phenomena.

Second and in some ways even more disturbing is *true precognition* – direct or unmediated apprehension of future events. Such phenomena would seem on the surface to suggest that the future is fully determined, and hence to undermine any possibility of free will. This greatly troubled F. W. H. Myers (1895), who was therefore relieved to discover cases in which future accidents seemed to have been anticipated clearly and in detail, but were then averted by appropriate interventions.

The conceptual issues related to precognition are complex and deeply tangled. I will not attempt to unravel them here but rather will simply address the state of the evidence itself, which strongly suggests that true precognition is also a genuine phenomenon. The large amount of

apparently supportive evidence from forced-choice precognition experiments is rendered somewhat uncertain in its bearings by the possibility that it might have been produced or contaminated by PK (Morris, 1982), but precognitive *remote viewing* experiments in which the possible targets are not even known to the subjects in advance and have not been picked at the time of the viewing seem less subject to alternative explanations of this sort. Most significant, in my view, are the many well-documented spontaneous cases involving multiple low-level factual details that are recorded at the time of the original experience (which often takes the form of an unusually vivid or intense dream), and then verifiably occur at a distant point in the future (Rosenberg, 2015).

Still more important for theoretical purposes, and particularly germane to this special issue of *JCER*, is the large further body of evidence directly suggestive of postmortem survival, the persistence of elements of mind and personality following bodily death. It is simply *false* to assert, as does eliminative materialist philosopher Paul Churchland (1988, p. 10), that we possess no such evidence. We in fact possess a large amount of such evidence, much of it of very high quality, but unfortunately this work remains practically unknown outside the small circle of persons professionally involved with it. Here I can provide only the barest glimpses into a literature consisting of literally hundreds of thousands of pages of heavily documented case studies – anything but mere *anecdotes*, as would-be critics often allege. Three main lines of survival research are of particular importance for my purposes here.

The first concerns *trance mediumship*, a principal focus of the SPR during the first several decades of its work. *Mediums* here are persons who are ostensibly able, usually when in some sort of trance-like altered state of consciousness, to make contact with the dead (Gauld, 1982). A large proportion of the most important research revolves around a half-dozen or so such persons who proved especially good at providing, under well-controlled conditions, detailed and accurate information seeming to derive from specific deceased persons about whom they could not have learned in any normal way. There is a difficult issue here related to proper interpretation of such evidence, which we will get to shortly, but let me first indicate the character of the evidence itself.

One of the first and best of the great trance mediums was Leonora Piper, discovered by William James in 1885, and the most important phase of her mediumship involved a “communicator” named GP (George Pellew), ostensibly the surviving personality of a young

man who had recently died unexpectedly in a fall. Over several years her principal investigator, Australian lawyer Richard Hodgson, arranged for some 150 “sitters,” exactly thirty of whom had been known to GP during his lifetime, to be introduced to sessions anonymously after Mrs. Piper had entered her trance state. The GP communicator recognized all and only those thirty sitters, and for most of them provided numerous and appropriate details of events and memories they shared, often with compelling verisimilitude in terms of GP’s own characteristic vocabulary, diction, sense of humor, and so on. Hodgson himself, initially a skeptic, became convinced of the reality of survival largely on the strength of this one series of sittings (Hodgson, 1898).

Speaking more generally, all of the main properties of minds or personalities as we customarily understand these terms are evident in high-grade mediumistic communications. In the formulation of Pols (1998), for example, building on that of Descartes in Book II of the *Meditations*, mind “knows, makes (that is, forms, produces, creates), understands, thinks, conceives, perceives, remembers, anticipates, believes, doubts, attends, intends, affirms, denies, wills, refuses, imagines, values, judges, and feels” (p. 98). Summarizing the very large scientific literature on mediumship, it is fair to say that all of these properties are exemplified individually in many cases, and most or all of them jointly in the best cases such as that of GP. Not only are previously existing semantic, autobiographical, and procedural memories apparently in considerable degree preserved, but new memories can also be formed, mediated at least in part by continuing and presumably psi-based interactions with the world of the living, whether directly or by way of the medium. Less verifiably, the communicating personalities also seem to experience themselves as continuous with their prior selves, and as conscious selves who inhabit some sort of body and are able to interact with other deceased persons in some sort of shared phenomenal world.

The full picture regarding trance mediumship is of course more complicated and hazy than this brief summary suggests. A large proportion of garden-variety mediumistic (and *channeled*) communications are pure twaddle, and even the best cases sometimes display surprising weaknesses and limitations. Some of these limitations seem to derive from the medium, some from the communicators, and some perhaps from the still largely unknown nature of the connection between them. The GP persona for example exhibited certain curious lacunae, such as a determined unwillingness to discuss philosophic and scientific matters that had been of burning interest to the living GP, and vouched for the authenticity of certain other Piper

“controls” that were transparently bogus, such as the soi-disant “Walter Scott” and “Julius Caezar” (sic). As in many other cases, GP’s awareness of ongoing events in this world was also very limited and imperfect, often extending even to uncertainty as to whether his attempted communications had gotten through Mrs. Piper to the sitters. For further information about Mrs. Piper and other great mediumistic cases see for example Balfour (1935), Braude (2003), Broad (1962), Dilley (1995), Ducasse (1961), Gauld (1982), Hart (1959), Murphy (1961), Myers (1903), Salter (1950), Sidgwick (1915), and Sudduth (2016).

A second large area of survival research concerns what we call “*cases of the reincarnation type*” (CORT), in which small children – typically ages two to five – begin to speak and act as though they are remembering events from a previous, usually very recent, lifetime. The children often give detailed information about people and places they had known, or talk about the circumstances in which they died, and with this information the parents, or sometimes an independent investigator, can identify a deceased person whose life and death corresponds to what the child was saying. In the best cases, detailed records of the child’s statements have been made by independent investigators before any contact between the child’s family and that of the ostensible previous personality (PP). The children also frequently show strong and unusual behaviors that seem appropriate for the PP – such as an extreme fear of water when that person had died by drowning – and in a sizeable subset of cases the child has an extremely unusual birthmark or birth defect corresponding to fatal injuries of the PP (see, especially, Stevenson, 1997).

The originator and principal architect of this line of work was our UVA colleague Ian Stevenson, and, between 1961 and the present, he and others including Jim Tucker and Emily Kelly of our group have directly investigated over 2,500 such cases, many in great detail (see, for example, Kelly, 2013; Stevenson, 1975–1983, 1997, 2001; Tucker, 2005, 2013). Although the great majority of cases to date have come from countries where belief in reincarnation is strong, such as India and Burma, good cases have also been found in most other parts of the world including the countries of Europe and North America. An important further development now nearing completion is the entry of all cases into a cumulative database according to a detailed coding system. Completion of this database will open a path toward development of statistical models and testing of hypotheses about factors that govern the phenomena – for example, predictors of the number and accuracy of remembered details, or the length of the *intermission*

between death and rebirth.

Although the latter work in particular is still at an early stage, a number of points have already emerged that should command the attention of theorists. First and foremost, of course, is the strong indication that rebirth at least sometimes occurs. Second, although it is easy to imagine more complex scenarios in which personalities split or merge – i.e., one-to-many or many-to-one relations between PPs and the corresponding children – the data available so far strongly support one-to-one correspondence as the predominant pattern. Something seems to encourage continuity of personality both within and between lives. This picture has been reinforced, moreover, by early results from the database indicating strong tendencies toward conservation of gender and of some basic personality characteristics between successive lifetimes. Another striking fact is the high incidence of early, violent or unnatural death among PPs (around two-thirds of the cases), which may be related somehow to these children’s unusual capacity or impulse to recall (Stevenson, 1997). Little evidence has yet emerged of anything like moral improvement or punishment for past misdeeds, such as might be expected from theories of *karma* and the like, but this is conceivably due to limitations of the available sample, biased as it is toward unusual conditions of death in the PPs. If all or most of us in fact reincarnate, and we could discover means for reliably accessing past-life memories in adults, a fuller picture might conceivably emerge. However, although there is some relevant meditative lore and a bare handful of interesting hypnotic-regression and psychedelic experiences suggestive of such possibilities, no meaningful conclusions can be drawn about such things at the present time. A final point which concerns the birthmark/birth-defect cases is that in most such cases the dying and perhaps surviving PP seems likely to have been aware of the fatal injury, and hence is plausibly suspected of being the source of the subsequent marks or defects. A surviving PP might similarly be the source in an important subclass of *experimental birthmark* cases in which the child’s marks correspond to marks deliberately placed on the deceased person’s body after the death by grieving relatives in hopes of identifying the successor. However, there are other cases – for example, cases involving wounds to visually inaccessible or even interior parts of the PP’s body – in which such interpretations seem less plausible.

The third main area of survival research concerns what we call *crisis apparitions*, in which a “percipient,” person A, may see an actual visual apparition, hear a voice, have a dream, or simply feel the presence of a loved one, person B, at or near the time that B, the “agent,” is

undergoing serious or fatal injury at some physically remote location. The early SPR researchers took a special interest in such events, carefully collecting and documenting large numbers of cases and produced as its first major work the landmark *Phantasms of the Living* (Gurney, Myers, & Podmore, 1886). This remarkable two-volume study includes not only detailed reports of over 700 individual cases (many including detailed documentation such as medical and legal records, supporting testimony from witnesses or interlocutors, and so on), but also an elaborate and sophisticated discussion of methodological issues regarding eyewitness testimony and means for dealing with them. Subsequent case collections, mostly carried out with far less concern for detailed documentation, have shown generally similar patterns, as revealed especially by initial trailblazing attempts to encode their features in standardized fashion for computer modeling and analysis (Schouten, 1979, 1983).

A number of general features of crisis-apparition cases stand out in terms of theoretical relevance and interest. First is the apparent importance of strong emotional ties as a driver of these unique events, somehow overriding normally existing physical barriers. Also striking is their apparent association with altered states of consciousness in the percipients, especially dreaming and hypnagogic/hypnopompic states – the *twilight zone* between waking and sleeping. In many cases the event begins with the percipient having a vague feeling of distress or disturbance, sometimes accompanied by a vivid sense that the injured person is present at a particular location nearby, and progresses into a full-fledged apparition only later on when the percipient enters a more receptive state. Third, as argued by Myers (1903), the timing of the events relative to verified times of death is sharply asymmetrical, rising steeply right around the time of death and declining slowly thereafter (vol. 2, p. 14). Percipients also typically have only a single such experience in their entire lifetime and remember it vividly for decades afterward as something uniquely significant (and note that Gurney et al. took pains to show that when questioned repeatedly over periods of many years, percipients typically reported *fewer* details with the passage of time).

Many crisis apparitions seem potentially interpretable as hallucinations generated by percipients who have been alerted at some level to their loved ones' circumstances by a psi process, as argued in particular by Louisa Rhine (1977). Others, however, seem to locate agency and purpose squarely in the dying or deceased, as for example in the case of a long-dead husband who seems to have come for his newly deceased wife but is seen by her tenant, a total stranger.

Many apparitions also display what are aptly described as *quasi-physical* properties, as discussed by Tyrrell (1953, pp. 77-80). For example, they sometimes obscure the background, cast shadows, and can be seen in mirrors, like ordinary physical objects. Pet animals may also detect them, and, if more than one human is present, all or most may observe it, with differences of perspective appropriate to their differing locations in the communal space. On the other hand, apparitions sometimes enter and exit through walls or floors, become transparent and disappear, and in sundry other respects behave very *unlike* normal physical objects. Thus, they both resemble and differ from ordinary embodied persons, approximating them in widely varying degrees, from marionette-like to so lifelike as to be mistaken temporarily for the corresponding person. (Similar properties apply, parenthetically, to haunting cases in which the apparitional form is recurrently associated with some particular *place*.) Complicating the picture further, there are also a number of well-documented *reciprocal* and *experimental* cases of out-of-body experiences in which one living person more or less deliberately *projects* to a distant location, observes verifiable circumstances there, and is observed at the corresponding location in the form of an apparition by one or more persons present (Hart & Hart, 1933; Myers, 1903, vol. 1, pp. 682–685).

The bulk of the available evidence concerning apparitions thus seems consistent with a picture in which some part or aspect of a given person departs from one place and appears in another in a form which is somehow intermediate between genuinely physical and purely hallucinatory. This is essentially the picture originally arrived at by Myers (in debate with Gurney), which is also endorsed – but only reluctantly and after lengthy critical consideration – by Gauld (1982). Further confirmation lies in the fact that certain kinds of crisis apparitions that might be expected on the telepathy-plus-hallucination model seem not in fact to occur – in particular, what might be called *disseminated* apparitions, in which a dying person appears simultaneously to loved ones in widely separated locations.

So what are we to make of all this *direct* evidence for postmortem survival? Ironically, the primary threat to survivalist interpretations usually arises *not* from considerations of evidential quality – problems of fraud, credulity, errors of observation or memory, and the like – but from the difficulty of excluding alternative explanations based upon psi-type processes involving only living persons. For example, a trance medium who appears to be delivering veridical information from your deceased uncle might actually be acquiring that information by

means of a psi-type process from you as the sitter, or from other living persons who knew him, or from physical records of some relevant sort, rather than from your deceased uncle himself, and in general it proves extremely difficult to determine with certainty which sort of explanation is correct. This is the infamous “survival vs. living agent psi” debate, recently discussed in depth by philosophers Braude (2003) and Sudduth (2016).

Either horn of this interpretive dilemma – survival or psi – is fatal to the prevailing physicalist brain/mind orthodoxy, and this undoubtedly helps explain the hostility of dogmatic physicalists to both. It should also be evident that compelling evidence for postmortem survival, an element of belief common in some form to all of the world’s great religious traditions, would demonstrate especially clearly the inadequacy of present-day mainstream physicalism. In my judgment we are at or very close to that point – close enough, I believe, to justify rational belief in the possibility if not indeed the likelihood of one’s own personal survival. I must also underscore, however, how little we have learned so far: The most that can responsibly be said at present is that a few persons may have continued to exist in some unknown fashion following bodily death, for varying periods of time and under essentially unknown conditions, some of whom may also have been reborn. Nevertheless, a world that includes such a possibility is already radically different, and in humanly significant ways, from that inhabited by most contemporary scientists (at least in their day jobs!).

II. Additional “Rogue” Phenomena Incompatible with Physicalism.

Evidence for psi and survival flagrantly conflicts with conventional physicalist expectations, and it is for precisely this reason that many mainstream scientists are anxious to dismiss it, or perhaps more accurately to isolate and quarantine it as though this were the only sector in which contemporary physicalism is not triumphantly advancing. In fact, however, many other well-evidenced human mental and psychophysical capacities also resist or defy explanation in conventional physicalist terms and thus point in the same theoretical direction.

A project organized in 1998 under the auspices of Esalen Institute’s Center for Theory and Research (CTR), and led by me, began by systematically assembling large amounts of peer-reviewed evidence of this sort. We approached this task by revisiting an extraordinary book published in 1903 which had already pursued the same general strategy: *Human Personality and Its Survival of Bodily Death* (2 vols.), by Frederic W. H. Myers (1843-1901), a founder of the

SPR and friend and colleague of William James. We set out to update and re-evaluate Myers's great work in light of the subsequent century of scientific work on various topics that had been central to his own original argument, and to this end we systematically collected material related to manifestations of extreme psychophysiological influence, such as stigmata and hypnotically induced blisters; prodigious forms of memory and calculation; unexplained aspects of everyday human memory; psychological automatism and secondary centers of consciousness; out-of-body and near-death experiences, including intense and transformative experiences occurring under extreme physiological conditions such as deep general anesthesia and/or cardiac arrest, which contemporary neuroscience deems incapable of supporting any experience whatsoever; genius-level creativity; and mystical-type experiences whether spontaneous, pharmacologically induced, or resulting from transformative practices such as intense meditative disciplines of one or another sort. Collectively, these phenomena greatly compound the explanatory difficulties posed by everyday phenomena of human mental life (such as meaning, intentionality, subjective point of view, and the qualitative aspects of consciousness) that have recently been targets of intense philosophical discussion. In a nutshell, they add a rich empirical dimension to what appears to be a rising worldwide chorus of theoretical dissatisfaction with classical physicalism as a formal metaphysical position. We seem to be at or very near a major inflection point in modern intellectual history.

This first-stage effort culminated in publication of an 832-page book titled *Irreducible Mind* (Kelly et al., 2007; henceforth *IM*). For details of the evidence I must refer readers to *IM* itself, but what matters most here is its central theoretical implication. Specifically, it became clear that rogue phenomena of the sorts we catalogued can be accommodated more naturally within an alternative to the conventional physicalist interpretation of the brain/mind correlation, an interpretation already advanced in abstract form by William James (1898/1900). James there points out that to describe the mind as a function of the brain does not fully specify the character of the functional dependence. Physiologists routinely presume that the role of the brain is *productive*, the brain generating the mind in something like the way that the tea kettle generates steam, or the electric current flowing in a lamp generates light, but there are other forms of functional dependence which merit closer consideration. The true function of the brain might for example be *permissive*, like the trigger of a crossbow, or more importantly *transmissive*, like an optical lens or a prism, or like the keys of a pipe organ (or perhaps, in more contemporary terms,

like the receivers in our radios and televisions).

More generally, one can at least dimly imagine some sort of mental reality – which in James’s view might be anything from a finite mind or personality to a World Soul or cosmic consciousness – that is closely coupled to the brain functionally but somehow distinct from it. Within this basic framework James himself speaks variously of the brain as straining, sifting, canalizing, limiting, and individualizing that larger mental reality existing behind the scenes. He quotes approvingly Schiller’s characterization of matter as “an admirably calculated machinery for regulating, limiting and restraining the consciousness which it encases. ... Matter is not that which *produces* consciousness, but that which *limits* it, and confines its intensity within certain limits” (James, 1898/1900, pp. 66-67), and Kant’s declaration in the *Critique of Pure Reason* that “the body would thus be, not the cause of our thinking, but merely a condition restrictive thereof, and, although essential to our sensuous and animal consciousness, it may be regarded as an impediment of our pure spiritual life” (as cited in James, pp. 28-29). James also explicitly portrays the brain as exerting these various effects in a manner dependent on its own functional status, and links this idea to Fechner’s conception of a fluctuating psychophysical threshold (p. 24, pp. 59-66).

Much can immediately be said in favor of such a picture, James then argues. It is in principle compatible with all of the facts conventionally interpreted under the production model, and however metaphorical and incomprehensible it might at first seem, it is in reality no more so than its physicalist rival. It also has certain positive superiorities: In particular, it appears potentially capable of explaining various additional facts, including those being unearthed by F. W. H. Myers and his colleagues in psychical research (pp. 24-27).

In sum, “transmission” or “filter” models are *logically* viable, and they should rise or fall in the usual scientific way in light of their ability to accommodate the available empirical evidence. The central aim of the first phase of our Esalen/CTR project had been to review and reassess Myers’s filter-type model of human personality in light of subsequent research, and we had found that the evidence supporting such pictures has actually grown far stronger in the century following his death. Myers and James were of course soon pushed aside by the rise of radical behaviorism with its self-conscious aping of the methods of classical physics, and that influence persists in modified form even now in mainstream cognitive neuroscience. In my view psychology has taken a hundred-year detour, and is only now becoming capable of appreciating

the theoretical beachhead that our founders had already established.

I should also underscore here that for me personally this first phase of our project had gone a long way toward dissolving what the eminent American psychologist Gardner Murphy (1961) long ago called the “immovable object” in the survival debate – the *a priori* biological objection to survival: Specifically, if physicalism were true, and mind and consciousness manufactured entirely by neurophysiological processes occurring in brains, then survival would be impossible, period. This is essentially the position argued *ad nauseum* by Martin and Augustine (2015), as though it were something novel. But the evidence we assembled in *IM* clearly shows, I submit, that the connections between mind and brain are in fact much looser, and can be conceptualized in the alternative fashion of filter or transmission models without violence to other parts of our scientific understanding, including in particular leading-edge neuroscience and physics (see especially *IM* Chapter 9). For me this shift in theoretical perspective instantly opened the door to the possibility of survival.

The normally hidden subliminal region of the mind, “The More” of William James, is the wellspring of the latent human potentials that historically have comprised Esalen’s main practical focus. But it is also precisely these transpersonal aspects – especially psi phenomena and mystical experience with their deep historical and psychological interconnections, postmortem survival, and genius in its highest expressions – which jointly demonstrate that classical physicalism must give way to some richer form of metaphysics. Please note here that what is at issue is *not* whether we will have metaphysics – because we inevitably will, whether conscious of it or not – but whether we will have good metaphysics or bad.

Classical physicalism is definitely inadequate, but what sort of alternative metaphysics should take its place? Our basic strategy in approaching this second and much more difficult task was to examine in depth a sampling of conceptual frameworks or theories, ancient and modern, that take the existence of rogue phenomena of the sorts catalogued in *IM* for granted and attempt to imagine how reality must be constituted in order that such things can happen. This ultimately led to our publication of a second large book, *Beyond Physicalism* (Kelly, Crabtree, & Marshall, 2015; henceforth, *BP*), which includes theoretical contributions from an unusual diversity of perspectives including those of physicists, neuroscientists, psychologists, philosophers, and scholars of religion.

The central conclusion of *BP* is that theorizing based on an adequately comprehensive

empirical foundation of the sort set forth in *IM* leads inescapably into metaphysical territory partly shared with the world's major religious traditions. Specifically, we argue that emerging developments in science and comparative religion, viewed in relation to centuries of philosophical theology, point to some form of evolutionary panentheism as the current best guess about the metaphysically ultimate nature of things. In brief, panentheism's attempt to split the difference between classical theisms and pantheisms, conceiving of an ultimate consciousness of some sort as pervading or constituting the manifest world, as in pantheism, but with something beyond, as in theism. The version we tentatively embrace further conceives the universe as in some sense slowly waking up to itself through evolution in time. Most importantly, the rough first-approximation picture we have developed so far can be elaborated and tested through many kinds of further empirical research, especially research on meditation and psychedelics as pathways into higher states of consciousness. In sum, although a great deal remains to be done both theoretically and empirically to bring the current rough picture into sharper focus, we feel confident that it is headed in the right general direction.

What we see currently emerging, in short, is a middle way between the warring fundamentalisms – religious *and* scientific – that have so polarized recent public discourse; specifically, an expanded science-based worldview that can accommodate empirical realities of paranormal and spiritual sorts, including postmortem survival, while also rejecting rationally untenable *overbeliefs* of the sorts targeted by critics of institutional religions. This emerging vision is both scientifically justifiable and spiritually satisfying, combining the best aspects of our scientific and religious heritage in an effort to reconcile these two greatest forces in human history. What is ultimately at stake here seems nothing less than recovery, in an intellectually responsible manner, of parts of our human heritage that were prematurely discarded with the meteoric rise of modern science starting four centuries ago. And what is especially significant at this critical juncture, and the fundamental new factor that may finally allow this recovery to succeed after numerous previous failures, is that it is now being energized by leading-edge developments in science itself. A potentially viable path to a better world seems to be opening up.

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Explorations

ISS Theory: Cosmic Consciousness, Self, and Life Beyond Death in a Hyperdimensional Physics

Chris H. Hardy, PhD*

Abstract

The *Infinite-Spiral-Staircase Theory (ISST)* posits a hyperdimension of consciousness populated by faster-than-light, high-energy, sub-Planckian *sygons* pervading the pluriverse. This HD is in fact triune, a braid of hyperspace (Center, C), hypertime (Rhythm, R) and consciousness (Syg, S), topologically organized as a double phi-based golden spiral set on a double BlackHole-WhiteHole Kerr system. Within the Terminal Black Hole of a parent universe, all matter-systems are translated into pure CSR information or syg-fields steered by the sub-quantum sygons; and through the White Hole at the origin, these syg-fields are translated back from virtual sygons into post-Planck particles and matter systems, still retaining the sygons as a 5th dimension at their core. ISST builds on the *Semantic Fields Theory (SFT)* in modeling a semantic layer of organization in all systems—their syg-fields (semantic fields) ranging from proto-consciousness to self-consciousness. As human beings, our mind or consciousness is our global syg-field, organized in dynamical networks and steered by syg-energy—the sygons (Hardy 1998, 2001, 2003). The ensemble of all syg-fields form the cosmic CSR hyperdimension of consciousness, as a gigantic hologram, self-conscious and evolving.

Positing a consciousness-HD layer in the universe leads to envision a new paradigmatic stand in philosophy as well as in physics. The syg-HD operates clearly beyond-spacetime and is a beyond-matter layer (thus in accord with dualism); yet, given that consciousness-as-process is steered by the sub-quantum sygon particles, the syg-HD is definitely a blend of energy and mind (as in monism/materialism). Thus ISST reframes the mind-body split in a complex dynamical network systems' framework, as a consciousness HD existing at a sub-quantum scale in all matter systems (thus setting a type of panpsychism), and also as a bulk in its own CSR-HD region.

At the scale of the pluriverse, the spacetime regions of specific universe-bubbles are constantly birthed and then die. The HD preexists and survives to these matter regions in the BH-WH double spiral, and pervades them during the life of a universe.

In a consciousness-HD (syg-HD) framework, consciousness and our mind—the syg-field—operate mostly via the HD, and only a small part of our syg-field is branching into the brain's neuronal networks. It is because the Self and the mind belong to the syg-HD that they instantiate psi capacities, high meditation states, and some independence from spacetime. In this framework, death is just the severing of links to the brain-body and the Self, at death, becomes fully independent from the body and enjoy (in the HD layer) the same intelligent, creative, and individualized capacities as when embodied, yet with greater psi capacities.

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INTRODUCTION: ADDRESSING COMPLEXITY AND A MULTI-LAYERED REALITY, THE NEW PARADIGM IN SCIENCE

While physics has been plagued by four centuries of materialism, psychology and philosophy were, during that same period, trapped into the insoluble antinomy between idealism (mind wholly different from body/matter) and materialist monism (mind as a by-product of body/brain); in the mid 20th century, the materialist paradigm became enforced in science.

My theoretical stand in Semantic Fields Theory (SFT, Hardy 1998) was that both positions—materialism and dualism—are lacking, something amply demonstrated by the fact that the *mind-body split* could never be resolved and that the qualia couldn't be accounted for unless one takes a first-person subjective perspective. In brief, we need a new paradigm. But there is also an arduous problem arising from these two positions' links to the two contending frameworks of physics—Relativity founding a perfectly ordered and causal spacetime, and QM instating indeterminacy at the quantum scale (with materialist monism espousing the causal and local one, and dualism partly so). As I argued in a 2001 article, at a certain threshold of complexity, causality and determinism break down. The complexity of neuronal networks in the brain, and that of multilevel webs in the mind and social interactions, demanded that we move *beyond causality and determinism* and postulate instead instantaneous or synchronistic inter-influences between complex semantic systems (such as minds or social groups). These could also imply retrocausality, that is, the influence of future events on past ones, as well as nonlocal proactive effects—modifying the future environment with intentions, a sort of proactive PK, as proposed in a Retrocausal Attractor modeling (Hardy 2001, 2003).

I. JUNG AND PAULI'S MIND-MATTER DEEP REALITY

In the 1950s, Carl Jung's work, discoveries, and his depth psychology, started to fully impact both the scientists and the public. One discovery was the concept of *collective unconscious*—a lattice of collective psyche connecting all human beings unconsciously (via their personal Self) with the planet (thus nonlocally); of course, this was clashing with biology and materialism viewing mind as local, i.e. contained in the 'space' of the brain (Hardy 2015c, JCER). Let's clarify that for Jung the personal unconscious has a subject—the Self—(just as the ego or 'I' is the subject of the conscious), and that the Self is a supraconscious entity, having access to the immense knowledge of the collective unconscious and able to guide the individual Self. Another concept was that of *synchronicity* as "spontaneous, meaningful coincidences" and connections at a distance, that he deemed "trans-temporal and trans-spatial," that is, nonlocal (Combs & Holland 1995; Peat 1987; Hardy 2004). Moreover, Jung's definition of synchronicity made clear

references to psi: in his book *Synchronicity* (1960, pp. 109-110), he defines three types of correlations between the mind's content and an event: "The coincidence of a psychic state in the observer (1) with a *simultaneous*, objective, event; (2) with a corresponding (...) external event taking place (...) *at a distance*, and only verifiable afterward; and (3) with a corresponding, not yet existent, *future event*." Thus case 2 refers explicitly to clairvoyance, while case 3 refers to precognition. With physicist Wolfgang Pauli—one of the pioneers of QM—they stated in their fascinating correspondence that synchronicities were *acausal* phenomena, instantiated by a *deep reality*, in which mind and matter were blended; the name came to Pauli in a clear dream featuring this "deeper reality" at a scale below quantum fields and distinct from them (Pauli & Jung 2014; Hardy 2015, pp. 89-92).

This layer of deep reality, they postulated, was a psyche-matter medium in the universe, at a subquantum scale—a layer in which mind and matter were deeply enmeshed and merged. The synchronicities would be springing from, and expressing, this underlying connective lattice. Based on his clinical experience and the science of the Ancients (alchemy, mysticism, Greek and Middle-Ages philosophy), Jung referred to this deep layer (as the Ancients did) as "The One world" (*Unus Mundus* in Latin) or the "world soul" (*Anima Mundi* in Latin): "We have all the reasons to suppose that *there must be only one world, in which psyche and matter are one and the same*, and in which we establish distinctions for the sole purpose of knowing," says he in his autobiography *Memories, Dreams, Reflections* (Jung 1965). Jung and Pauli posed acausality (instantiated by synchronicities, the unconscious, and the Self) as a fundamental principle equal in strength to causality, but working through instantaneous meaningful interconnections, thus outside of time or space constraints.

As we'll see, the syg hyperdimension of consciousness (syg-HD) postulated by ISST fits perfectly their definition and accommodates the types of nonlocal processes that they listed as belonging to the deep reality, such as psi, the quantum entanglement, and the spin complementarity – Pauli's law of spin (Jung & Pauli 1955).

II. HYPERDIMENSIONS, MAJOR PHYSICS PARADIGMS & THE INDEPENDENCE OF MIND-SOUL

II.1. Hyperdimensional physics neither determinism nor indeterminacy

Physics has been seminal in showing us that the setting of any problem in an *either-or* logic is bound to fail. This is what happened during the nearly 230 years of debate between the proponents of light as waves (interference patterns) and those of light as particles (quanta and photons). From Huygens opposing Newton in 1678 to that of Young's 1801 famous double-slit experiment demonstrating wave-interference patterns (and still to our day spurting out unsolved paradoxical results), to Einstein solving the photoelectric effect by light quanta in 1905—both schools could cite successful experiments proving clearly that their theory was supported by facts. The ultimate solution had to be a leap into a paradoxical framework—light was both waves and

particles—a leap achieved by Louis de Broglie (1939) in his 1926 doctoral thesis, when he posited that all particles (such as electrons) are driven by what he called a *pilot wave*; soon followed by David Bohm (1980) who developed his own Pilot Wave theory (Bohm 1980; Bohm & Hiley 1993).

Yet physics once again fell in the grip of a dual competing logic, when it became clear that Einstein's Relativity (instating causality) was validated at the matter and spacetime scale or region (and the 2016 discovery of gravitational waves was its latest acclaimed success, see Hu & Wu 2016); yet, the quantum indeterminacy posited by QM was validated at the quantum vacuum and Zero Point Fluctuations (ZPF) scale. What was the reality of the universe then, and how could we ever get a picture of the whole universe—the Unified Field theory physicists are progressively building since Einstein spent in vain the last decades of his life looking for it? To do that, we had to make a leap toward hyperdimensional physics—a solution implemented as early as 1919 by Theodor Kaluza, soon joined by Oskar Klein in 1926.

Let's ponder a bit the crucial entanglement problem and EPR Paradox. Einstein rejected at first QM's indeterminacy (as posited by the Copenhagen or Bohr's interpretation), because he didn't want to let go of causality equated with order ("God doesn't play dice," said he). And this is why, with Podolski and Rosen, he proposed the famous *EPR* thought experiment to disprove QM. Yet Alain Aspect's experiments in 1982 (1982a, 1982b), using Bell's theorem protocol, brought a solid proof of the entanglement of paired particles and their correlation at such great distances that it forbade a signal transmission through space. Thus the entanglement was definitely shown to be beyond spacetime, that is, nonlocal. As John Bell stated it (disproving Von Neumann's previous argument), theories proposing nonlocal yet causal dynamics (such as de Broglie's and Bohm's pilot waves driving particles' behavior) could thus be a viable solution. The unnerving point is that, as history has it (based on Von Neumann's faulty but resilient argument), both QM and indeterminacy (as opposed to causality) were *proven* by Aspect et al. (1982a, 1982b) and other EPR-type experiments. Yet the entanglement conforms to Pauli's Law of Spin (or spin complementarity) for two entangled paired particles—that the sum of their spins always has to be equal to zero. Therefore, if an apparatus changes the spin of particle A (e.g. with a mirror) from $+1/2$ to $-1/2$, the paired particle B, even already as far as the moon, has to shift instantly from spin $-1/2$ to $+1/2$. That's what Aspect proved. Thus the entanglement, as a global dynamics driven by the Law of spin, is a clear contravention to indeterminacy, and to the opposite, it definitely is a nonlocal type of interconnection or influence. Then it can be modeled as an *acausal* or *synchronistic process* (as Pauli deemed it) or else as driven by a *formal cause*—an influence due to a more global organization, as in Aristotle's 4 causes and as opposed to material or billiard balls causality—such as Rupert Sheldrake's (2009) morphic fields. (The indeterminacy, nonetheless, remains at the level of each particle having such or such spin.) So that, in either case, it falls in the category of the nonlocal *hidden variables* (i.e., unknown causes or processes).

When Jung and Pauli defined synchronicities as *acausal* processes, it meant they instantiated a wholly different organization than material and sequential causality—a new universal principle of interconnection *beyond spacetime*, and as fundamental as causality. Then we are back to HD physics as the most probable explanation, and the only viable one at the present, given that materialist monism, positing a one-block spacetime, is out of the question, and given that dualism doesn't offer a real foundation or a substrate for consciousness in the matter and biological universe.

Since the mid nineties, I developed the Semantic Fields Theory (SFT) that postulates mind and Self to be complex dynamical networks coupled with the brain's neuronal networks but being nevertheless able to operate independently and beyond Newtonian-Einsteinian laws; for example, experiments show that psi violates EM inverse square law, and even linear time. In SFT, all systems and beings have semantic fields instantiating a layer of consciousness/sentience (from a proto-consciousness to a self-referent mind), and these can thus be part of a HD organization as posited by ISST (Hardy 1998, 2015). Semantic fields are steered by instantaneous network connections based on meaning and an index of *semantic proximity* (meaningful and affective resonances and links). These instantaneous network connections (that I call *spontaneous linkage process*), are also the basis of our mostly unconscious thought process (Hardy 1998, chap. 4). This connective dynamics based on links and meanings instead of causal chains, in my view, is the way synchronicities work; and ISST now clarifies the nature of the (semantic) syg-energy creating these connections, as being the HD sygons.

II.2. Hyperdimensional physics: only way to unify QM, GR, and the 4 forces

Theodor Kaluza, in positing a 5th dimension, showed that only hyperdimensional (HD) models could unify the four forces (Brandenburg 2011, Kaku 1994, Witten 1981). In 1919, Kaluza rewrote Einstein's equations with a 5th dimension, which was a 4th dimension of space—a hyperspace, best represented by a hyper-structure like a hypersphere or a hypercube (also called tesseract), like the one in Christopher Nolan's 2014 movie *Interstellar*. (See Figure 1)

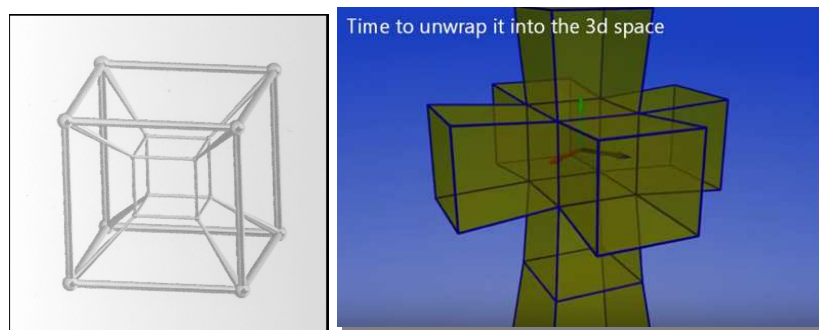


Fig. 1. A tesseract or hypercube. (a) Creator: Robert Webb, using Stella software. Find it at <http://www.software3d.com/Stella.php>
Credit: Wikipedia Commons. (b) Extracted by CHH. On YouTube "Unwrapping a tesseract" (0'47")
<https://www.youtube.com/watch?v=BVo2igbFSPE>

Kaluza's solution produced both Maxwell's EM field equations and Einstein's field equations for gravity, plus a mysterious scalar field he called the *radion*. John Brandenburg (2011, p. 197) comments: "The boundary between geometry and forces was now gone, EM was geometry in five dimensions, and gravity was a force. The fields could now be unified." Then the mathematician Klein (best known for his *Klein bottle*) calculated that the 5th dimension not only had a physical reality, but was compact, that is, curled up in a tiny circle, the radius of which was Planck length (of about 10^{-33} centimeters). Klein's equation thus integrated Planck constant, and now, astonishingly, the equations of QM could be derived from it. The Kaluza-Klein theory (KK theory) was at the time overshadowed by the rise of QM, but it became forefront research in the nineties.

Several theories propose a hyperspace (5th extra dimension) in compactified or warped models (5thD extremely small, curled up) or in an extensive form called a *bulk*; the leading one by Lisa Randall and Raman Sundrum (1999), within a string theory framework, and called the Randall-Sundrum (or RS) model, implies a 5-dimensional *warped geometry*, and comes in two versions, one with a bulk. In the bulk RS model, the 5D bulk surrounds two branes, the Planckbrane (on which strings are 10^{-33} cm in size, the Planck length), and the Tevbrane, our 4D world (16 orders of magnitude higher, at 10^{-17} cm). Also, various superstring theories (9 or 10 D) pursued the integration of the four forces and were unified by Edward Witten into M-theory (1995), positing a multiverse with 11D, elaborated upon by Susskind (2003).

II.3. A hyperdimension of consciousness: integrating psi and psyche with physics

Just like in physics the only way to integrate QM and Relativity (the 4 forces) is by adding extra dimensions, so the only way to integrate consciousness with physics is by postulating a hyperdimension of consciousness that would then be blended to the physics hyperdimension. This solution is also required by the fact that a gamut of mental and psi processes operate beyond spacetime and cannot either be founded on indeterminacy since they are driven by meaning (see Bem 2011; Mishlove 1997; Mitchell 1996; Nelson *et al* 1996; Radin & Nelson 1989; Targ *et al* 1979.) Therefore they can only be grounded by positing a hyperdimension of consciousness—one that would, just like hyperspace in the Randall-Sundrum bulk model, surround and contain the 4D spacetime universe. Bernard Carr (2007, 2014) proposes a hyperdimension based on sheets (2D brane surfaces) to account for consciousness (mainly in its perceptual and psi facets).

While SFT and ISST postulate a type of panpsychism, some may question ISST's solution consisting in integrating consciousness with physics in a single physics paradigm that, nevertheless, is not a monism (even a dual-aspect one). Let me clarify my own position.

Physics cannot anymore tolerate having two distinct sets of theories reflecting contradictory paradigmatic stands—spacetime causality versus quantum indeterminacy; it has worked ceaselessly to bridge the gap, pursuing Einstein's grand vision of a unified theory. Following the same logic, we cannot any longer allow to have two paradigmatic

stands to account for the whole universe—one physics-based and the other addressing the reality of the mind (and awareness/experience). And even less so to have so-called Theories of Everything (TOEs) accounting for a matter-only universe (but not accounting for awareness of that matter-only universe), especially when the latest data show that ordinary matter (particles, atoms, stars and galaxies) amounts to only 5% of the total energy of this universe.[†]

Jung and Pauli laid the foundation for such a unified theory of a mind-matter universe. They observed and modeled a region, or deep reality, in which mind and matter were merged. The Self and the collective unconscious bathe in this deep reality, in which acausal instantaneous meaningful connections are the prominent dynamics (as in synchronicities). ISST postulates this deep reality to be a triune hyperdimension (hyperspace, hypertime, and consciousness). Both models (rather complementary) have an impact on the question of life after death. But first let's review the survival question in the light of the main actual paradigms.

II.4. The survival question within major physics and philosophy paradigms

Let's note first that the question of a consciousness living or dwelling in an extra dimension is much wider than just our survival beyond bodily death; it has also an impact on whether any entity (intelligent or not, in any galaxy or any region of the pluriverse or multiverse) may inhabit another manifold than our 4D spacetime. For example, do fifth or eighth dimensional beings exist, the way they have been pictured in various movies, such as W.D. Richter's *The Adventures of Buckaroo Banzai Across the 8th Dimension* (1984) or Christopher Nolan's 2014 *Interstellar*? Could some intelligences dwell in an unfathomable hypertime? Could immaterial spirits such as fairies or angels have some reality?

It has always been recognized that in our materialistic-reductionist monist paradigm in which only matter is considered to be real, no survival of the soul, nor any immaterial or extradimensional being, may ever exist. The argument is that since mind or consciousness cannot function independently from the brain's neural networks or space localization, then it doesn't exist without it and the death of the brain-body means the death of its captive mind. However, with 95% of the total energy of the universe being non-matter—either dark matter or dark energy whose nature is still an enigma—the materialist paradigm has suddenly become, at the turn of the century, somewhat of an antiquity. As for Cartesian dualism, with mind being a totally different substance than matter/body/brain, of course non-matter entities (souls or n-dimensional beings) are allowed and therefore the survival of bodily death as well. However, dualism has failed to give a satisfactory ground for the observed two-way interactions of mind with the brain-body. As for, idealism, it has no explanatory power either, being it is too weak at

[†] See the PLANCK cosmology probe team's release of March 2013, then early 2015 at:
http://en.wikipedia.org/wiki/Planck_%28spacecraft%29_-_2013_data_release [last accessed 10/16/2016]

explaining consciousness without a material body, and it has clarified neither the nature nor the processes of individualized thoughts and experiences.

An interesting solution is that of Rupert's Sheldrake morpho-genetic fields: a theory positing that fields of form (morphic fields), of a nature different from the biological and matter systems, would in-form these systems (and even behavioral and mental processes) via *morphic resonance*, acting as the memory of a type or family of systems and guiding their morpho-genesis (thus along memorized paths). Morphic fields would then be akin to a *formal causation* (one of Aristotle's four causes). Let's note that Sheldrake and other scientists have conducted successful experimentations that lend credit to the existence of such non-matter fields guiding the organization of biosystems or the psyche (Sheldrake 2009).

Let's see now the two contending paradigms in physics. Each one of them, taken alone, is a dead-end just as far as a viable and evolving universe is concerned. How much more about one in which intelligent beings like us—not even to mention n-D beings—could dwell!

- (1) A fully deterministic universe, run by spacetime laws (Relativity framework), doesn't allow the creation of novel organization, of diversity and transformation in matter- and bio- systems. It doesn't lead to evolution and innovation in nature (not even to the Darwinian *selection* or simply the *favoring* of the fittest), nor to creativity and choice, and even less so to free will and consciousness!
- (2) A fully random and indeterministic universe (QM framework) wouldn't even allow a spacetime or any law whatsoever to exist—even less so intelligence! (We have to grant that intelligence leads to innovation and thus the creation of order.)

In order to give a foundation to the evolution of matter- and bio- systems, to conative processes (intention, will...), to choice, creativity and consciousness, we need a layered and complex universe, one favoring the interplay of (1) fixed laws (spacetime), (2) stochastic processes (randomness at the quantum scale), (3) nonlinear dynamics (chaos theory) leading to the creation of novel organization, and lastly (4) a dimension of sensitivity, choice, intended behavior, and intelligence, in a word, *consciousness*—all intermingling and interacting. In brief, to simply get to an evolving universe allowing intelligence to blossom, we need some leeway from set laws (in the form of diversity, chaos, divergence, change), and a selective or intentional ordering of this chaos and diversity—at the minimum as a Darwinian *favoring* or *selection* within life forms, at best as basic intelligence.

But now, if we want to have also the types of nonlocal processes we observe (1) in psi (communication and influence beyond brain localization and beyond spacetime laws), (2) in the unconscious (archetypes and Self guiding the ego and providing information), and (3) in some physics dynamics—such as the entanglement, faster-than-light speed during the inflation phase, etc. (Guth 1997)—then we need to posit a hyperdimension—not only as hyperspace (and possibly hypertime), but also as a HD of consciousness.

And within a physics+consciousness HD (that gives a foundation to all nonlocal processes, whether physical or mental ones), then the nonlocal part of the mind-psyche can dwell and live as a self-conscious and evolving entity, autonomous from the body with which it was coupled. Thus, given that all semantic fields (the Selves or sentient entities) of beings and systems belong to, and exist within, the semantic or Syg hyperdimension, ISST postulates that the death of the body/brain does not entail the death of the hyperdimensional Self. To the contrary, the syg-field acts as an informational, sentient or self-conscious field—as a Syg HD field (hyperconsciousness), coupled with a morphic field (Center HD or hyperspace), and a frequency field (Rhythm HD or hypertime). The triune HD allows evolved self-referent systems such as human psycheminds to not only keep on living beyond the death of the body, but to do so as self-conscious cognitive entities (the Self or soul), endowed with volition, intention, autonomy, and able to learn and evolve. Furthermore, the HD gives them access to greater nonlocal cognition and psi capacities at large. While the ensemble of all the Selves (of all cognizant individuals) form the collective or cosmic consciousness that is the triune HD (Jung's Anima Mundi or collective unconscious), the individualized Selves maintain their own individuality and personal sensitivity, experience, knowledge, memories, mode of thinking, network of relations, emotional bonds, etc. This, whether having an actual body in 4D spacetime, or after the death of this body.

Ironically, a triune hyperspace-hypertime-consciousness HD also solves the dualism-monism conundrum: mind and consciousness are different from spacetime as in dualism, and yet they have an energy component—something that can always be translated in virtual mass—as in materialist monism. Moreover, this HD (in ISST) is pervading all matter systems by being at their very core, and is thus strongly coupled with them, and yet autonomous. This, of course, is in agreement with Gödel's (1992) theorem—that the coherency (self-consistency) of a system can only be founded on a more global level than that of the system itself. In brief, the self-consistency of spacetime can only be founded on an extra-dimension.

Let's turn now to the framework postulated by ISST.

III. ISST: COLLARS OF UNIVERSES EMBEDDED IN THE HYPERDIMENSION

III.1. The Infinite Spiral Staircase Theory (ISST)

The Infinite Spiral Staircase Theory (ISST) postulates a hyperdimension (HD) at the very origin of the universe, that would have contained all the information about myriads of systems optimized in previous universe-bubbles (UBs), as a cosmic DNA, this information being the blueprint of matter- and bio- systems that would then, due to their nonlinear dynamics, evolve during our universe-bubble timeline as new types of systems.

This hyperdimension is both consciousness and a topological order (geometric or rather, geodesic) in the form of a spiral driven by the logarithm of phi—thus a *golden spiral*. A golden spiral embeds, at each quarter of circle, a specific radius (and thus

frequency) following the Fibonacci sequence, each radius being a multiple of $\phi = 1.6180$). This sequence is infinite, and thus the Infinite Spiral Staircase bears a quasi-infinite set of frequencies (or frequency spectrum) starting from the virtual infinite (at the X Point of origin) down to Planck frequency (happening at 10^{-43} second of the universe). At the Planck scale (the first quantum), the frequency of the universe is about 10^{43} hertz (Planck frequency is precisely $1.85 \times 10^{43} \text{ s}^{-1}$), which means that the quantum-scale universe vibrates more than 10^{43} times in one single second. How much more near the X-Point, where this frequency tends to the infinite. It's only after Planck's scale (acting as a threshold), with the frequencies getting lower, and the radius (and wavelength) of the universe larger, that particles, space, time, and thus causality are allowed—and all the Standard Model particles will appear in due order, starting with the Higgs boson, and they will acquire mass while crossing the Higgs field. ISST calls this region the Quantum-Spacetime or QST manifold, driven by QM + Relativity. In contrast, the hyperdimension exists before and below Planck scale, this HD thus occupying the pre-spacetime, at a sub-Planckian or sub-quantum scale. Many physicists have argued that the laws acting before Planck scale (still unknown) are of a different order than the ones we know are acting beyond it. Yet Stephen Hawking (1988, 2003) predicted sub-Planckian wavelengths inside a Black Hole's (BH) event horizon, in an argument referred to as the *Trans-Planckian Problem*. And John Brandenburg, following Erik Verlinde (2010), argues that gravity can be fundamentally tied to entropy as a cloud of states (an entropic state-space) above Planck scale, and that this co-dependence makes it necessary that it be founded on a sub-Planckian cloud of states, or frequency spectrum, thus giving some weight to the ISS' frequency spectrum (Brandenburg & Hardy 2016). Let's note also two theories postulating a constant death and rebirth of the universe: Penrose's (1989, 2010, 2014) *Conformal Cyclic Cosmology* that resets entropy at each new origin, and Lee Smolin's *Fecund Universes Theory* (1997) positing that massive black holes (issued from dead stars) may be the seed of budding universes, which would retain some of the parameters of their parent universe. However, neither Penrose nor Smolin postulated a hyperdimension (and even less so a consciousness HD).

III.2. A triune HD as hyperspace-consciousness-hypertime

In ISST, the HD is triune: firstly the immense set of frequencies forms (by ϕ) the HD of time—hypertime—spread in virtual space along the steps of the spiral; secondly, the set of radii produces (by π) the bows (quarters of circles) of the spiral, and thus forms hyperspace as a curved line, thus time-like. Hermann Minkowski, modeled the light cone in 1908 (using Special Relativity), as a hourglass in which events/particles (at the center or present time) have straight *worldlines* running into the future (top cone) and from the past (bottom cone). Outside of the double-cone is the Elsewhere (beyond spacetime), in which time is space-like (extended), and space is time-like (a line). The cosmic ISS, as HD, presents a space-like Hypertime and a time-like Hyperspace; but it adds another dimension: an HD of consciousness, the semantic or syg-HD, which is the whole spiral itself and its immense databank as a set of frequencies. Thus, the language of the cosmic

hyperdimension is music, and its dynamics are basically spins and resonances, waves and interferences, “spin networks” and “loops” (as in Smolin 1997; Sarfatti 2006)—myriads of meaning-driven networks of frequencies (as closed, spinning, strings) that will form the seed of the syg-fields expressing (coding for) all systems existing in our universe-bubble.

This is why hypertime is called Rhythm-Rotation (R), and hyperspace is called Center-Circle (C), and the semantic/syg HD is called (S). Thus the ISS is embedding the creative dynamics of pi and phi—two non-finite numbers. HD Center is the dynamics of the center (or node) creating its circle (via pi) to set the organizational closure of its own system—and in the process it creates the identity of a specific system (a property that will be essential in our 4D region, as systems and chaos theories have shown). As for HD Rhythm, by oscillating, each bow puts its circle/torus in rotation and creates a sub-quantum wave-particle carrying its own frequency, a *sygon*, that, due to its entanglement with HD Syg and HD Center, is a semantic system by itself. The sygons will be propelled from the ISS by its initial thrust and energy and will create our whole universe-bubble with its two regions, the HD bulk and the quantum-spacetime or QST.

As we know, any frequency is a wave and thus a virtual string/particle; and since we are in pre-spacetime, the virtual particle is sub-quantum of course, but it has also a speed immensely superior to C (the speed of light limit being effective only within the QST region). Thus all bow-frequencies of the cosmic ISS are ejecting faster-than-light (FTL) sygons (and networks of them) endowed with the properties of the CSR HD, notably, information and consciousness.

The ISS spiral at the origin is a White Hole (WH) issued from the Terminal Black Hole (BH) of the previous universe-bubble. This double BH-WH system has been modeled by Roy Kerr (1963); it has an hourglass or X-funnel shape (hence the name I give to the origin, at the center of the hourglass: the X-Point).

As the WH starts erupting from the Terminal BH (TBH), the spiral staircase unfolds (and enlarges) at blinding speed and ejects myriads of sygons whose wavelengths get larger and larger, while their frequencies decrease. The first and highest frequency sygons (called *Free Sygons*) will launch the bulk of the HD—as a large and curved region, probably spindle-shaped. When the sygons’ size reaches Planck length, they will start interfering and creating a foamy lattice—the Higgs field—and later and bigger sygons will take on mass while crossing it, becoming the particles of the Standard Model. Yet all particles of the QST region retain at their core the sygons, as a sub-Planckian, compact and curled-up hyperdimension. These particles will *create* the spacetime region as they dart along, propelled by the ISS initial energy, itself issued from the TBH—starting with the first wave of neutrinos (the decoupling of the neutrinos happens within the first second), then the photons wave (the photons’ decoupling, within the first 2 minutes) will illuminate spacetime and leave the relic radiation or CMB, the Cosmic Microwave Background that we detect now at about 370,000 years after the Big Bang.

These first waves of particles will form the spacetime region (as a spindle or near cylinder) *within* the HD larger region, with the vacuum and zero-point-fluctuations (ZPF)

as a membrane demarcating the two regions—QST and CSR HD. (Such a complex boundary membrane has been modeled by Jack Sarfatti, 2006)

III.3. The sygons in-forming the syg-fields (consciousness) in complex systems

The sygons are consciousness-as-energy, semantic or syg-energy belonging to the CSR hyperdimension. They are able, via the HD Rhythm, to interact instantaneously and exchange information between the systems they dwell in. They constitute and drive (via HD Center) the self-organization of the syg-fields of all systems, whatever their complexity (from a proto-consciousness to a mind). All systems within spacetime have syg-fields, that are their self-organizational dynamics and information, and their identity as systems. And the syg-fields of all systems (whether a rock, a tree, a person, or a planet) (1) are conscious, (2) embed the whole evolving information about this system, and (3) form the HD of this system. This is of course the foundation of the panpsychist view of ISST.

- *At the human individual level*

For human beings, syg-fields are the whole dynamical semantic network of the person (intelligence, mind-psyche-body organization, self-consciousness, memory, emotions, skills, etc.). Human syg-fields are complex dynamical networks, multilevel, that comprise myriads of semantic constellations, each steering a set of cognitive acts in a specific domain of activity (such as driving, reading, etc.), each being network-linked to associated, co-evolving, constellations (Hardy 1998). The syg-fields belong to the CSR hyperdimension, yet each constellation is coupled to all neuronal, physiological and somatic systems needed for its functioning in the 4D world. The dynamics are based on meaningful connectivity and networking, on parallel and multilevel processing, rather than on hierarchy (top-down) and commands as in dualism.

For us human beings, our syg-field is our whole individualized consciousness field/network, that is, our mind and semantic dynamics + psyche + body consciousness + our relational and interactive network. The Self is the supraconscious subject of our syg-field, while the ego (the 'I') is the subject of our ordinary state of consciousness, the one taking care of our social interactions (Jung 1960, Tart 1969). The distinction Self-ego (whatever the terms used) is the basis of many inner, initiatory, hermetic, mystic, spiritual, and religious paths of knowledge—defined as a striving to harmonize oneself with our higher or spiritual Self (soul, atman, Ka...). And in ISST, this makes a lot of sense if we understand that the ego-consciousness is mostly centered on the social and physical world. In contrast, the Self (via the syg-field and the sygons) can have access to the collective consciousness and the capacities allowed by the hyperdimension—meditative and spiritual states of consciousness, psi communication at a distance in space and in time, influence on bio- and matter- systems such as healing, connection to the collective unconscious and its immense accumulated knowledge... In ancient cultures such as the shamanic ones (covering Aboriginal and Siberian ones and most African, Native American and South American ones, and also pre-buddhist Asiatic ones, as well as in eastern religions, alchemy and esoterica, we know that a gamut of practices have

been developed in order to reach or operate within the “spirit world” or dreamtime (e.g. the shamans’ out-of-body trance, the possession trance), or to achieve this ego-Self harmonization (e.g., the nagual or Eagle consciousness in Yaqui culture, samadhi meditation states and yoga paths, mystical fusion states in Christianity and Islam)—many of these paths of knowledge said to lead naturally to the awakening of *siddhis* or psi capacities such as clairvoyance, prediction, healing. (Let’s note that the field of psychological anthropology acknowledges that most ancient cultures, as its pioneer Erica Bourguignon (1976) observed it, had a form of trance, and these are sorted out as either shamanic (intentional and volitional conscious trance) or else possession cults (impersonation of spirits without self-consciousness within the trance.)

- *At the collective and cosmic levels*

Carl Jung has defined the *collective unconscious* as a sort of lattice or medium of communication among all human psyches (and their subject the Self), in which *archetypes*—collective psychic blueprints (such as that of heroes) endowed with consciousness and an immense “psychic energy”—may influence the psyches of individuals attracted to them. Yet, on the one hand, Jung integrated the animals and plants in this collective unconscious, in an alchemical way, for example as symbols and archetypes (expressing the guidance of the Self), or else as animal or plant *souls*—a perspective that concurs with that of the shamans on sacred plants and animals, viewed as self-conscious and able to guide and teach individuals on a quest (for example in South and Central America). On the other hand, the collective unconscious, as *Anima Mundi*, partakes of a sort of supra-consciousness (as an entity, a whole, being more than the sum of all psyches/Selfs constituting it) that Jung deemed *trans-temporal* and *trans-spatial*, thus definitely nonlocal, and the stuff of the *deep reality* that, with Pauli, they explored at a later time. And there, we meet the concept of an extra dimension.

In ISST-SFT, the part of the psyche that is not strongly coupled with the brain-body and contains all the information is the HD syg-field (whose subject, or organizing self-consciousness, is the Self). The syg-fields of all individuals and all systems form a hyperdimensional collective consciousness at a planetary level (collective unconscious, *Anima Mundi*), fueled by syg-energy, and in which the linked or resonant syg-fields (the personalized mind-psyches) keep interacting and exchanging qualified information (via the sygons). Let me note that when viewed from the perspective of the ‘I’ or ego involved in the social and material spheres, his/her own Self and syg-field are relegated to the unconscious; it is mostly with a self-development, shamanic, or yogic, path that the Self or Atman may become part of conscious awareness. (The leap from SFT [1998] to ISST [2015] consists in modeling the syg-fields and the semantic dimension as a HD, and syg-energy as HD sygons.) And at the cosmic scale, the CSR HD is the ensemble of the syg-fields of all systems (matter-, bio-, or just *HD systems*) in our universe. This is why the HD is not only self-conscious but quasi omniscient in this universe, and why it is a collective and evolving *Anima Mundi* at the cosmic scale, system-linked to all its components syg-fields (all minds and all systems’ psyches). As a consequence, any syg-

field with enough syg-energy may have an influence on any group of syg-fields (e.g. a society, a planet), or even theoretically on the whole.

This is in total contrast with a creator god who would be of a different substance than his creation/creatures and would only issue commands, and with a one-time-created and non-evolving creation. (Note the parallel in logic with the dualist framework of a mind only issuing top-down commands to the brain-body.) In ISST, not only each psyche-mind is a personalized and meaning-generating part of the hyperdimension, but the evolution of the whole—The One—is instantiated by the evolution of all its parts—the individual syg-fields of all systems, each a self-conscious and free creative entity. Now, since syg-fields are networks and use a connective dynamic based on meaning, the syg-field itself (e.g. that of a human being), as a system, is already a collaborative, dynamic, self-organized and constantly evolving, self-creation. The cosmic HD is just the same type of semantic dynamical system at the cosmic scale—its *body* being the matter region of the universe, that is, the QST. Thus, the cosmic consciousness is constantly evolving because its component systems—the individualized syg-fields/minds—are in a permanent creative evolution by themselves. In ISST, the cosmic consciousness is only the ensemble of all the Selves of all beings and systems—it is a One-Plural, a multifaceted holographic self-conscious system, yet an entity who is more than the sum of his/her parts but who evolves via his/her self-conscious parts (the syg-fields). Moreover, being beyond spacetime and nonlocal, the self-conscious cosmic HD knows the far past as well as the future and its lines of probabilities. The trends toward specific probable futures are constantly reorganized with the real time creative input of all beings and minds of all intelligent civilizations (via their syg-fields). So that the cosmic anima is, like us, an individual constantly self-creating and self-organizing her/his mind and mindscape with intelligence, creativity, sensitivity and art, and through myriads of connections with other syg-fields and their environment. Yet, as a One-Plural, her/his knowledge and capacities are more than the sum of the minds-psyches composing it, and therefore we can expect that she/he is endowed with wisdom and hyperconscience.

- *ISST: On the ontological side*

(1) The global systemic and holographic framework of ISST is that the triune hyperdimension (CSR HD) preexists the spacetime region (QST) and gives birth to it, thus forming a collar of universe-bubbles (Figure 2). So that a universe-bubble like ours consists of a CSR HD preexisting, then birthing, surrounding, and pervading the QST region whose boundary is the quantum vacuum and Zero Point Fluctuations.

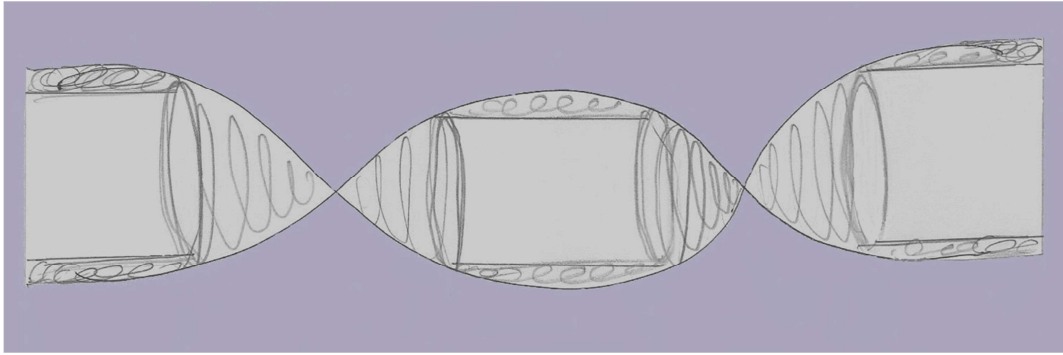


Fig. 2: A collar of universes: The CSR hyperdimension existing in the Phi-based spirals in a BlackHole-WhiteHole system, and surrounding the QuantumSpacetime (QST) region.

(2) The information-seed of all systems evolving in spacetime is transmitted from a parent universe-bubble via the cosmic CSR HD (acting as a cosmic DNA) via the ISS' immense data bank at the origin. Therefore, there is no *creatio ex nihilo* (creation from nothing), and no personalized divine creator as totally different in substance from his non-divine creatures. In contrast, all beings have a HD Self (or soul) and their ensemble constitutes the collaborative cosmic hyperdimension. Then all beings and even matter systems—all having a HD syg-field—not only partake of the One-Plural, but continuously in-form or create the Whole who has given birth to them. It is a sort of self-creating consciousness loop at all scales.

(3) The self-creating, self-organizing, and self-conscious cosmos is neither deterministic nor random; but rather the creative interplay of both, plus nonlinear dynamics and creative intelligent input from the beings that constitute it.

(4) The whole cosmos (HD+QST) is a collective intelligence, a multilevel system both in its wholeness and in its parts (Hardy 2015b).

(5) ISST posits a type of panpsychism since all systems have a consciousness-HD core (the sygons as a compact HD), the syg-fields of these systems being more or less evolved (from a proto-consciousness to a mind).

(6) The universe's global organization is holographic and self-conscious—all parts have the information of the whole, and can influence groups of syg-fields.

(7) The cosmos is a fine-grain blending of mind and matter, at all scales.

(8) ISST's paradigm of a self-conscious cosmos and collective consciousness is a leap beyond monism versus dualism, beyond QM versus Relativity, beyond the mind-matter and mind-body split.

(9) The image of a personalized god creating the universe at a specific point in time switches to a collective consciousness perpetually self-creating through the input of all its parts—the syg-fields of all beings and systems, and relatively to their syg-energy strength—and who, as a holographic system, keeps learning and evolving at all scales.

(10) An interesting consequence of the ISST model is that all intelligent civilizations in our universe are somehow co-evolving among them and influencing each other

(despite the fact some could be a million years ahead of us or behind us), and moreover they are also co-evolving with the planetary bodies they inhabit.

(11) And of course ISST transforms deeply not only the perspective on human freedom and free will, but it has also a deep impact on the question of life after death.

IV. CONTINUOUS LIFE OF UNIVERSES AND BEINGS IN THE HYPERDIMENSION

IV.1. Birth and death of universes: the cosmic scale

Since the triune hyperdimension (CSR HD) preexists the spacetime region (QST), we have, in between universe-bubbles (UBs), a Kerr BH-WH system. ISST postulates it to be—within its two singularities—pure Center-Syg-Rhythm hyperdimension, that is, a field of dynamic self-conscious information or cosmic consciousness, as a near infinite set of frequencies spread in hyperspace on the phi spiral.

In the Terminal Black Hole of the previous universe-bubble, all matter- or bio-systems lose their matter layer and are transcribed (sublimated) into pure CSR sygonic semantic energy (thus forming the cosmic DNA). These were the systems that had been viable, enduring, and optimized in the previous parent UBs.

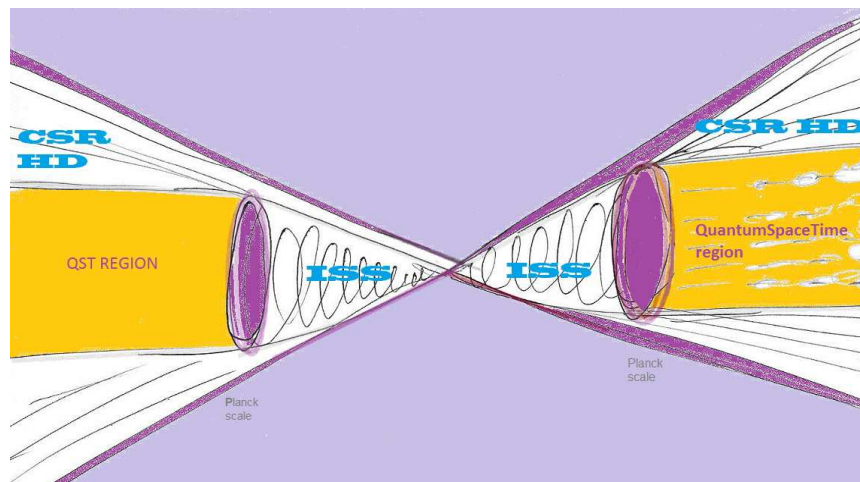


Fig. 3: Phi-based ISS spirals in a BH-WH system (Black Hole on the left; White Hole on the right), instantiating the pure CSR hyperdimension surrounding the QuantumSpaceTime region.

In the White Hole of a new UB (the birthing cosmic ISS), the bow-frequencies of the spiral eject FTL sygons, the nearer to the X-Point of the origin, the higher the frequency (and the smaller the radius). The early high energy sygons—the Free Sygons—ejected with tremendous momentum, will form the large HD region (in the form of a spindle) of what will become a UB. Then, when the bow-frequencies are down to Planck frequency, the sygons' wavelengths are so large that they start interfering, creating foam and loops at

the mouth of the ISS, thus forming a lattice in front and perpendicular to it, that will give rise to the Higgs field. The large sygons will now have to cross this lattice, which is becoming denser and denser, and they acquire mass and bloat in size, thus morphing into the particles of the Standard Model.

The first two waves of high energy particles we know of—the *decoupling* of the neutrinos (within the first second) and that of the photons (at 1.40 minute)—literally create the spacetime region as they speed forward, within the HD bulk already created by the Free Sygons, as a smaller cylindrical region. Meanwhile, the foamy lattice extends around the spacetime region as the latter moves forward (like a balloon) and becomes the vacuum, a complex boundary surface between the spacetime and the HD regions—behaving as the double membrane modeled by Sarfatti (2006), standing between spacetime and the sub-quantum Dirac sea of negative energy, and through which virtual particles tunnel). The (false) vacuum is an oscillating and bubbling surface boundary, showing permanent fluctuations of virtual particles (hence the ZPF indeterminacy). However, the Free Sygons had occupied the region that is now spacetime (QST), and they are still there, immensely more numerous than the large sygons that have been *clothed* in mass while crossing Higgs field—the known particles, assembling themselves to form atoms, then molecules, etc. The new particles retain in their core the original sygons (and their information), thus forming the 5th D, compact (sub-Planckian), of these particles. These core-sygons are *individual ISSs*—a quasi-replica of the cosmic ISS, and bearing its information as in a hologram—and they constantly send sygons back to the source, the cosmic ISS, about their own evolving system. Thus, all systems, via their individual ISSs, are constantly in conversation with the cosmic ISS, and their information is imprinted on the cosmic ISS—acting as the Akashic information field (see Laszlo 2004). But here, in contrast with Ervin Laszlo’s *A field*, this Akasha is sub-Planckian, that is, sub-quantum, and does not reside in the quantum vacuum itself which, in ISST, would bear only informational traces of the tunneling of sygons through the vacuum membrane, appearing as loops.

The ISS theory thus highlights the deep coherence and systemic dynamical organization of the pluriverse—the collars of UBs. It also brings an interesting understanding about a puzzling fact: that all simple atoms (hydrogen, helium, deuterium) still existing at our present time in our whole universe have been formed within twenty minutes after the Big Bang. If we consider that all particles and atoms bear a priceless information about all possible systems they can form or be part of, then nature being economical wouldn’t get rid of this information and the atoms would keep on existing until they are transcribed back into pure CSR information within a black hole. It has been calculated that the photons from the first light (the photon decoupling) make up 96% of all photons reaching us—that is about 400 Big Bang photons by cubic centimeter around us when we walk in the street! (Bogdanov, 2004) The remaining 4% come from the light of stars.

So let’s see the consequences regarding our topic, the post-mortem life issue.

In the collar of UBs, each UB receives at birth the cosmic DNA of its parent UBs (the information about optimized systems), yet it will be free to improvise and create, transform these systems, and make them evolve. So that in a Terminal BH, the information field on the cosmic ISS will be drastically different than the one received at birth (Hardy 2015a). The HD sygons (whether free or embedded as a 5th D in systems) are the deep reality of our universe, and they steer all nonlocal communications and inter-influences between entities—a constant two-way interaction with the origin, and among resonant syg-fields (such as minds); thus high states of consciousness and psi phenomena are instantiated by the sygons and the HD, including weird forms of nonlocality such as retrocausality or synchronicities (Hardy 2016).

In brief, at the pluriverse scale, there is no loss of information, ever. Matter is birthed by the hyperdimension, and when disintegrated within a BH, it is translated back into pure HD sygonic information imprinted on the ISS. Thus is preserved an axiom of QM, that no information is ever lost. As modeled by Nobel laureate Gerard 't Hooft (1993), the whole information about a volume (i.e., a BH) is inscribed on its surface (i.e., on the surface of the BH's event-horizon); consequently, the Holographic Principle states that all information about this universe is inscribed on the 2D surface of its cosmological horizon.

In ISST, the universe as we experience it in our 4D world had an origin and will die in a Terminal Black Hole (and numerous partial BHs before that). However, the *HD pervading* the universe, unfathomable, dwells beyond the birth and death of matter systems (including universe-bubbles); it is eternally existing as a self-conscious whole (the Hindu *Tat Vam Asi*—I am That, I am What is); yet, in contrast with a creator god deemed immovable and distinct from the created, the CSR HD is constantly evolving and learning through its component systems. As the whole is more than the sum of its parts, the cosmic CSR HD knows more than all of its parts but both its knowledge and its beingness, constantly evolving, are neither perfect nor total. Thus the ISS theory opposes the concept of a creator god—especially when viewed as immovable, omnipotent and omniscient. Its originality is that it is neither a creator god nor a blind materialistic universe, but a self-creating and self-evolving, multilayered, hologram. In brief, as a holistic (whole, coherent) and holographic system, the CSR HD knows all of its parts, and is self-conscious in its wholeness and in its parts as well. Thus, universe-bubbles are constantly birthed and then die (in terms of their QST matter region); yet their information is preserved and passed on to the following UB, via the CSR hyperdimension. Death at the cosmic scale is only a transformation, a translation into pure hyperdimensional consciousness; and birth is the reverse process.

Thus is shed a new light on an impersonal, yet self-conscious and creative Wholeness, with whom each one of us intelligent beings may communicate through our Self. The implicit aim of the perpetual creation of UBs would thus be the exploration and expression of creative acts and mind potentials by entities at all scales and at many embedded and interactive levels.

IV.2. The hyperdimensional Self alive beyond spacetime

We saw that ISST (and SFT) have integrated and elaborated upon Carl Jung's concepts of a collective unconscious, and of the Self as a supraconscious and transcendent subject of the personal unconscious, as connected to other Selves and to the Anima Mundi (the collective Self as the One-Plural).

It is within cognitive psychology that I developed SFT yet, as a researcher on world cultures and PhD in psychological anthropology and a practitioner and expert on meditation and self-development techniques, I'm totally in accord with Jung's concept of the *individuation process* that reframes the ancient paths of knowledge and initiation in the language of depth psychology. Initiation paths are found in most ancient cultures and religions, as well as in Christian and Muslim mysticism. As Mircea Eliade (1954) has shown, initiation was a world-wide path of knowledge aiming at exploring the spiritual dimension of the world (the dreamtime for the Australian Aborigines) and at developing one's own mental and psi capacities, yet its practices differed with each culture.

Individuation and initiation reflect a layered cosmos and the perennial knowledge that: (1) each human being has a transcendent, supraconscious, Self (or soul), and an ordinary state of consciousness driven by the ego, which is more centered on one's body and social environment (Tart, 1969); (2) this Self can access a deeper knowledge than the ego, and activate new mind potentials by getting connected to the world soul or dreamtime. According to some ancient knowledge paths, enlightenment (or awakening) is the ego-Self fusion ("death of the ego," "Mystical or Alchemical Marriage"), and once attained, the individual reaches *beyond duality* (*advaita* in Hinduism) and can connect or harmonize oneself with cosmic consciousness (Brahman, the Tao, The One)

Now, let's focus on the topic of the bodily death for human beings.

SFT posits that the main part of our being is extra-dimensional, that is, operating in the *semantic dimension* beyond space and time (just as Jung had predicated it about the Self and the unconscious); and that only a small part of our semantic field is intermingled with the brain's networks and the body via eco-fields (body consciousness). In ISST+SFT, our *syg*-fields are thus operating freely in the *syg* hyperdimension and create spontaneous interconnections with resonant *syg*-fields (e.g., those of our loved ones, but also those of our pets, our houses, relished works of art and systems of thought, etc.). The Self is the supraconscious subject of the whole *syg*-field, and is steering the individuation process or ego-Self integration. As Jung showed it, it is the Self of a person who acts as a guiding entity in most symbolic and numinous dreams—mostly appearing as the repressed side of the psyche, either the feminine *anima* or the masculine *animus*, in order to balance the person's psyche—and this explains the representation of a personal *guardian angel*. And in one's life, the Self is ever devoted to the awakening of the ego and is able, from within the *syg* hyperdimension, to concoct synchronicities, events, or situations that will send a message to the ego.

Thus, to draw the global picture, the *syg*-field, being both the information-field of the person and steering his/her semantic and organizational dynamics, contains moreover the

whole dynamical memory of this person—as information, selfhood, organization, procedures, and processes.

In this framework, death is just the shedding of the bio-matter system by the Self—something like an uncoupling of the Self and its HD syg-field from matter—both Self and syg-field being highly personal and strongly individualized. In fact, the degree of originality of the syg-field and Self of a person is higher than that of their fingerprints because the syg-field is also the ensemble of their affective, social, and intellectual networks. Bodily death, for the individual Self, is just severing the connections to the brain's neuronal networks. However, all past connections of this person's syg-field with still living loved ones, objects, places and environment are enduring, because they are primarily psychic and mental (i.e., semantic) links and bonding. However, ISS Theory—as a cosmic consciousness framework—doesn't lead to any judgment of the souls or punishments after death. If the global aim of an incarnation is to learn and expand one's consciousness and talents, then it's likely that the Self will ponder its achievements and shortcomings during its past life; but this is only a learning process and has nothing to do with a condemnation and even less so with an eternal judgment; here, we only have a Self taking one's own responsibilities.

CONCLUSION: FULLY CREATIVE INDIVIDUALS POST-MORTEM

As we have seen, before/below Planck scale (at the origin, then surrounding the spacetime or QST region, and at the end of a universe bubble), there's the pure CSR HD—the syg-fields embedding the ISS, before they express (or clothe) themselves in matter after/above Planck scale, in the QST region (as in Figure 2). Thus, an interesting consequence of ISST's framework is the fact that a self-conscious hyperdimensional region leads to the necessary existence of beings and systems that would be pure CSR-HD systems (that is, syg-fields without material bodies in spacetime), and networks of them (such as groups of Selves or souls). While these immaterial beings are devoid of ordinary matter or bodies, they nevertheless have a high syg-energy (as well as a morphic field) and may have an influence on the organization of matter systems in the spacetime region. This is similar to an alive human being doing a self-healing visualization and whose syg-field will transmit a healing energy toward his/her body. After the death of the body, the syg-field, as we saw, still exists as an intelligent, creative, volitional and evolving personality. Thus, the Self of a deceased person is a pure CSR HD being that exists only in the hyperdimension. I surmise that a pure Self (disembodied) wouldn't have as much influence on spacetime systems as an embodied Self on his/her own body, but could still tinker with 4D reality.

Another pure CSR-HD system could be the syg-field of a galaxy that has been swallowed by a Black Hole (at any point in the spacetime of a UB), and whose matter would have been crushed by gravity. It would now exist as a pure field of information—syg-energy organized as a syg-field and able, under favorable conditions, to act as galactic DNA and give birth to a new galaxy.

To give a more precise picture of the question of the survival beyond bodily death within the ISST framework, a deceased person, having shed his body, would be his pure Self—having all the memories and also the accumulated talents of his previous life. This is in accord with the Buddhist and Hindu concept of the Self (atman) being conscious between incarnations, in the Bardo.

Given the large research on communications with the deceased (e.g., Brune 2009; Gurney *et al* 1886; Myers 1903)—and my own experiences recounted in *The Sacred Network* (Hardy 2011)—my stand on this issue is that the pure HD Selves (as individual souls—the deceased) (1) have maintained their individuality and their mindscape, (2) are still thinking, creative, acting, and learning, able of intention and volition, (3) they have kept their past relational network and have even added new HD friends to it, (4) they moreover enjoy the larger scope of a HD consciousness (reaching to any coordinates in space or time) that allow them to communicate freely with their past loved ones and colleagues, whether this is registered consciously or via their unconscious by the living individuals. (All these properties and capacities can be fluidly derived from SFT-ISST). This means that, as intelligent beings living in the 4D spacetime, the more we are able to connect and harmonize ourselves with the syg-HD—to our own Self through high meditative states—, and the more we may be able to communicate with HD beings.

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Does the Consciousness End, Remain Awake, Or Transform After Death?

Radivoj Stankovich, PhD*

With Afterword by Micho Durdevich

Abstract. We discuss the possibility of the existence of consciousness after physical death, within the conceptual frameworks of quantum psychology, and higher-dimensional and non-classical geometries. We provide a compact historical and philosophical overview of related ideas, and present some illustrative examples.

1. The Problem

Man has always been interested in what awaits him after death. Anthropological studies show that beyond the things he could see around him, he believed in the existence of unknown forces capable of influencing his life. He also believed that apart from the body, people had some kind of everlasting soul after death. Anthropophagi even believed that by eating their enemies they acquired forces those enemies possessed. This should, of course, be attributed to their ignorance.

Nowadays, naturalists affirm that man is just an intelligent animal. And that he has progressed more than others thanks to some special circumstances. According to quantum psychology, on which our statements rely, there is no doubt that man is physically an animal. It also accepts that he has developed thanks to specific circumstances. But unlike the naturalistic view, quantum psychology states that man, in his development, has acquired the faculty of orienting himself based on his own experiences and making a choice from

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among them, free of any instinctive protection that govern all the animals. This has turned him into a new genus.

His belief in an “afterlife” was typical of the ignorance of human beings who started to orient themselves on the basis of their own experience. It took him to another dimension of reality, inaccessible to animals, which remain governed by instincts that come from the accumulation of experiences related to nature. In his new condition, man began to understand everything existing on the basis of his incipient intuition. He certainly made countless mistakes, which he corrected over time, but also acquired some new and everlasting perspectives.

Some of them were wrong, others developed in a positive manner. However, some others still remain problematic up to the present times. One of them is the existence of different unknown things and forces. We now face, in a completely different fashion, the possibility of survival of human consciousness after the biological death of a person. And we try to approach this problem by using the most advanced knowledge, thousands of years away from the ignorance of the primitive man.

In this attempt we face another point of view that has been formed over time, which emphatically affirms that even mentally man is still an animal. It ignores his capacity to make a choice free of the influence of instincts. It understands human psychic life as the exclusive result of neural development without any influence of ideas. (By denying ideas and the logic, it denies existence beyond its time-space expression). In the same context, it also denies the possibility of existence of a conscious mind not governed exclusively by biological laws.

This work, naturally, does not intend to demonstrate for sure that there is any reality, other than the one known till now, which could open its doors to human consciousness after biological death. It only wants to indicate the possibility that said existence can be examined within a broader scientific framework than that suggesting its denial. It presents the grounds for such an approach as well as some ideas resulting from it.

To put the issue in a solid framework, we continue with some notes on related ideas throughout history. Some brief notes regarding philosophy and some broader ones concerning the method used to deal with this matter. Lastly, we give some examples of its application as well.

2. Towards a Scientific Framework for Consciousness

2.1 Premises of Science

Human reasoning always develops within certain premises that determine its extent and its limits. In daily life, the premises of reasoning are usually implied and not examined. However, they determine the logical structure of any reasoning. Therefore, in order to thoroughly analyze the consistency of thoughts, scientific reasoning searches for the surest knowledge possible. To this end, a methodology and epistemology are first prepared. Paradoxically, the ultimate premises of science are examined very rarely, because they are close to philosophical approaches that the current science tries to avoid.

In principle, these premises are accepted as being the same as those of natural sciences, which admit that the universe is only composed of matter that develops by deterministic causality. The achievements of natural sciences are so huge and obvious that their premises are identified as those of general science. That is to say, it is assumed that natural sciences are the same thing as general science, so that an additional examination in this sense is unnecessary.

It is thereby intended to apply the methodology of natural sciences to the understanding of psychological and sociological issues as well as to those of other human sciences. However, despite the tenacious insistence on this principle, achievements in psychology and other human disciplines have been very poor as compared to the success of natural sciences. In the past hundred years, the distance between technology and human psychology has become increasingly larger.

2.2. General Science

The search for explanation of this situation leads us to the need to review the ultimate premises of natural sciences. The reasons for this are not philosophical, but strictly logical. Until we do not have absolute knowledge, the sole existence of matter in the universe is just a hypothesis that could be faced with other hypotheses (even more since it is not fully known what matter is). It cannot be denied that natural sciences explain a great deal of reality, but, at the same time, they leave open the issues that are specifically human.

If science consists of the search for the surest knowledge possible, it does not

deny the enormous value of natural sciences. But it does indicate that they cannot be reasonably considered and valued as general science. It means that science has to be approached bearing in mind the limits of human knowledge. The knowledge of matter of an outdated philosophy refurbished up by positivism cannot be accepted as definitive, when according to the latest knowledge, its essence is closer to Kant's *noumenon* than to a naturalistic point of view.

Furthermore, general science is not only based on criticism of the materialistic approach. It offers its own hypotheses on human psychological reality based on the recognition of free choice. This latter is not unjustified either, but is based on the analysis of logical structures and of the development of orientation mechanisms of living beings as well as on the latest research results in physics. All this opens up promising perspectives to human sciences.

At the same time, the scientific method criteria have been broadened and have become more elastic to comply with the characteristics of their object of research. In mechanics, they have practically not changed, although they have become more variable without ever failing to observe, like general science, the surest and the most verifiable knowledge possible, even when there are just traces of it; these should always be greater than mere possibilities and within a consistent theoretical framework (which complies with the surest knowledge possible).

In the same context, consciousness is a very complex concept that encompasses several processes of human mental life. It is explained in different manners but in short, it distinguishes its own self from another person, preserves its memory and teleological reasoning capacity. Biological death is in turn considered as cessation of the elementary faculties necessary to survive as a living being. But we must add that all these faculties do not have to be simultaneous.

According to this, mind is not limited to any biological reaction of the brain, but involves the existence and organization of the psychic life of a person as a whole. Therefore, its conscious survival after death refers to this whole. Within the common biological reality, this survival of consciousness is impossible. But theoretically, in a reality that is yet to be known, it could possibly exist. The following are the reasons that support such possibility.

As we do not have absolute knowledge, the possibility of a reality fundamentally different from the one we know is not precluded. But in order to be examined

within the framework of general science, it must be consistent with it. Then, any signs of such a reality should be sought and be observable with a higher degree of probability than a mere possibility. Finally, the existence or nonexistence of that probability is here examined.

2.3. Deterministic and Logical Causality

Deterministic causality is a type of causality that matches the current knowledge about matter. In this sense, it shares the explanations of natural sciences and the metaphysics of materialistic philosophy. However, its validity is limited to the premises of natural sciences, but beyond them, it is just a form of logical causality in general.

In the same way the concept of general science is broader than that of natural sciences, logical causality is broader than materialist, deterministic causality. Greater knowledge about matter may reduce its significance even more.

On the contrary, logical causality won't disappear until there is any type of reality or consistent theoretical construction. Without this causality there may not be any scientific or spontaneous analysis or consideration, because it is the indispensable premise of the reasoning process.

2.4. A Theory on the Threshold of Science

Both the religious promise of an *afterlife* and the secular image of the prolongation of life in anti-matter assume that the conditions in the eternal life are similar or analogous to those we know in earthly existence. This is more than problematic. However, the possibility that immortality may take place under different conditions cannot be discarded, and neither can the fact that the perpetuation of human consciousness is linked to something we still ignore. We will now deal with this assumption within the most objective framework possible.

The hypothesis under examination is logically possible and allows for a formal research aimed at finding its confirmation if not now, possibly later in a future when knowledge becomes far more advanced. For the time being, it is based on probabilities. Therefore, the possibility of perpetuation of individual human life will be examined based on the hypothesis of the existence of the fourth dimension.

2.5. The Three Dimensions

In order to undertake this study, it is necessary to start with some elementary data on space dimensions we are familiar with. The first dimension can be illustrated with the perspective of one point that is a part of a line. If this point were conscious, the entire world would be given by the line to which it belongs. Its possibilities of movement would be reduced to forward and backward direction, but it will be unable to move sideways.

The second dimension that a point could know would be if it were located on a plane. In this case, in addition to forward and backward movement, it could also move laterally along the plane in all directions, but would not be able to come out of the plane. Thus, based on its experience, it could not imagine anything outside the plane.

But if in addition to foregoing, the point were able to move upward and downward, it would get to know the third dimension too. It would be in the same position as we, human beings, in the third dimension are. However, it would not be able to imagine anything else beyond the three dimensions it knows, since it could not perceive anything else with its senses.

Neither can we, human beings, perceive anything beyond the three dimensions in which we live. However, unlike the little point, we can imagine the existence of the fourth dimension and of many more dimensions. We are capable of making mathematical calculations of multidimensional spaces. On the basis of that, we can make some other assumptions.

First, we are able to suppose not only that there is a fourth dimension, but also that we live in the fourth dimension although we are not aware of that due to limitations of our sensorial perceptions. Exactly in the same way as the imaginary point that was a part of the line could not imagine the second dimension or the point of the plane could not imagine the third dimension.

Since we have more knowledge than the small point, we can imagine perfectly well that we live in the fourth dimension, even though we do not feel it. But we can go even one step further and imagine that we not only exist in the fourth dimension, but also that we will continue existing in the fourth dimension, after we disappear from the third. However, the best thing of all this is that it's not

only the matter of imagination.

2.6. More Knowledge

In the first place, we know that there is a relationship between time and space, which gives rise to very interesting effects. For instance, for the person traveling in a spaceship at a velocity close to the speed of light, time passes much more slowly than for those who stayed on the Earth. We have seen this in some movies about time travels to the past and the future. But this is not a matter of fiction; the relation of the difference in time elapsed for the traveler and for those who stayed on the Earth is accurately grounded and can be measured.

We also know that there is a relationship between energy, mass of a particle and the velocity of its movement. By accumulating more of such knowledge we started to explain phenomena that we could not understand until now by means of classical materialistic physics. This is similar to what is going on with Euclidean geometry, whose premises are valid but was surpassed by other types of geometric calculations.

For example, we do not stick so much to some materialistic beliefs as we did just a while ago. That opens us to new perspectives for the study of some phenomena dealt with in parapsychology, such as telekinesis, poltergeist and other similar issues. Although there are still some significant gaps we have to eliminate by using new knowledge that will surely be acquired in the near future, for the time being we can examine several scientific hypotheses.

Using the hypotheses we analyze in this work, we can understand how someone apparently may be in two distant places practically at the same time; how someone can become disintegrated and then put together again in a quite different place; or other phenomena that seemed to be miracles before, such as spoon-bending by touch, remote clock repairing, etc. Obviously, after having discarded tricks of the tricksters.

2.7. Grounds for the Fourth Dimension

Before we talk about the prolongation of life, we are going to summarize the bases of hypotheses that support the existence of the fourth dimension. They all surpass the degree of mere logical and probabilistic possibilities and are probable to a greater or lesser extent according to scientific epistemology:

- (1) The fourth dimension is logically consistent with the three dimensions accessible to our sensorial perception.
- (2) Time and space in the fourth dimension are different from those in the third, although they are in a way linked to the phenomena of the latter.
- (3) In the fourth dimension, there is a type of energy we do not know in the third ($E = MC^2$). The form of energy we know is a variation of that existing in the fourth dimension. Or, rather, the opposite.
- (4) The fourth dimension coexists simultaneously with the third, like this latter coexists simultaneously with the first two.
- (5) We cannot perceive the fourth dimension with our senses.
- (6) We do not know how one can pass from the third dimension to the fourth. However, we can seek this step by intuition before being able to calculate it mathematically.
- (7) Some phenomena that are inexplicable in the third dimension are probably influenced by the effects of the fourth dimension.

Due to the differences between the third and the fourth dimension, we can assume that the effects of the physical death of a human being in the third dimension are not the same in the fourth dimension, especially because of the characteristics of person's psychic life. The most important consequences deduced from the above are the hypotheses that:

- (A) After physical death of a person in the third dimension, his/her existence in the fourth dimension can, somehow, continue.
- (B) Person's psychic existence, linked to biophysical factors in terms of energy, no longer receives this energy, but does receive the one that has always had in the fourth dimension.
- (C) Therefore, even though the human being can continue indefinitely in the fourth dimension, he/she cannot go back to the third.
- (D) Psychically, an individual that stops existing in the third dimension, continues to exist in the fourth at the same level he/she had in the third.

2.8. Scientific Level and Value

Epistemologically, the degree of certainty of the aforementioned seven points, as a whole, is greater than that of the four hypotheses deduced. The four hypotheses deduced are not yet scientific, because they still have to be proved, but their proof is already close to scientific examination.

None of these hypotheses can be definitively rejected. On the contrary, some are being proven (for instance, a faster displacement of antimatter as compared to light, which makes the $E = MC^2$ formula as a general explanation of energy, stagger).

Due to the sole fact that the theory of the fourth dimension is getting closer to its scientific consistency, the value of the fourth dimension hypotheses is greater than the first two preceding promises of eternal life. This is something that can already be taken into consideration.

Independently of the scientific confirmation of the previous dimensions, an interesting point related to the prolongation of human life can be made in a new religious sense based on the assumption of existence of the fourth dimension. However, this should be treated after considering the following question: Why do religions exist?

It is commonly thought on a scientific level that religions were created because the primitive man could not find explanations for many natural phenomena due to his ignorance. So he attributed them to supernatural forces, which later gave rise to religious beliefs.

This anthropological hypothesis is quite plausible, but if the existence of the fourth dimension is proven, it could mean that the very early appearance of ideas about afterlife, besides the anthropological explanation, might have come from an obscure intuition of the possible prolongation of human life in the fourth dimension.

2.9. Intuition of Survival

According to the analysis of needs that led to the creation of religions, there isn't much to add to the thesis that explains them as a product of ignorance of primitive man. However, the fact that human beings have believed from the very beginning in the prolongation of life after physical death is more interesting.

Superstitions, and later religious beliefs, have changed and expanded in countless variations. However, the idea of human survival was always present in all of them as an expression of desire or a sort of rebellion against the idea that the psyche itself can be equal to existence of perishable material things and

animals. This can be attributed to human intelligence, feelings and self-esteem.

Notwithstanding this, the fact is that although we have enriched our knowledge, the desire of survival has not disappeared. It has been repressed in those who look for simplistic solutions, but remains present in those who try to see the human situation without pseudoscientific prejudice. Therefore, it is worthwhile examining the possibilities we do or do not have to satisfy this desire.

If religions had not been created in the remote past, but at present, we would undoubtedly have had a different religion that would offer much more rational answers to human needs than historical religions. So, as we have freed ourselves from materialistic prejudice, we have to consider the possibility of a modern religion rationally as any other possibility.

The main advantage of such a religion is that we would have faith without the need to accept multiple inconsistencies typical of classical religions. Because they are all based on dogmas that were created when the mankind lacked the knowledge it has nowadays. Therefore, people constantly have to search for the way to make their faith fit within the current scientific knowledge.

For example, dissection was forbidden in Christianity, which pre-vented anatomic studies and surgical interventions for some time, to mention just two of the already disappeared prohibitions. But some of them have remained, such as mandatory celibacy for priests and prohibition of abortion that hinders rational planning of the size of population.

The insistence on the conservation of these kinds of dogma by different churches does not help to strengthen the religious faith. But, as a need for faith is so deeply rooted in human beings who seek some strong orientation in their lives, many choose not to take all of the rules of their religion *literally*, while others seek a substitute for faith in ideological beliefs. Therefore, in the past century, many believed not in God but in Karl Marx or Hitler.

This latter brought some obvious, further difficulties, since churches at least preach peace and harmony, whereas political substitutes of religions preached fanatical revolutionary violence or dictatorship of a “superior race”. In order to overcome such situations, a more rational faith could be based on hypotheses that are ahead of science, instead of being always behind it.

These points were established in a “laboratory” of elective hypotheses, which led to the synthetic “conception” of a religion that is not revealed but rationally conceived. It is presented below together with its advantages and disadvantages.

2.10. Principles of Anthropoligion

Anthropoligion (human religion), although not based on science, has its grounds in hypothetically possible principles — basically, in the assumption of existence of the fourth dimension. It is not based on any kind of revelation, but on the hypotheses that encompass the fundamental part of conventional religious topics people have been familiar with over thousands of years.

According to this approach, the anthropoligious God is a self-conscious principle or a being that possesses unrestricted creativity, which expands to all the possibilities existing in the universe. The almighty and omnipresent God of Judeo-Christian religion, except for his anthropomorphic image and patriarchal character, matches pretty much this formula.

The similarity between God and human being, his supreme creation, does not lie in human biophysical constitution, but in the possibility of free choice, will and creativity that man possesses, although to a limited extent. It also lies in the prolongation of human life in the fourth dimension (though God also exists in other dimensions we cannot even imagine yet).

The earthly human life is, in a way, preparation for the life in the fourth dimension. The life of an individual in the fourth dimension depends on what he or she does in this world, because each individual remains at the same level of possibilities he or she has created during his/her existence on Earth. Animals are neither capable of free and responsible choice nor of the independent creativity of their genetic impulses.

In a sense, heaven and hell also exist in the fourth dimension. Persons of good will who have been creative on Earth, will preserve these qualities for eternity in the fourth dimension. It will be their heaven. Whereas those who have been inconsiderate and not engaged in their earthly life, will remain reduced to these characteristics and will not be able to hide them from anyone throughout the entire eternity. It will be their hell.

Religious miracles, if they have ever really existed, can be explained by

exceptional influences of the fourth dimension on the earthly life in the same way parapsychological phenomena can be. However, exceptions in religious miracles will always be accompanied by a certain degree of ethical significance.

So, people who feel need for religion but cannot accept the archaic stories and statements that stand in contradiction to their objective knowledge, may now find a new kind of faith. At the same time, this religion agrees with hypotheses of immortality and the fourth dimension.

However, despite its advantages over historical religions, this new version of faith has its disadvantages too. The most important one is that old religions possess strong esoteric mysticism and offer magical promises that attract people, whereas anthropoligion lacks this attraction.

Another disadvantage is that promises of heaven and dark threats hell of old religions probably have stronger ethical effects, especially for the people with low level of education. It is due to the fact that they may fear the hell, but could hardly be frightened by the possibility of remaining in the fourth dimension attached to their scarce moral merits from their earthly life.

2.11. Intuition and Objective Value

Epistemologically, as a whole, anthropoligion is one degree below scientific certainty than the hypothesis of the fourth dimension itself, due to additional assumptions that are added to the outline of a new religion. These assumptions move anthropoligion away from science as much as they put it closer to an imaginative product, similar to science fiction. So, its degree is completely beyond science.

Finally, its objective value is lower from the point of view of sociology. On the one hand, because its influence on ethical behavior is lower, as seen herein, and on the other, because its possible radius of influence is much more reduced since its acceptance requires a higher level of education than that found in masses of believers in most of the world.

On comparing the extent to which the teachings of classical religions agree with this draft of an essay about a rational faith we have presented, it can be concluded that old religions shared practically the same bases, even though they did not express them clearly. Therefore, we should, after all, admire spontaneous

intuition that has always been the basis for their creation.

3. Afterword

by Micho Durdevich, Institute of Mathematics, UNAM

A great philosopher and scientist, visionary and inventor, artist, and my dear friend, Radivoj Stankovich, passed away on September 5, 2016, aged 97, at his hotel in Jiutepec, Morelos/Mexico. To his last days, he was focused on developing, sharing and perfecting his ideas, including writing the final pages of the present paper. He was a luminous example to follow, for all of us.

Hopefully, now Rade knows all the answers.

We did our best to try to give the paper a completed form. I would like to thank Dubravka Sužnjević for kindly providing the Spanish to English translation of Rade's original manuscript, and to Lilia Cespedes for so enthusiastically assisting Rade in typesetting the Spanish version. I am very indebted to Prof. Gregory Nixon, for carefully reading the entire manuscript; his suggestions have greatly improved the final version.

I include below a couple of comments regarding the connections between the quantum physics and geometry, on the one side, and Rade's work on the other. I also include a small collection of references, either to the works explicitly mentioned in the paper, or other works exhibiting non-trivial connections with the ideas presented.

Quantum Complementarity and Pure Consciousness

Rade would always encourage discussions involving mutually complementary pictures, viewpoints and descriptions of things – rather than searching for some monolithic universal truth. In this sense, he was quite in resonance with the Niels Bohr complementarity philosophy, in particular when developing foundations of his own Quantum Psychology.

Within complementarity, he would always search for *invariance phenomena*, the situations where different observers, with different structural identities, methodologies and explications, would nevertheless find a common ground in observable statements.

According to the von Neumann interpretation of quantum measurement process,

before objective statements about physical phenomena can be formulated, we need to perform a kind of an artificial division of the world, into the observed and observing parts. An imaginary object-subject cut/division. Quantum mechanical statements then apply to the observed part of the universe. However, due to the arbitrariness of the cut (and finiteness of the observed) – there is always a freedom in redefining it.

For example, if the observer is a human, instead of saying that she is observing a beautiful flower, we can say that she is in reality “observing” retinas of her eyes where the image is formed. Or that she is really “observing” the neuronal ends connecting her eyes with the brain.

The arbitrariness of the cut does not contradict the objectivity of the measuring process. As an extreme version of this argument, we can move all of the physical body to the observed part. According to von Neumann, what remains at the observer side, is then a pure spiritual form. And this form is ultimately responsible for the so-called collapse of the wave function, a kind of a process that occurs when potentialities of the quantum-mechanical description are converted into actual properties, within the act of observation.

Fourth Dimension and New Models of Reality

Rade was fascinated by the prospect of connectedness of things at the very basic level, of the very fabric of space. I understand his “fourth dimension” in this way: not as a four-dimensional space in the classical sense of the word, but as a geometrical existence dimension, which, by bringing the premises of quantum theory into the realm of geometry, establishes a ground for new models of physical reality, in which space and time, material and spiritual, are unified.

Notes & References

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not consciousness survives the death, together with possible theoretical frameworks that allow the existence of *pure consciousness*. Including very interesting speculations about possible explanatory framework based on quantum theory and the phenomenon of entanglement and distant correlations. This is a purely quantum phenomenon, complementary to the classical descriptions of objects and processes in terms of space and time.

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We intend to gradually make Rade’s unpublished books and papers freely available at his website: <http://www.radivojstankovich.net>

Big Bang Spirituality, Life, and Death

Kenneth Bausch *

[adapted from Bausch, 2016]

Abstract

Taking the Big Bang as the singular source of universal evolution, gives potent contemporary metaphors for understanding spirituality, life, and death. We can discover the nature of the Universe as we observe that its evolution is radically indeterminate, but manifests tendencies toward connectivity that manifest in self-organizing wholes. Like a traditional deity, the singularity that existed in the moment before the Big Bang is eternal and timeless. Everything that exists or comes into being, no matter how creative, is a manifestation of that first moment of creation. That the first moment of creation is always happening; it's happening right now. We (and every other thing) are products of that original creation and our own creativity is an expression of its creativity. This should comfort us, for it implies that when we lose our personal creativity at the end of our physical lives, we are likely to experience rejoining the original creative force of the Big Bang, just as religious faithful often expect death to reunite them with their creator God.

Introduction

"We have (in the world) the experience of a truth which shows through and envelops rather than being held and circumscribed by our mind" (Merleau-Ponty, 1964, p. 408). That is to say, the world thinks through us. We do not initiate either life or thought; the world does. This meaning in the world is never known until we express it in our lives and language. It is by perceiving and manifesting this ever-present but often obscured meaning that we become all that we can be.

As infants, we knew the world in the way of other highly developed animals, that is, through a kind of collective erotic sensing that knew no difference between ourselves and our mothers (primary caregivers). Our development of language splits that prelanguage unconscious unity (schematized as Subject0) into a conscious ego (Subject1), and its environment (Subject 2). This can be schematized as:

Original Subject → Ego + Other

or

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Subject0 → Subject1 + Subject2.

In addition, our efforts to understand ourselves and our environment (including other people) are schematized as:

Ego + Other → Communion
or
Subject1 + Subject2 → Subject3.*

On the subject of life after death, we need to parse the prospects of Subjects 0, 1, 2, and 3.

The book and this excerpted article are driven by my desire to make overall sense in the chaos of postmodernism. I was driven to question several religious, rationalist, and cultural standards:

- revealed religion, belief in God the Father, divinely sanctioned moral and ethical standards, dependence on hierarchical authority for rules and favors;
- tenets of the Enlightenment and classical science such as duality of body and mind, reification of the excluded middle, the demand for classic scientific proof for any rational conviction;
- cultural malaise resulting from uncertain ethical values.

The goal of this effort is to present a coherent systemic vision of our world and our roles in it. The method can be called syncretic imagination. From sources, I have read, have written about, and in my head, I perceived strong similarities in approaches that would seem otherwise divergent. I attempt to create stories that hang together and create a coherent background for meaningful and robust living.

Singularities

In Christianity and in some Eastern philosophies, there is an argument over the nature of Ultimate Reality/Divinity/Brahman. Does the Ultimate have attributes? Is it good, just, and compassionate, or not? Most modern day Western Christians would say, "Of course, God is good, just, and compassionate."

There is a strain of Christian theology, however, called negative theology, which holds that if we give God attributes, we put limits on God and put him on our level and the level of any object we describe. It was for this reason that St. Basil and his fellow bishops in 4th century Cappadocia said that they believed in God, but they did not believe that God exists. In other words, "The Creator transcends even existence. The essence of God is completely unknowable; mankind can only know God through His energies" (Fortescue, 1910). The Eastern Orthodox

version of this tradition, Hesychasm, became a dogma of the Orthodox Church with the publication of the decree of Tomos in 1351 (see, e.g., “Essence-Energies distinction,” 2016).

Parallel to this Christian negative theology is Advaita (non-dual) Vedanta as propounded in the eighth century by Adi Shankara (Satprakashananda, 1977). In this philosophy, the Absolute has no name or form or attributes. It is Nirguna (without attributes) Brahman (Satprakashananda). Daoism holds a similar view as revealed in the statement: “The Dao that can be described is not the Dao” (Lao Tsu, 1972, *Tao Te Ching*). In negative theology, Advaita Vedanta, and Daoism, God, Nirguna Brahman, and the Dao are absolute singularities – unknowable in themselves.

The Universe of the Big Bang bears remarkable similarities to the God of negative theology and to Nirguna Brahman and the Dao. It, too, is an ultimate reality. It, too, is a singularity. The universe before the Big Bang was an absolute singularity. It did not exist in space and time because it had nothing to relate to; and space and time are created by relations between things. Nothing can be said about a singularity. After the Big Bang, multitudes of chaotic energies were released to fend their way in an uncreated world (cf. Singh, 2005). The universe we inhabit is still finding its way, especially in intellectual and cultural arenas.

And yet, in a fundamental way the universe is still a singularity. As a whole, it has nothing to relate to because, by definition, it is everything. And we, at the atomic and sub-nuclear level are of the very same stuff as everything in the universe. We are one with the universe as a singularity.

Differences between the Big Bang and Other Singularities

How does our Big Bang singularity relate to the singularities of negative theology, Nirguna Brahmin, and the Dao? The principal difference lies in the relation to time. The Eastern singularities are eternal and timeless. For Advaita Vedanta, we are simply names and forms (*maya* = illusions) draped over non-dual reality. In the final analysis there are not two things; there is only non-duality. We do not relate to Nirguna Brahman with prayers or expect rewards and miracles. In Vedanta, we are one with the Absolute. Our glory is to live in awareness of that unity.

Our singularity is dynamic. Ever since the Big Bang, the world has been evolving cosmologically, chemically, biologically, psychologically, and culturally. In all of this evolution, our singularity has been expressing itself in its manifestations and in the “flesh” of the universe (as in Merleau-Ponty’s *flesh of the world*, 1968). It is perhaps true that the universe does not achieve consciousness except through us and our language. There is a vague, unexpressed meaning in the world that is never known until we express it. It may be that our singularity (that which we are) is one of becoming, and it seems to yearn to become conscious of its own existence through its creations as in evidenced in the evolution of life on planet Earth. In cosmic process, the power of the universe is ours to use. The universe is a miracle so it may follow that we can work miracles by tapping into that power.

Our personal involvement in the Becoming is sometimes enlightened by the verbal expressions and exemplary lives of persons in similar situations to our own. To a large extent, however, our understanding of what is going on is recorded in our bodily unconscious, where it and similar experiences of Becoming can sometimes be accessed through deeper reflection. So, we experience our share of the Becoming in our personal lives. We also contribute our share into its overall evolution.

Becoming equips all of its energies and entities to freely explore their possibilities. These innumerable experiments, big and little, express the nature of Becoming. Every achievement in the universe, every obstacle faced and overcome is *Becoming being real* in space and time. Every insight we have, every emotion we feel, and our every relationship is Becoming being real in our world.

As we are one with this Becoming, our job in life is to become all that we can be. The power of the universe is ours to use. Most of what we accomplish is in relationships with others. It is likely that at death we will be less individual voices in a chorus of expansion and harmony.

I once expressed our paradoxical relationship with Becoming in the following verse.

Am I God?

I am a body.

I am not two/not one with the universe.

I am a creative, chaotic, metaphysical contradiction as is the universe.

The universe and I and everybody else are the same hologram.

I am the creative force of the universe, especially in my microcosm where my body and environment provide the material limits that creativity requires.

I am free to do and be whatever I will

According to the laws of chaos,

I attract a uniquely beautiful constellations into my microcosm

That fits exquisitely into the overall design.

With attention, imagination, effort, and body wisdom, I co-create myself.

In free association with other bodies, I continue designing and producing the universe.

So I am God – and I'm not.

Scientific Analogies of Creation

The body of the universe has found exotic ways to symbolize for us the way it is put together. It presents the microcosm/macrocosm similarities to us in relation to both the little world/big

world of physics and the personal world/universal worlds of psychology and society. Recently, through the efforts of the scientists of chaos, exquisite artificial universes have been created by indeterministic and decentralized processes.

These chaotic processes are clues to the constituting process of the universe. They indicate how we function in the grand economy. They also sketch a solution to the freedom vs. predestination debate. They show us, as does the theory of the holoverse (described below), a divine economy in which we are both whole, center, and part.

The Holoverse

The high-tech, laser, three-dimensional photographs called holograms give sensual confirmation to our sense of being not two/not one. They demonstrate the relationship of the microcosm and the macrocosm, the age-old theory that the entire universe is reflected in its every part, as in the ancient Buddhist metaphor of Indra's Net (or Indra's Jewels), used to demonstrate how, though everything is Śūnyatā or emptiness, the universe is still dynamic, and each part of the cosmos contains the whole in a holographic manner (cf. Talbot, 1991; Robertson, 2009).

If you take an ordinary photograph of your face and tear off the part containing your chin, you will have two pieces; one will picture your chin; the other will show the rest of your face. Not so with the hologram. If you take a hologram picturing your face and break off the chin part you again have two pieces, but each one is a picture of your whole face. Break both pieces into two and you then have four complete pictures of your face, and so on. The whole is completely present in each of its parts. Regarding any two pieces resulting from breaking the hologram of your face, it is true to say, "These two are not two." In its relevance to the universe, this analogy says that its every part, its every molecule, planet, plant, animal, and human is an image of the whole universe.

The Strange Attraction of Chaos

Chaos theory provides a rationale for the random exquisiteness of the universe and our free participation in its creation. The strange attractors of chaos are both natural processes and equations. They generate harmony by chaotic processes. They exhibit remarkable characteristics. When their equations are graphed, for example, they often generate beauty of infinite depth and variety. They do this in unpredictable ways that do not seem to coerce the freedom of individual atoms or points (see, e.g., Field & Golubitsky, 2009).

A non-mathematical demonstration of a strange attractor at work is provided by the rise of cigarette smoke in a still room. The smoke rises but each individual atom within it is free to go wherever it will as each atom is indeterminate (free). The smoke gracefully rises curling at some point into two beautiful plumes which then separate into four plumes, thence to eight and eventual chaos. No two plumes are ever the same, but they maintain remarkable fractal [see below] similarity (cf. Gleick, 1987; Stewart, 1989).

Thousands of processes in fields as diverse as biology and electronics follow this same process as they progress from regular to periodic to chaotic.

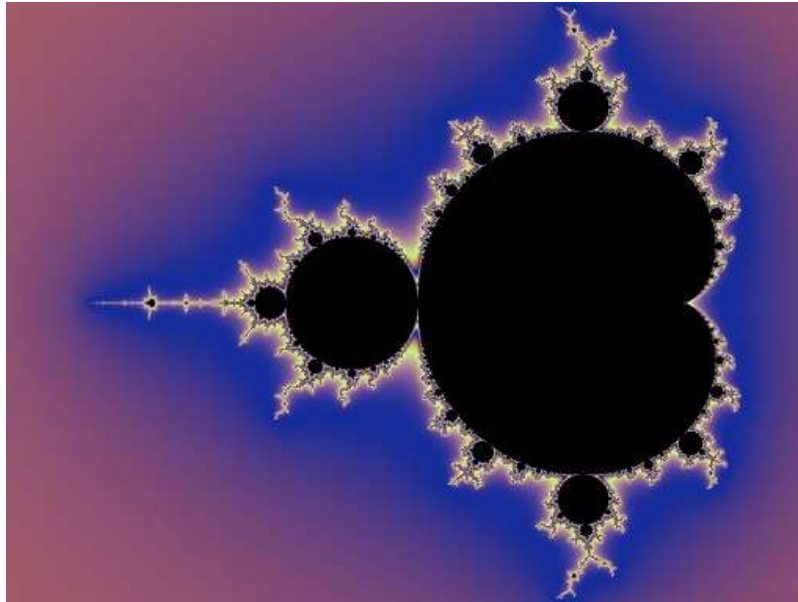
Fractal Grandeur

Fractal Geometry deals with fractional dimensions between our usual one-, two-, and three-dimensional representations of the world. In doing this, it deals directly with jagged lines and crinkled surfaces whereas traditional geometry deals with smooth lines and surfaces. An aerial picture of a rocky coastline, for example, has a fractal dimension of about 1:25, according to Stewart (1989, p. 219), whereas a protein molecule has a dimension about 1:7 (Stewart, p. 223), and a crumpled ball of paper has a dimension of about 2:5 (Stewart, p. 224).

Surfaces in nature are very irregular and have individual qualities. Traditional geometry smooths out the differences and reduces everything to approximations of straight lines and curves in order to compute lengths, areas, volumes, etc.

Fractal geometry, in contrast, tries to come to grips with the uniqueness of observed reality to discover its underlying structure. Using fractal geometry mathematicians can reproduce a fern on their desktop computers by following a few simple rules. Lucas Films generated the geography of the moons of Endor in this way for the film *Return of the Jedi* (Stewart, p. 229).

Visually the most remarkable production of fractal geometry is the Mandelbrot set which is sometimes called the gingerbread man because of its overall shape. It is generated using complex numbers and the simple mapping formula $z_{n+1} = z_n^2 + c$ (Stewart, p. 235):



We are ginger people. We are the Gingerbread Man

Wherever and whenever we awake in this evolving tableau, we disturb or expand the ongoing universal harmony.

Mandelbrot plotted the connectedness of every point c in the plane. There is no foreseeable sequence for plotting the connectedness of those points. They occur randomly all over the computer screen. The order is chaotic. Only after thousands and millions of iterations does the pattern appear. It is the gingerbread man.

Picking any spot on the gingerbread man we can enlarge it 100 times mathematically and find a design of jeweled splendor having elegance surpassing seashells and sea horses. Again enlarging this portion 100 times we find elegant designs by the same jeweler (perhaps it's Indra!). Repeating the process we find equally detailed but unique beauty by the same jeweler, etc. The Mandelbrot set has infinite depth. This progression is indicated in high definition color at "Mandel zoom 00 mandelbrot set.jpg" on Wikipedia: https://en.wikipedia.org/wiki/File:Mandel_zoom_00_mandelbrot_set.jpg

I am reminded of the biblical phrase, "God's only begotten son," but in a depth that says he is begotten again and again infinitely. One is tempted to mimic the style of John Lennon singing about the walrus, so I craft another expressive verse:

God is the Gingerbread Man.

Jesus is the Gingerbread Man.
We are the Gingerbread Man.
Again, the One and the Many.
Again, not two/not one.
Again, infinite freedom and depth
In infinite elegant order
Randomly generated.
God writing straight with crooked lines.

It appears that we can place ourselves anywhere we please in this universe and still fit exquisitely into the grand design.

Chaos theory and fractal geometry deal with random (free) events that create remarkable unpredictable beauty. They situate my experience of being one with the world precisely because I am a free individual: I do what I please, and, whatever that is, it is just exactly right for the universe. I am one with the magnificent unity of the universe because I am a free individual. Paradoxical as that may seem, holographic principles account for this mutual freedom of cosmos and self.

The workings of chaos and fractals expand on the metaphor of the hologram. They show a likely scenario for the formation of the microcosm in the macrocosm. They also surprise us with the revelation that the universe is free.

Putting It All Together

Cosmic Perspective

The Big Bang singularity existed before its eruption – except to say “before” puts it in time, and the singularity is timeless (so it also exists right here, now, forevermore, unless timelessness renders it beyond the qualities of “existence”). After its eruption, the stuff of everything in the universe is the stuff of that singularity. Everything proceeds from this original Being as it chaotically transcends itself. Effusively it projects replicas (total parts) of itself. By thus scattering itself, Being is able to simultaneously *express and know itself*. The physical world is the body, reflection, and language of Being.

The Big Bang unleashed immeasurable free energy into an empty universe and let that energy find its own way. From then on, everything is one with the universe and the Big Bang in the manner of a hologram. As each bit of a hologram contains the whole picture; so each bit of the universe contains the whole universe with the intensity specified by the capability of the bit. Every energy, atom, galaxy, organism, and human from the eruption to the present day is physically the original stuff of the Big Bang. We are “not two” but one with that originary stuff,

known to the ancient Greek philosophers as the *apeiron*. Its freedom, wisdom, and power, resides in our bodies and our unconscious.

Every bit of the universe has a degree of freedom, which it modifies or loses when it couples with other bits, in which case the union of bits becomes free to tackle more complex problems. Evolution provides numerous examples of plants and animals joining in symbiosis to survive in hostile circumstances (e.g., Archibald, 2016). We all have joined other people to get something done, if only to push a car out of a ditch or throw a party for a friend. Evolution and our own experience seem to indicate that there is a natural drift toward cooperation and communication.

Evolution previous to the arrival of language displays the chaotic efforts made by organisms in their pursuit of survival, but even more so the exquisite beauty created by those efforts. Those wildly free efforts and the resulting beauty express the complete openness and effectiveness of the universe's wisdom. Evolution is the process of the Logos becoming Flesh. This material language of Being is alive and chaotically purposeful. Its every indeterminate particle co-creates a universal Mandelbrot set. Its every particle is free, creative, and self-transcending. It is in this context of Being expressing itself that we human beings find our ultimate glory. The world evolves as a straining towards the consciousness that language makes possible.

With the arrival of language, the Logos (soul or self) becomes conscious (self-conscious). Heidegger (1991) does not use the Logos terminology, but he does describe invisible Being behind the process of individual perceiving and knowing as follows:

Through this body flows a stream of life of which we feel but a small and fleeting portion, in accordance with the receptivity of the momentary state of the body. Our body itself is admitted to this stream of life, floating in it, and is carried off, snatched away by this stream or else pushed to the banks. (p. 79)

We locate ourselves in this stream of life by focusing our attention. Focusing in the chaos of the moment (using our "F in O"), we can bring elements of the stream into words, and therefore, into consciousness. In Nietzsche's terminology, we "bring Becoming into Being" with our will to power. In the cosmic picture and in Merleau-Ponty's terminology, we fulfill Being's yearning for conscious expression.

Merleau-Ponty's (1998) large vision is that we are the world's project. The world thinks through us. We do not initiate either life or thought. The world does. At the same time, the world does not achieve consciousness except through us and our language. The world and ourselves as subjects are mutually related. There is a vague, unexpressed meaning in the world that is never known until we express it. For Merleau-Ponty, Being needs us in order to truly be. If Being is below us and only expresses itself in us, human history is then "the history of the becoming of Being itself", according to Madison (1981, p. 235). In other words, Being becomes its conscious self through the expression of free human beings. The movement of human history is the cultural history of Being.

Psychological Perspective

In its prepersonal state, the infant knows its world through a kind of collective erotic sensing that is similar to that of other highly developed animals. We were “not two” with the universe. There was no distance between us and the flesh of the universe. In particular, we shared a boundless oneness with our mothers or primary caregiver who stood in for her (cf. Rochat, 2009).

After a year or so but notably by three, we developed language, and that changed everything. According to Freud (1920/2009), in the Fort/Da experience, Freud’s grandson learned to possess his mother symbolically with language. He also became a separate entity (an ego). Emotionally, this separation sets up two drives and a complex relationship between them. Ego yearns for its lost mother-me closeness; it also has an intense desire to be an individual. Life is the working out of these two conflicting drives, which Freud called Eros and Thanatos.

The development of ego splits our pre-language unconscious unity (schematized as Subject0) into a conscious ego (Subject1) and its environment, or *the Other* (schematized as Subject2). The transaction is schematized as;

Original Subject → Ego + Other
or
Subject0 → Subject1 + Subject2.

In the grand scheme of things, we are now “not two/not one” with the universe. The contradiction this seems to involve would rend this status invalid only in a world of essences that obeyed the dualism of language. As Merleau-Ponty (1964) has argued, “[T]his acknowledged contradiction appears as the very condition of consciousness,” and there are other “philosophies which show contradictions present at the very heart of time and of all relationships” (p. 19).

The Other, the partner to Ego, is that part of our life that we have not yet expressed in words. It includes physical relationships, interpersonal relationships, and relationships with our anonymous and generalized corporeal existence. We are tasked with bringing those relationships into consciousness by using language. In other words, our job in life is to use our intuition, imagination, and ingenuity to make explicit and orderly the influences in our lives (just as I have done here). In doing that, we resolve our personal conflicts between Eros and Thanatos, and simultaneously advance Becoming’s progress into conscious Being. This process can be schematized as:

Ego + Other → Communion
or
Subject1 + Subject2 → Subject3

We are at our optimum when we are acting as Subject3, when we are combining our rationality with our intuition, imagination, and feelings. In this state, we are using our abductive [or

retroductive] logic as named by C. S. Peirce (2013). In physics, this logic was expressed by Albert Einstein when he said, according to Wertheimer (1959), “I very rarely think in words at all. A thought comes and I may try to express it in words afterwards” (p. 213). In everyday discourse, I am working in Subject3 consciousness when I struggle to find the words to tell someone that I love her in the midst of an emotional scrap. Subject3 consciousness finds win-win solutions to conflicts.

As Subject 3, we seize our destiny to create a human world. Nietzsche expresses this sentiment in the strongest way. His phrase for Subject3 is “the will to power.” He says, “This world is will to power—and nothing besides! And you yourselves are this will to power—and nothing besides!” (cited in Heidegger, 1991, p. 18). The context of our lives is exuberant and self-transcending. Joy and the memorable things in life occur when my Subject3 communes with your Subject3. This is true from the intercourse that gives birth to new human life and also to the dialogue that leads to new intellectual breakthroughs.

After Physical Death

Will I survive physical death? Given the ambiguity of the word “I”, the answer depends upon the whether I am talking as Subject0, Subject1, Subject2, or Subject4.

- Subject0, the reality of the Universe available to our untapped unconscious wisdom continues to grow through physical, social and psychological evolution.
- Subject 3, communion of ego and other, is embodied in the progress of universal evolution.
- Subject2, Other, would remain as part of Subject0.
- Subject1 Ego, might pass away as an active subject.
- Alternatively, Ego and Other might continue to exist as foils for each other in ever expanding exploration and satisfaction.

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Explorations

Death, Consciousness and the Quantum Paradigm

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“For in that sleep of death, what dreams may come...?”

Shakespeare, *Hamlet* (III.1.66)

“Life, what is it but a dream?”

Lewis Carroll, *Through The Looking Glass* (1871/2016)

1. Introduction

The question of death as either the extinction or continuation of consciousness is intimately connected with the question of the nature of consciousness, which is itself connected to the question of how consciousness is connected to the material world as understood by physics in general and quantum theory in particular. To the extent that the prevailing paradigm of contemporary culture appears to be resolutely reductionist, it is generally assumed that consciousness is but a way of discussing phenomena pertaining to the experience of human awareness – phenomena that will cease to exist when the body-brain complex ceases to function in the context of death (Carroll, 2016). In other words, consciousness or mind simply blinks out in a manner that at least mimics the experience of having a general anaesthetic.

During my own experience of being anaesthetized, I was shocked at how the interval of the medical procedure had been reduced to absolutely nothing. A moment of drowsiness and a yawn were immediately followed by a sudden awakening and the sense of utter amazement that several hours had passed. What if I had died during that procedure? Of course, I did wake up, but I was left wondering if my timeless *non-experience* was a vindication of the reductionist paradigm with respect to the nature of consciousness and ultimately of death itself.

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The purpose of the present study – my anaesthetic experience notwithstanding – is to challenge the prevailing paradigm with respect to consciousness and death by way of a three-pronged approach. (1) Since the reductionist paradigm is based on the materialist foundation of quantum theory, I propose to look at that dimension of being, not as an occasion for explaining consciousness by way of something that is inherently non-conscious, but as a set of phenomena that provocatively parallels a corresponding set in that dimension of being called consciousness. (2) Demonstrating how that pregnant parallel can give birth to a new theory of consciousness, I will put forward three postulates that follow from my exposition of certain quantum principles. (3) On the basis of these postulates I will then return to the death question, not with a view to reviewing what appears to me the ample evidence for post-mortem survival of consciousness (see, e.g., Kelly, Crabtree, & Marshall, 2015; Carter, 2012), but to put that evidence into a framework that connects it to or makes it consistent with the quantum behavior I outline in the first part of this essay.

While I am challenging a reductionist outlook, the reader should be aware that I am not denying that physical processes can explain consciousness. However, because these physical processes at the quantum level appear *weird*, I am also exploring the possibility of *de-weirding* the physical dimension by making reference to the functioning of consciousness as introspectively understood, albeit in a somewhat novel way. Does that mean I am suggesting that the external or non-conscious realm can be reduced to the internal or conscious realm? I believe the relationship between these two spheres is subtler than that of mutual reduction. It might better be thought of as a kind of reflective symmetry where the internal is the way it is because the external is the way it is and *vice versa*. Symmetry is, of course, a principle of physics, but it clearly plays a role in other areas of knowing (e.g., art, which might be thought of as a form of knowing the world through acts of aesthetic creativity). With respect to the survival of consciousness after death, there is certainly an implied reference to symmetry, which, according to Lederman and Hill (2007) may be understood as a tendency for something to remain invariant under transformation

or change. Thus, if death is a transformation from a physical state to a non-physical state, the survival of consciousness in the form of an individual personality would be an impressive manifestation of the principle of symmetry.

My way of proceeding then is to have the three following sections explore each of the foregoing prongs of my position: (1) the nature of the quantum world; (2) outlining a theory of consciousness that reduces the weirdness factor of that world; and (3) utilizing the insights of the first two sections to place life after death in a more constructive context – one that opens us to the evidence by placing it in a framework that is connected to both quantum principles and those of consciousness understood in a manner that demystifies some of those principles.

2. *Hiatus*: From h to H – The Quantum Paradigm

The core of the quantum paradigm is connected to the idea of rupture, fissure, break, discontinuity or, the term I will be using most, hiatus. This is with reference to letter h , called Planck's constant, an irreducible chunk of energy that figures so prominently in a multitude of quantum phenomena (e.g., quantum *leaping* in electron orbits and Heisenberg's uncertainty principle with respect to simultaneous measurement of position and momentum of sub-atomic particles). I will be discussing how this physical constant emerged and how it functions before considering, in the subsequent section, how quantum behavior parallels that of consciousness. The symbol H will be used with respect to shedding light on analogous phenomena that seem to exhibit a comparably 'hiatic' quality in the sphere of human consciousness.

What then are some examples of H ? One does not have far to look: mind-body, dreaming-waking, and, of course, life and after-life. What the foregoing have in common is the idea of a problematic disconnect between each these pairs. For example, while mind and body appear to be linked, the nature of that link is anything but clear to the extent that mind and body seem to be radically different substances – the former being non-spatial while the latter is spatial (cf. Cottingham, 1992). Likewise, when we awaken from a dream state, the waking world seems to

exist at a different level of consciousness from the dream world. In a similar vein, the post-life world of the dead (if it exists at all) seems so disconnected from the world of the living that only a few gifted psychics can connect the two realms, and even then their efforts are often met with skeptical derision.

The original hiatus of quantum theory introduces discontinuity into the wave-like world of frequency, where instead of a continuous range of frequencies existing they are quantized by a small and irreducible chunk of energy called h . This physical constant came out of the late 19th-century struggle to understand the black-body radiation curve. What I propose calling the consciousness constant (i.e., an embodiment of ' H '), which will be shown to play a role in understanding the hiatus of mind-body as well that of life-death, may also be understood as a response to a different issue: namely the issue of integrating paranormal and spiritual phenomena into the usually hostile world of mainstream academic discourse. To avoid turning this essay into a long-winded discussion of thermodynamics, I will keep to a very basic level with respect to the black-body radiation problem that beset physics toward the end of the 19th Century and how that problem gave birth to h as a universal hiatus phenomenon at the physical level.

The term *black body* refers to an ideal absorber and emitter of thermal radiation. When heated in the form of an enclosed space or cavity, the range of radiated frequencies emitted by a black body can be carefully measured by way of an opening in the cavity. Within the framework of pre-quantum theory what should have been observed was a preponderance of high frequency or short wave-length radiation for certain high temperatures. This is because more high frequency (short wave-length) waves would fit into the cavity space than low frequency (longer wave-length) ones. In other words, when more heat energy is pumped into the cavity, high frequency radiation should increase to the point where an *ultra-violet catastrophe* ensues. That somewhat dramatic term is a poetic way of describing a physical as well as a theoretical crisis in the prevailing theory of thermodynamics – namely, that, according to an obviously incorrect theory, an infinite amount of energy should be generated by heating a black body because ever higher

frequencies (with ever shorter and more energetic wave-lengths) should predominate over the lower frequency emitters. Ultra-violet refers to those highly energetic frequencies beyond the visible frequency of the color violet.

To remedy this theoretical impasse, Planck introduced the constant h in the formula $E = hf$, where E is energy, h is a very small unit of energy (i.e., small in comparison with our macro-world experience), and f stands for frequency. Because a high frequency is now *quantized* by h and the heat energy pumped into the cavity has to be equally distributed among all of the differing frequency generating *oscillators* in the wall of the cavity, the result is that the high frequency contribution to the overall shape of the radiation curve is suppressed (rather than enhanced) because of its shorter wave-length. As Manjit Kumar (2008) puts it: “It is not possible for oscillators to absorb or emit energy continuously like water from a tap. Instead they can only gain and lose energy discontinuously in small, indivisible units” (p. 26).

In short, energy seemed to have a *hiatic* nature associated with h that affected every frequency emitter in a way that kept them differentiated or separate from each other. Thus, when energy is introduced into a system of vibrating oscillators, it can only be distributed in such a way that there is little left over to activate quantized high-frequency oscillators, and their minimal presence in a black-body radiation distribution is accordingly explained. The hiatus aspect may also be understood as an absence of fractional units of energy. As Fred Alan Wolf (1989) points out, “Since the quantity, hf , of energy was a certain *whole* amount of energy – not $\frac{1}{2} hf$ nor $\frac{1}{4} hf$ nor any other fraction – the energy in any given light wave could only be a multiple of the basic “chunk” of energy” (pp. 65-66). It is because energy has this granular quality that I associate h with a physical hiatus. Grains, after all, have spaces between them and are not continuous or they would not be grains. More importantly this granular quality is not something that can or should be explained away – Planck’s own reluctance with respect to his innovative idea notwithstanding. It actually allows for energy to be controlled rather than *running away* with itself in some kind of catastrophic activation of ever increasing frequencies that would make any kind of order

physically impossible and intellectually unthinkable.

3. Implications of the Quantum Paradigm: Three Postulates on Consciousness

With this *black-body* background in mind, we can now shift our focus to the functioning of consciousness. However, before undertaking that description, I need to clarify what I mean by that notoriously elusive term. In this regard I would like to put forward three heuristic postulates – ‘heuristic’ in the sense that their value will be revealed by noting how well certain phenomena can be explained by them; ‘postulates’ in the sense that they are meant to operate as underlying principles for a wide range of phenomena. The key difference characterizing these postulates with respect to other views of consciousness is their *activist* nature, that is, they are to be understood as a power to make things rather than being a passive reflector of them. Moreover, this activist quality allows for the association of consciousness with energy, that is, the capacity to do work in the physical sense:

- Postulate #1: Consciousness is a *world-creative* force.
- Postulate #2: World-creation takes place via communicative interchange.
- Postulate #3: Consciousness is *quantized* via self-identity (one of the primary manifestations of *H*).

As might be noted by the attentive reader, the three postulates (to be clarified in due course) parallel the three elements of Planck’s equation ($E = hf$), and this in itself suggests that physical reality as described in the equation might be a kind of shadow of a non-physical foundation.

The first postulate (i.e., consciousness being a world-creative force) connects consciousness to the physical reality of energy, which, by the power of various forces, makes the physical world – i.e., the world that seems external to the internal realm of consciousness. The world-creative power of consciousness can be seen in dreams, which are not just things of which we are passively aware but real events that are personal (i.e., not shared as in *joint dreams*)

creations of the unconscious as we sleep. The *world* quality may be associated with the sense that the creation is so all encompassing and complete that, until we awaken, we do not normally know that we have been dreaming. Kahn (2002) notes that Freud, along with other dream interpreters, takes no notice of this all-encompassing quality and focuses instead on the mechanisms and motives of the creations known as dreams. In any case, how far this world-creative energy is operative in the inter-personal waking world is yet to be seen.

The second postulate (pertaining to communicative interchange as a means of creation) seems odd, but may be seen in the *Genesis* creation myth when God (the creator) speaks the world into existence with the words, “Let there be light, and there was light” (1:3). To whom is God speaking, i.e., communicating? Is not God speaking to the readers (or hearers) of the text who are themselves created in God’s image? If God is a creator, the ‘image’ might be that aspect of the divine that is *world-creative*, and in that sense the readers-hearers, the descendants of the original pair of humans, are also divinely creative although not to the same degree as the God who created them. The myth then touches on a basic principle of world-creating, which is that of conversation, communication, dialectic, or discourse, where one position is put forward and considered by another party to the conversation. The latter may put forward a response, which is then considered by the original speaker. In short, a back-and-forth movement or communicative chain is generated and a kind of co-created world or joint creation ensues. Moreover, just as physical energy may be seen as a kind of parallel to the world-creative power of consciousness, physical frequency, with its back-and-forth peak-trough structure, may be seen as a kind of parallel to the back-and-forth agreement-disagreement quality of inter-communication.

The third postulate touches on consciousness being not just world-creative, but creative in the context of individualized or granular units called selves. They are (in this plane at least) the loci of consciousness, through which humans approach the world and make their respective contributions via communicative interchange. In dreams, where the world created by the dreamer is personalized (sometimes with respect to his/her repressed wishes), the *integer* of creative action

is one particular self. But in the waking world, the integer functions in the context of *multiples* depending on the number of individuals (selves) communicating and thereby co-creating a common world – a world that (like the dream) appears to be all-encompassing as well as expressing the perspectives of all who have participated and are currently participating in the conversation.

To sum up, while the physical world connects energy to a quantized frequency as in Planck's equation $E = hf$, the world of consciousness seems to display an interesting parallel where world creation is linked to individualized inter-communication. If one were to express this in the form of an equation, one could write $WCP = sd$, where WCP stands for 'world creative power' while s represents the self as a kind of quantized unit of consciousness and d represents discourse or communicative interchange between selves. At this point I do not wish to jump to some kind of premature and reductive identification of the first equation with the second. What is of interest in the parallelism or isomorphic analogy is the possibility that a deeper level of reality might underlie both spheres.

4. The After-Life In The Context Of Quantum Paradigm and The Three Postulates

If death is not to be taken as a termination, but as a hiatic breakpoint between consciousness with a body and consciousness without a body and if consciousness is a world-creative force, how might the quantum paradigm bring these two ideas together in a theoretical framework for an after-life? Several points can be made, but the most crucial one centers on an implicit sense of purpose that seems to be inherent in the quantum paradigm in the context of world-creation – that purpose being the disciplining of the creative impulse.

First, just as the physical quantum suppresses the ultra-violent catastrophe in a way that appears to facilitate the possibility of some kind of order in the natural world, the third postulate (i.e., the self as a granular or singular locus of consciousness) can be said to function in an analogous manner. How so? To answer this one must consider how a world-creative

consciousness could get out of hand. Creation in the vein of consciousness has its explosive side in the sphere of unbridled imagination. We can see this in the often fantastical nature of dreams, but also in the delusions of those we deem mad. The practical results of this may not be so dangerous in dreams, but Don Quixote's famous delusion that windmills were giants led to him enduring painful injuries.

If world-creative energy is quantized over a wide range of discourse participants, the vast majority or middle range will inadvertently suppress the imaginative tendencies that remain relatively untamed in dream states. Also and more importantly suppressed would be the power of those discourse participants who, by virtue of their intellects and/or rhetorical skills, could seriously de-stabilize the field of cultural discourse if all world-creative energies were concentrated within their purview. But that does not happen. Thus, while *discursive frequency* in those individuals (like mystics) who appear able to communicate with deeper and wider aspects of reality is high, the vast majority, who communicate at lower frequency levels (i.e., where interchange with the world is more circumscribed), absorb in a stabilizing and quantized fashion the energy of world-creative consciousness. In this context one might venture to speculate that major world religions start out with mystics, who seem to be able to channel forms of consciousness that are highly integrative in nature (i.e., compelling world visions that entail a sense of human destiny). This is followed by disciples, acolytes, interpreters, etc. who mediate and water-down the message even further so that it can spread itself among the vast majority of discourse participants constituting, if not helping to create and/or transform, a significant cultural unit. For example, if Jesus is taken as mystical mediator of a higher consciousness (i.e., the Father in heaven), then a set of disciples and later the seminal figure of Paul are required to keep the message from causing the culture to be non-viable for this plane of existence. The principle that a greater intimacy with the Father is possible only after death (if the self has lived a certain way) indicates that this higher consciousness is *hiatically* separate from life on the earthly plane.

As a subsidiary addendum to this first point of comparison between quantization at the

material and conscious levels, I would suggest that the energy of world-creative consciousness is engendered by the challenges of life that must of necessity inspire discourse. In other words, individuals are set to talking when they confront obstacles of different kinds and these have to be dealt with in a context of communicative interchange.

My second point is but a theoretical extrapolation of the first with respect to the situation of a post-physical existence, that is, an after-life. Here, on the one hand, the creative imagination might be more fluid, as in dreams, because the restraints of having a physical body are absent. (see Williams & Williams, 2006) On the other hand, consciousness is disciplined in its creative aspect by the experience of reflecting on and discussing the experience of the life just ended or of those lives that the self may have gone through in other incarnations (Carter, 2012). What that suggests, with respect to the self as a quantizing constant, is that is that this locus of consciousness would have a different value than was the case during life on the physical plane. To be specific, the value of H in the after-life plane would be smaller than it was on the physical plane because the boundaries of the self are more fluid and porous. Communication takes place, but it is more telepathic in nature given the absence of a physical or material environment as understood from the pre-death plane. Moreover, as might be expected in a situation of porous boundaries, the possibilities of communicative interchange would be enhanced and the back-and-forth rhythm of discourse would be more intense and thus at a higher frequency than appears to be the case at a physical level.

The third point combines the notion of a *constant* (physical or *metaphysical*) with the ideas of planes of existence and the ultimate trajectory of world creative consciousness. In this regard one of the *weird* qualities of the quantum paradigm is the very ideas that something as flow-like as energy should be quantized. What is not usually considered in this context is that h has a specific or constant value that is omnipresent and unchanging in the plane of existence we call physical reality – the very thing studied by physicists. That constancy quality seems to suggest that if h were to somehow change its value, the phenomena associated with that shift

would occupy another plane of existence. Obviously we as living humans, who exist on the physical plane and are to some extent an expression of it, cannot change that value. But, if we could, might we not alter the fabric of our existence or perhaps have access to another plane where that value would be different?

The reason for this *thought experiment* is a quality that seems to pertain to the after-life – that is, the existence of planes of consciousness, according to Deepak Chopra (2006). Higher planes seem to be characterized by higher frequencies or levels of discursive interchange and those on lower levels cannot normally engage in communicative inter-change with beings whose level of consciousness would be characterized by a different *H* value. While the physical plane would be different in character depending on the numerical value of Planck's constant, the after-life plane would also be different as the locus of consciousness shifted in value; but the shift here would not be quantitative so much as it would be qualitative, where the main quality would, for want of a better word, be porousness. Thus, a more porous or open locus of consciousness would be capable of more communicative interchange because its *defenses* against its environment (mainly the existence of comparable loci of consciousness) would be significantly attenuated. Would not a higher consciousness be a more open one – open to discourse to which a more defensive consciousness would be closed? The higher ones could, of course, attempt to communicate with lower ones and sometimes even get through via those who purport to channel or mediate this higher frequency locus of consciousness; but given that the message must successfully distribute its world-creative energy among those who must quantize such energy at a lower (less porous) level of consciousness, that level will maintain its integrity and an ultra-volatile creativity will be avoided.

To normalize this process (of limited communicative interchange between planes) even more, consider how animals are not open to understanding the plane of communicative interchange occupied by humans (e.g., Strieber & Kripal, 2016). Could there be mediators among the animals? Some dogs do seem to mediate human messages and function as our assistants when it

comes to herding other animals or helping the handicapped (e.g., seeing-eye dogs). The point is the hiatic phenomena are more common than one might think and deserve more study in a comparative context.

If planes are characterized by ever increasing porosity in terms of communicative interchange, we can engage in a final extrapolation with respect to the ultimate trajectory of consciousness, which in an after-life context is sometimes described as movement toward self-perfection (Williams & Williams, 2006). But what could that mean? A tentative answer might come from considering what a final plane might be like – a plane where consciousness would have no boundary or locus. By analogy with the Planck equation ($E = hf$), as H tends to zero, frequency would become infinite (at least if world-creative consciousness is somehow conserved in a manner analogous to energy conservation on the physical plane). However, instead of an ultra-volatile creativity, the ongoing disciplinary process that seems to characterize the after-life planes would have reached a level of extreme concentration or convergence as is characterized by mathematics and myth where complex meanings are tightly integrated. What might emerge is an *ultra-visionary creation* — that is, a creation that goes beyond the mathematical and mythic vision of consciousness and brings forth a complete and all-encompassing universe. Perhaps it is a kind of dream, but it is *a big dream*. Perhaps the big dream began as the Big Bang. Perhaps it is both at the same time and the Big Bang is still occurring.

5. Conclusion

I have in this discussion tried to normalize the idea of an after-life (with its apparently quantized planes of consciousness) by placing it in a theoretical framework informed by the hiatic behavior of the quantum paradigm. I have also tried to *de-weird* the paradigm by placing it in the somewhat more accessible framework of world-creative consciousness, a common example of which is the phenomenon of *dreaming up* a complete and all-encompassing world. To put it another way, the external world behaves the way it does because it appears to be infused with an

internal or consciousness-like aspect, which behaves as it does because it is composed of a hierarchy of levels or planes. One of these levels is the physical plane, wherein the quantum foundations of reality were discovered. Moreover, the hostility of physicists to the idea of a non-physical plane associated with an after-life or mind somehow independent of matter makes sense in the theoretical framework I am attempting to put forward.

How so? The core of my position is the idea that world-creative consciousness is engaged in a process of self-disciplining, of taming its effusive imaginative potentials, which are also the source of its power. If physicists had not banished the wild card of an underlying world-creative consciousness from their deck of assumptions, they might never have discovered the highly disciplined mathematical foundations of *material* or non-conscious reality.

By the same token, if that underlying world-creative consciousness were channeled by inspired mystics and ultimately manifested itself in the form of major world religions, there would also be the need to *translate* the messages in a manner that allowed the integrity of the culture receiving the messages to be maintained – that is, avoid the possibility of some analogue to the ultra-violet catastrophe. The result of this translation process would be a separation of the new religion from those higher planes of consciousness where a process of mathematical and mythic integration might be taking place with a view to some future generation of a new universe.

Separation? Perhaps that is too strong a term for what might be taken as a unified holographic process – one where each religion, like each Jewel in Indra's Crown, is a fragmentary reflection of an indescribable whole that is nonetheless open to human experience. It may be described as a place where the whole and the holy commune.

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Explorations

Living With Limits: The Continuum of Consciousness

Donald Brackett*

Abstract

This paper is an attempt to explore the possibility of unifying principles between certain eastern philosophies on the nature of consciousness at death (which could be considered mysticism) with certain Western quantum concepts of cognitive patterns (which are customarily considered neuroscience). The intention is to outline the startling similarities and compatibilities between these two modes of thought by examining the proposed idea of *embodied meaning*, the concept that our use of symbolic forms encodes cultural artifacts with common patterns that convey something of the continuity of consciousness beyond arbitrary borders. Indeed, our physical entities themselves might also be considered material artifacts (embodied meanings), which reflect obvious energy patterns based on codes common to objects, thoughts, memories, dreams and to all philosophical concepts. I further approach the potential for certain Tibetan Buddhist principles, such as the *Bardo Thodol* teachings, to be practical examples of an early non-scientific (but not non-empirical) precursor to contemporary neuroscience, especially to current notions of neuroplasticity. The salient idea conveyed in the paper is that a unifying pattern exists that suggests a proportional harmony between physical matter and psychic matter, and that the identical ratio can be used to try to come to terms with the end of life experience as both a departure and a return. (See Figure 1 at the end.)

I

“Just as psychoanalysis reconstructs the original traumatic situation in order to release the repressed material, so we are now being plunged back into the archaeopsychic past, uncovering the ancient taboos and drives that have been dormant for epochs... Each one of us is as old as the entire biological kingdom, and our bloodstreams are tributaries of the great sea of its total memory.”

(J. G. Ballard, *The Drowned World*, 1962, p. 41)

As a writer and culture critic my role is to explicate both works of art and the cultures which create them, not from the usual judgmental point of view that assesses success or failure from the relative angle of aesthetics but from the phenomenological vantage point of encountering those works of art as

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what they actually are: *embodied meanings*. I often interpret whole cultures, and even whole civilizations, as if they were individual works of art, because that is precisely what they are. Such a comparative approach allows us to utterly preclude issues such as liking or disliking the relative features of works in any medium, or using our limited time and energy to declare the success or failure of their maker's intentions. Works of art, whether they are visual, architectural, literary, musical, or durational, are all dark mirrors of the *consciousness* that created them. Like us, they succeed because they exist. Also, as per the work of Ernst Cassirer, all symbolic forms, including our own, are a reflection of limits and patterns.

We are therefore free to more fully experience the degree to which drastically different kinds of art objects, of embodied meanings, are really the immediate sense data reflections of the consciousness of the particular cultural context within which they were created. As such, none are superior or inferior in kind, apart from the accumulated aesthetic, psychic and spiritual assumptions of their culture. It suddenly becomes possible to understand the deeper strata levels at which a classically representational Vermeer painting is totally equivalent to an apparently randomly abstract Pollock painting, as well as the degree to which both utterly succeed in conveying the key elements of the space (and the time) in which they were produced. They are emblems of an enigma: their maker's consciousness.

As Cassirer's exemplary research indicated, the symbolic forms we utilize are multiple: that of language, which both the writer and reader are using now in a quantum-like manner of transmission and reception which utterly eliminates our separate locations; as well as of mathematics, the principal language with which the universe makes itself accessible to and discernible by us. One reciprocal and reconciling pattern ratio also governs everything in existence, both physical and immaterial.

This is accomplished via a bio-mimicry motif that perpetually echoes the proportional harmonies in nature *and* culture that replicate the spiral growth pattern of the Fibonacci sequence and its ratio. In addition, we have at our disposal the symbolic forms of music, design, mythology, religion, philosophy and psychology, each of which is a distinct form-language with specific aims and accomplishments, i.e., Chartres Cathedral, Einstein's relativity equation, Mozart's concertos, Shakespeare, or the archetypal depth principles found in both Carl Jung, Mircea Eliade, and Tibetan Buddhism.

As we will see, and as readers looking for more detail than can be offered in this short paper can easily find with available research, the last example in particular is one which, apart from merely entertaining us on the path

great works of art, at the embodied meaning level, are also philosophical propositions or even spiritual statements on par with the Pre-Socratics.

I am not by profession an academic, and as a cultural journalist I am if anything more of a professional voyeur, but since I take a scholarly approach to all art objects, whether they are prehistoric stone carvings or Andy Warhol silkscreens, I am perhaps advantageously positioned to speculate on some of the questions posed by this thematic journal issue from a somewhat unique perspective. As an art critic, and one who also writes about photography and especially films as an integral part (maybe even the culmination) of the history of art and visual culture, I have observed a couple of key distinctions between the supposedly nebulous realm of aesthetics and the supposedly concrete realm of science. Science, and especially the zones devoted to neurological speculations, appears to be devoted to reducing and eventually eliminating the unknown, to replacing the unknown with the known. Fair enough, up to a point.

Art on the other hand, appears to be devoted to increasing the amount of unknown in our world, expanding the unknown until there is perhaps nothing *but* the unknown, which would of course be synonymous with a state akin to perpetual wonderment, rapture, bliss or otherwise magical states of contentment and awe. It stands to reason (no pun intended) that all the ideas we might exchange in the service of the questions asked by this journal in general and this issue in particular are speculative in nature. As far as I know, no dead people are submitting papers reporting on their experiences of the transitional state between the embodied existential condition and the disembodied post-conscious state. If they have, I for one look forward to reading their deceased accounts, and as far as I know Houdini has yet to make good on his dying promise to communicate with us from the other side, if he found it possible to do so.

Of course he may also be communicating with us daily but we are unable to translate his transmissions. This observation is only partly tongue in cheek, since clearly there will be no right or wrong avenues of speculation when it comes to the ultimate fate of consciousness. Just as clearly, all fervent disputes or aggressively constructed arguments on the subject, no matter how cogently or rationally arrayed, will be utterly fruitless in the end, since we will all only personally experience this transition once (though Ludwig Wittgenstein once observed that we can never experience our own

death). So did Maurice Blanchot: “Death is the absolute future in which the absolute past approaches, but only approaches, for death is never present.”²

Therefore, it also stands to reason, by a logic perhaps even more powerful than reason itself, that the sooner we contemplate the cessation of our own consciousness, by whatever means seems most efficient and effective, the better prepared we will be to meet this abrupt mortal departure (which, we should remember, can occur anytime at all, even before the end of this very sentence) with something resembling equanimity, elegance, poise and the absence of fear. I don’t know about you, but from my perspective those four descriptors are the key elements I would want to possess when I begin to experience the dissolution of all other ingredients making up the embodied realm around me. In other words, when “I” attempt to experience the impossible absence of “me.”

Surely thinking about these two ingredients in advance via some kind of contemplation would be useful, by whatever means necessary, and in my particular case that includes some degree of Buddhist hermeneutics. Perhaps this is because such speculation is the primary and principal impetus of the Buddhist psychology examining the nature of consciousness, its potential meanings, implications and consequences. In other words, the most important factor in approaching questions about the nature of consciousness must also include outcomes that influence our behaviours and interactions with the other sentient beings around us, or else what is the point of such speculation in the first place?

For example, if we were able to accomplish a phenomenal feat of elegant and exhaustive deductive reasoning expressed in beautiful abstract terms such as Heidegger’s, and yet we remained capable of such dense feats of denial and delusion as expressed in his *Black Book* entries, what had really been accomplished in the end (literally)? I mean, really, was his potentially final thought as a human being on the planet earth, *oh what a clever boy am I?* If so, what did he actually accomplish, apart from existential entertainment of a vaudevillian sort? Was the gorgeous trajectory of his thinking about thinking really just greasepaint, makeup on the human mask?

So, obviously the question we’re all considering here is what happens when the human mask is removed? What if anything is underneath? And perhaps even more importantly, what difference does it make, apart from occupying our preciously short time on earth to the fullest extent? Therefore my first speculative answer, as an agent of affect who accepts and even

² Maurice Blanchot, *The Space of Literature*, A. Smock, trans. University of Nebraska Press, 1982, p. 117. Original in French, 1955.

embraces the unknown, uncertainty, obscurity and ambiguity, without feeling the need to replace them with their binary opposites, is *Yes*. Does consciousness end, yes. Does consciousness continue, yes. Does consciousness awaken, yes. Does consciousness transform, yes. How could it be otherwise?

It, consciousness, does all these things – and who can say otherwise, apart from poor Houdini, whose messages remain as mute as the ending of a Beckett play (another embodied meaning by the way, and one which might address the nature of self-consciousness at least as adequately as Kant did). When the brain and the body die, not being separate entities, the entire world dies, not in the manner that solipsists might entertain (as delightful and unassailable as their position is) but to the degree that our largely illusory experience of having an inherent, separate and independent *self* or *soul* is really what dies.

This is where the Buddhist psychology (preferable to the identifier “religion” since there is no deity to speak of in its tenets) comes into play for us. This is where the potential for a concept of consciousness being a continuum that has always been here, a consciousness platform which in fact manufactures the apparently solid world around us as a stage for our performance, enters the picture. What if the entity we identify as a *self* never existed in the first place but was merely a projection on our experience of the sensory world as a collection of disconnected and disparate elements within which we are trapped and isolated? What if “it” doesn’t die so much as cease to have a format for application?

What if its existential job description is redundant? It drops away and reveals to us what we were too disconnected to see before, a sudden expanse in every direction of the luminosity of mind, not *our* mind per se, but the theatrical playground of the senses within which our mask was being worn? What if this sudden unmasking reveals us to be a succession of life forms parading across a stage, each one wearing a different mask (table, robin, shark, cloud, stone, water, cat, etc.) but each one being identically the same thing?

One of the greatest psychologists and philosophers who asked pertinent questions about the nature of our consciousness, and especially of our identity, was the author Franz Kafka, who disguised his interrogative insights in the form of his fiction and even more powerfully in his personal diaries. His embodied meanings are riddled with riddles and parables that are easy for the distracted reader to misinterpret as depressing, gloomy, doomed or death-obsessed, but they are actually far from it. One of his finest

observations was hidden like a glistening little gem in the middle of his endless and exhaustive process of journal entry writing. It alone, if interpreted accurately, presents a clear indication of the depth of this man's thought processes regarding the nature of consciousness.

"The meaning of life is that it stops," Kafka remarks.³ But this doesn't mean, as many wrongly supposed, that he felt life was pointless, irrelevant, or fated to conclude with failure (even though often enough elsewhere he was all too consumed with his own perceived personal flaws and failures). If we interpret this entry correctly it simply states something as clearly as Wittgenstein himself may have put it. Life is temporary; its chief and primal characteristic is that of impermanence. How do we intend to spend our limited time? The corollary of such an insight is even more instructive and moves us to the most obvious extension of this basic existential observation: if that is the meaning of life, its temporary condition, then what is the purpose if it?

The purpose of it, Kafka is suggesting by inference, is to make impermanence meaningful, as in existentialism. Precisely how we do that, of course, returns us to the relativity of any truth whatsoever: what is meaningful is defined by the parameters, by the limits, of each individual culture and each individual occupant of that culture. This naturally suggests that all forms of meaning, just as with all forms of the embodiment known as artworks, are equivalent, correct, proper, true, accurate, and deserving of our tolerance. The only thing that prevents us from accepting the sometimes drastically different forms of meaning around us is the myth of otherness, the unceasing devotion to the belief that each of our "selves" is the real world and that our perspective is the right one.

It is clearly the case that, after sufficient examination, it is only our aggressively slavish perspective on this illusory condition of otherness that ever really *dies*. Reports have come down to us over the ages however, not created by psychics, mystics, séances, or believers in the *other side* but rather by practitioners of the science of contemplation who penetrated to what we might as well refer to as the quantum level of consciousness and have garnered a clear picture of its continuum. They have even managed to maintain enough cognizance of their/our condition to suggest an even more spacious continuum, one extending from one life to another in a long sequence of consciousness-events fueled by a consistent source of energy, one which does not differentiate between our being a dolphin, a bee, a cactus or a Billie Holiday.

³ Gustav Janouch (1971). *Conversations with Kafka*. New Directions, p. 120.

II

“The phenomenon to explain is why the brain, as a machine, insists that it has this property that is non-physical.”

(Michael Graziano, Neuroscientist, Princeton University, speaking to a symposium at the New York Academy of Sciences, May, 2016)

Given that all possibilities are equally plausible, even the most outlandish ones, and that all our speculations cannot be proven or disproven, I for one see no particular reason to discount the intriguing line of reasoning developed back in 1976 by Julian Jaynes in his remarkable book *The Origin of Consciousness in the Breakdown of the Bicameral Mind*. This of course involved his supposition that until a relatively recent occurrence some five thousand years ago, the domination of the brain by the right hemisphere rendered us technically unconscious until the unification of those spheres eliminated the apparent existence of voices outside our heads and instead situated the *one voice* in the centre a functioning self-conscious entity.

The only thing he didn't do that he could have done, since he resolved that evolution only goes forward in one direction, was to postulate that upon death the unified spheres forming our current format of consciousness return to a bicameral state, leaving its central command position drifting to the periphery and eventually dissolving altogether. Thus the only remaining speculation, given such a possible scenario, would be to try to quantify or at least interpret the sequence of hallucinatory experiences encountered by the dying individual as he or she traverses this potential reverse evolution and returns first to a bicameral format (exactly duplicating the binary polarities in nature that cause the spiral growth pattern of the golden ratio and Fibonacci sequence in the first place) and finally plunges into a *no-cameral* mind, seemingly no matter what a particular self has experienced.

This would be a mind that is undifferentiated from all the matter and mind surrounding it, existing, even temporarily, in a panpsychic (for lack of a better word) realm. I don't believe we should discount Jaynes's notion just because either it was formulated way back in the late 1970s, or just because it was delivered in a vastly popular mainstream book instead of in an academic journal. Another reason for reconsidering it is the subsequent research on binary design codes conducted by Gyorgy Doczi in another popular non-academic book, *The Power of Limits: Proportional Harmonies*

in *Nature, Art and Architecture*, in which the author explored the dizzying array of ways in which the reciprocal interaction of opposite forces creates recursive patterns from galaxies to seashells, crystals and *DNA* helices.

My point is that the same observation can be made about the dual sphere design of the brain and the cognitive patterns which result from the interaction of these two *sides* to produce a self-reflexive awareness sophisticated enough to paint Sistine Chapels and write Tolstoy novels, as well as being intimate enough to wonder what is happening in the last moments of its own existence.

One saving grace of entertaining this and any other theory is that it also doesn't preclude the possibility for existential amusement while we are doing so, and that even humour or comedy itself (a superb form of cognitive dissonance when practiced at the level of an Aristophanes) can also be a valid form of philosophical enquiry. Thus I found it seriously amusing recently to observe the permutations of an article by the science writer of the *New York Times*, George Johnson, reporting on his attendance at a recent conference in Tucson now called *The Science of Consciousness*.

The May 16th article was called *A Carnival of the Mind*, the July 4th iteration was called *Messing with the Mind*, and the July 5th reprint was titled *The Brain Versus the Mind*, each one titled by a different editor from his or her own vantage point and each one suggesting a slightly different nuance on the same event. This struck me as having some salient similarities to what all of us do, not only when entertaining different theories of the same phenomenon but even on a daily basis when we reiterate our own memories of either our childhood or just the day before this one.

The Tucson conference in question took place in April of this year, and Johnson was reporting on the bewildering array of conflicting or at least competing panels, sessions and papers being delivered simultaneously, more than anyone could hope to attend unless they cloned their brain in order to do so. He referenced one room where scientists and philosophers were discussing the physiology of brain cells and how they might generate the thinking mind; in another the subject was free will, whether such a generated consciousness could actually have it or was just manifesting a delusion; another session was examining panpsychism, the exotic but plausible idea that everything, whether animal, vegetable or mineral is based at the sub-atomic level on mindlike features; and competing with these sessions were others on phenomenal consciousness, the extended mind, and the neural correlates of consciousness.

All were exploring where consciousness came from, few if any were examining where consciousness goes to, if anywhere, or more importantly to me, *anywhen* – the time of consciousness. Johnson pointed out that the human mind has plumbed the universe, determining that it is almost 14 billion years old, and the same mind has discovered, with the aid of super-particle colliders, that invisible dark particles such as the Higgs-Boson are actually gluing all of reality together in a kind of supreme void which is indistinguishable from the so-called solid contents it supports.

But as he observed, there is no scientific explanation for consciousness itself, without which none of these discoveries about consciousness could have been made. Further, what occurs at the moment of its extinction is even more disregarded, perhaps because science has always abandoned such notions as metaphysical and thus more the domain of religion, a strange distinction to someone like me (and also for Werner Heisenberg) for whom science and religion are two sides of the same coin, or should we say sides of the same brain.

Johnson reported that, for one attendee, Michael Graziano, a neuroscientist at Princeton,

Consciousness is a kind of con-game the brain plays with itself. The brain is a computer that evolved to simulate the outside world. Among its internal models is a simulation of itself—a crude approximation of its own neurological processes. The result is an illusion. Instead of neurons and synapses, we sense a ghostly presence—a self inside the head. But it’s all just data processing. The machine mistakenly thinks it has magic inside it, and it calls the magic consciousness. (“The Mind Messing With the Mind”, *New York Times – Science*, July 4, 2016)

Of course, his *processing* can’t quite ever explain how such a machine can produce James Joyce’s novels, Picasso’s paintings, or Duke Ellington’s music.

But this Doczi sensibility of extending the pattern making processes in nature’s matter all the way into the design motifs of human art and culture can actually do so. Equally possible is the way in which the “self that isn’t there” can be explored and explained by certain Tibetan Buddhist yogis who compiled the assembled texts devoted to the experience of death and dying (and for that matter of rebirth) known as *The Book of Liberation Through Understanding in the Between* (i.e., *Bardo Thodol*). This is the book more popular known in the west as the *Tibetan Book of the Dead*, as a result of the

misguided translations commissioned by the well-intentioned European Evans-Wentz.

This remarkable book of contemplation is said to have semi-legendary origins that incorporate multiple mythologies and merge them with actualized practices. Its origins in both legend and mythology in no way devalue its deep input into questions of mortality and the fate of consciousness, since mythology – as Cassirer, Jung, Eliade, and others such as James Hillman, Henri Corbin and the popular Joseph Campbell have indicated – also contains a profound set of shared human projections, the archetypes of the collective unconscious, which recur regularly through every distinctly different culture and somehow unify them at the foundational level of being.

This contemplative book, passages of which are actually read aloud to the dying person, before, during and after the death experience in order to orient them to the astonishing self-generated visions they are thought to be experiencing, some of them terrifying in nature. These visions arise in the mindstream of the dying person as he or she is coming into contact with the so-called clear light nature of mind, or the white light vision reported by so many westerners, a phenomenon which is not actually separate from the mind of the individual dying person and which never was separate from it.

Tradition (which includes both legend and mythology remember) states that this text was composed in about the 8th Century CE by the yogi master Padma Sambhava and hidden by him for a later era to find, when it was “unearthed as terma” by a renowned treasure-finder Karma Lingpa in the 14th century.⁴ Before discounting the supposedly superstitious aspects of these practices, designed to remove fear and liberate the dying, we would do well to remember that during these same historic periods in the West, we were still engaged in barbaric heresy wars, brutal crusades, insanely self-torturing inquisitions and human burnings in an imaginary war against an evil invented by our monotheistic and anthropomorphic deity projections. By comparison to our own pathological history, this particular science of the spiritual passage out of one life and into another is quite gentle, kind, compassionate and visionary.

These meditative practices, which can also be engaged in on a nightly basis by us when we fall asleep, dream and wake up again, are also part of a larger corpus called *The Profound Teaching of the Natural Liberation through Contemplating the Mild and Fierce Deities* (Norbu). Such “deities” by the way are not thought to be real but are more the internal projections of

⁴ Namkhai Norbu, *Self Liberation*. Station Hill Press, 1989, p. xii.

our mind as it comes to terms with the experience of extinction, and also as it reflects the basic binary polarities inherent in the embodied condition. It involves realizing that everything we are experiencing (whether it is meeting the Virgin Mary, talking with Moses, or dancing with Rita Hayworth) is actually happening only in our mind(s).

Removing the fear of hallucinations, which of course we also experience on a daily and nightly basis, is actually the base for liberation from all our sufferings, whether real or imagined. I mention this system of thought also as a means of potentially situating the binary vision of Julian Jaynes in both a transpersonal and a trans-cultural context. This makes sense to me, not least because as we are dying surely we cease to be as distinctly separate as entities as we usually believe we are, and also simply because the existence of a collective unconscious foundation allows us all to perpetually experience the same archetypical human dream images regardless of our culture. It also suggests a valuable outcome to the nightly practice of watching our minds dissolve into dreams before our eyes in the charmingly titled rehearsal practice known as *dream yoga*.

Of course all of this speculative reasoning and contemplative practice only works to our advantage if we are able to be brave enough to accept the fact that life is temporary and existence is impermanent, that we might die at any moment, and that it makes sense to be prepared. This is rather difficult for those of us in the West whose whole daily existence is predicated upon the fear of death, the presence of evil, sin and punishment in an afterlife whose very parameters we never even imagine, apart from believing that we'll be rewarded for being *good* and by following the correct superstitions and instructions.

By the way, I'm in no way denigrating the religions of the West, since I was raised a Catholic before stumbling into Buddhism, only observing that they in no practical way prepare us to actually encounter and experience the death of our consciousness, whatever that might be. Also, I'm pretty secure in my belief that in the transitional stages between the end of one life and the beginning of another, I'll most likely be dancing with Rita Hayworth. Of that much I can be as reasonably certain as it is possible to be of a hologram. One can always dream.

There is of course, no east or west in dreams. That is where we can most readily research, anticipate and prepare for the alarming cessation of consciousness as it occurs right in front of our eyes, and perhaps also to maintain enough stability to establish continuity. The continuum of consciousness is not however the same as some hoped for afterlife for the

soul, since the soul is largely as illusory as the self was by that stage. On the contrary, the continuum might suggest the potential for an awareness of the transition from one to the next, not to the afterlife, but the next life. Or, if the Bardo texts are accurate in some fashion, for the possibility of not having a next life with all its attendant difficulties, unless, it suggests, one is a being such as the Dalai Lama, who, as a bodhisattva or fully enlightened creature, appears to return intentionally in order to lessen the sufferings of other sentient beings. Few of us however are ever vouchsafed that particular privilege, since obviously we are primarily preoccupied with our own lot in this life, or the next one, or the one after that.

One of the best ways to engage with and utilize the energy of the dream state is to become lucid in the midst of a dream and apply the insights practically. This does differ significantly from the western New Age concept of lucid dreaming, however, which usually results only in being able to manufacture an endless series of encounters which don't further the core motivation (i.e., wasting our time with silly notions such as dancing with Rita Hayworth for instance).

The more appropriate approach is to gain a familiarity with the luminous nature of mind during mind-fabricated image scenarios which can then be useful during the death experience, according to these traditions, and enable the *traveller* to realize the ground-nature they always possessed but were too distracted by the ghost-self to notice before. It is naturally therefore most advantageous to apply such insights into the everyday nature of *waking consciousness* in order to vitally witness the truly dreamlike aspects of our daily experiences. In other words, to realize that we are essentially dreaming at all times, constantly, without this exotic fact actually meaning that life is not real. Incredibly, it *is* being dreamed, and yet it *is* definitely real.⁵

Familiarity with this fact of life, it is said, can allow us not only to be comfortable during the dying process, but also benefit us in dealing with other sentient beings we encounter during our lives, especially the ones who may cause us some degree of difficulty. I myself have had some intriguing experiences using dream yoga and bardo contemplation, starting from an early age when it began to manifest itself spontaneously without my intentional seeking, a phenomenon which prompted me to come into contact with a degree of awareness continuity and a continuum of consciousness that enabled me to (somehow) come into direct contact with information, data,

⁵ Waking brain states cannot be distinguished from dreaming brain states, so, from the brain's perspective, we are dreaming all the time, according to Rodolfo Llinás (*I of the Vortex: From Neurons to Self*. MIT Press, 2001).

knowledge or experiential content that could only have come from another, presumably earlier, lifetime. In other words, *terma* treasures.

But that however, is another story, and another paper. For now, suffice it to say that this particular speculation, or theory of consciousness of the death experience, posits that you cannot lose something (an inherent self) that never actually existed in the first place, other than as a reflexive *voice* and its concomitant emotional apparatus hovering in your head. It can however permit us to gain a new appreciation for the magical nature of awareness, the amazing capacity to produce symbolic forms, and the manner in which the foundational base energy can shift into and out of focus as we are born, live, dream, and die, over and over and over again. Perhaps most rewarding in this approach is the fact that this ongoing evolutionary process has no specific aim: it is not about evolving *toward* some fully perfected or angelic state. We are all already in this perfect state, all the time. We're just too dumb to realize it. That's where the assistance of a *reality sherpa* comes in handy.

III

“What is this? Regarding these present phenomena, I have died and am wandering in the transitional process; so this place, these companions and these indistinct appearances are phenomena of the transitional process of becoming. Previously I did not recognize that process, and I wandered on. Now I shall arise as the embodiment of it.”

(*Experiential Instructions on the Six Bardos*, trans. Alan Wallace. Wisdom Publications, 1998, p. 257)

Naturally enough, everything in which we are engaged is not only pure speculation but also raw wondering. As a practitioner of Dzogchen and Bardo Dream Yoga for many years, its emphasis on preparing carefully for the moment of extinction or transition strikes me as very sound advice. By no means an expert, I was fortunate enough to experience bardo states and insights during personal encounters with the *terma* teachings of Padmasambhava (which are preferable investigations to the Evans-Wentz mistranslations known as the *Tibetan Book of the Dead*). His practice of the six bardos, as well as those of Naropa, which draw parallels between waking, sleeping, dreaming and dying, allow the practitioner (any practitioner, regardless of intellectual capacity or background) to recognize the base-nature of mind – which in Dzogchen is also known as The Great

Perfection – and to become familiar with the transitions in and out of the waking and sleeping states and the living, dying and post-death states (bardos) with considerable continuity.

One thing that is certain, and which has been clarified by many investigators such as Kübler-Ross (*On Death and Dying*, 1977) and others, is that only the dying can teach us about death, if we are brave enough to watch and listen. In the Tibetan Buddhist bardo traditions there are specialists whose entire existential enterprise is based upon not only this kind of bearing witness, but also to guiding the dying being through a threshold that can obviously be disconcerting to the unprepared.

The profound Dzogchen methods practiced by Chogyal Norbu also provide ample thought provoking speculation based on the actualized practice of awareness continuity before, during and after death. The key to this is not the *post-mortem* experience, but the preparation in sentient realms we occupy on a daily basis. This ground awareness is accessible to everyone here and now, since that is the ground of being which *emerges*, or appears to emerge, during dreaming or dying but which is also present as the base from which the entire phenomenal world appears in the mirror-like radiance with which we're all familiar. So I would suggest that consciousness doesn't *do* anything during death; it also doesn't quite transform either, it merely continues doing what it always does, which is to be misconstrued as a solid world of separate entities all competing for space and time locales.

The ground nature of mind, however, does seem to be *uncovered*, which is why so many parallel experiences are reported at an archetypal level by diverse peoples with utterly divergent belief systems, which are then projected into or upon whatever cultural context they occupy. One thing they all share, or so it seems to me, is the sudden realization that their entire life and experiences had been based on the incorrect assumption that they existed independently as a separate entity called a *self*. That entity appears to shimmer like a mirage and dissolve into the transitional state (so great yogi masters have reported) as it dawns briefly on the dying being that he or she is in actuality space (or light or energy) itself without differentiation.

Therefore death, in this contemplative context at least, is not a question of a tangible entity with a separate existence going anywhere or doing anything, since such an entity is the very illusory dynamic which death itself erases right before our eyes, and yet we seem to continue seeing. The dying being becomes aware (all too temporarily, in what many have described as the white light encounter) that all and everything had originated in a mind luminosity which is not separate at all from the dying being, and towards

which no travel at all is possible since it's always been right in front of us, staring us in the face (not to mention around and within us).

But we – failing to recognize our own true face or nature as precisely this essentially self-produced and maintained energy – were simply too deluded by apparent concrete forms to recognize it until it's too late to do so. A flash of light ensues, we react in habitual fear and suddenly we materialize once again as a newborn baby – or, in some versions, we are drawn by visions of sexual desire back into incarnation. In any case, fear or desire, the re-embodiment of awareness is thought to be a real possibility, but a failure to awaken to the clear light of nirvana. Hence the importance of bardo meditations, such as dream yoga, which are obviously useful in order to develop new and more advantageous habitual tendencies. It's not that habits per se are inherently good or bad, only that good habits can be learned, through practice and repetition, and can replace bad habits that were learned in exactly the same manner.

In conclusion, I have no particular desire for resolution or answers. As suggested, I have a high comfort level for uncertainty and ambiguity and a low threshold for any finalities that accept or reject the conjectures of other theorists. Perhaps this is because I am not a theorist. Since none of us can ever be proven right or wrong in these matters, I tend to lean towards the attitudes of those guides who offer the most spacious, flexible, generous, open minded and inclusive approaches. Any heavens or hells which arise in the midst of the post-death process of becoming are of our own making, but, even so, they cannot either hurt or help us unless we find a way to fully recognize the clear light nature of this transparent mind as it diminishes and disappears.

The truth about our consciousness and its extinction is, to paraphrase the poet Louis MacNeice in describing our crazy world, “incorrigibly plural”: there is no necessity therefore of demanding or even hoping for an either/or condition for speculating on the infinite fate of our finite awareness. So, my own theories are deceptively simple: all physical objects (including us) and the physical space in which they are situated are actually durational in nature – they are frozen or congealed time moving too slowly to be discerned as what we and they are, mirror images of constant and perpetual flux. Flux is all there ever was and all there ever will be.

Far from being merely a science fiction concept, there really is a phenomenon we could call the *archaeopsychic* and it's staring us in the face every single day. Our brains and bodies are flotsam and jetsam floating down the bloodstream of its archaic memory, itself consisting of a fluid form

of time. The non-physical property that we insist occupies our brain as a presence is also real and actual, as it is a mirror-like echo of the sound of our forms floating up or down the slipstream of this mind-made physical realm. Our brains don't die exactly, they merely return to the original form they had before being embodied.

If we are fortunate enough (what the Tibetan *Bardo Thodol* death contemplation practice calls "oh nobly born") to achieve the status of a human being in our present shapes, we are also fortunate enough to be able to access and comprehend the codes of the biological kingdom that manufactured consciousness in order to be aware of itself. If, that is, we do not shy away in fear from the simple fact of impermanence and thus manufacture more unnecessary suffering for ourselves (or the apparent others around us) than we deserve as custodians of "the great sea of its total memory" (Ballard, *The Drowned World*).

Basically, this places me squarely in the playground of the panpsychic theories, which if I am practicing certain contemplative modes from the Tibetan Buddhist bardo traditions, must perforce be my own orientation. It also follows that I tend to subscribe, from personal experience one might say, to the David Bohm notion of implicate and explicate *orders* to our experience, since the bardo practice of dream yoga so clearly involves that perspective (though in the end it privileges the implicate). I suppose it is best summed up in Bohm's words about the central underlying theme of his (eventually holographic) theory that there is "an unbroken wholeness of the totality of existence as an undivided flowing movement without borders".⁶

His research also indicated that he held what could be called a basically Gnostic viewpoint, not in the religious sense of the word but in terms of the viability of each person (particle) having the ability to personally experience the wholeness he refers to as a totality. To me this sounds very Buddhist in scope, and also links to my own personal research into the nature of pattern forming reciprocal limits without borders. When we die, it appears that the explicate order of the hologram dissolves and the implicate order of the projector is revealed, as is the unison between the two. The trick, according to the bardo practices, is to be awake, stable and aware enough to detect this degree of oneness without being afraid of the awesomeness of the realization, without projecting, and without *freaking out*, so to speak.

On a personal note, and with reference to my notions about duration itself being the conceptual crux of the flux, when I was ten years old I had a spontaneous experience of something akin to what R. Maurice Bucke called

⁶ David Bohm, *Wholeness and the Implicate Order*, Routledge & Kegan Paul, 1980, p. 218.

“cosmic consciousness”, a transpersonal realm where the mind was not located inside the head per se but inside everything else. I was listening to an *adult* chattering on about their usual adult narratives, when they remarked to me that commonplace observation we have all heard a thousand times and maybe even uttered ourselves: “If I knew then what I know now...”, etc.

They were suggesting that at my tender age, if only I could access all the extra additional information, data, knowledge, wisdom one might accumulate from years of study and experience, my choices and actions would be impacted significantly. Thus I would be able to make decisions based on *who I would become* if I made the correct decisions. For some unaccountable reason it suddenly struck me that the mind I had then was technically identical to the mind I would have now, except presumably now with more useful information. I became aware of the mind as a *mindstream*, a fast flowing river with ever more debris, some of it useful some of it useless, that in the “future” would still somehow be “me”, but a supposedly wiser me.

I understand how this may sound somewhat exotic, but is it really any more exotic than what we now customarily accept about the hidden weirdness and uncertainties of an interconnected quantum reality? At any rate, this thought experiment has now been conducted for some fifty five years with surprisingly useful results, the most salient of which is that if there is a mindstream with which we can connect at different stages in the progression of our own lifetime, might it not also be possible to connect with a future mindstream *after* this lifetime, extending forward indefinitely?

For some reason I’ve never been fond of the word incarnation, so therefore I’m disinclined to call this potential phenomenon re-incarnation, instead opting for my already stated preference for the notion of embodiment. Therefore let’s name this, for the purposes of this discussion, not even a re-embodiment but rather a successively progressing sequence of embodiments, each one with perhaps a different personality but the same identical ... identical what? Life force? Spirit? Soul? Sentience? Words are obviously our chief conundrum here, since as Wittgenstein reminds us, the limits of language are the limits of our world, as well as the respectable fact that what we cannot talk about we must pass over in silence.

Therefore as I draw these speculations to a close, I return once again to the notion of an embodied meaning (or pattern) with which I have identified all structures that utilize any of the symbolic forms at our disposal, whether linguistic, visual, sculptural, mathematical, spiritual, musical or

architectural, and I choose to suggest that the ways to *survive* the so-called death experience of self are twofold.

The first is to create or compose something in which your consciousness is *embedded*: if you are Dostoyevsky you do this in the form of a novel like *Crime and Punishment*, if you're T.S. Eliot, in the form of *The Waste Land*, if you're Martha Graham, in the form of *Appalachian Spring*, if you're Albert Einstein, in the form of the *Theory of Relativity*, if you're John Coltrane, in the form of *A Love Supreme* ... to name but a few obvious examples. In effect, such artists in multiple mediums are the gardeners of the collective unconscious: growing these splendid blooms that are perennial, outlive them, and return to blossom with each new successive generation.

If you do not operate within the spheres of influence for these particular symbolic forms, perhaps you do so in the mundane form of the children you give birth to, name, teach and send out into the world to live on after you carrying your genes and their own obscure coded messages. If, like me, you don't choose to reproduce because you were too busy engaging in rampant speculation about what it means to be alive in the first place, perhaps you achieve the condition of an embodied meaning yourself, which in theory at least is what happens when you engage in the Bardo Thodol contemplative practices devoted to dream yoga and the eschatological realm of achieving a kind of continuity before, during and after death.

One can, in principle, determine through the scrupulous management of awareness during the stage of final things, to witness the transference of your personal consciousness into a transpersonal and, for lack of a better word, quantum state of consciousness, which clearly would seem to adhere to both the panpsychic and by extension the archaeopsychic domains. An example of such scrupulous management? Two of the most impressive parallels to what we Buddhists often refer to as the mirror mind in Western terms were proffered by Mikhail Bakhtin in his concept of the dialogic self in consciousness (in which we are essentially talking to ourselves and interpret this as a self, prior to engaging in a dialogic interaction with "others") and also by Charles Cooley in his concept of the looking glass mind (which of necessity begins to blur at the edges and vanish during death when the interior voice or monologue no longer has a vehicle).

These two notions are well worth further exploration in the context of their remarkable similarities to the *Bardo Thodol* technologies for intuitive insight, albeit in a primarily linguistic and cognitive science mode. Both of them are also admirably explored and clarified in a recent book by Norbert Wiley. *Inner Speech and The Dialogic Self* (Temple University Press, 2016)

offers us a fascinating platform from which to leap from our linear Western suppositions to a more lateral Buddhist perspective. I highly recommend it to the reader for further exploration of these ideas.

Surely the most important aspect of all this conjecture is not only a grasp of the self-conceptions that begin to evaporate upon the dying experience, but also the pragmatic move toward resultant actions while still alive and able to prepare for this most obvious, mysterious and awe-inspiring of all life events, the end of physical life itself.

In the end, pun intended, perhaps the real question is not so much what happens to our consciousness during the enigmatic death event, but rather how and why we were able to have *any* consciousness in the first place. And, maybe even more importantly, what did we actually do with our precious consciousness when we were still alive? And just for the record, I still plan to happily dance with Rita Hayworth in the afterlife. But I also plan to bring along a *reality sherpa* to help guide me through the emotional rapids.

Having contemplated the river in which these rapids occur for long enough to determine that it is I myself who am both the water itself as well as the turbulence being experienced, I plan to be somewhat prepared for the shock of recognition during my final moments. Since I am in no way a completely enlightened being, however, I am also quite ready both for whatever latent tendencies might result in the flickering frames of mental film as my movie runs out of my projector, hence my acceptance of Rita's presence without mistakenly thinking she is *real*. In addition, such long-term contemplation of impermanence has also provided me with the benefit of knowing quite tangibly that I am in fact already dying and departing, moment by moment, in a perpetually shifting flux which will merely continue after my final shimmering moments as "myself".

Even though I know that the self who is dying is also merely a mask worn by everything else that is *not* me, because I am still just as prone to the potential for forgetfulness shared by all the other suffering sentient beings surrounding me, I still plan to avail myself of the professional consulting services of what I have referred to as a reality sherpa. Why? Because that person, presumably a skilled practitioner who will be reading from the pages of an ancient book devoted to the passage between one life and the next, will be re-unminding me: Rita is not real, you are only dancing with the light itself. Enjoy the trip, this guide might tell me: you *are* the continuum.

IV

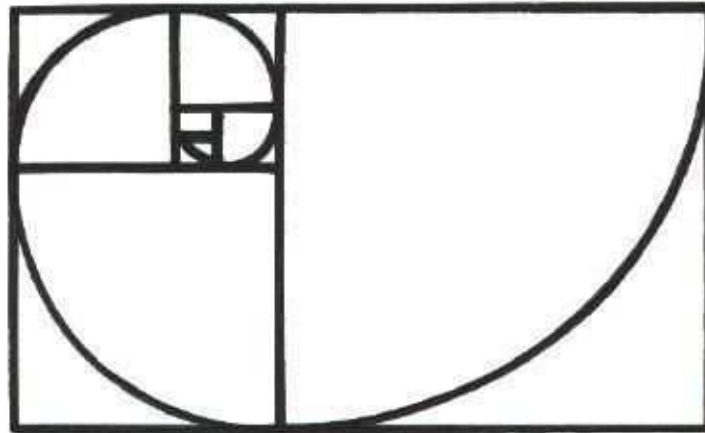


Figure 1:

I see no particular reason why this familiar diagram of the dinergy ratio known as the golden mean (1:1.618) and Fibonacci sequence, which depict a spiral growth pattern of all physical matter, wherein the relationship of the smallest part to largest part is equivalent to the relation of the largest part to the whole, cannot also depict the growth pattern of non-physical matter such as consciousness, in which the individual's mind is in an identical direct ratio to the collective unconscious, and thus continues, in a continuum growing past the limits of the individual lifetime.

(Thanks to our editor, Greg Nixon, for his close work, encouragement and assistance with this article.)

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Mysticism, Consciousness, Death

Dr. Mike Sosteric^{*}

Abstract

Drawing on the mystical experiences of the author, this paper examines death. After making several observations about his own mystical experience, the author explores the implications of his experience for both theories of consciousness and the ultimate question of death. He concludes, based on the observable facts of his experiences, that not only is consciousness far more varied and complex than most might admit, but that in order to account for observations in his home laboratory, it must survive the death of the physical vehicle.

(The author gratefully acknowledges the assistance and guidance of editor-at-large, Gregory Michael Nixon.)

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*I am you; you are me
You are the waves; I am the ocean.
Know this and be free; be divine.
(Sri Sathya Sai Baba)*

Narrative

I'm a sociologist. I was trained in the classical way and got my PhD through the appropriate channels. I was a regular and normal sociologist for a long time. I did my PhD on the political economy of scholarly journals, started the first Internet journal of Sociology, did some stuff on computers, learned some things about programming and was generally on my way to a relatively average ending after an infuriatingly average life. But then, "it" happened. When I was 39 years old, my head exploded. In an instant I went from staid, boring, materialist sociologist to full blown professional mystic gushing out parables, poems, and psalms like a broken fire hydrant gushes water. As I present myself before you now I could express my shock, awe, and surprise. But even if I was an A-list actor, I do not believe I could ever express it adequately. Even now, fifteen years later, I still shake my head with wonder every time the thought of it draws near.

I have to say that when "it" happened, I certainly didn't see myself as a candidate for mystical experience. I was raised fire and brimstone Catholic, but I left the faith disgusted when I was only eight years old. The catalyst for my rejection of Catholicism was an event that occurred with my mom. One day when I was about eight years old I was helping my mom in the kitchen. My mother was baking some cookies and I, inexperienced but anxious to shove them in my mouth, reached into a hot oven and grabbed the handle with my bare hand. Not surprisingly, I burned my hand severely. My mom, rather than comforting me with compassion and understanding as all parents should when their children experience pain, grabbed my hand, held it up to my face and exclaimed, "Hell will be much worse than this!" Shocked! Horrified! Even though I was only eight at the time, I knew there was something terribly wrong. The eyes of a child could see who was at fault. I blamed the Catholic Church for teaching my mom such hurtful nonsense. So, thenceforth I refused to go to church. I rejected Catholicism and left the faith.

As you might expect, I did not totally give up on the spiritual side right away. As I grew I began

looking at other things. As a middle adolescent I found my way into a New Age bookstore one day and there I was exposed to Buddhism, Eckankar, Theosophy, Wicca, Satanism, and tarot, to name a few things. I fiddled around with those things for a few years but none of them really seemed that interesting or useful, so I never really committed. It might have gone on like this for my entire life, i.e., I may have twiddled unsatisfactorily with the surface of things, but then four years after I entered university to pursue psychology I was exposed to the brilliant work of Karl Marx. As I quickly learned, Karl Marx brought a utopian vision to the table. He saw a world of prosperity, justice, and equality for all (and not just the .01 percent). He was a champion of the underdog and the savior of the masses! He was everything that Jesus Christ had not been, or so I thought at the time, and I loved him for it. What's more, he believed that religion was a pile of manure. He called religion an "*opiate*" (Marx, 1978), and he, and other sociologists after him (Berger, 1969), believed the elites used it to manage, mollify, and mind control the masses, whom they exploit. Of course, as I learned in my sociology courses, it was true. The .01 percent bloat themselves on the backs of the exploited masses and they use religion, the media, a-list actors, and whatever else they can buy with their piles of money to keep the hoi polloi quietly going about their jobs. I had seen the light, finally, and so I rejected religion, spirituality, and belief in anything other than molecules and atoms (and later leptons and quarks) of the physical universe. Everything else was – à la Marx, Freud (Freud, 1964), and Dawkins (Dawkins, 2006) – nothing more than the ideological and infantile delusions of an oppressed and stunted planet. I completed my degree in psychology, changed my major to sociology, completed a double major (both with honors) and went on to a PhD in sociology.

And there, for a decade, I remained. I stood, proud atheist and defender of the atheist credo. But then my self-satisfied atheism came crashing to the ground. One day, as I've already said, "it" happened. I sat down to watch a movie and the mirror of my thinly constructed self came crashing to the ground. One night I had what I now characterize as a *connection experience* or *connection event* (Sosteric, 2016b), but what most would understand as a mystical experience. It occurred one night as I sat down to watch a movie entitled *The Abyss* with my wife. Immediately prior to sitting down I had a very small puff of marijuana. I sat down to watch the movie and within minutes my normal reality collapsed and I was confronted with none other than the almighty patriarch of my Catholic indoctrination. One moment I was sitting watching a movie and the next moment I was streaming consciousness and having a full-blown conversation with God in my mind. It was not a pleasant conversation. Thought gushed. You might expect that when I met God I experienced wonder, glory, awe, and joy, but I did not. When I met God I experienced pure terror. In fact, I felt like a small child who had just been caught in the act of disobedience by a violent, alcoholic father. Even though I had done nothing more evil than shoot a bird with a pellet gun when I was a

small child, an action which immediately caused me to break down and cry at the horror I had just committed, I felt that God had arrived to judge me and cast me into the fiery pit of hell! I felt unworthy of God's love. I felt that I was a dirty sinner. I felt undeserving of divine Grace. I was terrified; in fact, it was the most terrifying experience I had ever had. Worthless, useless, insignificant, inconsequential, dirty, sinful, cosmic garbage, powerless, subjugated, and defeated are all adjectives I could use to describe my feelings during this brief but hyper toxic monologue with this very Catholic God.

It was certainly a surprise. I thought I had left this God behind when I converted myself to atheism but now, all of a sudden, there he was in all his monstrous and despicable glory.

So what did I do?

Well, I sat there transfixed for a few moments while the horrible toxic dialogue bubbled in my brain – my angst, anxiety, helplessness, and defeat made all the greater by fact that this was not the first time I had experienced this terrible fear of God. I had experienced it off and on as a teenager and young adult, usually following experimentation with marijuana, psilocybin, or LSD. Not every time of course. I had many different experiences while tripping the night fantastic, but every once in a while I'd have this one terrible, and terribly Catholic experience. Now, decades after I thought I had put the nonsense behind me, here it was again. I felt deflated, hopeless, and defeated. All I could do was sit and wait for the lightning bolt of God's wrath to shatter me like the cosmic piece of dirt that I was.

But then, something shifted.

After sitting absorbed in the trauma and running over and over again in my head just how pathetic I was, and after resigning myself to the inevitability of God's wrathful hammer falling on my head, a little switch went off in my crown, chakra that is¹. Suddenly, I was frustrated and weary by the whole thing. I was weary of the fear; I was weary of the trauma; I was weary of the emotional anguish; I was weary of feeling like worthless cosmic turd; and, perhaps most significantly, I was weary of waiting, like a lamb, for God to pull the trigger and cast me into the fiery pit. I was weary, frustrated, and fed up and so I *stood up*,² rejected the monologue of fear, raised my right fist in the air, gave God the middle finger, and said: "Fuck you and fuck off" (in my head). Then I went on to give him shit. I looked God square in the eye that night and I said to that if he thought it was OK to roast his children alive for all eternity just because they didn't measure up to his standards, I

¹ The crown chakra is the least dense, most easy to activate chakra in the energy system of the physical body.

² Just a point of clarification, I didn't really *stand up* to do to this. When I say that I "stood up," I mean it in a metaphorical sense. I was sitting down, but in my head I was standing up and giving God the finger.

didn't want to have anymore more to do with him, ever. In fact, I thought that if he could abuse his creation like that then he could just take his stinking gulag creation and shove it up his fucking ass. If he wanted to throw me in hell for my insolence, fine, fuck him. What did it matter anyway? If everything I had been told about God the great and powerful was true, I was hooped and there was nothing I could do about it anyway. Then, exhausted by the outburst, I sat back and waited. I waited for my insolence to sink in and I waited for God's wrath to materialize. I waited, in short, for the lightning bolt to strike me down. But, the lightning bolt never came, at least in the form that I was expecting, and so I watched the rest of the movie with my wife who remained unaware that anything untoward had occurred.³ When it was over, still traumatized, I went upstairs to bed.

The next day I woke up, mildly surprised that God hadn't taken me out in my sleep. I scratched my head for a bit and tried to process. After my insolent outburst I was sure I was going to be dead, or worse. To be honest, I was quite surprised. Surely God would have done something about my brash disrespect by now. After decades of listening to organized (and not so organized) religions and their representatives rattle off about the violent, abusive, and fowl tempered God, I expected that he would never have stood for such an impertinent outburst from such a worthless and pathetic soul. But God, if he existed, didn't do a darn thing! Dulled and exhausted by the night's previous struggle, I got out of bed. It was a psychologically gray morning reflecting what I began to suspect was a spiritually empty universe, but nothing more serious than that.

For some the story might end here. Some might discount the experience as delusional remnants of my religious indoctrination. Others might trace the source to neurological anomalies caused, perhaps, by a heightened genetic sensitivity to *transcendents*,⁴ as I like call them. For myself, I was prepared to reaffirm my Marxist atheism. If God really existed, and if he was really like the priests I had knelt before as a child said he was, something bad should have happened. I should have been punished, but I was not. I went to bed and woke up just like any other normal day. My initial conclusion was that it was delusion, hallucination, or remnant of my childhood indoctrination. The lack of divine response meant it must be an empty, materialist universe. What else could I conclude?

Unfortunately, or fortunately, depending on how you look at it, the glass pane of my materialist worldview was thoroughly shattered two days later when I sat down at my computer, opened a Word document, had another puff of blue smoke, had another powerful mystical experience (another "reconnection with Consciousness"), and proceeded to puke all over the page. I mean to

³ I only spoke with her about the experience years after it had occurred.

⁴ *Transcendents* are things,entheogens, meditation, music, and a "sharply" written poem, that facilitate connection to consciousness.

say, words began to fly from my fingers like a thousand pigeons escaping their coup. And it wasn't just an experience or two, an article here and there. Suddenly, I was having multiple noetic experiences and writing, as a consequence of these noetic experiences, poems, parables, books, and stories about things I had never even thought about before. The very first thing that came spewing from my brain was a story of creation in the form of an epic poem! This story of creation replaced the canonical creation mythology of good and evil with a story of true unity and purpose. And it didn't stop there. A decade and a half later, I still sit down every day and let it flow. When I first started I would put in about an hour a day. Now it is closer to four or five hours a day, with a much more rigorous approach, and a much more diverse output of scholarly articles, poems, books, and educational materials. Empty universe indeed.

Observation and Hypotheses

I have to admit that when I looked at it as a scholar and scientist, I thought what was happening to me was a bit odd. I had smoked a bit of cannabis, I had a frightening conversation with God, and then, as clichéd as it might sound, I was *reborn* as a spiritual author. As strange as this might sound, this is what happened. These were the noetic facts and they couldn't be denied. At first I couldn't see how any of these facts were related. I could come up with no rhyme or reason for the events or the rebirth. I might have thought that this was, as one editor suggested, to be expected "from a naturally creative person whose expressivity had been trapped for years behind the repressed fear of God's vengeance for denying him." But that explanation didn't feel right, even at the start. There was too much information, too much of a shift, and too much of a transformation to reduce it in this fashion. That is, it couldn't be "just me" because "just me" couldn't know all the things that suddenly I knew. Not only that, but "just me" was a lot smaller than all of "that" which it perceived. I certainly didn't have the experiential background for all of it; and, as complex as human neuroanatomy is, I don't believe the experiences can be contained in the brain either. My conclusion, weak as it may be, was that whatever was happening was beyond the physical body. Whatever was happening was *something more*.

Of course, I didn't come to this conclusion so clearly right away. To be honest, initially, I was confused. However, I did not let the initial confusion deter me. If anything, it spurred me on. Thus as I began to write my spiritual materials I also began to think about and investigate the phenomenon as a scientist. Using a form of ethnographic observation as my method, I observed and explored my mystical experience. I didn't have full explanations for things immediately, but I did begin to organize and make sense of things. As the initial months unfolded I made five key observations about the "thing" that was happening to me.

Observation One: Noesis

One of the first, and most challenging, things that I observed when I sat down was noesis. Noesis refers to the experience of “experience as a source of valid knowledge.” Noesis is a feature of connection/mystical experience long recognized in the literature (Hood, 1975; Stace, 1960). A basic explanation of noesis is that it is a feeling combined with information. In mystical connection, the information can be anything from self-knowledge to cosmic knowledge. The feeling is a strong, *sometimes overpowering*, feeling that the information is valid, authentic, and true (with a capital “T”), despite its purely subjective nature (Hood, 1975). For me, and for others (Harmless, 2008) the feeling of noesis in mystical experience is prominent, pervasive, and powerful.

Observation Two: Copious Information

The second thing I noted about the process was *copious information flow*. Prior to the experience I had ideas of course, but they came slow and I sometimes had to struggle to get them out. Following the experience, noetic truths flowed from my fingertips in a veritable gusher, page after page. Suddenly I knew and understood things (like the nature of God, the structure of consciousness, and so on) that I never even thought about before. It came so fast and furious it was all I could do to keep up. The only thing that allowed me to get it all down was the fact that I had a computer and I could type 80+ words a minute. Had I not been a touch typist, had I not had modern computer technology at my fingers, I would not have been able to get it all down in anything resembling reasonable sense. Even so, the spew was so powerful it was a challenge to get it all down.

Observation Three: Shift in Interest

The third thing I observed was a very big shift in interest. Prior to my “conversation with God,” I was primarily interested in scholarly communication and technology. I had written my PhD dissertation on the political economy of scholarly journals and I had done work on creating Internet based academic journals. Subsequent to that I went on to explore online pedagogy, technological *objects*, and related communication technologies. But all that changed in a magical, mystical, moment. After my experience I instantly developed an entirely new set of interests. Like Sri Aurobindo or Edward Carpenter (Anon, 2009), suddenly I was interested in consciousness, the nature of God, human purpose, human transformation, eschatological issues, and so on. It was nothing like I’d ever experienced before and it is, still, a massive challenge to integrate. But that is another story.

Observation Fourth: Shift in Expertise

In addition to copious flow and dramatic shift of interest, I also observed a remarkable *shift in expertise*. Before my *clearing experience* I was an academic writing knowledgeably on things like learning objects, the labor process, and other sociological type topics. Afterwards, and quite inexplicably, I suddenly knew things I had never known before, and understood things that I had sometimes barely considered. God, consciousness, chakras, the spiritual composition of the physical universe, kundalini, spiritual archetypes, and much more came suddenly into focus. And it wasn't just a topical shift in expertise. As I have already noted, my abilities to communicate shifted as well. Before my clearing experience the only thing I had ever written was an academic article. After my experience I was suddenly writing poems, parables, and other non-academic style resources. In an instant I went from academic expert to amateur mystic with absolutely no previous training at all.

Observation Five: Spiritual Transformation

In addition to copious information flow, a shift in interest, and a shift in expertise, I also observed a total transformation of my belief system. Before my experience I was a staunch, some might say arrogant and obnoxious, materialist/atheist, just like you would expect of a professional sociologist and academic. Before my experience I did not believe in God, spirit, the afterlife, or anything else beyond what I could see with my own two eyes. After my experience, I knew differently. After my experience, and as a consequence of all my subsequent experiences, I knew there was more going on beneath the thin meniscus of our normal reality than meets the proverbial materialist eye. I had lived powerful phenomenological encounters, nay I had lived several powerful experiences, with remarkable emotional, psychological, spiritual, and professional consequences that could not be denied. As a consequence, you could no more convince me that universe is a universe empty of Spirit and Consciousness as you could convince me that my name was Frank. I know that the materialists are wrong, I know that the atheists have been misled, and I know it as surely as I know my own name.

Observation Six: Rapid Expansion

Speaking of powerful mystical experiences, my fifth observation was just how rapidly this all occurred. The shifts did not develop over the course of months or years. I did not train to become a mystic or practice to become a poet; it just happened – *snap!* – like that. My initial experience had been no more than five minutes long and it was barely two days after that before the verbal flood began to flow. Suddenly, I was an entirely different person. Well, that's not quite true. I was the same person, just my interests and abilities had shifted and transformed. *Assumptions of tabula rasa and the centrality of external experience went out the window as the implications of this remarkable transformation percolated in my head.* It was a 180-degree shift of interest, perspective,

and talent and it occurred in the span of only a few hours.

The question that burns in my mind is simple: how do we account for/explain these six key observations?

Hypothesis One: Connection to Something More

I have to say, coming up with an explanation for these observations was (and continues to be) challenging, on a number of levels. Materialist explanations offered little in the way of insight. I was not having “boob experiences” (Prince & Savage, 2012). I was not engaged in self pacification (Horton, 1974). I was not having micro-seizures (Michael A. Persinger, 1983; M.A. Persinger, 1987; M.A. Persinger, 2002). It was not high altitude hypoxic breakdown (Joseph, 2001) or neural cross talk (Monastersky, 2006). Neither could the experiences be understood within the frameworks of my Marxist materialist mode of thought, my childhood Christianity, or even the other spiritualities (like Buddhism) that I had tried on for size, because some experiences were outside all known (at least to me) frameworks. If it was just elite ideology, why the phenomenological experience, rapid transformation, and copious information flow. If it was really *the* patriarchal God, why no wrathful lightning strike? If it was “just me,” then why the alien variety? Standard explanations, materialist or psychological, didn’t seem to cut it. To fit psychological and materialist frameworks, I either had to ignore the powerful phenomenology or reduce it in some fashion. But reducing didn’t fit the phenomenology of the experience, or the noetic (at least) facts! I was not descending to primitive modes of thought; I was expanding to cosmic levels of consciousness and transforming as a result. I was not having primitive boob experiences; I was experiencing deep intellectual understanding and insight. I could only conclude, as already noted, from my experiences that I was moving beyond the body — beyond the material neurology of my brain. I was, in short, *connecting* to something more. Either that or I was, as somebody like Richard Dawkins might suggest, crazy. While I will admit there were some what I would call *connection pathologies* in the beginning, clearly I was not crazy. And besides, my experiences were hardly unique. As Harmless (2008) notes, copious output is a defining characteristic of the professional mystic’s work, as are expansive experiences (Mercer & Durham, 1999, pp. 175-176), and powerful spiritual transformations, as I myself can attest. Mystics themselves even note the phenomenon. For example Madame Blavatsky, famous theosophical author, notes these sorts of shift:

One morning in the summer of 1875 Madame Blavatsky showed her colleague some sheets of manuscript which she had written. She explained: "I wrote this last night 'by order,' but what the deuce it is to be I don't know. Perhaps it is for a newspaper article, perhaps for a book, perhaps for nothing: anyhow I did as I was ordered." She put it away in a drawer and nothing more was

said about it for some months. In September of that year she went to Syracuse on a visit to Prof. and Mrs. Hiram Corson, of Cornell University, and while there she began to expand the few original pages. She wrote back to Olcott in New York that "she was writing about things she had never studied and making quotations from books she had never read in all her life..." (as cited in Kuhn, 1930, p. 114)

Thus from my five key observations, confirmed as common features of mystical experience in the literature, I hypothesized that I was connecting beyond the body. The question now was, connecting to what? Noetically, I knew right away. Noetically I knew that I was connecting to something that I called the *fabric of consciousness*, and I knew, at least in a general way, both the nature and structure of that consciousness. It all came to me in a series of powerful mystical experiences that dumped so much information in my lap that fifteen years later I am still working to sort it out and present it in sensible way. So yes, as a mystic, I knew what was going on. As a scholar, I wasn't so sure. I was pretty sure I'd have to revise my Marxist materialism, maybe even discard it all altogether, but beyond that, I couldn't say, with anything approaching scholarly sense, exactly what it was all about.

So what did I do? To make a long story short, I put aside any doubts and fears – and I have to admit, there were a few – that might have prevented me from continuing, put my Mystical Magical Mickey hat on, and advanced down my new found mystical path. I explored the Fabric through multiple connection experiences, but every once in a while I'd pause, put my gray scholar's hat on, and have a close look at what I was doing. As I did that I made two additional key observations.

Observation Seven: Different Experiences

In addition to my five previous observations (copious information, shift in interest/expertise, personal transformation, and rapid expansion), the sixth, observation I made was that my connection experiences were different from each other along three axis: quality, intensity, duration, and content.

As regards intensity, some connection experiences were simply more intense than others. Some connection experiences were powerfully visceral and netted grand visions and glorious enlightenments. Others were less dramatic, more down to earth and grounded sort of affairs netting incremental improvements in awareness and understanding. Notably, I could determine no external reason for the variation. The experiences seemed to have a mind of their own.

As regards quality, some experiences had a different "feel" or "vibe" than other. Especially in the very beginning, some of the experiences were frightening, anxiety and angst ridden *nadir experiences*, as I have come to call them. Others, the vast majority, were positive, uplifting,

transformative, noetic, *zenith experiences*. Within these broad categories, the intensity varied wildly. The first nadir experience I had, retold in the narrative section of this paper, was very much a dark night of the soul type experience. Others, not as much. In fact, as my expertise with and control over connection increased, nadir experiences diminished and finally expired altogether. Similarly, the intensity of zenith experiences varied widely. Some were wildly transformative, blissful, and expansive. Others, more mundane.⁵

As regards the information, it too was all different. Sometimes the ideas blasted out in fully formed visions, and sometimes they trickled out in a weak little creative streams. Sometimes the ideas came out in massive lumps that needed to be reshaped and decoded, while at other times they came out in logical pieces over time. And it wasn't just the size of the ideas that varied: the content varied wildly as well. Sometimes I had ideas concerning the entire depth and breadth of creation, and sometimes it was the leptons and quarks that make up the *material* substructure of this universe. Sometimes I was wondering about the structure of the Fabric of Consciousness, while at other times I had horrible realizations of the personal damage caused to myself and others by the various forms of violence we all experience, what I have come to call Toxic Socialization (Sosteric, 2016c).

It was, from the perspective of our mundane daily existence, all very odd to be sure, and it bore little resemblance to anything I had ever read about God/Consciousness before. Going by what I had read in the literature, I should have expected ultimate intelligence, profound bliss, and pure consciousness, but this is not what I got. To be sure, ultimate intelligence, profound bliss, and pure consciousness were aspects of some experiences, but these were just parts of only some of the experiences. Instead what I experienced was a potpourri. Some were classic, if by classic you mean measurable by the Hood's scale, and some were outside the pale of mystical parameters, as defined by Hood, but others were different in many different ways.

So, how do you explain all this? If you wanted to you could, I suppose, argue that I'm crazy. That

⁵ A question at this point is, "What causes the different intensity and vibe?" This is a good question, and I speculate about this below. I will say here, it wasn't set or setting. It is well known that set and setting can influence connection experiences, but in my case set and setting was carefully, though not consciously, controlled. As regards setting, I always made connections in the same place (in front of my computer), at the same time (typically early morning when everybody else is sleeping), every day. As regards set, my mental and emotional states are consistently neutral in the early morning. For me, set and setting have been controlled for many years. Of course, this does not invalidate the importance of set and setting. It is just to say, any explanation of the variability of my connection experiences (and the experiences of others, I presume) must move beyond set and setting.

is not a very scholarly thing to do, but besides, there's lots of evidence to the contrary. I have a healthy family with healthy children. I have a job, which I've held for close to twenty years, a publication record, and a history of *go-native* ethnographic research of the kind I am reporting here (Sosteric, 1996). I may not have the biggest peacock plume, but I've done some things of note. You would have a hard time playing the crazy card.

So, if you can't dismiss my observations as madness, what is it? You may want to try and reduce here. But how does reduction to psychological (dis)function (e.g., "soothing") or neurological epiphenomenon explain the variation of experience and wide variety of content? The only reductionist explanations that I can think of is that this vast topical content is somehow woven into the DNA or is emergent from random neurological processes. But DNA, at least as currently understood by the aging Crick model, is not capable; and, the notion that random neural processes can generate anything more than the most rudimentary of ideas (if even those), strains credulity. *Random neurology did not create this world*, and cannot explain my connection experiences: that much seems painfully clear.

Hypothesis Two: Connection to a Cosmic Internet (CI)

So, what it is? What was I experiencing? As a mystic, noetically, I knew right away. The explanation for my experiences was "emailed" in a vision I had almost immediately after I got started. When I received the vision I immediately wrote it down (it took me about twelve months to get the basics down) and began working on formation (i.e., putting it in a presentable form). From this vision I coined the term *Fabric of Consciousness* to describe with what I was connecting. From the vision, and as a mystic, I also understood the basic structure of this Fabric, and how it relates to physical creation.

But, that was as a mystic. As a scientist, and based on observations, I couldn't say for sure what was going on. I knew there was something, and I knew that whatever it shattered the materialist box I had been living in, but I couldn't say what. I thought about it for a few years and then one day it just hit me, I was "connecting" to what is, for all intents and purposes, a vast cosmic Internet⁶

⁶ How many people make connections to this cosmic Internet? Conservative estimates put the number anywhere between thirty and fifty percent (Bourque, 1969; Bourque & Back, 1971; Yamane & Polzer, 1994). And note, it is not just the uneducated that have these experiences. The limited sociological research that has been conducted on the phenomenon has found that those with more education are equally likely, if not more likely, to have profound mystical experiences (Bourque, 1969; Bourque & Back, 1971). The educated just don't conceptualize it in the same way. Instead of using religious language and concepts they use a secular or a psychologically neutral language. The educated characterize mystical experiences as peak experiences (A. H. Maslow, 1962, 1968; A.H. Maslow, 1971), transcendence (A.H. Maslow, 1971), "pure consciousness events" (Forman, 1999), or as Albert Einstein put it, *cosmic religious feeling* Einstein speaks directly and clearly about *religious experience* in his 1930 New York Times article entitled *Religion and Science* (Einstein, 1930). When we open the field and loosen our definitions we find that connection in one form or another really is a ubiquitous experience.

(Sosteric, 2016b). I, and everybody else on the planet, if you can believe Abraham Maslow (1971) who long ago expressed surprise at just how prevalent the experiences were, are connecting to a cosmic Internet.

At this point this is just speculation. As a mystic I know this to be true, but as a scientist I just have my suspicions. At this point I'm also not speculating about anything more than the basic reality. I am saying nothing here about our complicated relationship to the network, our complicated relationship to other nodes, the structure of the network, how that network relates to the "real" world outside of us, and so on. I have done some work on this. I have written a paper on the transformative outcomes of even brief connection (Sosteric, 2016a), the neurological mechanisms of connection (Sosteric, 2016b), and (from a more sociological perspective), elite interference with the process of connection (Sosteric, 2014), but a lot more needs to be done. All I'm doing here is suggesting that if we want to understand mystical experience and consciousness, then based on over a decade of my personal exploration and ethnographic/introspective observations, we see God, Consciousness, Para Brahman, Ain Soph Aur, Hunab Ku, Primum Mobile, Spirit, or whatever you want to call it, as a vast cosmic Internet that we connect to, just like we connect to websites. Turn yourself on, plug yourself in, enter an "address," and go. I think this explains my observations more than any of theory (religious or scientific) I've come across. I think this is what mystics do, though sometimes I think we enter random addresses and pursue ill-informed connections. For me, the idea of a cosmic Internet coupled with the notion that during mystical experience we connect to that Internet is the only thing that explains my mystical experiences. My mystical experiences are "connection experiences" and where I connect determines, in concert with set and setting, the intensity, quality, and even content of my connection experience.

This may be hard pill to swallow for some, maybe most, of the people reading this. Many scientists don't believe in a cosmic Internet of Consciousness, and even if they did, many might reject idea of controlled connection, and so they would perhaps busily dismiss and/or reduce. Many others, perhaps more than many might think (Ecklund, 2012; Ecklund & Long, 2011), believe in something more. But most of them have some version of what I like to call the *big guy* or *big thing* theory of connection, meaning that when we connect we connect to something much grander than we miniscule little humans. Of course, as Ecklund (2012) notes, most scientists don't personalize it. Most depersonalize it and push it, more or less, towards some abstract conceptualization of a big consciousness. For these people, swallowing the notion that what we are connecting to is an Internet democracy and not a mainframe autocracy might be a little difficult to swallow. Atheist or believer, it's a big shift I'm presenting here — consciousness as a cosmic Internet. The cosmic Internet as a vast collection of monadic egos (terminals) connected in an immaterial etheric

tapestry. There will be resistance to this notion; there may even be fear as a consequence of Borg visions of collective connection, but hopefully now that we have some collective experience with the global Internet, these fears and resistances can be overcome enough to at least consider, and perhaps begin researching, with this new paradigm approach. The research program could be quite fruitful. Indeed, whole new research directions, and vast new vistas of scientific possibility may open up, especially as brain scanning technology continues to evolve

Death, the Ultimate Conclusion?

This paper was initiated as a speculation about death. It might seem like we have travelled a long and winding road to get here, but the journey has been necessary. My speculations on death are necessarily wrapped up in my thinking on consciousness (that “something more” that is beyond the body) and connection. That is, to be able to communicate my speculations on death I need to first present the theory within which they are embedded. Thankfully, once that is done, the speculations themselves are easy to understand and, I feel, sensible and logical as well. As you can see, the framework is quite simple. Based on my observations, investigations (preliminary as they are), and extrapolations I believe we, and by “we” I mean our little “i,” our bodily ego as defined neurologically by the brain’s *default mode network* (DMN) (Buckner, Andrews-Hanna, & Schacter, 2008; Carhart-Harris & Friston, 2010; Gusnard, Akbudak, Shulman, & Raichle, 2001; Raichle et al., 2001), can connect to a Fabric of Consciousness. This Fabric of Consciousness is organized, I would tentatively suggest, as a Cosmic Internet. From the point of connection we may “address” and connect to, like we address and connect to a web page, certain nodes in that network. Once connected,⁷ there is a noetic information transfer.

In light of this nascent theory of consciousness and connection, what is death? As Nixon (2011) notes, and as I would heartedly agree, it’s “nothing.” Extrapolating from the theory of consciousness and connection tentatively outlined here, death is nothing more than Consciousness (i.e. big “I”) unplugging from an aging, antiquated, or damaged terminal, and going to find a new one. The process is simple. When the body dies, the “soul” disconnects, the electrical activities of the terminal cease, and the little “i” that emerges as an epiphenomenon of the Default Mode Network of the physical brain expires, *unless perhaps it has fully integrated with the big “I”* (see below). But big “I,” the Consciousness on the other side of the “computer screen,” the information source/web page that little “i” connects to, just finds another terminal/body. That’s all. The vast Cosmic Internet of which we are all a part doesn’t go away when an individual device fails. Death

⁷ As I point out in Sosteric (2016), connection is accomplished via suppression of the brain’s Default Mode Network (DMN)

amounts to nothing more than a network a reconfiguration, and I think technically a minor one at that.⁸

Of course, at this point many questions might ensue. What happens at death to awareness? Does awareness expand or does it contract? What happens to my sense of identity? It is submerged/subsumed into a cosmic ocean of consciousness? If not, are there choices to be made? Are we assigned a new level? Will we be punished for our sins? If we don't "release" the body from attachment or "pass the test," will our sense of "I" die with our body, will it pass into hell, or will it be born into a lower incarnation? These are all fascinating questions and they have been asked constantly for thousands of years. Can they be addressed in the light of this "network theory" of Consciousness?

Maybe. In the light of the speculations here, I think some of these questions simply evaporate. For example, moral talk of levels, sins, testing, and punishment make no sense in the context of network connectivity. If Consciousness is a cosmic Internet and if we merely plug into that internet, morality, at least in the dogmatic Church sense, don't fit in at all. How can you moralize about something that is perhaps nothing more than a technical process of connection/reconnection? You can't. Technical questions makes sense here, for example, How do you prepare the terminal/body, how do you facilitate connection, how do you enter "addresses," how do you filter information, and so on? But moral question are totally misplaced. Other questions come into clearer focus, and become more nuanced. For example, what happens to your sense of identity, your little "i," when you die? Is it submerged into the Cosmic Internet? Does it expand? Does it contract? Is it extinguished? Who makes the reconnection (i.e. reincarnation) choice? The answer to all of these might be, it depends. In particular, it may depend on what side of the screen you (and by "you" I mean little "i", little "y", you) are identifying with when you die. Do you identify with little "i" of the body or big "I," Cosmic "I", Christ "I?" Whether or not death is felt as a loss of "i" may depend on the extent to which you have integrated your little "i" with your big "I." If you have not integrated, if you have not done the *spiritual* work, perhaps little "i" is extinguished. Even if so, the death here is merely an illusion - in the sense that little "i" is only an epiphenomenon of the brain, an emergent property of the DMN network, this extinguishment is not real; it is merely the death of a delusion. Big "I" on the other side of the screen goes on. However, if you have integrated "i" and "I", perhaps death is not experienced as a loss, at all. Perhaps it is experienced as a simple transfer of vehicles, or perhaps even an ascension of consciousness. Perhaps the *Tibetan Book of the Dead* is an effort to get the dying "i" to identify with the big "I." I have my personal beliefs on this topic, beliefs that come with the full force of noetic connection, but I won't know for sure until

⁸ Except, perhaps, in time of famine, plague war, or genocide.

I come to the Great Divide. Nevertheless, the speculations that emerge from the network theory of consciousness outlined here are, I find, fascinating and stimulating.

I'd love to continue on with the speculations but I fear the paper is already too long; and besides, more research needs to be done. One final question that I'd like to address at this point is, if all this is true, what happened in my original experience? Why did "killing God" net me a better connection? Skipping over all the analysis that led me to the following speculation, allow me to just say, the killing of the Church God was significant as a *clearing experience*. What was cleared was an ideological blockage intentionally implanted by spiritual gatekeepers (in my case Catholic priests) to prevent connection. They do this because, as many wise sociologists (like Marx, 1978; Weber, 1904, 1995; Berger, 1969) can tell you, they serve the ruling classes. They thus implant ideas and ideology to shape behavior and control the masses. Part of the process of control is preventing connection simply because connection leads, potentially, to revolution (Sosteric, 2016a). When I confronted Church seeded ideology and dismissed it, the blockage was cleared and connection (and subsequently, development and maturation of said connection) could proceed.

I realize this statement may fall on some like a sack of bricks, but to a sociologist who has accepted the significance of mystical connection and the importance of understanding it, it is not outrageous at all. That this world is saturated with elite ideology is a basic sociological fact. That religion and spirituality are, like Hollywood, the school system, and the corporate media, outlets for the dissemination of this ideology is a basic sociological truism. Once you have accepted that *connection events* are a real thing, something long recognized in psychology,⁹ and once you recognize the presence of elite ideology, it is a very small and eminently reasonable step from considering the ideology of the Church as intentionally constructed opioid-like distraction à la Karl Marx, to deliberate interference with connection, à la Mike Sosteric. And I'm not the only one thinking along these lines.

Sociologists are beginning to clue in. For example, Bender (2010) points out how the white, male definition of mystical experience as a privatized, ineffable, super-conscious, highly personalized psychological experience has sanitized its revolutionary potential and turned mystical experience into a modern, mystical anesthetic." For myself, I have demonstrated the revolutionary potential of mystical experience (Sosteric, 2016a), a potential that would be anathema to any reasonably competent ruler who would no doubt do anything to stamp it out because of the problems a spiritually active and empowered population would cause. I have also demonstrated how the

⁹ Cf. the work of Abraham Maslow, and in particular Transpersonal Psychology.

Freemasons, an organization brought up during the transition from Feudalism to Capitalism to lubricate the transfer of power, manipulated esoteric spiritual wisdom *and* spiritual connection experiences for venal political reasons (Sosteric, 2014). Though I have not explored the hypothesis in great detail, I think there is clear evidence that the Catholic Church, an institution founded by top level elites, was setup to block awareness of a pacifist, proletarian, but nevertheless critical (but perhaps not by today's standards) and potentially revolutionary spirituality.¹⁰ I think this evidence appears in the activities of the early Church when the Council of Nicaea, called by Roman Emperor Constantine, selected only certain writings to be included in the Bible (Bock, 2006; Ehrman, 2003, 2007). I would suggest these writings were not selected because they represented accurately Christ's words and work but because they were safe, sanitized, even less potent.¹¹

So, did the original church patriarchs collect "safe" religious texts and edit these specifically to throw the people off the scent and/or downplay/obscure/prevent connection? Did they, essentially, create an institution tasked with crown chakra deactivation?¹² And if so, why am I talking about this here? The answer is simple, if the Western Church, of other churches, in fact if all elite instantiated religion, is an attempt to prevent connection, then what does this have to say about their pronouncements (exoteric and esoteric) on death, judgment, the afterlife, and so on? To be blunt, if religion is nothing more than an elite instantiated institution of spiritual disconnection, can anything they say be trusted? Obviously answering this question is well outside the scope of this paper, but answering the question isn't the point here. The point is to encourage a little critical reflection. If all this is true, it really calls for a fundamental reevaluation of even our most basic spiritual concepts, and that includes our understanding/speculations of death. If the elites have interfered with the spirituality of this planet then sorting out scientifically plausible speculations and truths from ideologically impregnated mush could be quite difficult. I have offered some concepts and basic speculations about what happens, but if we are interested in human spirituality in general, or death in particular, there's a lot of work to be done.

To conclude this paper let me ask the question, "Where does this leave us in regards to our understanding of death?" Does it leave us at the gateway of a vast an undiscoverable country, or are

¹⁰ See for example the *New International Version of the Bible*, Mathew 5-7, the "Sermon on the Mount," which, while not particularly revolutionary by today's standards, nevertheless could, arguably, be seen, in the context of the powerful Roman Empire, quite revolutionary.

¹¹ At this point one might object and say the early Church got together to settle doctrinal disputes and/or expertly pick over available texts to pick the most theologically accurate, but the fact that the Church went on to hide the Bible that they had created away from public scrutiny until the invention of the printing press wrested control of the book from their hands, belies such sociologically naïve suggestions.

¹² Though strange to some, I think that from a sociologically informed spiritual perspective (or a spiritually informed sociological perspective) this is a very good question, and a reasonable, sensible, and obvious one.

there things we can do to explore? Personally, I feel we can explore. We can explore as scholars and scientists, with all the tools and methodologies available, and we can explore spiritually/noetically, by doing what the mystics and gurus tell us to do, which is go within and experience noesis. Personally I think it is worthwhile doing both, though this does present ontological, methodological, and theoretical challenges which will have to be worked out. How far will this exploration take us in our understanding of spirituality and death? At this point that's impossible to say. I only know that a vista lies before us. As scientists and scholars, we have the tools and techniques to explore that vista. Science, at least as currently practiced, may never be able pierce the dark veil; but that doesn't mean we can't ask questions, explore, and even have some fun (after all, what greater fun is there, to a scholar, than exploration and discovery?) while doing it.

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What Dies? Eternalism and the Afterlife in William James

Jonathan Bricklin *

"A luminous and helpful idea is that time is but a relative mode of regarding things; we progress through phenomena at a certain definitive pace, and this subjective advance we interpret in an objective manner, as if events moved necessarily in this order and at this precise rate. But that may be only our mode of regarding them. The events may be in some sense in existence always, both past and future, and it may be we who are arriving at them, not they who are happening. The analogy of a traveler in a railway train is useful; if he could never leave the train nor alter its pace, he would probably consider the landscapes as necessarily successive and be unable to conceive their coexistence ... We perceive, therefore, a possible fourth dimensional aspect about time, the inexorableness of whose flow may be a natural part of our present limitations..."

—Sir Oliver Lodge, a pioneer of wireless technology, and a principal investigator of trance medium, Leonora Piper¹

Preface

Three weeks before he died, Einstein sent a condolence letter to the wife of his recently deceased friend, Michele Besso. His friend's departure "from this strange world," Einstein told her, "signifies nothing." Death signified nothing to Einstein because in his eternalistic block universe, all events co-exist permanently. Parmenides (Karl Popper's nickname for Einstein) expressed it this way: "Nor was it ever, nor will it be, since now it is, altogether one, continuous."² Or as Einstein himself expressed it in his letter: "[T]he separation between past, present, and future, is an illusion, however stubborn."³ If the block universe is real there are

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other illusions in play, as well. In my book *The Illusion of Will, Self, and Time: William James's Reluctant Guide to Enlightenment*,⁴ I explore some of them, mostly by separating what anti-block-universe James wanted to believe, based on common sense, from what his deepest insights—insights from both altered-states and introspection—led him to believe. I conclude that James's *neutral monism* is ultimately contextualized by his end-of-life, eternalistic, mystical suggestion, which he proposed as a “veridical revelation of reality”: Consciousness is not generated moment by moment but exists, rather, “already there, waiting to be uncovered.”⁵

In an eternalistic block universe, no events actually happen—at least not within the commonsense past/present/future-context for happenings (the temporal sequence McTaggart famously labeled the “A series”). All events, rather, simply *are*. As James proposed his eternalistic reality in the last year of his life, knowing the end was near, he may well have been writing a condolence note to himself. But as an avid supporter of the possibility that the human personality survives bodily death, James could write two very different condolence letters. Here we will try to make the case for both of them.

James's Windrosed Mandala

Although free-will-champion James publicly derided what he called the “iron block universe,”⁶ the mystic-minded James contributed much to its feasible consideration. A year before he *suggested* the veridicality of an eternalistic universe, he proposed that our individual selves might “form the margin of some more really central self in things,” like a “windrose in a compass.”⁷ And for many years before that he had well prepared the way for this marginalization: homogenizing consciousness and matter,⁸ and decommissioning the autonomous self's commandeering of the “stream of consciousness” into a mere “passing thought” as “thinker.”⁹ His last preparatory step toward eternalism was to convert the passing thought stream's flow into pulses of “time drops.”¹⁰ While the early kinematic experiments in James's day were too choppy to generate a seamless flow of reality from individual still moments, all of the seamless reality we witness on our ubiquitous screens today are generated from just such still *whole* moments that James came to advocate. When these time drops are combined with his mystical suggestion of an “already there” consciousness waiting “as if in a field that stood there always to be known,”¹¹ the “confluently active” radii of his windrose

become confluent activated radial endpoints. The one consciousness, already *there* being uncovered, is divided functionally into the knowing and the known, with the knowing (centerpoint) eternally activating the known (circumference).

James, unaware of the relativity revolution underway, believed that his mystical suggestion would “not be understood by this generation or the next.”¹² But he might have looked to the distant past, as revived by a contemporary he knew well: Nietzsche. For James’s windrosed mandala suggests that beyond the illusion of events *happening*, another layer of illusion is in play: linear time. This illusion was not pervasive in the ancient world. The hugely influential Pythagoras, for one, believed, like Greek professor Nietzsche, in eternal recurrence. But linearity was insisted upon in the Judeo-Christian worldview, most emphatically by St. Augustine. Eternalism and eternal recurrence are both *strange worlds* indeed, but surely no stranger than Augustine’s *Bible*. Moreover, James’s wind-rosed mandala, like Parmenides’ “perfectly rounded sphere ... from a center equally matched everywhere,”¹³ provides a more feasible divinity than the angry Jehovah. A sense of such divinity was suggested by James’s mystical coach, the ether-prophet, Benjamin Paul Blood—who emphasized to James how the universe might well exist as a pre-existing block¹⁴—and whose central teaching James identified with eternal recurrencist Nietzsche’s *amor fati*.¹⁵ “Never,” Blood declared, “shall we know the meaning nor the end of this eternal life; but what though we may not comprehend the universe—what boots the circumference, when each of us is the centre, and the apple of God’s eye.”¹⁶

McTaggart’s Three Series

Eternalists—divinely inspired or otherwise—could easily bail on the question of an afterlife, dismissing the very premise that death is real and signing off with one of many millennial bromides, such as the Bhagavad Gita’s “Of the impermanent, one finds no being. One finds no non-being of the permanent. Indeed, the certainty of both these has been perceived by seers of the truth.”¹⁷ But belief in a block universe (whether or not played out in eternal recurrence) does not preclude beliefs about the aftermath of what *appears* as death. For although the aftermath of what *appears* as death is, in a block universe, no less an event that *happens* – since “all the ensemble of events constituting space-time exist prior to our knowledge of them”¹⁸ – there are significant, inferable details about those appearances. From the vantage point of

eternalism, McTaggart's temporal A series cannot be an ultimately legitimate context for after-life evidence (any more than it is one for during-life evidence); but afterlife evidence *does* fit into McTaggart's B series of before/after, as well as his C series of a permanently fixed relation of terms, like the alphabet. James's and his colleague's evidence of an afterlife are in no way inconsistent with a fixed sequence of pre-existing events.

Much of what follows plays out in what James called "consciousness *beyond the margin*,"¹⁹ "a sphere of life larger and more powerful than usual consciousness" and whose "farther margin ... being unknown ... can be treated as an Absolute mind."²⁰ Almost all of it would crack what James called "the levee [of] scientific opinion" that prevents "the overflow of the Mississippi of the supernatural into the fields of orthodox culture."²¹ While Einstein's eternalism (in 1905, codified into space-time by Minkowski in 1908) is almost C-series contemporaneous with James's eternalism in 1910, Einstein's is based on physics, James's on mysticism: two paths to the same strange world. Parmenides' eternalism would seem to offer a third path – logic – strongly defended by his disciple Zeno. But a second path for Parmenides, more in line with James's, has recently been uncovered, and it provides the ideal starting point for any consideration of death and the afterlife, eternalist or otherwise, for it posits a boundary of consciousness that cannot be crossed, before or after apparent death.

Parmenides' Gap

Here's what we *can't* imagine happening when we die: nothingness. We can go to black—in fact we *do* go to black, every night, and (if not dreaming) come out of black every morning. Black, though, is far from nothingness, and black-*outs* are merely black-*ins* in which the last moment of blackness is recalled before "coming to." The unimaginableness of absolute nothingness, its unknowableness, its unpointable-to-ness—indeed, its actual non-existence—was first posited in the West by Parmenides, the man whom Plato called *Father*, and the only philosopher he referred to as deep (*bathos*).

Though Parmenides' insight has most persistently been understood as proto-logic, we now know, through the pioneering research of Greek scholar and self-proclaimed mystic Peter Kingsley, a more compelling origin: Parmenides was what the Greeks called a *pholarchos* (a *cave leader*), who supervised deep meditative states, or *incubations*, in total darkness.²² Prior to

Kingsley, other scholars had drawn attention to Parmenides's affinity with Vedantic and yogic philosophy,²³ but it is the revelation of Parmenides as a *pholarchos* that compels us to consider his injunction against absolute nothingness as an altered-state insight, rather than a mere philosophical ban on what cannot be imagined or pointed to.²⁴ For as an adept of such incubation, Parmenides might well have become acquainted with the ancient yogic insight that what *appears* to be an *absence of all consciousness* in deep, dreamless sleep, is only the absence of *self* in an ongoing "undifferentiated darkness" with "some form of awareness," if only awareness-in-itself.²⁵

Avoidance of *Father's* injunction against imagining a total annihilation of consciousness practically defines us, of course, as fearful, mortal beings. But precisely because absolute oblivion is exactly the unsayable, unimaginable, unthinkable "delusive array of words"²⁶ that Parmenides asserts it to be, our avoidance requires an alliance with what *is* thinkable and pointable. Enter the corpse.

There is no mystery, or even controversy, about the death of the body; it is stark and conclusive: that part of our "I" becomes an inanimate object, akin to a doornail, with no apparent consciousness, let alone subjectivity. This inanimate object is essential to our concept of death, since it is the only *percept* of it we have. What we imagine as death—fearful death—is actually a specious amalgam: an unimaginable percept/concept of nothingness mixed with an all too vividly imaginable percept/concept of a corpse. One can imagine consciousness dimming down *toward* annihilation, but never actually arriving. As the philosopher whom James called a goldmine of insight, Shadworth Hodgson, put it: "The lowest form of being, beyond which it would be meaningless, is perceivability."²⁷ And the only route from fully-embodied conscious life to an empty-consciousnessed *dead* corpse is through a non-existent space of non-being: what I have called "Parmenides' Gap."²⁸

James's White Crow

That a corpse is a red herring, analogous to the dead skin sloughed off by a still live snake, rather than a final repository *of* the snake, came into startling focus for me in my third decade of researching and writing about William James. What took me so long to come around to that conviction was James's own dilatoriness, his "undecided verdict ... after so many years"

of earnest inquiry into the possibility of an afterlife.²⁹ James believed that the highly specific messages conveyed by the trance medium Leonora Piper, through both speech and automatic writing, purportedly from beings whose personalized consciousness had apparently survived death, were “the most baffling thing I know.”³⁰ Yet his final assessment of the evidence from Piper fell short of the spiritist conclusion of full personality *survival*. I say “fell short,” but I could easily say “leapt long.” For James’s belief that the *supernormal* knowledge transmitted from an apparent afterlife entity might, instead, be issuing from a “continuum of cosmic consciousness” in a “panpsychic ... universe” against which all apparent “individualit[ies]” (embodied or otherwise) are but “accidental fences,” radically reconfigures birth, death, and all in-between.³¹ And it was this same long leap that I took with him in my book, weaving the supernormal knowledge James went *on record* as favoring with his radical empirical ontology. But after taking a closer look at the detailed reports of Piper, James’s “white crow,”³² I have come to accept a shorter, intermediate, step as well: the formidable illusion of our individuated, skin-encased egos forging a linear path in an indifferent object-universe is followed by an encore reappearance in a subtler facsimile form.

The reason I missed the most startling details of Piper’s mediumship is that James himself left them out of his extensive essay on Piper, “Report on Mrs. Piper’s Hodgson-Control.” Before looking at that excluded evidence from what James called an unprecedented “conjunction of a good medium with a thorough investigator,” and why he did not include it in his extensive report, let us look at how it came to be.³³

Richard Hodgson was a leading skeptical investigator and psychical debunker of his day, whose investigation of London’s professional mediums had led him to conclude that “nearly all” were “a gang of vulgar tricksters.”³⁴ On the strength of his record and determination to expose counterfeit psychical claims, he was hired by the *Society for Psychical Research* to investigate the Boston medium Leonora Piper, with whom James had had a couple of startling sessions. Two examples: Inquiring about his Aunt Kate, James was first told “doing poorly” then “she has arrived.” James returned home an hour later to a telegram announcing her death.³⁵ Piper also described James’s recent killing, with ether, of a grey-and-white cat, describing how it had “spun round and round” before dying.³⁶ For the next 18 years until his sudden death in 1905, Hodgson searched for any evidence to contradict what he, like most people, assumed: “Mrs. Piper was

fraudulent and obtained her information previously by ordinary means, such as inquiries by confederates, etc.”³⁷ Hodgson supervised her sittings 3 days a week, imposing scrupulous protocols (such as forbidding umbrellas to be placed in the foyer where a confederate’s note might be conveyed to Piper by Piper’s maid) and pursued a no-stone-unturned approach, such as hiring private detectives to follow her in her off hours. But he never detected the slightest trace of fraud.

Nor did anyone else. Even the *Society for Psychological Research’s* chief, thorn-in-their-side, skeptic and critic, Frank Podmore — noting “how numerous and precise” Piper’s trance statements were, “taken as a whole,” and how “the possibility of leakage” to her “through normal channels in many cases was so effectually excluded”— declared “it is impossible to doubt that we have here supernormal agency of some kind.”³⁸ Not that attempts at credible doubt have not been made, challenging those, like James, who believed “absolutely” that “the hypothesis of fraud cannot be seriously entertained.”³⁹

James, himself, after his few initial, remarkable sessions with Piper, stepped away from direct exploration, content to learn second-hand from Hodgson’s investigation. But Hodgson’s death and subsequent re-emergence as Piper’s “spirit Control” led James to directly re-engage what he called this “queer chapter in human nature.”⁴⁰ Published in the penultimate year of his life (almost simultaneously with his “Confidences of a Psychological Researcher”) James’s 2-part “Report on Mrs. Piper’s Hodgson-Control” appeared to be his ultimate word on the Piper phenomenon. But as it turns out Hodgson was, in fact, a highly problematic control to evaluate because his 18 years with Mrs. Piper made it almost impossible to distinguish information coming out of the entranced Piper via the new (deceased) Hodgson from information that had gone into her from the old (alive) Hodgson. As James put it, the Hodgson control was “vastly more leaky and susceptible of naturalistic explanation than is any body of Piper-material recorded before.”⁴¹ Moreover, the body of Piper material James found most convincing, those of George Pellew (a/k/a Pelham)—the material that most convinced Hodgson and other prominent researchers of the survival of the human personality—James left out of his report. He omitted these most compelling details, he said, because he had “no space for twice-told tales” and he assumed that the reader was “acquainted, to some degree at any rate, with previously extensive printed accounts of Mrs. Piper’s mediumship,” principle amongst which were Hodgson’s reports

in 2 separate volumes of the *Society for Psychical Research Proceedings*.⁴² My own suspicion is that James was wary and weary of his role as a “genuinely scientific inquirer” of the *supernormal* (James never used the word *paranormal*) pitted against the “ignoramus ‘scientist’” who “pressed with all the weight of their authority against the door which certain ‘psychical researchers’ are threatening to open wide enough to admit a hitherto discredited class of facts.”⁴³ One of the most renowned and respected scientists of his day, James was all too aware that mediums were considered “scientific outlaws, and their defendants ... quasi-insane.”⁴⁴ He certainly had ample opportunity to respond to debunkers, such as Columbia Professor James Cattell, who publicly castigated James for even considering Piper worthy of his attention. James’s plea to Cattell for fair play resonates strongly today:

Any hearing for such phenomena is so hard to get from scientific readers that one who believes them worthy of careful study is in duty bound to resent such contemptuous public notice of them in high quarters as would still further encourage the fashion of their neglect.⁴⁵

But to the degree that James himself (and later Piper researcher, physicist Sir Oliver Lodge, in his autobiography) left out the most striking details of the Piper phenomena—referring their readers to the *Proceedings of the Society of Psychical Research*—they inadvertently encouraged neglect of a body of material that marked, in James’s assessment, “an epoch in our knowledge of trance-states.”⁴⁶ While this epoch-making knowledge, however often “intolerably tedious and incoherent reading,”⁴⁷ has languished mostly unread in its long form (*Proceedings of the Society of Psychical Research* Volumes 6, 8, 13, 15 & 16), it is now available free online. And two recent books—Deborah Blum’s *Ghost Hunters: William James and the Search for Scientific Proof of the Afterlife* and Michael Tynn’s *Resurrecting Leonora Piper: How Science Discovered The Afterlife*—offer enough excerpts and response to skeptics to affirm James’s belief that there were “unmistakable indicators” of “supernormal knowledge ... as if from beyond.”⁴⁸

Consider, for example, the following transcription of a sitting with the parents of a five year old girl who had died a few weeks earlier, recorded in Hodgson’s “Observations of Certain Phenomena of Trance,” in Volume 13 of the *Proceedings*, and edited here by Blum (with

Hodgson's original bracketing). The parents did not identify themselves or mention their recent tragedy, but brought with them 2 items their daughter had played with: a silver medal and a string of buttons.

“Where is Papa? Want Papa. [The father takes from the table a silver medal and hands it to Mrs. Piper] I want this—want to bite it. [She used to do this.] ... I want to call Dodo [her name for her brother George]. Tell Dodo I am happy. [Puts hands to throat] No sore throat any more. [She had pain and distress of the throat and tongue] ... Papa, want to go wide [ride] horsey [She pleaded this throughout her illness.] Every day I go to see horsey. I like that horsey ... Eleanor. I want Eleanor. [Her little sister. She called her much during her last illness.] I want my buttons. Where is Dinah? I want Dinah. [Dinah was an old rag doll, not with us]. I want Bagie [her name for her sister Margaret]. I want to go to Bagie ... I want Bagie...”⁴⁹

Of similarly startling sessions from the Hodgson reports, the most compelling stem from George Pellew (a/k/a Pelham and, in “spirit mode,” G.P.), a 32-year old philosophy student and acquaintance of Hodgson, who died from falling off a horse, emerging 5 weeks later via Piper. Two years before he died, Pellew had had a friendly debate about the afterlife with Hodgson, with Pellew denying the possibility of consciousness surviving the death of the brain. According to Hodgson, Pellew ended the debate by “pledging” that although he found an afterlife “incredible” he would “do all that he could to establish it if he died before me and found that there was a future life after all.”⁵⁰ James, for one, felt he may well have kept his pledge, since he found the G.P. evidence to be the most compelling of all the Piper evidence.⁵¹

Evidence such as the following: Of 150 sittings with different visitors that Hodgson supervised with Pellew, only 30 were his friends. But although no clue was given to differentiate friends from strangers, G.P. had no problem immediately identifying all his friends. There was only one exception: a girl he had known when she was 10 and was now 18. Once her identity was revealed, though, G.P. immediately teased her about her violin playing, just as he had done when he knew her.⁵²

One of the friends brought 3 pictures for G.P. to identify. He correctly identified the first as his friend's (the sitter's) summer home and the second (a rural setting) as a place where he had stayed, correctly describing a small brick henhouse that was *not* in the picture. He could not identify the third picture. He had, in fact, never seen it.⁵³

As there are hundreds of equally compelling such sessions, I can only urge the reader to either access directly the aforementioned free, online *Proceedings of the Psychological Society*, or read Braude's, Gauld's, Tymn's or Blum's book, rather than succumb to contemporary debunkers fitting James's description of "critics who, refusing to come to any close quarters with the facts, survey them at long range and summarily dispose of them at a convenient distance by the abstract name of fraud."⁵⁴

My own perusal of this voluminous evidence has led me to believe that consciousness does indeed survive bodily death, and can exist without the material body, however much it requires someone else's material body to manifest to materially embodied beings. While James and other Piper researchers (including Eleanor Sidgwick and E.R. Dodds) believed Piper's supernormal clairvoyance might be evidence more of telepathic (a word coined by Myers) access to a field of consciousness, rather than that her physical body has been supplanted by their astral body, I agree with Hodgson that consciousness may well assume (that is, *appear to dwell in the form of*) the "astral facsimile of a material body," (as G.P. describes it).⁵⁵ In his debate with the embodied Pellew, Hodgson proposed that "the gross material body might be tenanted by a more subtle organic body composed of the luminiferous ether."⁵⁶ One striking corroboration of such is an encounter with a spirit entity called Newell, communicating through Piper in eleven sessions with his friend, an artist, Rogers Rich. During one of the sessions Rich observed Mrs. Piper making an odd movement with her hand that appeared to be "twirling an imaginary moustache" which Rich knew Newell to have frequently done when he was alive.⁵⁷ Another was a description by one spirit entity of another spirit entity, a woman identified only as "Q" whom Hodgson had known before she died. The spirit entity Q was described as having a brown right eye with a spot of light blue in the iris. Hodgson confirmed the blemish (though he had remembered it as gray).

But, as I said, this is just my short leap of faith, based on an unprecedented convergence of some of the finest scientifically trained minds of their day⁵⁸ investigating an honest, straightforward woman with apparent access to supernormal knowledge. My longer leap is one with James's late-life eternalistic mystical suggestion of consciousness already there waiting to be uncovered. Whatever there may be of an afterlife, including reincarnation, it is still the eternal playing out of fixed before-after moments (McTaggart's C series), "as if in a field that always stood there always to be known."

Precognition and Retrocognition

Whether or not Parmenides did, in fact, derive this same eternalistic perspective—"Nor was it ever nor will it be, since now it is, altogether, one, continuous"—from altered trance-induced states, James certainly did: his mystical suggestion is immediately preceded by the precognitive experience of an ether-induced correspondent of his, Frederick Hall.⁵⁹ James supported other credible precognitive experiences as well, such as a farmer's wife who saw highly specific details of her son's death being mourned, by people she had never known, days before she arrived on the exact scene.⁶⁰ But precognition is only half the corroboration of eternalism. The other half is retrocognition, as in Piper's capacity to revisit exactly the precise spinning movements of James's dying cat. According to the eminent classicist, E.R. Dodds, an expert on ancient oracles, who saw Piper as an authentic trance medium,⁶¹ divination (*mantikē*) referred to both precognition and retrocognition, the "typical diviner" being Homer's Kalchas, "who knew things past, present, and to come."⁶² Indeed, says Dodds, the most celebrated seers would sometimes "exhibit supernormal knowledge of past events as evidence that their vision of the future will prove true."⁶³

Far less threatening to James's most cherished belief in free will, a belief scorned by Blood,⁶⁴ evidence for retrocognition was found by James in a thoroughly investigated incident of it from the only other person than Piper for whom he claimed a "supernormal faculty of seership," a New Hampshire woman, Mrs. Titus. In a trance state, Titus accessed a missing young woman's previous day's fall from an icy bridge miles away, locating the exact spot beneath the surface of the murky lake and the exact position of her body: "head down, only one foot with a new rubber showing and lying in a deep hole."⁶⁵ Titus even shuttered with cold in

her trance as she accessed this scene. (Recall how Piper, too, so “inhabited the scene” of James’s recent etherization of a cat, describing how it spun around.) The professional diver, who had reluctantly returned to the location he had already searched at the urging of the victim’s employer who had hired him, later told investigators that he was not afraid of the body when he found it 20 feet below the dark surface of the lake, but of the “woman on the bridge” pointing to it. “How can any woman come from miles away and tell me where I would find this body?”⁶⁶ Just how far away “Mrs. Titus herself had travelled to retrieve that information accounts for the fear exchange — encountering clairvoyance over encountering a corpse.

Together, precognition and retrocognition provide the supernormal evidence for block universe eternalism. And it is worth emphasizing that the first physicist to reintroduce it into the modern age was not Einstein, but Sir Oliver Lodge. Lodge, one of the founders of wireless technology, was also one of the principle investigators of Leanora Piper, whose *clairvoyance* he found to be genuine.⁶⁷ The quotation with which we began was published the year Einstein was given his first geometry book.

What dies?

Eternalism, however, is anathema to most people, and especially James, the zest-seeking champion of free will, who waited until the very end of his life to propose it as “veridical revelation.” But for those for whom the persistent thought (however ill-formed) of total annihilation is the deepest curse of all, and the inevitable loss of both cherished attributes and beloved companions the ongoing tragedy of life—it offers the compensation that each moment may well be eternal, existing like frames in a completed film of fixed sequences, endlessly revivable.

Endlessly revivable for whom? As early as the *Principles of Psychology*, James “confessed” that whenever he became “metaphysical” he found “the notion” of some sort of *anima mundi* thinking in all of us to be a more promising hypothesis, in spite of all its difficulties, than that of a lot of absolutely individual souls.”⁶⁸ In that same classic early work he defined the thinker as “the passing Thought.”⁶⁹ In the eternalistic worldview of his mystical suggestion, all passing thoughts, including the passing-thought-that-feels-itself-to-be the thinker,

is an endless movement of the one knower consciousness, one *anima mundi*, through myriad knowns—knowns laying as if in a field, waiting to be uncovered.

Of course, consciousness cannot exist as an eternalistic field of pre-existing known moments unless the apparently non-conscious objects that contribute to that known—to what we are mostly conscious *of*—participate as well. Eternalism *requires* the non-heterogeneity of matter and consciousness. Hodgson once published an essay in the journal *Mind* in which he wrote that the fundamental distinction in the world is between the *me* and the *not-me*.⁷⁰ In eternalism the distinction between the *me* and *not-me* has a relative status only—like different characters, landscapes, and objects in a single dream. Both Parmenides and James opened the door to this unification, and its relevance to the fear of death cannot be overstated. For even those who believe we become a sort of astral spirit may well mourn the loss of an embodied, material substance. One thinks of the Greek afterlife below, in Hades, with their ghost-like inhabitants craving a drop of blood from the physical world above, according to Homer. But if the physical external world of matter is no less an aspect of consciousness than thought—if, in other words, consciousness creates matter, and not the other way around—the ultimate rhetorical question death would pose is not Stephen Levine’s “Who dies?” but “What dies?”

“...[T]he same thing is there for thinking and being,” the famous “fragment 3” of Parmenides, has various translations and interpretations,⁷¹ but it is certainly fair game to align it with this tenet from James’s radical empiricism: “Things and thoughts are not at all fundamentally heterogeneous; they are made of one and the same stuff, stuff which cannot be defined as such but only experienced; and which one can call, if one wishes, the stuff of experience in general.”⁷² So what dies?

For most of his life as a psychological researcher, James held out for the existence of a relationship between *cosmic consciousness* and “subtler forms of matter.”⁷³ But his late life mystical suggestion brought duality of even this subtlest matter into question, suggesting consciousness *alone* is the ultimate substrate of both matter and energy. As early as the *Principles*, James wrote that “Matter,” as “something *behind* physical phenomena,” is just “a ‘postulate’ of thought.”⁷⁴ This postulate would apply to the brain (however many today believe

consciousness is a mere “biological feature *of*”⁷⁵), no less than the wave of light photons that becomes a particle when observed (as in the double-slit experiment). So what dies?

Take any given phenomenon of so-called matter, such as a wooden desk. What matter, what substance is postulated as behind it? A wooden desk, as James’s former student Dickinson Miller pointed out, can be seen as either a “light brown total or unit,” a “wilderness of woody fiber,” or “a host of ordered molecules or atoms.”⁷⁶ A desk, like a body—live or otherwise—*appears* to have substance—whether encountered awake or in a dream—but “all that the word substance means,” says James, “is the fact that *experiences* do seem to belong together.”⁷⁷ No apparent substance, however, belongs together with all its phenomenal aspects. For as Miller says of those three different phenomenal aspects of a desk: considered together they create a “monstrous medley.”⁷⁸

The body—its substance, its matter—decomposes, rots, and disappears, even its bones eventually. But how much substantive reality did it ever have? The deeper we try to penetrate behind the phenomena of matter, as with our ever-more-powerful electromagnetic microscopes, we find it, as Bohm says, “turning more and more into empty space with an evermore tenuous structure.” A “tendency” he says “carried further by quantified theory, which treats particles as quantized states of a field that extends over the whole of space.”⁷⁹ So what dies?

In his essay “Human Immortality,” James posited that the brain may well act more like a transmitter of consciousness, like a radio, than a generator. And a lifetime of psychical research led him to corroborate “extra-marginal” consciousness, “outside of the primary consciousness altogether,” with its body-centered “set of memories, thoughts and feelings.”⁸⁰ The physical brain is more the radio than the orchestra. So what dies?

The Self

The life’s work of James’s afterlife research colleague, Frederic Myers, was given a highly specific title, *Human Personality and Its Survival of Bodily Death*, because a self essentially continuous with our embodied self is what we want to survive. But even an embodied underlying self, suggested James, as early as his *Principles*, is no less a postulate of thought than matter.⁸¹ Descartes got it wrong. “I think therefore I am” is *not* the ultimate

foundation of certainty. “I” is a wavering, ill-defined term. By the time “I” get to “I am” it has turned into “I thought.” James’s dictum, “[T]he passing thought is itself the thinker,” speaks directly to the cogito’s specious claim as a foundation of ultimate certainty. The ultimate foundation of certainty precedes the “I”—indeed, is what the “I” arises out of: *sciousness*, or consciousness without consciousness of self.⁸² The irreducible foundation of certainty is not an “I” but merely a knowing and a known. Frequently, as James states in the *Principles*, the known includes the sense “I,” but does not need to:

“I may have either acquaintance-with, or knowledge-about, an object O without thinking about myself at all,” says James:

It suffices for this that I think O, and that it exist. If, in addition to thinking O, I also think that I exist and that I know O, well and good; I then know one more thing, a fact about O, of which I previously was unmindful. That, however, does not prevent me from having already known O a good deal. O *per se*, or O *plus* P, are as good objects of knowledge as O *plus me* is.⁸³

So, too, the *knowing* is most frequently, as with Descartes, assumed to be that of a knower “I.” But, again, that is an assumption not a certainty. In the closing passages of his revised version of the *Principles*, James declared that “*who the knower really is*,” “correlative to all this known” may well be “wide open,” not ultimately issuing from a self’s consciousness, but from wide open “*sciousness*.”⁸⁴ Through both his radical introspections and his psychical research, James kept widening that opening, culminating in the widest opening possible, his end-of-life mystical suggestion.

Of course if “consciousness is already there ... as if in a field that always stood there to be known,” then the known and the knower must be homogenized, beyond the simple non-heterogeneity of “things and thoughts” of his radical empiricism.⁸⁵ Either things must become thoughts (a/k/a the hardest problem), or thoughts become things. But thoughts, as it turns out, *do* become things—apparent things—to all who dream, as many do, in highly specific detail. As James says: “If I dream of a golden mountain, it no doubt does not exist outside of the dream, but *in* the dream the mountain is of a perfectly physical nature or essence, it is *as*

physical that it appears to me.”⁸⁶ In an eternalistic world everything physical is only, ultimately, “*as physical.*” So what dies?

Curious Autonomy

Recall the fear of the diver. Repeatedly in the literature of clairvoyant incidents, fear, even horror, is a response to an eternalistic clairvoyant revelation. Such fear is appropriate, since eternalism issues a mortal blow to the sense of self-agency, replacing what James called our “show” of “curious autonomy, *as if* we were small active centers on our own account” with what we have always known at least “in one sense” we are: “passive portions of the universe.”⁸⁷

Yet may we not affirm, along with Hodgson, Myers, Lodge, and other investigators of the Piper phenomenon that the *show* of curious autonomy might well survive? There will be gaps in self-identification for sure—just as there are every night; there may be a painful separation from the body we have been identified with (“like tearing limb from limb” as the aforementioned spirit Newell put it, adding “but once free how happy one is”;⁸⁸ but our curious autonomy curiously seems to continue, not only as astral facsimiles of our embodied selves, but as re-embodied incarnations of new “centers of autonomy.” Human personality *does* appear to survive. The Piper transcriptions, combined with Ian Stevenson’s compelling research on reincarnation, frees us from James’s fear of a vacuous “white-robed harp-playing heaven,”⁸⁹ or of a further dispersal into a depersonalized cosmic consciousness, however joyous our personal appreciation of such cosmic consciousness may be, as in G.P.’s “Love is spirit; love is everything; where love is not, there nothing is,”⁹⁰ or the more down-to-earth, ether-induced altered-state experience that prompted James to first speculate on the prime reality of “consciousness”:

During the syncope there is absolute psychic annihilation, the absence of all consciousness; then at the beginning of coming to, one has at a certain moment a vague, limitless, infinite feeling—a sense of existence in general without the least trace of distinction between the me and the not-me.⁹¹

James himself, described coming out of a chloroform anesthesia as “to wake to a sense of my own existence as *something additional* to what had previously been there.”⁹² And it has been

well imagined that one *dies* to some sort of limitless, infinite experience. But like the woman in Arthur Deikman's famed meditation-on-a-blue-vase experiments, in which a "diffuse blue occupied the entire visual field" and participants experienced different degrees of "merging with the vase," I might well, as she did, resist the notion of being "merged completely with that diffuseness ... bringing myself back in some way from it."⁹³ (Though it is more difficult to imagine resisting what one of Piper's spirits described as an early, post-death encounter with an inconceivable, unimaginable white light, "the most brilliant and yet the softest moonlight you ever saw.")⁹⁴

I am all for an ongoing nature "born for the conflict" as James says,⁹⁵ or, at least, the ongoing illusion of conflict. Perpetual conflict, with a throughline of subtle aspects—subtler than any physical instruments can detect—a throughline of each *body-mind* that "reassociates with phenomenal conditions of bodily existence upon rebirth," as Da Free John says⁹⁶ — individual striving forever with no end in sight and no beginning, a defining characteristic of a perfect circle.

It makes no difference that in such a fixed monism of consciousness the conflict is not ultimately real. Has there ever been any eternalist, from Parmenides to Einstein, who fully believed in such a pre-ordered universe? Indeed, full belief in such a pre-ordered universe absent any veridical, individual initiative might well invoke despair, before deeper penetration into the belief eliminates the despairer as an independent agent making things happen and renders her or him at best a mere arriver in each moment. But can penetration into the belief ever be total?

Did Einstein's eternalism truly console him? Does it, in our own time, console block universalists Julian Barbour or Vesselin Petkev? Has there ever been anyone who so completely inhabited a pre-ordered universe that they would, like the conflict-free (a/k/a enlightened) Buddha, arrive fully present in each moment, "having ... abandoned favoring and opposing?"⁹⁷

Let us assume, then, that even in the eternally recurring fixed relations of a windrosed mandala, "from a centerpoint equally matched everywhere," there is always something to apparently do, something to apparently strive for, whether physically embodied or not. Embodied or "astral," each radii is precisely and eternally what it is, and never more than what it is, so that there is no thickening or layering in each *uncovering* moment, just as there is none in a

looped film's endless journey through a projector, or the full moon's periodic beam upon a lake. Although from the perspective of commonsense duality "I" might be increasingly enriched by each glimpsed moonglow or by each repeated viewing of a film, a wind-rosed mandala of consciousness being eternally uncovered has no such cumulating vantage point.

Nor is any moment of consciousness “definitely closed off unto itself”⁹⁸—a point James emphasized frequently—however much the illusion of such enclosed consciousness is forcefully suggested by the apparent individuation of our apparently physical bodies. James, the eternalistic mystic, was not as ready as Einstein, the eternalistic physicist, to offer eternalist consolations for the apparent doom awaiting our bodies. But he had recourse to another consolation. “When that which is you passes out of the body, he wrote to his perpetually invalid sister, Alice, as she lay dying, I am sure there will be an explosion of liberated force and life til then eclipsed and kept down.”⁹⁹ And although he knew his sister was not a fan Mrs. Piper, he did not withhold from her where his assurance for the survival of “that which is you” came from. However tentatively offered, and however tentatively—and, til the end of his life, sporadically—believed in by James himself¹⁰⁰—such assurance may well be, even for eternalists, the best assurance we have: “...enlargements of the self in trance, etc., are bringing me to turn for light in the direction of all sorts of despised spiritualistic and unscientific ideas.”¹⁰¹

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Notes

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- 1 Lodge, 1891, p. 554
 - 2 Parmenides, fr. 8
 - 3 Zohar, 1983, p. 118
 - 4 Bricklin, 2015
 - 5 James, 1910a, p. 1280
 - 6 James, 1897, p. 570
 - 7 James, 1909, p. 131
 - 8 James, in Bricklin, 2007, p. 110
 - 9 James, 1890a/l, p. 346
 - 10 James, 1909, p. 104. For an extended discussion of such pulsing as a foundation of both Buddhist meditation and quantum physics, see Bricklin, 2015.
 - 11 James, 1910a, p. 1274
 - 12 James, 1910a, p. 1280
 - 13 Parmenides, fragment 8, lines 43-44
 - 14 See Bricklin, 2015, p. 224
 - 15 James, 1910b, p. 1312
 - 16 Blood, 1860, p. 130
 - 17 Verse, 2.6, translated by Schweig, 2006, p. 40
 - 18 de Broglie, quoted in Schlipp, 1974, p. 114
 - 19 James, 1988b, p. 70
 - 20 James in Skrupskelis, 2001, p. 501
 - 21 James, 1986, p. 252
 - 22 See Kingsley, 2003
 - 23 See Bricklin, 2015, pp. 306-307
 - 24 Parmenides, fr. 2
 - 25 Gupta, 1998, p. 27. See discussion in Bricklin, 2015, p. 124
 - 26 Blood, 1920, p. 153

- 27 Hodgson, S., 1898/l. p. 455
28 Bricklin, 2006, pp. 16-17
29 James, 1986, p. 494
30 James, 1896, p. 190
31 James, 1986, p. 374
32 James, 1986, p. 131
33 James, 1986, p. 188
34 Hodgson in Tymn, 2013, p. 18
35 James, 1986, p. 436
36 James, 1986, p. 131
37 Tymn, 2014, p. 18-19
38 Podmore, 1910, p. 222.
39 James, 1986, p. 188. The frequently excellent science writer, Martin Gardner, for one, offers what I believe can be best described as an under-researched, overly speculative essay: "How Mrs. Piper Bamboozled William James" (Gardner, 204, 252-262). And Gardner's essay was used by both the daily and Sunday *New York Times'* book reviewers in their review of Blum's book to torpedo anyone's advance toward Piper. Gardner, at his best, can hold his own with James when it comes to assessing valid empirical research. But that little essay—window-dressed as "a long exposé" by the Sunday Times reviewer—cannot survive an extended examination of the actual sessions, and the rigorous context in which they were conducted. (See, especially the books by Tymn, Braude, and Gauld, listed in the bibliography). There is also a deft point by point-by-point exposure of what James might have called Gardner's "humbug" (his terms for critics guided more by narrow preconception than honest exploration): Michael Prescott's "How Martin Gardner Bamboozled his Readers"
http://michaelprescott.typepad.com/michael_prescotts_blog/2007/08/how-martin-gard.html . See also Greg Taylor's detailed response to Gardner: <http://www.dailygrail.com/essays/2010/11/skeptical-skeptic>
40 James, 1986, p. 372
41 James, 1986, p. 360
42 James, 1986, p. 254
43 James, 1986, p. 217
44 James, 1986, 185
45 James, 1986, p. 184
46 James, 1986, p. 188
47 James, 1986, p. 188
48 1986, p. 255
49 Blum, 206, p. 218
50 Hodgson, R., 1896, p. 364
51 James, 1986, p. 496
52 Blum, p. 217, and Gauld, p. 259
53 *ibid.*
54 James, 1986, p. 191
55 Hodgson, R., 1896, p. 301
56 Hodgson, R., 1896, p. 364
57 Tymn, 2013, p. 91
58 In addition to James and Lodge, Nobel physiologist Charles Richet, chemist Sir William Crookes.
59 James, 1910b, 1279-1280
60 Myers, 1903, pp. 402-405. For how precisely detailed accurate precognitive visions can be contrasted with apparent precognitive visions that do not "realize" see Bricklin, 2015, pp. 99-100.
61 Dodds, 1934
62 Dodds, 1973. P. 160
63 Dodds, 1973, p. 160
64 Blood, 1920, pp. 82-203
65 James, 1986, p. 239

- 66 James, 1986, p. 239
- 67 Lodge, 1931, p. 212
- 68 James, 1890/I, p. 346
- 69 James, 1890/I, p. 346
- 70 Hodgson, R. (1885)
- 71 See Palmer, 2009, 118-122
- 72 James, 1905, p. 110
- 73 James, 1986, p. 374
- 74 James, 1890/I, p. 304
- 75 Searle, 1992, p. 90
- 76 Miller, in Taylor, 1996, p. 185
- 77 James, 1911, p. 1045
- 78 Miller, in Taylor, 1996, p. 185
- 79 Bohm & Hiley, 1993, p. 322
- 80 James, 1902, p. 218
- 81 James, 1890/I, p. 185
- 82 James, 1890/I, p.304
- 83 *Ibid.*, p. 274
- 84 James, 1892, p. 433
- 85 James, in Bricklin, 2007, p. 110
- 86 James, in Bricklin, 2007, pp. 94-95
- 87 James, 1897, p. 476, emphasis added
- 88 Tymn, 2013, p. 24
- 89 James, 1897, p. 583
- 90 Tymn, 2013, p. 93
- 91 James, 1890/I, p. 291
- 92 *ibid.*
- 93 Deikman, 1963, p. 337
- 94 Tymn, 2013, p. 131
- 95 James, 1902, p. 338
- 96 John, 1983, p. 185
- 97 Mahatanhasankhaya, Sutta 38, in Nanamoli & Bodhi, 1995, p. 360
- 98 James, 1890/I, p. 350
- 99 James, in Skrupskelis, 1999, p. 178
- 100 The year before he died, James summarized his lifelong struggle with spiritism in his "Report on Mrs. Piper's Hodgson-Control": "I myself can perfectly well imagine spirit-agency, and I find my mind vacillating about it curiously" (James, 1986, p. 284).
- 101 James, in Skrupskelis, 1999, p. 178

Explorations

Theories of Consciousness and Death
Does Consciousness End, Continue, Awaken, or
Transform When the Body Dies?

Roger Cook*

Abstract

In this paper the organic process of death is envisaged as giving rise to a transformative experience, one that the human brain may have evolved in response to being confronted with its termination. The out-of-body experiences (OBEs) of patients undergoing surgery are examined, and considered to have a physiological basis rather than a spiritual one. The near-death experience (NDE) is then interpreted as a return to the present of the moment of birth.

It is suggested that nothing leaves the body at death, but that the individual has a euphoric experience that coincides with cessation of awareness of time. The NDE of a noted atheistic philosopher is then considered. By its nature the process of death precludes research by conventional neuroscientific methods that would be both invasive and impractical. The paper concludes with corroborative evidence of a personal nature.

WHAT happens when we die? The phenomenon known as the near-death experience (NDE) is explored in this paper in the hope that it may provide an insight into the possible transformation of the human consciousness that may occur at death. Dying is considered by most people to be a gradual process. Charles II is said to have apologised for taking an unconscionable time over it, whereas he probably thought death itself would be instantaneous, like the snuffing out of a candle.

But death is also a process, which commonly starts with cardiac arrest. Some minutes elapse before stoppage of the circulation becomes lethal to the brain. The mind can remain alert until the brain stem – into which are packed the control mechanisms for speech, sight, hearing and breathing – ceases to function. What takes place in the mind during that interval is crucial. A considerable body of evidence has been assembled indicating that the human consciousness undergoes a unique transformation.

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A great deal of this evidence comes from reports of the near-death experience (NDE) that have been recorded over the past fifty years. The NDE ‘typically involves a number of different components including a feeling of peace and well-being, out-of-body experiences (OBEs), entering a region of darkness, seeing a brilliant light, and entering another realm’ (French, 2005, p. 351). Certain impressions can be aligned with corresponding physical events. For example, the thump that accompanies the return to the body in many autoscopic NDEs (where the subject claims to have seen the medical team at work from above) appears to coincide with the heart being restarted by a successful resuscitation procedure (Sabom, 1982).

The most significant event is the irreversible loss of the capacity for consciousness that is the inevitable effect of death of the brain stem. A distinction should be made between the *capacity* for consciousness, which is a function of the brain stem, and the *content* of consciousness, which resides in the cerebral hemispheres. The survival of the former is essential for the activation of the latter.

Typically, at least according to French (2005), it is clear that during the minutes that elapse between cardiac arrest and death of the brain stem, the mind experiences vivid and varied images. It seems that these lead into a final experience that totally resolves all personal conflicts, all unanswered questions, all emotional loose ends, all guilt remorse and sorrow, as the consciousness enters a state of warmth, joy and release from pain, characterised by NDEers as being overwhelmingly suffused with love. In a word, it is transformative. (To be fair, various others note that some NDEs differ significantly, some even being terrifying.)

Another notable feature of NDEs is the disappearance of all sense of time, which occurs just before the moment of death (afterwards is unknown). This atemporal sense is not the same as entering a *hereafter*, but would seem to be a permanent *here-and-now*. The *after* in “life after death”, or “hereafter”, is a product of the sequential habit of thinking derived during this life, which has always involved consideration of *the next*. Being born, and acquiring a theory of mind means entering time – a narrativised “and then...and then...” mode, a “What happens next?” perspective. But if this imperative ceases to govern one’s perceptions, such a question ceases to formulate itself. Eternity is thus outside of *time* in its restricted sense of duration measured as a succession of events (cf. Nixon, 2010).

Does Something Leave the Body?

Perhaps the heightened reality of the experience is the most powerful impression noted by NDEers. But registering this impression is not the same as accepting that the events related in the NDE actually happened. Because they were experienced as real does not mean that they were actual.

The distinction between real and actual is particularly marked in the autoscopic element of the NDE, the out-of-the-body situation experienced by many patients being treated for cardiac arrest. They typically report leaving their body and observing, usually from a point near the ceiling, the medical team at work. For this actually to occur, the retina of the eye would have to record the relevant images and pass them via the optic nerve to the visual cortex. The requisite organs, together with their support systems of veins, arteries, glands and the like, would therefore have to be in place. Such a disembodied assemblage has never been recorded by anyone present in such a setting; the very process of enumerating them in this way serves to highlight the bizarre nature of the notion.

But the intention here is emphatically not to devalue such accounts; quite the reverse. As noted earlier, such testimony is overwhelmingly suffused with the reality of what was experienced. Is it then the case that what took place in the mind was also produced there? If so, there is no necessity to postulate the idea that anything like a soul or spirit leaves the expiring human.

The Altered State of Consciousness

In the normal everyday situations of life, such as writing at a desk, the conscious mind experiences a stable model of reality: a combination of sensory inputs, such as the hardness of the chair or the sound of passing traffic, together with mental constructs, derived from learning and memory. But on occasion an alternative model displaces this stable model: for example, in dreams, drug-induced states, and out-of-body experiences. All such states involve worlds of truly imaginary, i.e., imaged in the mind, origin, which seem as real, and often more real, than waking life.

In effect, the model of reality fuelled by sensory inputs has been challenged and superseded by a model derived from images and memory, and constructed from the top down (Blackmore, 1993). The conscious model of reality is dislocated so radically that the mind seeks something to put in its place: the model based on memory and experience becomes dominant over the bottom-up reality model as sensory input becomes weaker and less

definite. In a dream this dominance may be temporary and transient, so that we forget not only what we dreamed, but if we dreamed at all.

Under anaesthetic, however, it is possible that the mind responds to physical sensations originating from surgery by converting them into a mental construct, specifically an image of the surgeon at work on the subject's body. In other words, the person adopts the survival strategy of combining sensory input, perhaps affected by anaesthetic, with memory and previous knowledge of medical procedures. From these sources the mind constructs a model of what is happening to the body. This becomes dominant in the *out of body experience*, during which patients report observing the activities of the medical team from a point near the ceiling. In six cases of resuscitation from cardiac arrest reported by Sabom (1982), subjects confirmed details recorded on medical instruments and conversations of waiting relatives that could only have been perceived from a position outside the body. The altered-state-of-consciousness theory cannot account for these phenomena, unless it is modified to allow for paranormal or extrasensory perception. A closer examination by Blackmore (1993) revealed many of these anecdotes to have been as much fantasy as fact containing obvious contradictions.

However there are other situations in which the mind adapts to unmanageable challenges by shifting into an alternate state of consciousness. Faced with an inevitable car crash or similar accident situation, people frequently report experiencing a vivid replay of their lives. "My whole life seemed to flash before my eyes" is a typical formulation, of what has been termed "depersonalization in the face of life-threatening danger" (Noyes & Kletti, 1976).

The onset of death presents the mind with its most extreme condition of sensory deprivation as the sense organs lose their functions and the brain is denied sensory stimuli. But there is one significant compensation: in its weakened state of anoxia, the brain is no longer called upon to initiate motor functions or muscular contractions. Nevertheless, the brain stem is still alive, and able to affect neural activity in the cortex.

It seems fair to suggest that the preconditions for an altered state of consciousness are then met. Sensory input has ceased, so the mind searches for a model to replace the fading bottom-up reality model. It can only build one from the top down, i.e. using memory, images, and experience in a totally unfettered way. Having laboured since birth in the service of the

organism, the mind can now give complete precedence to the onrush of images and feelings stored away over the years. Relieved of the necessity to monitor, filter, and suppress external perceptions, the mind is freed to experience totally the joys, sorrows, loves, hates, pleasures, and pains that make up this flood (unless the brain is just running amok).

Whatever form the experience takes, it will be unique for each individual, based entirely on his or her biography, and hence not part of some universal or shared other world. But the universal factor in the situation is that it will not be subject to limits of duration. It will be outside time, having no beginning or end, conspiring to convince the spirit that its condition is unique, personal, and eternal.

The logic behind such a marked change is very clear; the continuance of survival, for any animal, hinges on its acquiring sufficient nourishment to continue living. The basic question posed by life is, “Where is the next meal coming from?” This puts humans in the “And then...and then...” mode referred to earlier. But in death the only parameter is the present. Time past and time future fall out of the picture.

The idea that all this, the resolution of all regrets and fears in some personal paradise can be a creation of the isolated mind in its dying moments may seem implausible. But again there is a logic behind it. Once out of the womb an infant child embarks on a life centered on others; every engagement with a significant other is increasingly social, in a context of other-directed and frequently dependent relationships.

It may be helpful here draw attention to the work of child psychologist Margaret Donaldson. Professor Donaldson (1992) suggests that humans are born experiencing only the present, the here-and-now, which she terms *point mode*. “Later other loci become possible. For example, the second mode, which is called the *line mode*, has a locus of concern that includes the personal past and the personal future” (p. 11).

Death is a complete reversion to the singularity of the moment: in effect, a return to point mode. As the poet T S Eliot (1944) has it, “In my beginning is my end” and “In my end is my beginning” (first and last lines of *East Coker*). At death the dimensions of both time and a responding world are apparently displaced by a state of timelessness and solitariness – not, however, loneliness, since the interior world at the point of death is peopled with those who have meant most in life (not necessarily in a good way, however); reportedly such

encounters, though imaginary, are extremely vivid. However, the dead themselves – those who don't revive – have to this point made no reports about the nature of their company.

For those who have not experienced an NDE, it may be hard to accept that the product of the mind at such a time will be so unique and exceptional. Experience of the brain's capacity for recall is not encouraging. Consciously trying to dredge up happy memories, friends' faces, successful holidays and the like may lead to the conclusion that the raw material is not exactly heavenly.

Similarly, seeking to conjure up a picture of the joys and pleasures that might comprise life in paradise is somehow unrewarding. But this may be because the attempt is made from within a context that is neither relevant nor propitious; that is, the dominant reality model of one's waking life. This may be why the potential performance of the human mind at the point of death has long been seriously underrated. Susan Blackmore (1983), in noting that many persons dismiss out-of-body experiences as "just imagination," comments, "Imagination is far too vast and exciting a word to be denigrated with the word 'just'. ... [The OBE] is imagination, and that may be quite the most exciting thing it could be" (p. 149).

The central conundrum, then, may be re-expressed in the following form: *Nothing leaves the body at death, yet we do experience a personal heaven. The experience occupies only a moment of time, yet creates an eternity in death, at which point the dimension of time is extinguished.* Such may be the transformation of consciousness that occurs at death.

The foregoing is an organic perspective on the near-death evidence, firmly grounded in the idea that everything humans experience at death is a product of the brain. But two other perspectives are widely held, and should be acknowledged here.

From the earliest times, the belief that an immaterial mind/soul or ghost separates from the dying body was widespread. This, the spiritual perspective, sees NDEs as providing a glimpse or foretaste of a spiritual realm in the hereafter. Bestsellers on the topic agree.

A second important perspective is the psychological, of which Noyes and Kletti's (1976) suggestion of depersonalization in the face of life-threatening danger is an example. However it is the third broad category, organic studies, which has received increased attention in recent years, according to French (2005).

Cardiac arrest survivors have been the chosen subject of at least four such studies because they provide the opportunity for a prospective approach, under clinical conditions, whereas retrospective accounts of NDEs are generally unsystematic, self-selecting, and often reported years after the event. From the prospective studies a best estimate for the incidence of NDEs among cardiac arrest survivors has been reckoned to be 10-12% (French, 2005).

Among the proximate causes of the experience may be the anoxia and/or hypercarbia of changed levels of blood gases, fluctuations in the body's neurotransmitters, and dysfunction of the temporal lobe. The explanation by Saavedra-Aguilar and Gómez-Jeria (1989) invokes temporal-lobe dysfunction, hypoxia, psychological stress, and neurotransmitter changes to account for the NDE. As Blackmore (1993) has pointed out, different components of the NDE may have different causes, giving rise to a model that is a synthesis of different components. The release of endorphins has also been invoked by a number of authorities (e.g., Carr, 1982; Saavedra-Aguilar and Gómez-Jeria, 1989) since they are known to relieve stress and pain and give rise to pleasant feelings.

Some have questioned the apparent occurrence of intense mental activity when the patient shows a flat EEG (which occurrence is controversial). Such experiences appear to be taking place at a time when cerebral function is severely impaired. However others have pointed out that the NDE may have occurred as the patient rapidly entered the state of flat EEG or as they more gradually recovered from that state (French 2005, p. 363). It should be borne in mind that altered states of consciousness often have an effect on time perception, as illustrated by the life review component of the NDE during which it is claimed that the whole of an individual's life is replayed in a fraction of a second.

One further possibility has been raised and may be worth quoting. According to Chopra Hameroff and Chopra (2010):

Recently two clinical studies used processed EEG brain monitors at the time of death in terminally ill or severely brain-damaged patients from whom support was withdrawn, allowing the patients to die peacefully. In both sets of patients, measurable EEG brain activity dwindled as blood pressure dropped and, eventually the heart stopped beating. But then, in each patient, there was an abrupt burst of brain activity lasting about a minute or more which correlated with gamma synchrony EEG, the most reliable marker of conscious awareness. Then, just as abruptly, the activity ceased. Because these patients died, we can't know if

they had NDE or OOB [out of body] experiences, or if the activity actually marked the soul leaving the body – 'giving up the ghost.' But regardless, the mystery is how the energy-depleted brain could muster synchronous neuronal EEG activity – whatever it was. One possible answer is that consciousness and gamma synchrony involve very low energy quantum entanglements which persist while other brain functions have run out of fuel.

This report confirms once more that both the uniqueness and the non-repeatability of the NDE are severe constraints on further progress in researching the organic model.

Perhaps the case of noted sceptic and lifelong atheist, A. J. Ayer, could be a paradigm for the organic explanation for NDEs. The crucial fact to emerge from Ayer's NDE episode (a period of four minutes without a heartbeat) was that the experience must have occurred entirely within his own head. So many readers gained the impression from Ayer's (1988a) account of his NDE that he had changed his mind about his atheism, that he felt obliged to publish a postscript a few months later. In this he made it clear that his experience had not altered his firm belief that there was no life after death: "I thought it so obvious that the persistence of my brain was the most probable explanation [for the near-death experience] that I did not bother to stress it. I stress it now. No other hypothesis comes anywhere near to superseding it" (1988b)

Particularly intriguing is the way that his experience so closely reflected his personal life. Like many people, Ayer clearly identified with Shakespeare's tragic hero Hamlet. For example he expressed regret that his article had been given the rather bald title "What I saw when I was dead" instead of his own choice, a quotation from *Hamlet*: "That Undiscovered Country [from whose bourn no traveller returns]" (1988b).

Throughout the account, Ayer (1988b) employs phrases from the play. At one point he found himself in space, which appeared to him to be awry, or "slightly out of joint." He felt it was "up to me to put things right," echoing Hamlet's words: "The time is *out of joint*; O cursed spite! That ever I was born *to set it right*." He encounters *ministers* who are in charge of space (perhaps reflecting Hamlet: "Angels and *ministers* of grace, defend us!").

Ayer also recalled during his NDE that since Einstein it had become customary to treat space-time as a single whole. He therefore "hit upon the expedient of walking up and down, waving my watch, in the hope of drawing their [the ministers] attention, not to my watch

itself but to the time which it measured” (1988a). This behaviour is utterly characteristic of the philosopher and academic that Ayer was in life. His NDE certainly confirms that the experience is unique and different for each individual.

The religious figures that are met during some NDEs almost always correspond to the religion of the person having the experience, “with Christians tending to see Jesus and Hindus seeing the messengers of Yamraj coming to collect them” (Osis and Haraldsson, as cited in French, 2005). For the atheist Ayer a tragic hero and a leading man of science were invoked instead (Hamlet and Einstein).

For Ayer and those championing the organic perspective, there can be only one explanation for the near-death experience. The human brain seems to have evolved a particular strategy when faced with extinction. Some combination of endorphin release and hypercarbia/anoxia usually triggers a final experience so profoundly happy that what might happen next no longer matters. This is the moment of transformation into eternity (**OED 1.1** A state to which time has no application; timelessness.)

Death is a subject impossible to study empirically, because no traveller returns from it. Consequently this writer’s personal conviction that time ceases at death is not amenable to proof, or likely to receive support from any quarter. However it is firmly held, as a result of two experiences, apparently triggered by a premonition or intuition of approaching death. Neither developed very far, so they could be regarded as proto-NDEs. One was a lucid dream, and the other a recollection of a hallucination that occurred under anaesthetic.

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Postscript, a Memoir

“IT all began with a dream – ”

“*Oh, no!*”

“A lucid dream actually – one where you know you are dreaming?”

“*And what was this dream about, Roger?*”

“I’ve completely forgotten – all I remember is that it was very happy and enjoyable. But I was aware that sooner or later I would have to wake up.

At that point it was borne in on me, as if to compensate for my disappointment, that at the appropriate time – which I took to mean at death – the pleasant experience would continue and be completed, fulfilled. The words “So *that’s* how it is!” came into my mind.”

“That’s how what is?”

“During the concluding moments of life everything would be resolved. Most important of all, at the moment of death the perception of time would be transformed. That moment would mark a reversion to a state that would be literally time-less. It seemed as though death would be an all-embracing experience of joy in the present moment, a totality with nothing beyond it.”

“And why was this perception so remarkable to you?”

“Because it squared the circle – it turns out that whereas in life you continually worry about what’s going to happen next, at the moment of death all preoccupation with the future ceases to apply. You exist entirely in the moment, the now – ”

“At which point it’s goodnight Vienna?”

“Yes – life comes to an end, but you go out on a high.”

“No eternal strumming of harps and praising the Lord forever then?”

“Not unless such things constitute your idea of Heaven, in which case the dying brain would create those images in your mind. But for most people the experience would incorporate joyful meetings with loved ones – ”

“- after travelling along a tunnel towards a brilliant white light? You’re talking about near-death experiences aren’t you?”

“Yes.”

“Oh...dear!”

Time was when I would have echoed my friend’s scepticism. NDEs? Weren’t they a bit hippy, flaky, along with ley lines, crystals and other illusory props to New Age thinking? But the dream had provided me with an insight, an intuition that was very hard to ignore. It

seemed to me that the final operation of your dying brain is to create the experience of paradise.

Since that morning, back in the 80s, the need to know more has taken me to conferences in Europe and the States, to degree-level exploration of the brain and conscious mind in the search for evidence in support of the notion that a paradisaal eternity is compressed into that final moment. But I can't prove it.

However the lucid dream described above started me thinking about out-of-body and near-death experiences, and brought to mind a near-death experience of my own. It occurred when the dentist gave me a general anesthetic in order to extract some teeth.

As soon as I passed out, my whole life – all ten years of it – flashed before my eyes. There was a tumult of impressions, of home life, pets, friends and relatives, and then I was in a tunnel that led up towards a distant bright light. At that point I became convinced that I had been given too much gas, that I had died, and was therefore on my way to Hell. As I got closer to the light I made out a face peering down at me – obviously Satan. The puzzling thing was that he was wearing glasses. If the Devil was as all powerful as I had been led to believe, he would surely possess 20/20 vision? At that point, his (the dentist's), voice reached me, and I was back in the land of the living.

The experience was very real, particularly the conviction that I had died. This realness seems to be one of the most memorable features of NDEs – “realer than here, really” as one experiencer put it (Sabom, 1982, p33). The other thing that most experiencers record is that time seems to fall out of the frame. There is just the now, the moment, an experience of bliss so total and all embracing that concern about the future ceases to apply.

In life, minute follows minute, hour follows hour and day follows day. But according to my lucid dream, at the point of death the mind stands outside time and experiences a resolution of all conflicts, all unanswered questions, all emotional loose ends, all guilt, remorse and sorrow, and in that last moment enters a state of warmth and joy and release from pain. If this is really what happens at death it is important that everyone should be aware of it.

From what I have experienced and read, it seems to me that the two most important characteristics of the NDE are (a) that at death nothing leaves the body, the NDE being a

construct of the dying mind, and (b) at the moment of death you are totally embedded in a euphoric present, which has the effect of extinguishing any concern about what will happen next. Death may, from such a perspective, be regarded as a totally transformative experience.

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Explorations

It's the Other Way Around: Matter is a Form of Consciousness and Death is the End of the Illusion of Life in the World

James P. Kowall* MD, PhD & Pradeep B. Deshpande* PhD

Abstract

An argument based on recent developments in theoretical physics is made that consciousness itself is the primordial nature of existence, and that all possible physical and mental experiences that can ever become manifest in the world are only forms of consciousness. This conclusion follows from the premise that in its ultimate undifferentiated state, consciousness exists as the nothingness of the void. Modern physics then demonstrates the only way a world can be experienced is if consciousness differentiates itself into an observer that observes all the physical and mental images of that world as projected from a holographic screen to a point of view. In this scenario, the focal point of the observer arises from the void through the differentiation of consciousness while the holographic screen arises through the void's expression of geometric mechanisms such as the expansion of space and non-commutative geometry. This scenario tells us the focal point of consciousness of the observer is the bridge that connects the ultimate being of the void to the becomings of the world. The nature of life in the world can then be understood as about becoming, while the ultimate nature of death can be understood as the final transition from becoming and the differentiation of consciousness to nondifferentiation and ultimate being. This premise also tells us that death is the end of an illusion. The illusion that ultimately comes to an end is not only the illusion of life in the world, but also the illusion of separation.

Keywords: Consciousness, nothingness, void, existence, being, becoming, life, death

Section 1: Introduction and Overview

In a recent New York Times Op-Ed: "Consciousness isn't a Mystery, It's Matter," Galen Strawson (2016) writes: "Conscious experience is itself a form of physical stuff, and the hard problem is not what consciousness is, it's what matter is." He asks: "What is the fundamental stuff of physical reality, the stuff that is structured in the way physics reveals?" He answers: "We don't know – except insofar as this stuff takes the form of conscious experience".

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We'd like to point out this argument is a strawman. Once the primordial existence of consciousness is accepted, modern physics has already shown that it's exactly the other way around: physical stuff is a form of consciousness. Ironically, this brings us back to the mystery of the primordial existence of consciousness. This line of reasoning is discussed in detail by Amanda Gefter (2014) as she surveys the landscape of modern physics. Based upon the recent observational discovery of dark energy and the theoretical discovery of the holographic principle she concludes that *nothing is ultimately real*.

Gefter defines ultimate reality in terms of what is invariant for all observers. Since modern physics tells us every observer's observations are observer-dependent, nothing can ultimately be real. Everything an observer can possibly observe depends on the observer's frame of reference. Only the primordial nothingness of the void is invariant for all observers and therefore can ultimately be real.

The only thing needed to complete Gefter's argument about the nature of ultimate reality is to identify the primordial nothingness of the void as undifferentiated consciousness, while the perceiving consciousness present for living organisms is differentiated consciousness. This premise tells us the individual perceiving consciousness of the observer is differentiated from the undifferentiated consciousness of the void. This essay gives the scientific reasons why her argument can be extended in this way.

The concept of ultimate reality is at the heart of all discussions of ontology, which is the study of what exists in reality. This directly leads into a discussion of being and becoming. This critical distinction between the concepts of being and becoming has a long philosophical tradition, beginning with the works of Plato. The idea of becoming has to do with the nature of the world, specifically the physical and mental world we experience through the perception of the world. All ideas of space, time, matter and energy have to do with becoming, while being has to do with something that is prior to becoming. As modern physics clearly points out, not to mention the conclusions of many modern philosophers, the only thing that is prior to the creation of the world is the nothingness of the void. In this sense, the void is the ultimate nature of being. Simply put, *being is prior to becoming*.

Relativity theory tells us that even the dynamical space-time geometry of the world has the nature of becoming. The holographic principle tells us that all the physical and mental images of the world are projected from a holographic screen to the point of view of an observer, and that these images of the world are animated through the expenditure of energy that animates the world, not unlike the animation of a movie. Everything in the world, from elementary particles to body and mind, is animated.

The animation of all things in the observer's world requires the expenditure of energy, which relativity theory refers to as an accelerated frame of reference. It is always the observer itself as a focal point of consciousness that enters into an accelerated frame of reference. The holographic principle tells us that if energy is not expended and the observer's frame of reference is not accelerated, the observer no longer has a holographic screen, and so all images of the observer's world must disappear.

The big question is about what finally exists when the expenditure of energy comes to an end. Correctly interpreted, the holographic principle tells us that without the expenditure of energy only the nothingness of the void can exist, which is therefore the ultimate nature of reality. Only this nothingness is invariant for all observers (Gefter, 2014). Since the flow of time is directly related to the expenditure of energy, this is a timeless or an unchanging reality.

If the void is the ultimate nature of being, while all the animated images of the world projected from a holographic screen to the point of view of an observer are the nature of becoming, then what is the relation of the void to the world? The holographic principle tells us the only possible *bridge* that can connect the void to the world is the focal point of consciousness we call an observer. The perceiving consciousness of the observer must have a source, which can only originate from the void itself. In this sense, the perceiving consciousness of the observer can only be understood as differentiated.

Correctly understood, the holographic principle is telling us that the focal point of consciousness of the observer is differentiated from the all-encompassing empty space of the void whenever a holographic screen arises in that empty space and projects images of the world to the observer. Since the perceiving consciousness of the observer is differentiated, the consciousness of the void can only be understood as undifferentiated. Undifferentiated consciousness is what it means to say the void is the ultimate nature of being. As undifferentiated consciousness, the ultimate nature of being is One Being.

This nondual concept of One Being has a long metaphysical tradition, ranging from *the Tao Te Ching* to the Vedas to Zen Buddhism. It can be found in the works of Plato and the Advaita tradition of Shankara. Most modern philosophers have also come to the conclusion of the *nothingness of being* and that the ultimate nature of being or *ground of being* can only be identified as the nothingness of the void.

This is also what modern physics tells us when correctly interpreted in the context of the holographic principle. The fundamental reason this is the correct interpretation is logical consistency. This is the only possible interpretation that is not fraught with the logical inconsistency of paradoxes of self-reference.

The nature of life in the world has to do with the animation of forms. These animated forms have a tendency to hold together while animated, which modern physics calls the coherent organization of information. The holographic principle tells us that all the bits of information that become organized into forms are encoded on a holographic screen, that forms are animated with the expenditure of energy that characterizes the world, and that images of forms are projected to the point of view of an observer.

At least superficially, the nature of death has to do with the disorganization of information in forms so that they no longer can hold together and become animated as distinctly perceived entities. At a deeper level, an argument can be made that the nature of death has to do with the transition of consciousness from the differentiated perceiving nature of an observer to its ultimate undifferentiated nature.

The holographic principle is telling us that the focal point of consciousness of the observer is the bridge that connects the ultimate being of the void to the becomings of the world. This also tells us that the nature of life in the world is about becoming, while the ultimate nature of death is about the final transition from becoming and the differentiation of consciousness to nondifferentiation and ultimate being. In this transition, the illusion of life in the world comes to an end. Ultimately, death is not only the end of the illusion of life in the world, but also the end of the illusion of separation.

The other way to say this is that consciousness is the true nature of what we are. The holographic principle tells us that the perceiving consciousness of the observer can only be identified as the focal point of consciousness at the center of its world. As we perceive the becomings of a world, the nature of our individual consciousness and being is differentiated from the void. This differentiation process can only occur as a holographic screen arises from the void and projects all the images of that world to the observer's central point of view. If the holographic screen does not arise, this principle also tells us that the ultimate nature of our consciousness and being is undifferentiated.

Correctly interpreted, the holographic principle tells us that all physical and mental experiences are manifestations of our consciousness. Whenever we have a physical or mental experience, we manifest the experience we perceive either as an external sensory perception, an internal emotional body feeling, a memory, a thought, or some other form of mental imagination. The holographic principle tells us that all these perceptions are analogous to images projected from a holographic screen to the point of view of an observer. The screen defines our physical and mental world and the observer is only a focal point of consciousness. The mystery of our existence is that we exist as a point of consciousness.

The really big mystery is that ultimately we exist as the infinity of undifferentiated consciousness, which is the void. The void expresses its potentiality through the expression of energy, fundamentally as dark energy, which is the expansion of space. The expression of this energy is an expression of desire, specifically, the desire to create and perceive a world. From that expression of desire a physical world arises and all the possible physical and mental experiences of that world. We might even venture to say the void creates a conceptual world for itself in order to explain itself to itself within that world, and then is able to return to itself after it has gained this conceptual understanding of itself. Such a conceptual understanding of itself is not possible in the ultimate state of existence, only in a conceptual world.

What is the scientific evidence for such bold statements about the nature of reality? Relativity theory tells us the expression of dark energy is the exponential expansion of space that expands relative to the central point of view of an observer. Due to the limitation of the speed of light, a bounding surface of space called a cosmic horizon surrounds the observer at the central point of view and limits the observer's observations of things in space. If the holographic principle is applied to the cosmic horizon, all the bits of information that define everything the observer can possibly observe in this bounded region of space are encoded on the cosmic horizon.

Leonard Susskind (1995, 2008) realized the observer's cosmic horizon acts as a holographic screen that projects the images of things in space to the observer's central point of view. This is just like the projection of images from a computer screen to an observer, except the images appear 3-dimensional since their nature is holographic. Gefter (2014) has stressed that in the sense of quantum theory and a Hilbert space, the observer's holographic screen defines everything the observer can possibly observe in its world. She also realized that a consensual reality shared by many observers becomes possible if their respective holographic screens overlap in the sense of a Venn diagram and share information.

Where does the holographic principle come from? The holographic principle is automatically in effect if non-commutative geometry is applied to a bounding surface of space. Position coordinates on the surface are no longer represented by ordinary continuous numbers, but by non-commuting variables, which is a way of quantizing position coordinates. In effect, each possible quantized position coordinate defined on the surface turns into an area pixel that encodes a bit of information.

Raphael Bousso (2002) has shown the holographic principle is a general property of relativity theory called the covariant entropy bound, which is due to very general focusing theorems. The holographic principle is best understood as a geometric mechanism that allows all the bits of information that define things in a bounded region of space to become encoded on the bounding

surface of that space. The bounding surface acts as a holographic screen that projects the images of things observed in that bounded space from the screen to the point of view of the observer. This geometric mechanism naturally arises with the expression of dark energy, the expansion of space, and non-commutative geometry.

How do the laws of physics that appear to govern the behavior of everything in the observer's world fit in with the holographic principle? The strange answer is that all the laws of physics are derivative of the holographic principle, but they can only arise as thermodynamic averages. Ted Jacobson (1995) has shown that Einstein's field equations for the space-time metric, which determine the space-time geometry of the observer's world, arise from the holographic principle as thermodynamic equations of state, which are only valid as thermal averages. In other words, the law of gravity isn't really a law at all, but is only a thermal average that is a statistical consequence of the holographic principle.

The other laws of physics that govern the interactions of the electromagnetic and nuclear forces can be understood to arise from Einstein's field equations for the space-time metric through the usual unification mechanisms, which include super-symmetry and the Kaluza-Klein mechanism (cf. Bailin & Love, 1987) of extra compactified dimensions of space. All the usual quantum fields of the standard model of particle physics then arise as extra components of the space-time metric through unification mechanisms. The final result is akin to 11-dimensional super-gravity, which is a part of M-theory. Like gravity, the electromagnetic and nuclear interactions arise from the holographic principle as thermal averages. Like the holographic principle, these unification mechanisms can all be understood as geometric mechanisms.

These geometric mechanisms pretty much explain the creation of the observer's world, the nature of all physical and mental stuff in that world, and why that world appears to be governed by the laws of physics. The observer's world is only created because the void has the potential to express these geometric mechanisms. The void expresses its potentiality as it creates a world through geometric mechanisms, such as the expansion of space, and observes that world from the central point of view of that world, as all the physical and mental images of that world are projected from a holographic screen to the point of view of the observer.

Section 2: Modern Physics Tells Us Life in the World is an Illusion

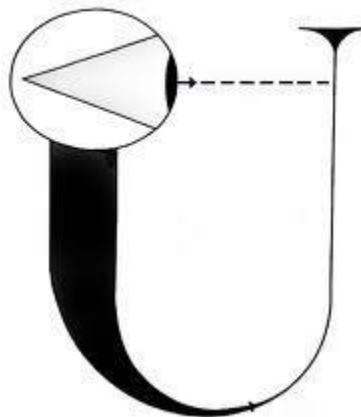
“Reality is merely an illusion, albeit a very persistent one.”

Albert Einstein

It helps to back up and review in detail how modern physics has brought us to this critical point in the development of science. Modern physics is concerned with the nature of the physical

world, which is to say matter and energy apparently existing within some kind of space-time geometry. There is a big puzzle in the connection between consciousness and modern physics in that all the matter and energy in the physical world that apparently exists within some kind of space-time geometry is composed of observable things like fundamental particles, while there is a long metaphysical tradition that equates the nature of being to consciousness itself, which is to say the observer of the observable things.

The big conundrum is about whether consciousness itself, as the observer of the observable things, can arise from some complicated configuration of the observable things like a human brain. Is it possible that consciousness arises from the things it observes? The simple answer is no. The problem with this idea is it lacks logical consistency and inevitably leads to paradoxes of self-reference. Almost all serious thinkers that have considered this puzzle have come to the conclusion that this idea is not possible, which begs the question: where does perceiving consciousness come from?

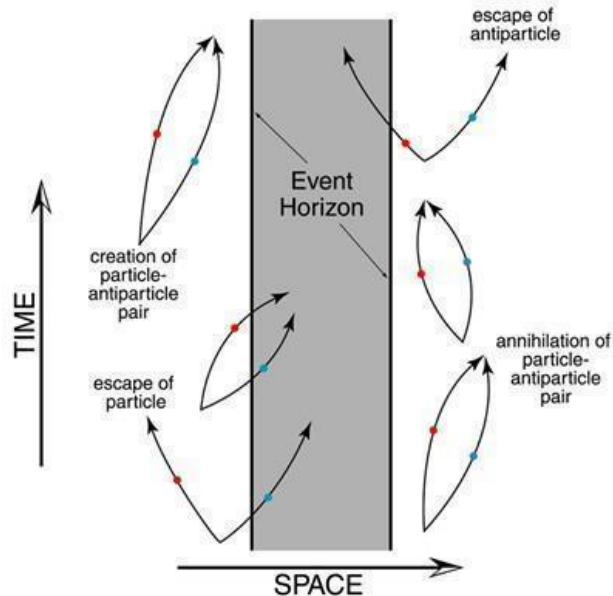


Wheeler's Universal Observer (image from Gefter, 2014)

The scientific answer to this question about the source of perceiving consciousness is really about what is ultimately real. Is the physical world the ultimate nature of reality, or is there an ultimate state of reality that is beyond the physical world? Until recent discoveries in physics, many physicists held the position that the physical world is the ultimate nature of reality, but that position is no longer tenable (Gefter, 2014).

The basic difficulty with this position goes back to the problem of the unification of quantum theory with relativity theory, which is the problem of fundamental particles existing in some kind of space-time geometry. Relativity theory tells us there is no such thing as an absolute space-time geometry, and so with unification there can be no such thing as fundamental particles. Change the space-time geometry as observed from the point of view of an accelerating observer, and the

symmetries of that space-time geometry also change. Since all so-called fundamental particles reflect the symmetries of the space-time geometry as representations of a symmetry group, there really is no such thing as fundamental particles.



Hawking Radiation (image from universetoday.com)

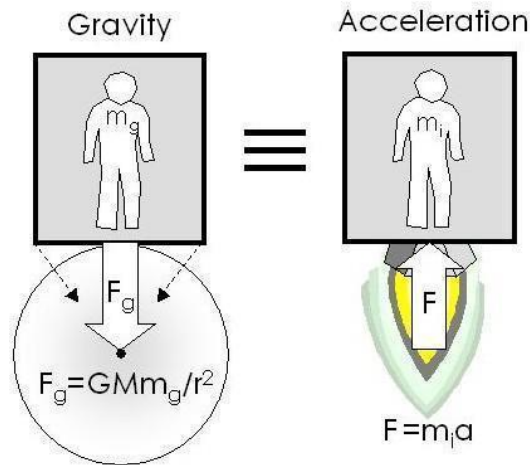
The ultimate example of this dilemma is an event horizon, which always arises from the point of view of an accelerating observer. The observer's horizon fundamentally limits the observer's ability to observe things like particles in space. As Hawking (1996) realized with the discovery of Hawking radiation from the horizon of a black hole, an accelerating observer that accelerates away from the black hole horizon in a rocket ship does not observe the same set of particles that an observer observes while free falling through the black hole horizon. The basic problem is the event horizon of the black hole breaks the symmetry of empty space, and so radically alters what these two observers call fundamental particles. For the freely falling observer, particles of Hawking radiation do not exist.

How can particles of Hawking radiation radiated away from the event horizon of a black hole exist for the accelerating observer but not for the freely falling observer? How can any particles be fundamental if the particles that appear to exist for an observer can change or appear to go in and out of existence based on whether the observer's point of view is accelerated or not? If neither space-time geometry nor particles are really fundamental, what is?

We might guess that only the consciousness of the observer is really fundamental, and that so-called fundamental particles can change based on whether the observer's frame of reference is accelerated. Although this is a good guess, it's not quite the right answer. There must be

something more fundamental than the point of view of the observer that explains whether that point of view is accelerated. The basic problem is acceleration implies the expenditure of energy, and that energy has to come from someplace. There must be some kind of a mechanism inherent in the generation of the energy that gives rise to the observer's accelerated frame of reference. If that energy is not expended or the acceleration mechanism is not put into effect, the observer's frame of reference is freely falling.

At the root of this problem is the underlying foundation of relativity theory. Relativity theory is fundamentally based on the principle of equivalence. The exertion of any force, which requires the expenditure of energy, is equivalent to an observer's accelerated frame of reference. For example, the force of gravity on the surface of a massive planet is equivalent to the acceleration of a rocket ship through empty space. An observer on the surface of the planet observes exactly the same kind of accelerated motion of objects that fall through space as an observer in the accelerating rocket ship, and so there is no possible way to distinguish between these two scenarios based only on the accelerated motion of objects. As an object accelerates through space, it gains kinetic energy. We usually think that gravitational potential energy is converted into kinetic energy as the object accelerates under the force of gravity, but where does the energy come from in the accelerating rocket ship? The answer is the energy comes from the energy expended as the thrusters of the rocket ship force it forward through space.

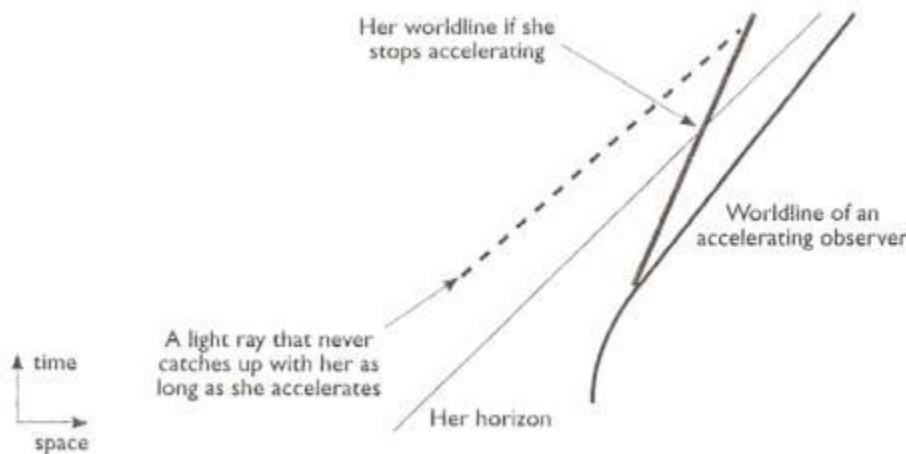


Principle of Equivalence (image from mysearch.org)

This means that before we can discuss an observer's accelerated frame of reference, we have to discuss the expenditure of energy or the mechanism that generates this accelerated motion. The consciousness of the observer cannot really be fundamental because there is the issue of whether or not the observer's point of view is accelerated and energy is expended. The observer is only in an accelerated frame of reference if energy is expended. Where does this energy come from? The strange answer is the energy comes from the same place as the observer's point of view. The

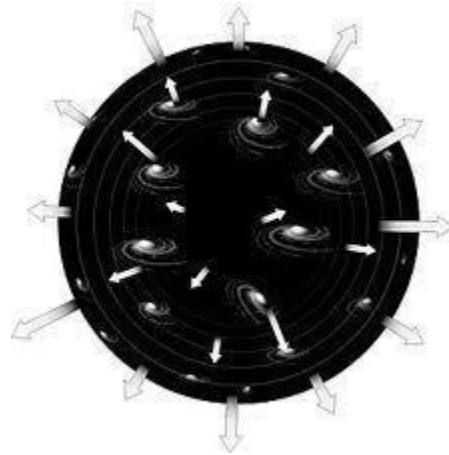
irony of this answer is that this most fundamental of all places and all things can only be described as the void or nothingness.

Closely related to the issue of the principle of equivalence is the issue of the generation of an event horizon. Although the horizon of a black hole seems like a special case, it turns out event horizons arise for all accelerated observers. The observer's horizon always limits the ability of the observer to see things in space. An event horizon always arises for any observer in an accelerated frame of reference. In the most generic case, this is called a Rindler horizon (Smolin, 2001). In line with the idea that the observer's accelerated frame of reference is only an accelerated point of view, we say the observer's horizon arises as the observer follows an accelerated world-line through its space-time geometry.



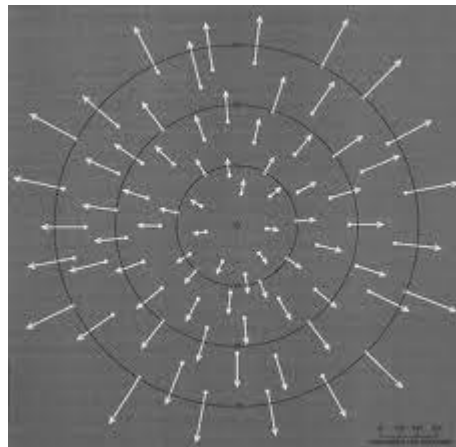
Accelerating Observer's Horizon (image from Smolin, 2001)

This brings us back to the question of where does the energy come from that gives rise to the observer's accelerated frame of reference? Although the answer seems exceedingly strange, it can be summarized with only a few concepts. This answer is at the heart of all theories of the big bang creation event. The energy must come from the same place that the observer comes from, which is the void. The nature of this energy is called dark energy, which is understood in relativity theory as the exponential expansion of space, which always expands relative to the central point of view of an observer. Dark energy is the creative energy that puts the “bang” in the big bang event (Gefer, 2014). If space does not expand and dark energy is not expended, only the void exists, which is like an empty space of potentiality. If space does expand and dark energy is expended, an observer's world is created, and the observer of that world is always present to observe that world at the central point of view of that world.



Exponential Expansion of Space (image from scienceblogs.com)

In relativity theory the force of dark energy is called a cosmological constant Λ , which gives rise to the exponential expansion of space that always expands relative to the central point of view of an observer. With the exponential expansion of space and the expression of dark energy, the farther out in space the observer looks, the faster space appears to expand away from the observer. Due to the limitation that nothing can travel faster than the speed of light, the observer is always surrounded by a cosmic horizon that limits the observer's ability to see things in space. This limitation of the speed of light is really not that mysterious, since it is like the maximal rate of information transfer in a computer network. At the observer's cosmic horizon, space appears to expand away from the observer at the speed of light, and so this is as far out in space as the observer can see things in space.



Accelerated Expansion of Space (image from Susskind, 2008)

How can space appear to expand? The answer is the curvature of space-time geometry as formulated by Einstein's field equations for the space-time metric. The space-time metric is the

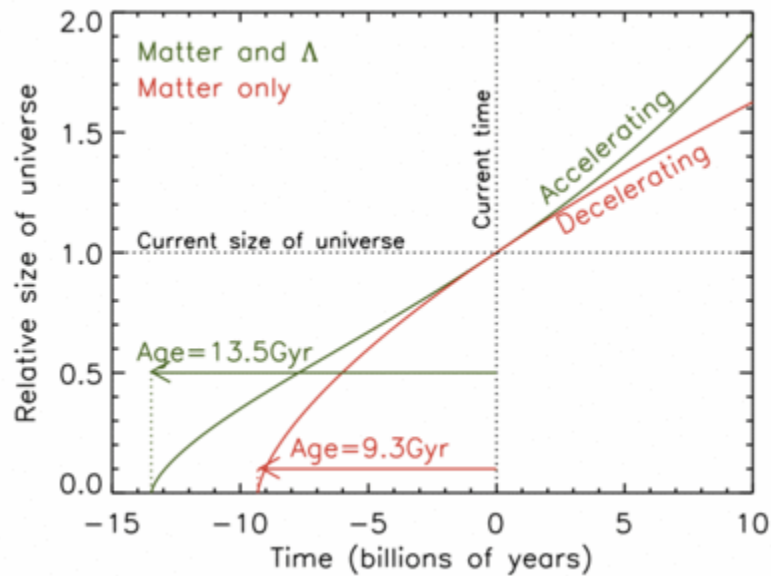
field that measures the curvature of space-time geometry. Einstein's field equations relate a change in the metric in a region of space to changes in the energy content of that region of space.

$$R_{\mu\nu} - \frac{1}{2}Rg_{\mu\nu} = 8\pi GT_{\mu\nu} - \Lambda g_{\mu\nu}$$

Einstein's Field Equations for the Space-time Metric

With the attractive force of gravity, space appears to contract. This gravitational contraction of space is like the kind of length contraction and time dilation that occurs with uniform motion in special relativity, but with gravity generalizes to accelerated motion. Relativity theory tells us the gravitational contraction of space always occurs relative to point of view of an observer, like the observations of a distant observer limited by the event horizon of a black hole. At the horizon of a black hole the contraction of space or the attractive force of gravity is so strong that even light cannot escape away from the black hole, cross out of the boundary of the horizon, and reach the point of view of a distant observer.

In a very similar way, the repulsive force of dark energy gives rise to a cosmic horizon that limits the observations of the observer at the central point of view. With the repulsive force of dark energy, space appears to exponentially expand relative to the central point of view of the observer, and due to the limitation of the speed of light, this limits the observer's ability to see things in space. At the observer's cosmic horizon the expansion of space or the repulsive force of dark energy is so strong that even light cannot cross into the boundary of the horizon and reach the central point of view of the observer.



Accelerated Expansion of the Universe (image from scholarpedia.org)

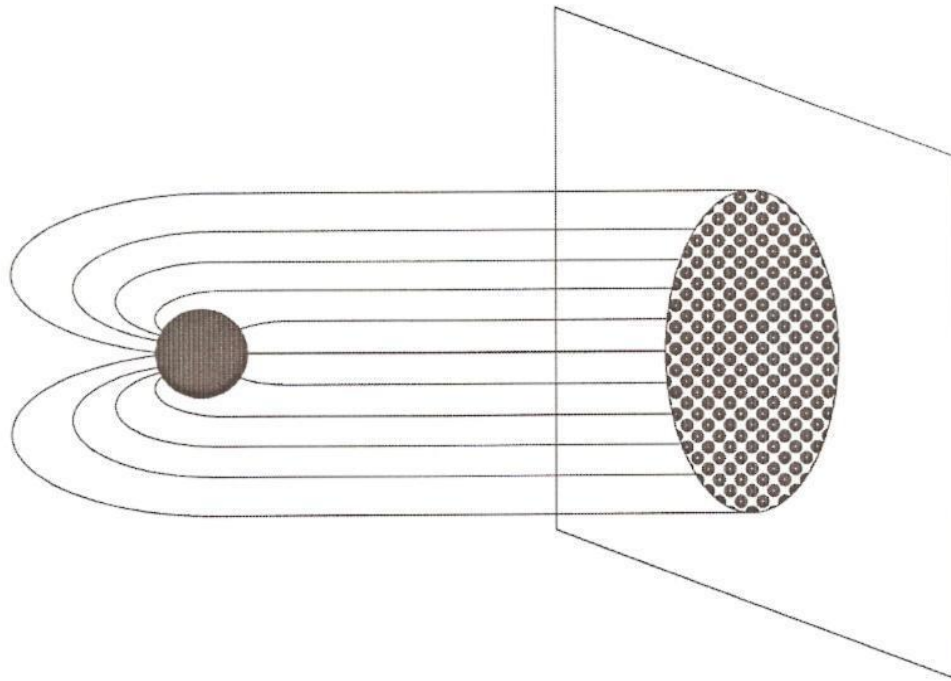
Although a lot of dark energy was used up in the big bang event, astronomical observations indicate there is still a lot of dark energy left in the universe. These are observations of the rate with which distant galaxies accelerate away from us. If the only kind of force operative over galactic distance scales was the force of gravity, the expansion of the universe should be slowing down, since gravity is an attractive force, but that is not what is observed. The expansion of the universe is speeding up, as though all the galaxies were repelling each other. This repulsive force, like a force of anti-gravity, is called the force of dark energy. Its current observed value in terms of the cosmological constant is $\Lambda=10^{-123}$.

If the only recent discovery of modern physics was dark energy, physics would only have another puzzle, but about the same time dark energy was discovered, the holographic principle was discovered ('t Hooft, 1993, Susskind, 1995). The holographic principle is about where all the bits of information that define all the observable things in any bounded region of space are encoded ('t Hooft, 2000).

The strange answer is that these bits of information are not encoded in space itself, but on the bounding surface of that space. The bounding surface of space acts as a holographic screen that projects the images of things into space, just like a conventional piece of holographic film projects holographic images into space. The other analogy is a computer screen. Bits of information encoded on the screen project images into space to the point of view of an observer.

This kind of holographic projection from a screen into space is really no different than the kind of animated space-time geometry projected from a computer screen to the point of view of an

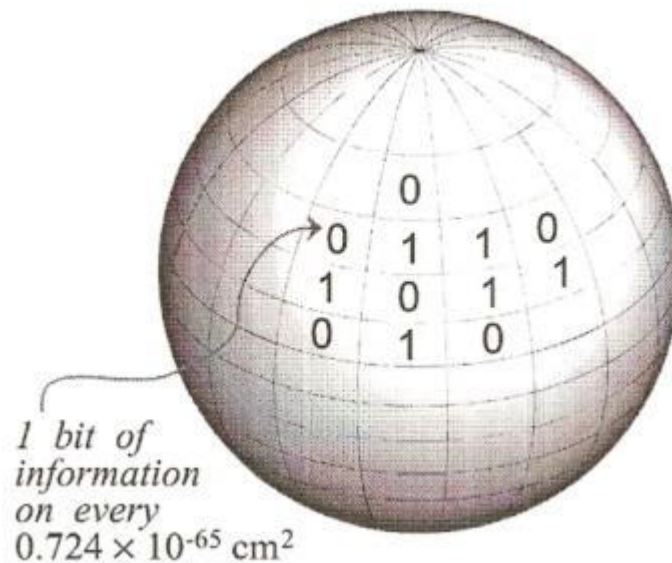
observer, except the images appear three dimensional since their nature is holographic. Just like the animated frames of a movie, the projected images are animated over a sequence of screen outputs. With each screen output, which corresponds to an instant of time, the images are projected into space. Since the projected images can become distorted as they change in size and shape, the projection of images from a screen to an observer over a sequence of screen outputs can give the appearance of the curving or warping of space-time geometry.



Holographic Projection (image from Susskind, 1995)

Just like a computer screen, each pixel defined on the screen encodes a bit of information in a binary code of 1's and 0's. In a conventional computer, this encoding of information in a binary code is performed by switches that are either in the on or the off position, but on a holographic screen, the encoding is generically performed by spin variables that are either in the spin up or the spin down position. Since spin variables are mathematically represented by $SU(2)$ matrices, this encoding of information has a purely mathematical representation.

The holographic principle is fundamentally about how the space-time geometry of any bounded region of space is defined, specifically where all the bits of information defining the space-time geometry of that bounded region of space are encoded. The strange answer is that all the bits of information are not encoded in space itself, but on the bounding surface of that region of space.

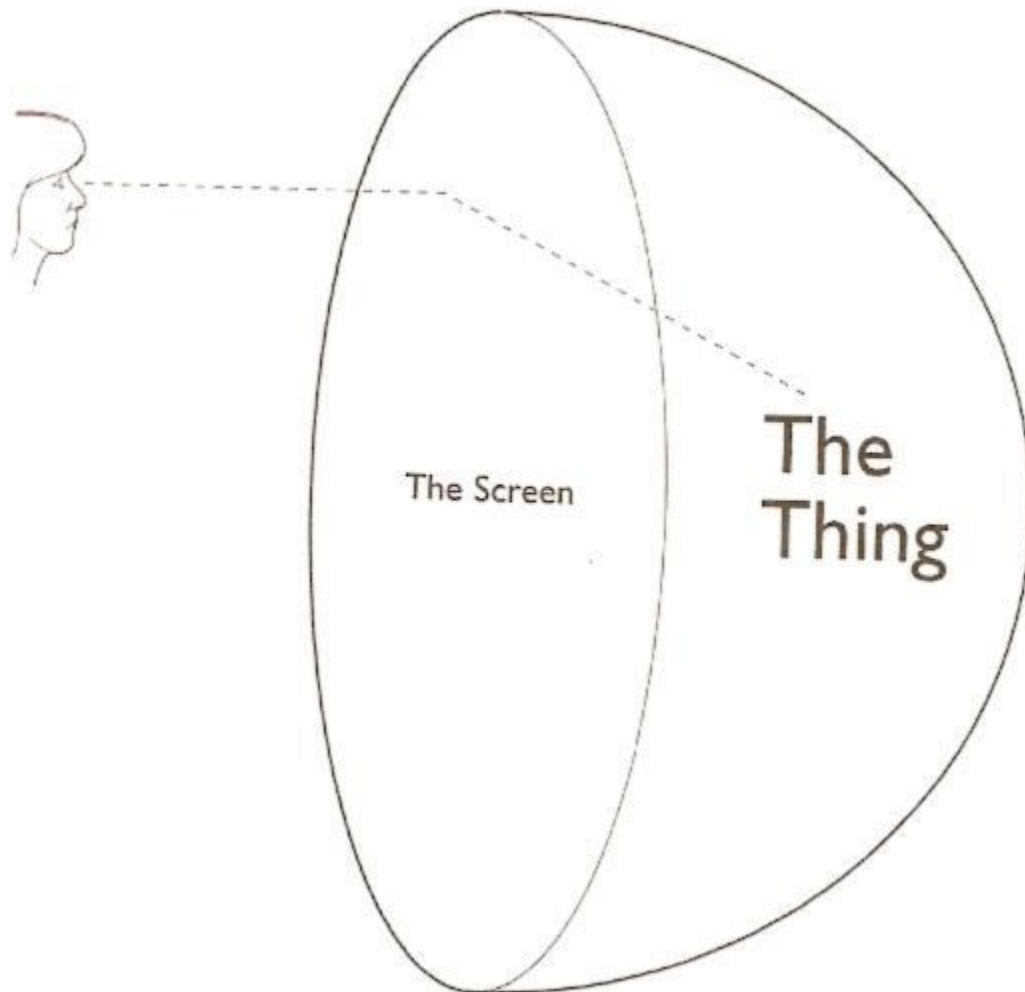


The Holographic Principle (image from 't Hooft, 2000)

Bits of information are encoded in a pixelated way, with each pixel on the screen encoding a single bit of information. The holographic principle tells us the pixel size is about a Planck area $\ell^2 = \hbar G/c^3$, given in terms of Planck's constant, the gravitational constant and the speed of light. For a bounding surface of surface area A , the total number of bits of information encoded is given by $n = A/4\ell^2$.

What is a bounding surface of space? The answer is for any region of space, the bounding surface is an event horizon that limits the ability of the observer of that region to see things in that region of space. With the expression of dark energy and the expansion of space, the observer at the central point of view has limited ability to see things in space due to its cosmic horizon, and so the bounding surface is the observer's cosmic horizon.

This is where things start to get weird. The holographic principle tells us the observer's cosmic horizon acts as a holographic screen that encodes all the bits of information that define everything the observer can possibly observe in that region of space. Every observation of something is like the projection of an image of that thing from the observer's holographic screen to the observer's central point of view.



The Observer, the Screen and the Thing (image from Smolin, 2001)

Before delving into all the weird implications of the holographic principle, it is worth an examination of how the holographic principle arises in the first place, and secondly, how the holographic principle gives rise to a world that appears from the point of view of the observer of that world to be composed of matter and energy, all of which appears to reduce down to some kind of fundamental particles existing in some kind of space-time geometry.

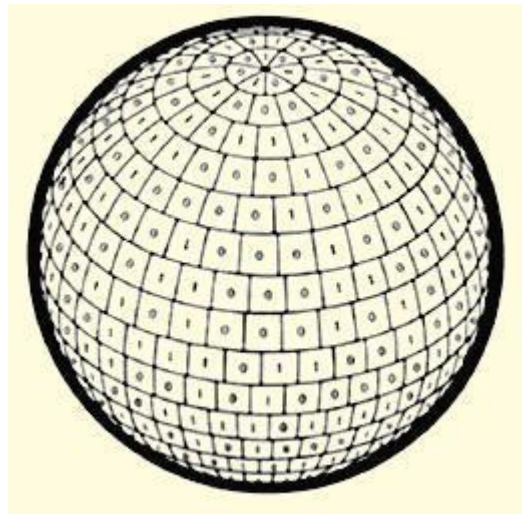
The first question is: how does the holographic principle arise in the first place? The answer is it can only arise if there is a bounding surface of space that acts as a holographic screen that projects all the images of things in that bounded region of space to the central point of view of an observer. This is the critical role that dark energy and the exponential expansion of space play, as the expenditure of dark energy gives rise to a cosmic horizon that acts as the observer's

holographic screen. All the bits of information encoded on the observer's holographic screen in effect define everything in the observer's world in the sense of a Hilbert space. The observer's cosmic horizon is the bounding surface of space that defines the observer's world as it limits the observer's observations of things in space.

How does the observer's cosmic horizon encode all the bits of information that define everything the observer can possibly observe in its world? The answer has to do with the quantization of space-time geometry. This is what the unification of quantum theory with relativity theory is all about. The most generic way to understand unification is with non-commutative geometry. Although the holographic principle was first discovered in string theory, which has been generalized to M-theory (see Witten, 1995), string theory is a special case of non-commutative geometry. All examples of the holographic principle occur in some kind of non-commutative geometry. Even fractal geometry can be understood as non-commutative. If non-commutative geometry is applied to a bounding surface of space, the holographic principle is automatically in effect. Non-commutative geometry is manifestly holographic. This basically says the space-time geometry of any bounded region of space is a direct consequence of how bits of information are encoded on the bounding surface of that region of space.

How does this happen? The basic problem is that position coordinates on the bounding surface of space can always be parameterized in terms of some (x, y) coordinate system, like latitude and longitude on the surface of a sphere. In a commutative geometry, there are an infinite number of (x, y) position coordinates, since the geometry of the surface is a two dimensional continuum and is infinitely divisible. The quantization of space-time geometry turns this infinitely divisible continuum into a finite number of quantized position coordinates on the surface.

The way non-commutative geometry performs this trick in the most generic case is to require an uncertainty relation between the x and y position coordinates where the product of uncertainty is at least as large as the Planck area. This is analogous to the uncertainty relation between the position, x , and the momentum, p , of a particle in ordinary quantum theory where the product of uncertainty is at least as large as Planck's constant, except in non-commutative geometry the uncertainty relation is between the position coordinates of space itself, not the dynamical variables of particles defined in a space-time geometry. Non-commutative geometry is fundamentally about how space-time geometry is quantized, not how the dynamical variables of particles are quantized. This turns the (x, y) position coordinates defined on the bounding surface into non-commuting variables.



Horizon Information (image from Gefter, 2014)

Whenever non-commutative geometry is applied to a bounding surface of space like a cosmic horizon, there are no longer an infinite number of position coordinates defined on the surface, but rather a finite number of non-commuting variables, which give rise to pixels. In effect, each quantized position coordinate is smeared out into an area element of size $4\ell^2$. The total number of pixels defined on the bounding surface of area A is given as $n=A/4\ell^2$, which corresponds to the number of non-commuting variables that define the non-commutative geometry.

In the most generic case of non-commutative geometry, these n non-commuting variables give rise to n bits of information defined by the n eigenvalues of an $SU(n)$ matrix, and so the n pixels defined on the bounding surface encode n bits of information. Since an $SU(n)$ matrix can always be decomposed into $SU(2)$ matrices, and since $SU(2)$ matrices encode bits of information in a binary code like spin variables that are either spin up or spin down, the $SU(n)$ matrix thus encodes n bits of information in a binary code, which is the nature of horizon entropy.

$$S_{\text{BH}} = \frac{kA}{4\ell_P^2}$$

Horizon Entropy

The second question was about how the holographic principle gives rise to a world that appears from the point of view of the observer of that world to be composed of matter and energy, all of which appears to reduce down to some kind of fundamental particles, and appears to exist in some kind of space-time geometry. Although this sounds like a broken record, the answer is geometric mechanisms.

The first step in solving this puzzle is to understand how bits of information encoded on a bounding surface of space give rise to the appearance of a curved space-time geometry in a bounded region of space. This is the problem of how the holographic principle explains the nature of gravity, which is understood as the curvature of space-time geometry.

Although there are many ways to approach this problem, the most generic way is the second law of thermodynamics. The second law is a very general statistical relationship that relates how a change in the number of bits of information or entropy that define the configuration state of everything in a region of space are related to the thermal flow of energy or heat through that region of space. This relation is usually written as $\Delta Q = T\Delta S$, where ΔQ is the flow of heat through the region of space, T is the absolute temperature of that region of space, and ΔS is the change in the entropy or number of bits of information that define the configuration state of everything in that region of space.

The flow of heat through that region of space is understood as the random thermal motion of those things through space, while the holographic principle tells us all the bits of information defining everything in that region of space are encoded on the bounding surface of that region of space as $S = kn$, where the total number of bits of information encoded is given in terms of the surface area A of the bounding surface as $n = A/4\ell^2$. The constant k is called Boltzmann's constant, which converts thermal kinetic energy into conventional units of absolute temperature.

Remarkably, this simple statistical relation between the flow of heat through a region of space and the entropy of that region of space implies Einstein's field equations for the space-time metric in that region of space as a thermal average as long as things are near thermal equilibrium, which is called a thermodynamic equation of state. The reason is fairly simple. The holographic principle tells us all the bits of information that define everything in a region of space are defined on the bounding surface of that region of space as $S = kn$. As heat flows through that region of space and the heat content of that region changes as $\Delta Q = T\Delta S$, the second law tells us the entropy of that region must also change as $\Delta S = k\Delta n$.

Since entropy is given in terms of the surface area of the bounding surface, $n = A/4\ell^2$, as heat flows across the bounding surface, the surface area of the bounding surface must change. As the bounding surface of space changes, the geometry of the region of space bounded by the bounding surface also changes. This change in the geometry of the bounded region of space is mathematically specified by Einstein's field equations for the space-time metric, which relates a change in the curvature of the space-time geometry of that bounded region to a change in the energy content of that region of space.

Before the discovery of the holographic principle, the vast majority of theoretical physicists thought Einstein's field equations for the space-time metric were about as fundamental as physics can ever get. Thanks to the holographic principle, we now know that Einstein's field equations are not really fundamental, but only arise as a thermal average in any bounded region of space, or a thermodynamic equation of state that is only valid near thermal equilibrium. Einstein's field equations arise from the holographic way bits of information are encoded on the bounding surface of that space.

Remarkably, the holographic principle is more fundamental than Einstein's field equations for the space-time metric. Einstein's field equations are derivative of the holographic principle as a statistical or thermal average that is only valid near thermal equilibrium. The force of gravity and the curvature of space-time geometry only arise in a bounded region of space from the holographic way bits of information are encoded on the bounding surface of that region of space.

The holographic principle in turn is only a geometric mechanism that allows bits of information to become encoded on a bounding surface of space whenever a bounding surface like a cosmic horizon arises with the expression of dark energy and the exponential expansion of space.

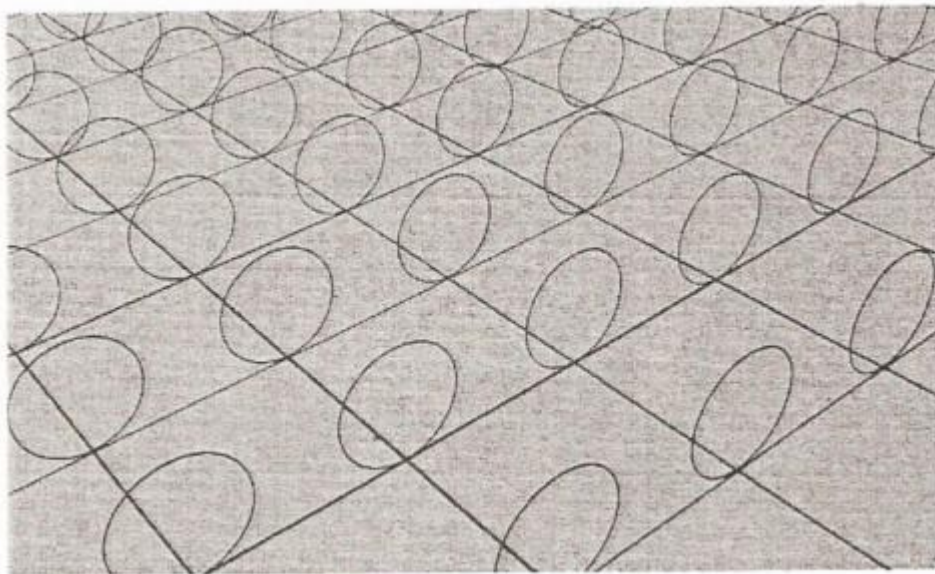
If Einstein's field equations are only derivative of the holographic principle, which in turn is only a geometric mechanism, what is really fundamental? The weird answer is nothing is really fundamental. Only the potentiality of the void to express itself with the expenditure of dark energy and encode bits of information on a bounding surface of space is really fundamental. This is the potentiality of the void to create a world for itself and observe that world from the central point of view of that world.

The second law of thermodynamics in the context of the holographic principle also explains the temperature of an event horizon as observed by a distant observer. This becomes an important issue when we discuss the temperature of a cosmic horizon as observed by the observer at the central point of view, since this horizon temperature sets the stage for the thermal evolution of the observer's world.

The observer will observe thermal photons radiated away from the horizon as a consequence of the horizon temperature. These thermal photons have an energy given in terms of their momentum as $E=pc$, where quantum theory tells us this momentum is related to wavelength as $p=h/\lambda$. The wavelength of a thermal photon that is just barely bound within the horizon as observed by the distant observer is given approximately in terms of the horizon radius R as the maximal circumference of the horizon, $\lambda=2\pi R$. For example, for a black hole horizon, a thermal photon that is barely gravitationally bound within the black hole as observed by a distant observer has a wavelength that is about equal to this maximal horizon circumference. This tells

us the energy of a thermal photon that is barely bound within the horizon and is just barely able to escape away from the horizon and become radiated to the distant observer is given as about $E=hc/2\pi R$. The energy of this radiated thermal photon is the flow of heat, $\Delta Q=hc/2\pi R$. The second law tells us this flow of heat is related to the change in entropy as $\Delta Q=T\Delta S$, where $\Delta S=k\Delta n$. The lowest energy thermal photon radiated away from the horizon corresponds to the smallest possible change in entropy, $\Delta n=1$, which gives the observed horizon temperature as about $kT=hc/2\pi R$.

What about other forces of nature besides gravity, like the electromagnetic and nuclear forces? What about other quantum fields besides the space-time metric that comprise the standard model of particle physics? The unification of quantum theory with relativity theory solves this problem in a straightforward way based on geometric mechanisms. The only known mechanisms of unification are supersymmetry (Dine, 2016) and the Kaluza-Klein mechanism of extra compactified dimensions of space.



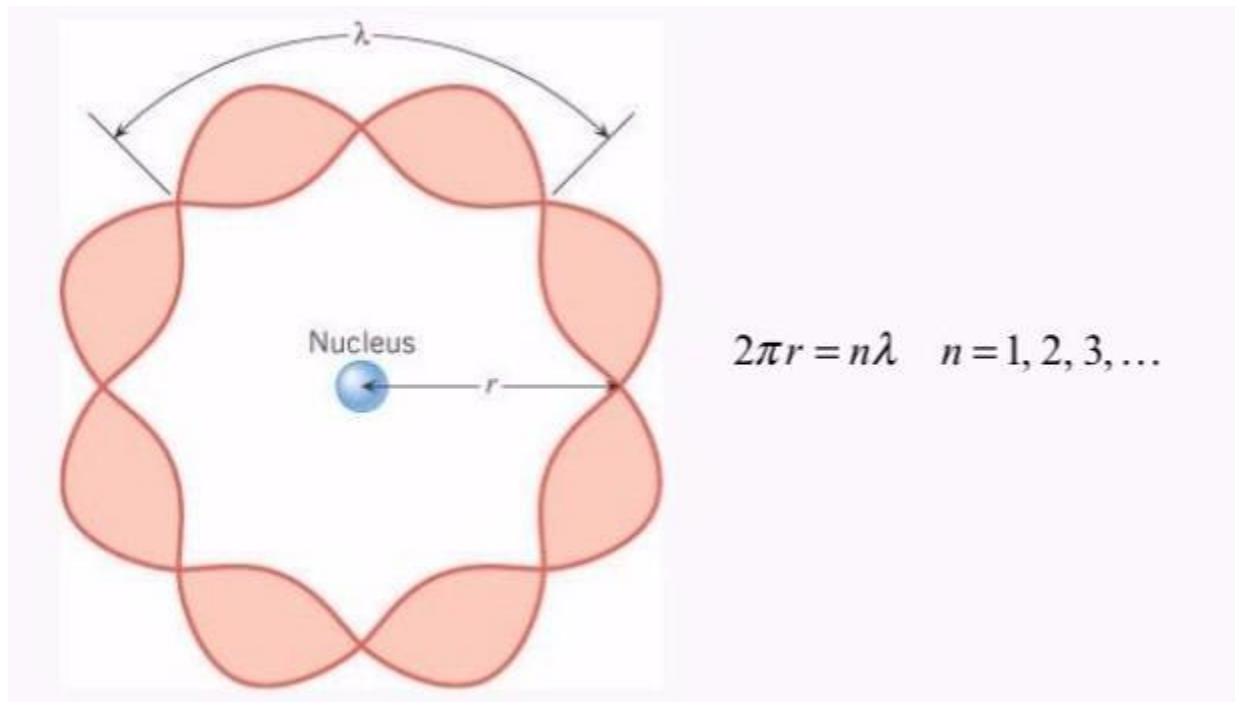
Extra Compactified Dimensions of Space (image from Greene, 2001)

If there are six extra compactified dimensions of space, then Einstein's field equations for the space-time metric give rise to the electromagnetic, strong and weak nuclear forces. The quantum fields that describe these forces are extra components of the space-time metric that arise in extra compactified dimensions of space. The quantum fields for these extra forces represent the curvature of space-time geometry in extra compactified dimensions of space, just like the ordinary components of the space-time metric for the usual four extended dimensions of space-time represent the force of gravity.

If super-symmetry, which is the idea of spatial coordinates with both commuting and anti-commuting aspects, is applied to Einstein's field equations for the space-time metric with six extra compactified dimensions of space, not only are the boson force particle quantum fields generated, but also the fermion matter particle quantum fields. If the extra compactified dimensions of space are formulated in terms of non-commutative geometry, not only are the force particle fields and the matter particle fields generated, but also the Higgs symmetry breaking fields. By breaking the symmetry of space, the Higgs mechanism gives rise to the mass energy carried by all the matter particle fields.

In the Kaluza-Klein mechanism, the electron is understood in terms of an extra compactified dimension of space. At each point of ordinary 3+1 dimensional space-time there is an extra circular dimension of space. Momentum can flow in the extra circular dimension just as it can flow in an extended dimension. Quantization of momentum in the circular dimension explains the quantization of electric charge, which is quantized in units of the electron. This is the usual Bohr argument for quantization of momentum in terms of an integral number of wavelengths fitting into the circumference of the circular orbit, $n\lambda=2\pi r$, where r is the radius of the circular orbit, n is the number of wavelengths, and in the sense of a Fourier transform momentum and wavelength are inversely proportional to each other, $p=h/\lambda$, except momentum in the extra circular dimension is the nature of electric charge. Momentum can flow in either the positive or the negative direction, explaining both the positron and the electron.

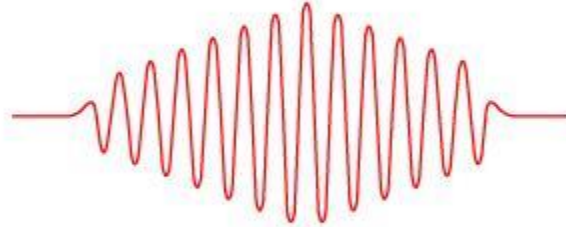
What we call an elementary or point particle is really only angular momentum quantized in an extra compactified dimension of space. As a geometrical mechanism, the quantization of electric charge is really no different than the quantization of energy in a hydrogen atom.



Quantization of Momentum in a Circular Orbit (image from slideshare.net)

The idea of a gauge theory naturally arises from this idea of extra compactified dimensions of space. With multiple extra compactified dimensions of space the idea of an Abelian gauge theory generalizes to non-Abelian gauge theories, which explains nuclear charges in addition to electric charge. In both cases, the nuclear and electrical forces are understood in terms of extra components of the space-time metric that arise with extra compactified dimensions of space, which allows the gravitational force to become unified with the nuclear and electromagnetic forces in a natural way.

The final result of unification is called 11-dimensional super-gravity, which includes all the standard quantum fields of the standard model of particles physics, including the electromagnetic and nuclear forces in addition to gravity. Since 11-dimensional super-gravity can only arise as a thermal average valid near thermal equilibrium, it is only valid as a low energy limit. All so-called fundamental particles are thus understood to be nothing more than localized excitations of field energy, which are called wave-packets. The wave-packet is localized in space and time, which gives rise to the particle quantization of energy and momentum.



Wave-packet

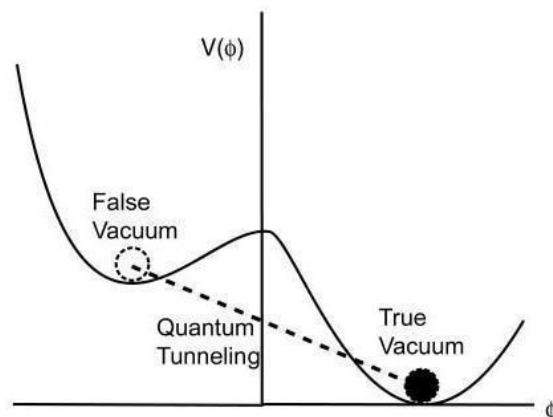
The wavelength of the wave-packet is extended in an extended dimension of space, which allows for the particle quantization of energy and momentum, while the quantization of wavelength in an extra compactified dimension of space gives rise to the internal structure of the particle like electric charge. Internal structure is related to external structure since the space-time metric relates the curvature of extended dimensions of space to compactified dimensions of space.

A so-called fundamental particle is thus nothing more than a localized excitation of field energy. These quantum fields all arise from the space-time metric through the usual unification mechanisms of super-symmetry, extra-compactified dimensions of space, and non-commutative geometry. All the quantum fields of the standard model of particle physics are really only extra components of the space-time metric that arise through these geometric mechanisms. Even the space-time metric only arises as a thermal average through the geometric mechanisms of the expression of dark energy, the expansion of space, and non-commutative geometry. In reality, there are no such things as fundamental particles or fundamental forces, only the potentiality of the void to express these geometric mechanisms.

Simply put, there is no Theory of Everything because there is No Theory of Nothing. The potentiality of the void cannot be reduced to a theory or conceptualized in any other possible way. That is the nature of infinite potentiality. Scientific reductionism simply does not apply to infinite potentiality. Anything is possible as long as it can be expressed in terms of a geometric mechanism. The expression of this potentiality always requires the expenditure of energy. In emotional terms, the expression of this energy is the expression of desire, which directly leads to the manifestation of desires. The manifested world is only a *manifestation of desires*.

This important point cannot be stressed enough. Correctly interpreted, the holographic principle is telling us *the physical world is only an expression of the potentiality of the void*. This expression of potentiality always requires the expression of energy, which in emotional terms is the expression of desire. Through its geometric mechanisms, the void has the potential to create a world for itself and to observe that world from the central point of view of that world. The void is the source of everything in that world, including all the matter, energy, information and even the space-time geometry of that world, but it doesn't end there. The void is also the source of the perceiving consciousness that observes that world. When we use the word *source*, we really mean potentiality. Just as the source of the world is an empty space of potentiality called the void, the source of the perceiving consciousness that observes the world is the potentiality of the undifferentiated consciousness of the void.

If we take the big bang creation theory seriously, as formulated with inflationary cosmology, we understand that at the moment of creation of the observer's world a great deal of dark energy is expended. That world is initially only about a Planck length in size, but then inflates in size due to an instability in the amount of dark energy. This instability in dark energy is like a process that burns away the dark energy. Inflationary cosmology hypothesizes that at the moment of creation the cosmological constant takes on a value of about $\Lambda=1$, but due to an instability in the amount of dark energy, the cosmological constant transitions to a lower value. This transition is like a phase transition from a metastable false vacuum state to a more stable vacuum state of lower energy. The most stable state, the true vacuum with $\Lambda=0$, is a state with zero dark energy.



Metastable State (image from ned.ipac.caltech.edu)

The expenditure of dark energy breaks the symmetry of empty space by constructing an observation limiting cosmic horizon that surrounds the observer at the central point of view. The instability in dark energy is like a consumptive process of burning that burns away dark energy and undoes this broken symmetry. As dark energy burns away to zero, the cosmic horizon

inflates in size to infinity, and the symmetry is restored. We understand this undoing of symmetry breaking is like a phase transition from a false vacuum state to a true vacuum state. Dark energy burns away as the phase transition occurs. This idea is also consistent with the current measured value of the cosmological constant, $\Lambda=10^{-123}$, based on the rate with which distant galaxies are observed to accelerate away from us, which also corresponds to the size of the observable universe of about 15 billion light years.

This burning away of dark energy also explains the normal flow of energy in the observer's world in terms of the second law of thermodynamics. Relativity theory tells us the radius R of the observer's cosmic horizon is inversely related to the cosmological constant as $R^2/\ell^2=3/\Lambda$, while the holographic principle tells us the absolute temperature of the observer's horizon is inversely related to its radius as $kT=\hbar c/2\pi R$. At the moment of creation, R is about ℓ , Λ is about 1, and the absolute temperature is about 10^{32} degrees Kelvin. As Λ decreases to zero, R inflates in size to infinity, and the temperature cools to absolute zero.

The second law of thermodynamics simply says that heat tends to flow from hotter to colder objects because hotter objects radiate away more heat, which is thermal radiation. The instability in dark energy explains the second law as dark energy burns away, the observer's world inflates in size and cools in temperature, and heat tends to flow from hotter states to colder states of the observer's world.



Second Law of Thermodynamics (image from Penrose, 2005)

The normal flow of energy through the observer's world reflects this normal flow of heat as dark energy burns away and the observer's world inflates in size and cools. This normal flow of

energy naturally arises in a thermal gradient. This also explains the mystery of *time's arrow*, as the normal course of time is related to the normal flow of energy through the observer's world. As far as the holographic principle goes, a thermal gradient is also a temporal gradient.

What are we to make of other forms of energy besides dark energy? Modern physics gives an answer in terms of symmetry breaking. All forms of positive energy arise from dark energy through symmetry breaking. This allows an observer's world to emerge from the void along the lines of the inflationary scenario, but only if the total energy of that world adds up to zero.

The remarkable discovery of modern cosmology is cosmic observations indicate the total energy of the observable universe is exactly zero (Gefer, 2014). This is possible in relativity theory as the negative potential energy of gravitational attraction can exactly cancel out the total amount of dark energy and all other forms of positive energy that arise from dark energy.

How do other forms of energy, like mass energy, arise from dark energy? The answer is symmetry breaking. As dark energy burns away, high energy photons are created, and these photons can create particle-antiparticle pairs, like proton-antiproton pairs. One of the mysteries of cosmology is why there are so many protons in the universe and so few antiprotons. Symmetry breaking gives the answer. At high energies, antiprotons can decay into electrons and protons into positrons, but there is a difference in the decay rates due to a broken symmetry, and so more antiprotons decay than protons. As the universe cools, protons become relatively stable, and so that's what's left over. Even the mass of the proton arises through a process of symmetry breaking called the Higgs mechanism. The expenditure of energy that characterizes all the gauge forces, like electromagnetic energy in a living organism or nuclear energy in a star, all arise from dark energy through a process of symmetry breaking, but all of this positive energy is exactly cancelled out by the negative potential energy of gravitational attraction.

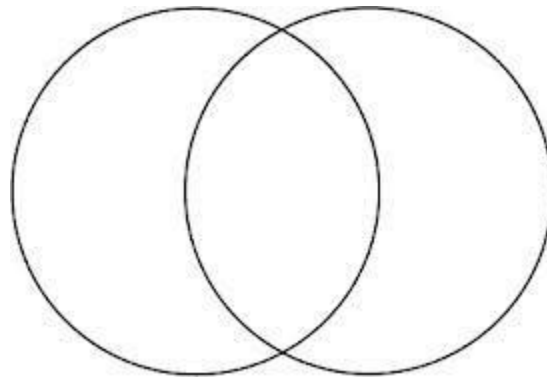
The observational fact that the total energy of the observable universe exactly adds up to zero tells us something important. Since everything in the world is composed of energy and all energy ultimately adds up to zero, this tells us that everything is ultimately nothing.



Ying-Yang Balance

If the void is the ultimate nature of reality, the physical world is a lower form of reality, like a virtual reality of images projected from a screen to the central point of view of an observer. This lower form of reality, with its projection of images from a screen to an observer, only exists when the void expresses its potentiality through geometric mechanisms, which is the nature of becoming. When the void expresses its potentiality through these geometric mechanisms it creates a world for itself, which it always observes from the central point of view of that world as the perceiving consciousness of the observer is differentiated from itself. If this potentiality is not expressed, only the void exists. Simply put, *being is prior to becoming*. As undifferentiated consciousness, the void exists as One Being.

What about a consensual reality apparently shared by many observers? The answer is many observers can share a consensual reality to the degree their respective holographic screens overlap in the sense of a Venn diagram and share information. This is just like the kind of information sharing that occurs in an interactive computer network. Each observer only observes its own holographic screen, but to the degree different screens overlap, different observers can apparently interact and share information. The network of interacting holographic screens can share information to the degree the screens overlap.

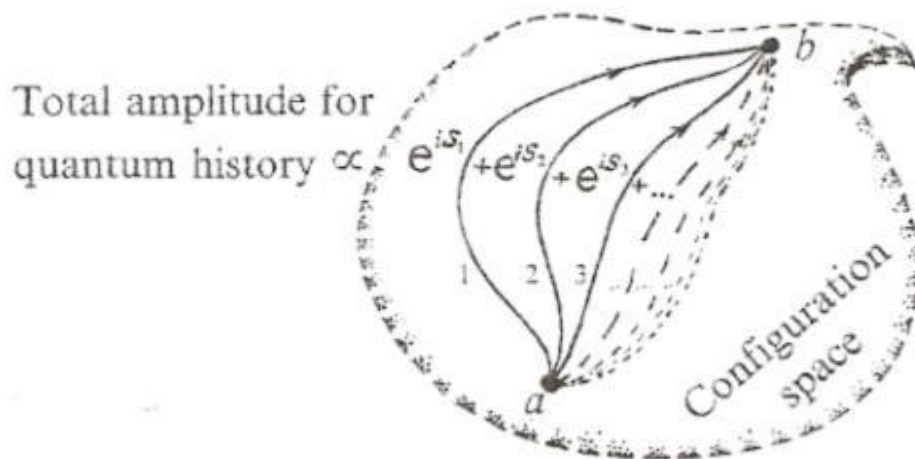


Overlapping Bounded Spaces

Each holographic screen encodes bits of information in a binary code. This is due to defining n quantized position coordinates on a bounding surface of space, which is due to defining n non-commuting variables on the bounding surface. The n bits of information, one per pixel, arise from this holographic mechanism as the n eigenvalues of an $SU(n)$ matrix.

It's worth pointing out that the holographic principle is completely consistent with quantum theory. In effect, each observer has its own Hilbert space of observable values, with all the bits of information for observables encoded on the observer's holographic screen. In this sense, each observation of something by the observer is like a screen output that projects an image of the thing from the screen to the central point of view of the observer.

The well-known fact that the observer has the innate ability to focus its attention on things in its world raises the issue of choice. How is this choice expressed? Quantum theory gives a natural answer in terms of a quantum state of potentiality. The quantum state can always be expressed in terms of a sum over all possible paths in some configuration space.



Sum Over all Paths (image from Penrose, 2005)

The configuration space relevant for the holographic principle are n non-commuting variables defined on the observer's screen that give rise to the $SU(n)$ matrix that defines the n bits of information encoded on the screen. That is the nature of the observer's Hilbert space.

Since the observer's holographic screen projects all images of the observer's world, each path specified in the sum over all paths is a possible world-line through the observer's projected space-time geometry. The observer's space-time geometry is not only projected from its holographic screen, but is also animated over a sequence of screen outputs. It is the observer itself that follows this world-line through its projected and animated space-time geometry. As a focal point of consciousness, an accelerating observer always follows a world-line.

Just as the observer observes its own world, the observer follows a world-line through its own world. Each observer's world-line is defined by the observations made on its world-line. In computer terms, each observation is like a screen output. A sequence of screen outputs occurring over a sequence of decision points on the world-line allow for the animation of observations. Until an observation is made, the quantum state of potentiality branches into all possible paths, but as the observer chooses to observe a particular state of information at a decision point, a particular path is followed.

Each screen output on the observer's world-line is a decision point where the observer chooses to follow some particular path rather than some other possible path. Each possible path of the observer through its projected and animated space-time geometry is a possible world-line. At every decision point or screen output the observer has a choice to make about what to observe

and which path to follow in its world. This choice arises with the observer's focus of attention on images of its world.

Quantum theory tells us each observer has its own Hilbert space of observable values for its own world defined by quantization of non-commuting variables on the observer's holographic screen. This defines everything the observer can observe in its own world, but due to information sharing in the network of overlapping screens, its observations can become correlated with the observations of other observers.

What is meant by other observers? Each observer is only a point of view that arises in relation to its own holographic screen. This point of view can be called a differentiated focal point of consciousness, or individual consciousness. The holographic principle tells us this focal point of consciousness is a point of singularity that arises at the center of the observer's horizon, which is to say the observer is the singularity at the center of its own world. Many apparently distinct observers can share a consensual reality, but ultimately when these geometric mechanisms are no longer expressed, only the undifferentiated consciousness of the void exists.

What role does the observer play in the creation of its world? The nature of quantum potentiality tells us every observation is a choice or a decision point on the observer's world-line as the observer's path or world-line branches into all possible paths. In computer terms, every observation is like a screen output. In the language of quantum theory, every observation is a decision point on the observer's path about what to observe and which path to follow. The observer expresses its choices through its focus of attention on images of its world.

Even the laws of physics are not fundamental but are all chosen. Everything is a choice and nothing is determined. All the laws of physics that appear to govern that world can only arise with random choice as statistical or thermal averages, which is what the second law of thermodynamics tells us in the framework of the holographic principle. As long as things are near thermal equilibrium, the laws of physics only appear fixed and stable due to symmetry breaking, and in some sense have frozen out of the quantum state of potentiality like a phase transition that turns water into ice, although the better analogy is probably the spontaneous magnetization of a magnet. The laws of physics only appear stable because they all arise through symmetry breaking within a metastable or false vacuum state.

The nature of symmetry breaking tells us that bits of information spontaneously become organized into complex forms as energy flows in a thermal gradient, like the spontaneous magnetization of a magnet. The holographic principle and the expression of dark energy explain how bits of information become encoded on a holographic screen in relation to the point of view of an observer, and the instability in dark energy explains the origin of the thermal gradient. The

expression of complexity arises through these geometric mechanisms because the organization of information occurs at a metastable state. Even the transition from one metastable state to another metastable state is a kind of symmetry breaking. This is epitomized by a cosmological constant that is only *constant* within a metastable state, while the transition from one value of the cosmological constant to another value is akin to a phase transition.

The birth and development of the observer's body can be understood in terms of the coherent organization of information, just as the physical death of the observer's body can be understood in terms of the disorganization of information. Modern physics tells us the development of coherent organization arises through a process of symmetry breaking. This is as much the case for biological organisms as it is for physical objects. The only significant difference is the organization of physical objects through phase transitions is dependent on the transfer of heat, while biological organisms can also engage in a process of eating, which adds organizing potential energy to the organism.

There is always a balance between the flow of thermal kinetic energy that tends to disorganize objects and organizing potential energy that tends to organize objects. When the balance shifts in favor of organizing potential energy, symmetry breaking occurs and coherent organization develops. When the balance shifts in favor of too much heat, disorganization occurs. As organizing potential energy is added to a body through a process of eating, the development of coherent organization naturally occurs through a process of symmetry breaking. Although symmetry breaking may be sufficient to drive the development of coherent organization in the observer's body, the observer also plays a role in the organizing process through choice, especially when those choices become emotionally biased.

Section 3: The End of an Illusion

“Sometimes people don't want to hear the truth
because they don't want their illusions destroyed.”

(Friedrich Nietzsche)

The nature of consciousness only appears to be mysterious if we do not know the true nature of what we really are. Plato describes an observer that mistakenly identifies itself with the central character of an animation of images it perceives on a screen as a prisoner. The only possible freedom is an observer that no longer identifies itself, but for that we have to know the true nature of what we are.

The age-old problem of identity often expresses itself as an identity crisis. This identity crisis is about the true nature of *who I am*. Is it possible that I am only the observer and not the person I

am observing? If I am not a person in the world, then who am I? Can the true nature of identity be purely spiritual? Can the problem of identity be answered with a statement like “*I am nothing but consciousness*”, or “*Ultimately, I am the undifferentiated consciousness of the void?*”

Ultimately, this identity crisis is about the mystery of the ultimate nature of existence. The ultimate nature of existence is a mystery that can never be explained, just as infinite potentiality can never be reduced to scientific concepts. The most that it is ever possible to say about the ultimate nature of existence is that *It Exists*, which is to say *It Is* or *I Am*.

The ultimate nature of existence can never be personified. The holographic principle tells us that the nature of a person in the world can only be understood as a limited expression of the ultimate nature of existence as the image of a person is projected from a holographic screen. This limited expression of a person in the world is very much like the animation of an avatar in a virtual reality world, which is no more real than the images of a character animated on a screen and projected to the point of view of an observer. As Plato tells us, the observer becomes a prisoner when it identifies itself with its character.



Plato's Cave (image from faculty.washington.edu)

“If man will strike, strike through the mask!
How can the prisoner reach outside except by thrusting through the wall?”
Herman Melville, *Moby-Dick*

The void expresses its potentiality as it creates a world through geometric mechanisms and observes that world from the central point of view of that world. The expression of this potentiality requires the expenditure of energy, specifically dark energy and the expansion of space. Without this expenditure of energy, neither an observer nor its world can exist.

How are these geometric mechanisms expressed? The only logically consistent answer is the void has the potentiality to express these mechanisms. The void is what exists prior to the creation of the world. Being is prior to becoming. In the sense of One Being, the void can be understood as undifferentiated consciousness. This argument is consistent with all the nondual traditions, including Advaita Hinduism, Zen Buddhism, Taoism, Sufism, Kabbalah Judaism and Gnostic Christianity.

“Truly, truly, I say to you, before Abraham was, I Am.”
(Gospel of John 8:58)

The book of Genesis 1:4 tells us that in the beginning, *God divided the light from the darkness*. The light that Genesis refers to is not physical light, but the light of consciousness, which is divided from the darkness of the void. The light of consciousness is inherent to the observer itself and can be understood as the observer's focus of attention, which allows for the observer's expression of choice in the sense of quantum potentiality. Each decision point on the observer's world-line is another choice.

Just as the observer is understood as a focal point of consciousness to which images of the observer's world are projected from its holographic screen, the observer's focus of attention allows for the projection of those images. To use a physical analogy, the observer's own light of consciousness illuminates the images of its world like the light of a laser projects images from a physical hologram. In this sense, with the creation of the observer's world, the differentiated consciousness of the observer is divided from the undifferentiated consciousness of the void.

Genesis 1:2 also tells us the creation of the world occurs as *the Spirit of God moved over the face of the deep*. The Spirit of God is the observer, the motion appears to occur as the observer follows an accelerated world-line through its projected and animated space-time geometry, the face of the deep is the observer's holographic screen, and the deep is the void.

The *Rig-Veda* tells us *darkness was hidden by darkness in the beginning. All that existed then was void and formless*. The undifferentiated consciousness of the void is referred to in the sense of One Being as that *One thing, breathless, breathed by its own nature. Apart from it there was nothing*. The creation of the world is described in a thermodynamic sense as *that which becomes was born through the power of heat. Upon that desire arose in the beginning the first discharge of thought*. The observer is described as *whose eye controls this world in highest heaven*.

The *Tao Te Ching* describes the observer's world is only created through the expression of desire, and without that expression of energy only the mystery of the void exists: *Ever desireless one can see the mystery; ever desiring one can see the manifestations*. The Tao describes the

void as *darkness, darkness within darkness. the gate to all mystery*. The gateless gate paradox describes that when *One passes through this gateless gate, one walks the universe alone*.

What is the nature of passing through the gateless gate? When the holographic mechanism that creates the observer's world is no longer expressed, the observer's world comes to an end and disappears from existence. What happens to the observer? The observer's individual consciousness must return to the undifferentiated consciousness of the void. This reunion is described as a dissolution, like a drop of water that dissolves back into the ocean (Osho, 1974).

In both Hinduism and Buddhism the final dissolution of individual consciousness into undifferentiated consciousness is referred to as the experience of nothingness or Nirvana (Nisargadatta Maharaj, 1973, 1996). The experience of Nirvana is understood as the final dissolution into nothingness in which individual consciousness reunites itself with undifferentiated consciousness. In the sense of spiritual reunion, the individual spirit of the observer reunites itself with the Supreme Spirit of the void, or to use the language of Advaita Hinduism, Atman reunites itself with Brahman (McKenna, 2013).

“Brahman is the only truth, the world is an illusion, and there is ultimately
no difference between Atman and Brahman”

“That which permeates all, which nothing transcends, and which,
like the universal space around us, fills everything completely from within and without,
that Supreme nondual Brahman-that thou art”

(Shankara)

The literal translation of Nirvana is to *blow out* the flame of life or extinguish the light of consciousness. When the light of consciousness is extinguished, only the darkness of the void remains. This reunion with undifferentiated consciousness or final dissolution into nothingness is the ultimate nature of death, which is the *end of an illusion*. The illusion that comes to an end is not only the illusion of life in the world, but also the illusion of separation. Ultimately, death is a transition from the differentiation of consciousness and the becomings of a world to nondifferentiation and ultimate being (McKenna, 2002, 2004, 2007).

Both the Rig-Veda and the gateless gate paradox refer to the ascension of consciousness. Plato also refers to the ascension of consciousness in the Allegory of the Cave. It is as though an ascended observer looks down on its world from a higher vantage point as it observes all the images of its world on a two-dimensional screen from a point of view outside the screen, and sees that all those images are only projected by its own light of consciousness (Nisargadatta Maharaj, 1973; McKenna, 2002). An ascended observer that clearly sees this state of affairs can

no longer identify itself with the image of its own character animated on the screen, but can only know itself as the focal point of consciousness or singularity at the center of its own world (Gefter, 2014). Only this singularity of consciousness can act as a *bridge* that connects the ultimate being of the void to the images of the observer's world.

The birth and development of the observer's character can be understood in terms of the coherent organization of information, just as the physical death of the observer's character can be understood in terms of the disorganization of information. Although symmetry breaking may be sufficient to drive the development of coherent organization in the observer's character, the observer also plays a role in the organizing process through choice, especially when those choices become emotionally biased.

The animation of the observer's character naturally arises in the flow of energy, which in part is directed by the observer's focus of attention. An investment of emotional energy arises whenever the observer focuses its attention on its character, but this investment of energy can be withdrawn when the focus of attention is withdrawn. The part of the animation the observer can direct arises in the sense of choice with the observer's emotionally biased focus of attention, but this always plays out against the backdrop of the normal unbiased flow of thermal energy through the observer's world. Emotional bias in the focus of attention gives rise to emotional feedback as it leads to the expression of biased emotions.

In some sense, every emotionally biased expression of emotional energy that arises with the observer's emotionally biased focus of attention is an interference with the normal flow of things through its world. This interference is analogous to a quantum interference pattern in the sense of a non-stationary path. This kind of interference leads to feelings of disconnection, while coming into alignment with the normal flow of energy and following the path of least action gives rise to feelings of connection.

“Before I sink into the Big Sleep
I want to hear, I want to hear
The scream of the Butterfly.”
(Jim Morrison, “When the Music's Over”)

Coming into alignment with the normal flow of things is the meaning of the Grail legend, while interfering with things in an emotionally biased way is the meaning of the Wasteland. The transition to this state of energetic alignment is described as a metamorphosis, like the transformation of a caterpillar into a butterfly. In this transformation, the caterpillar dies and the butterfly is born. This is the archetypal metaphor of spiritual rebirth. One dies to one's false self-identification with one's body and is reborn to one's true spiritual identity (McKenna, 2002).

How is it even possible for the observer to identify itself with the form of its body? Neuroscience has demonstrated the emotional nature of meaning. Meaning is given in an emotional context, and this is also the case for self-identification (Damasio, 1999). Emotional context has to do with the flow of emotional energy that relates one distinct perceivable thing to another distinct perceivable thing. The observer is only able to emotionally identify itself with the form of its body due to the expression of emotions that relate the observer's body to other distinct perceivable things in its world and that make the observer feel like it is really self-limited to the form of its body. This feeling of being embodied is perpetuated by the expression of biased emotions and the observer's biased focus of attention that play an essential role in the mental construction of the observer's body-based self-concept (McKenna, 2002).

The observer's body-based self-concept is emotionally energized by the expression of biased emotional energy that relates the observer's self-concept to other things in the observer's world in emotionally biased ways. This self-identification process is also an emotional attachment process. As the observer identifies itself with its character, the observer also becomes attached to things in its world, including its own body. This emotional attachment process can only occur when the observer's focus of attention is emotionally biased in favor of its character's survival and is focused on its character and other things in its world in emotionally biased ways, which directly leads to the expression of biased emotions.

Emotional bias in the observer's focus of attention and the expression of biased emotions are two sides of the same coin. As long as biased emotions are expressed by the observer's character, the observer's focus of attention is emotionally biased. As long as there is emotional bias in the observer's focus of attention, its character will express biased emotions. This kind of emotional feedback is a vicious cycle. The only way this vicious cycle can be broken is if biased emotions are no longer expressed by the observer's character and the observer stops directing its focus of attention in emotionally biased ways.

Breaking the vicious cycle is always a detachment process, or a process of *letting go*, as the observer detaches itself from its world and de-identifies itself from its character in that world. This letting go process is a kind of death as the observer stops being emotionally invested in or expressing bias in the outcome of any situations relevant to its character's survival, and in effect stops caring about whether its character lives or dies. This is a *giving up* process both in the sense of letting go and a surrender.

The impartiality of this kind of emotional detachment is the only way the expression of emotional bias can come to an end. In this detachment process, things are accepted the way they normally occur as an expression of the normal flow of energy through the observer's world, just

like the acceptance of death that finally occurs through a process of grieving. In this detached state, the observer only watches as things play out in the normal way, and stops interfering with or trying to control things in an emotionally biased way so that things come out in favor of its character's survival. This state of non-interference only occurs with willingness to relinquish the emotionally biased desire to control things (McKenna, 2002).

For the purpose of the observer's awakening, only the de-animation of the observer's character and disappearance of the observer's world are required. This de-animation of the observer's world is a direct result of withdrawing its focus of attention and emotional energy away from its world. Without the observer's focus of attention on its world and this expression of energy, there can be no animation of the observer's world. This always requires a shift in the observer's focus of attention away from its world.

This shift in the observer's focus of attention away from its world is what is meant by *turning around*, which is the original meaning of the word repent. In a spiritual or metaphysical sense, the observer turns the focus of its attention away from its world and onto its own sense of being present (Nisargadatta Maharaj, 1973). The observer shifts the focus of its attention onto itself. In some sense, only the observer's focus of attention on its character and the expression of biased emotional energy can keep the observer emotionally attached to its world and self-identified with its character. The only way the observer can detach itself is if this expression of biased emotions comes to an end, which naturally occurs when the observer focuses its attention on its own sense of being present (McKenna, 2002).

An ascended observer can only know itself as the focal point of consciousness at the center of its world, or dissolve back into the undifferentiated consciousness of the void. In a very real sense, an ascended observer exists right at the edge of the abyss that separates the existence of its world and the animation of its character in that world from the void and the non-existence of its world (McKenna, 2002).

There is no scientific way to prove the existence of the undifferentiated consciousness of the void, but anyone can confirm this ultimate state of being for oneself. It is possible to do an experiment of One. That is what it means to become a Buddha and awaken from the dream of separation. All nondual traditions describe the process of awakening. When one awakens from the dream of the world, one's world disappears and only one's true underlying reality remains. The experience of one's underlying reality is the experience of undifferentiated consciousness, which is the experience of nothingness. There is no other way to describe it. With dissolution, there is a sense of falling into the void, like entering into a state of ultimate free-fall (Osho, 1974). After awakening one observes one's world again, but from an ascended point of view and self-identification with one's character in one's world is no longer possible.

What happens to the observer's differentiated consciousness with the death of its body? One possibility is the observer's consciousness remains differentiated as a focal point of consciousness at the central point of view of its world after body death. Like a phase transition, body death is only the irreversible disorganization of information in the way the observer's body is coherently organized on the observer's holographic screen. Even with body death the focal point of consciousness can remain differentiated. Maybe a new body coherently forms for the observer, which would explain the nature of reincarnation.

It's important to point out the observer's mind is greater than just the information organized within the physical limits of the observer's body or brain. Quantum entanglement tells us the information for mental events involves entangled bits of information that are encoded both within the limits of the observer's body and outside those limits. Quantum entanglement is a natural consequence of the holographic principle since the observer's Hilbert space for observables as defined by its holographic screen arises as the eigenvalues of an $SU(n)$ matrix, and all those bits of information are entangled with each other.

Entanglement tells us that with any mental event it is possible to know about events that occur outside the limits of the body even if those events are not physically connected to the body. Even after body death, quantum entanglement remains in effect, and so the observer still has a form of mind after body death. It may be that these mental experiences after body death lead to the reincarnation of a new body.

A critical point is only the holographic principle can resolve the paradoxes of quantum entanglement, like the Schrodinger cat paradox and Wigner's friend paradox. All these paradoxes require an *outside* observer to collapse the entangled state of a quantum system, but as Amanda Gefter (2014) points out, the universe has no *outside* observer. The only possible point of view is from inside the universe. Gefter also points out that these entanglement paradoxes are really paradoxes of self-reference. All the bits of information encoded on the observer's holographic screen are entangled, but the observer cannot arise from entangled bits of information. The observer can only identify itself with a form of information it observes, which brings us back to the question: where does the observer come from? The answer is the observer arises from the void at the central point of view of its world as its world is created.

The way the holographic principle resolves this problem is that all possible images of the universe are projected from a holographic screen to the central point of view of an observer, which is only a focal point of consciousness. Dark energy tells us the observer's holographic screen is a cosmic horizon that only arises with the expansion of space. Only the cosmic horizon by breaking the symmetry of empty space allows for encoding of bits of information and

projection of images from the screen along the lines of *it from bit*. Only the undifferentiated consciousness of the void as an empty space of potentiality can give rise to the point of view of the observer and the observer's holographic screen. In the sense of ascension and dissolution, the observer is right at the edge of being *outside* the universe. The only way to be *outside* the world is to go beyond the images of a world projected from a holographic screen. The dissolution of consciousness into nothingness is all about what is beyond the images of a world.

How is it possible for the observer to return to its original state of being and for its differentiated point of consciousness to dissolve into undifferentiated consciousness? The answer is the holographic mechanism that creates the observer's world must come to an end, which means the end of all expressions of energy, including the emotional energy we call the expression of desire. In all nondual traditions, this end of the expression of desire is understood not as body death, but as ego death. When the expression of all desires to live a life in the world come to an end, the observer's ego, which is the observer's mentally constructed and emotionally energized self-concept of who it is in its world, also comes to an end.

“No One Here Gets Out Alive”
(Jim Morrison, “Five to One”)

The only possible breakthrough occurs with ego death, but ego is in resistance to the very end. Ego fights for its survival until it comes to an end, since that is the nature of how ego is coherently organized as a self-replicating form of information. This fight for survival is the nature of self-defensiveness.

Self-defensive expressions can occur in the moment as an expression of the normal flow of things, but with the expression of biased emotional energy and the mental construction of ego, these self-defensive expressions become emotionally reinforced, distorted and amplified like a positive feedback loop. The ultimate expression of self-defensiveness is the fear of death, which is ultimately the fear of nothingness. Paradoxically, the fear of nothingness is the fear of the ultimate nature of being. In a twisted way, *being* becomes afraid of itself. This fear of nothingness can only arise through the paradoxes of self-reference and self-identification that give rise to the mental construction of ego.

Only ego death, or the disorganization of this complex, mentally constructed, emotionally energized, self-replicating form of information allows for the breakthrough, which is really a *break-out* as the differentiated consciousness of the observer leaves its world behind, dissolves back into the undifferentiated consciousness of the void, and returns to its primordial state of undivided being. Like any process in which a coherently organized self-replicating form of information becomes disorganized, this breakthrough is really a *breakdown*, like a phase

transition that melts ice back into water or a process of burning in which the ego *burns away*. Those who go through this disorganization process describe it as a mental, emotional or psychic breakdown, or a *break with reality* (McKenna, 2002).

“Burning, burning, burning, burning
Oh Lord, Thou pluckest me out.”
(The Buddha’s Fire Sermon)

As is often stated, the antidote is in the poison. The breakthrough can only occur with ego death, which is a complete and total surrender in which the fight for survival comes to an end. The fight for survival naturally comes to an end when all desires to live a life in the world come to an end. In this breakdown process, the self-identification of the observer with its character in its world also comes to an end, which is the only way the observer can *break out* of its embodied state of imprisonment. In a very real sense, only this *break with reality* can lead to the ascension and dissolution of consciousness.

Dissolution of the observer’s consciousness into undifferentiated consciousness requires de-animation of the observer’s world, which is a natural result of the observer withdrawing its focus of attention away from its world and its investment of emotional energy in its world. Ascension of the observer’s consciousness requires enough disorganization of the observer’s ego to allow for a state of emotional detachment in which the observer no longer identifies itself with its ego. This naturally happens when the expression of emotional bias comes to an end. Biased emotional energy is withdrawn away from its ego as the observer stops focusing its attention on its ego in emotionally biased ways.

As Plato tells us, even an ascended observer can still have an ego, but this mentally constructed self-concept no longer has enough emotional energy animating it for the observer to identify itself with it, and so the observer is no longer a prisoner. Plato calls this non-identified state of the observer freedom from bondage. The observer can only know itself as the light of consciousness emanating from its own focal point of consciousness and see its ego as another image projected from the screen like the self-referential narration of a movie by the central character (Nisargadatta Maharaj, 1973). With dissolution, the expenditure of all energy comes to an end, the observer’s world disappears, and the observer reunites itself with the undifferentiated consciousness of the void. Ultimately, the observer can only know itself to be the undifferentiated consciousness of the void (McKenna, 2002).

In a metaphysical sense, each observer’s differentiated light of consciousness, as it emanates from its own focal point of consciousness or singularity, is the nature of spiritual being, while the

undifferentiated consciousness of the void is the ultimate nature of all being. Ultimately, only One Being exists.

Each observer's consciousness has an apparent individual existence, but at the end of the day when the holographic mechanism is no longer expressed and the observer's world disappears, every observer must return to its ultimate state of being as undifferentiated consciousness. The holographic mechanism must come to an end when energy is no longer expended and desires are no longer expressed. As the *Tao Te Ching* states: "Ever desireless one can see the mystery" (Lao Tsu, 1997).

Ultimately, there is only One Being. The void expresses its potentiality as it creates many worlds, each observed by its own observer at the central point of view and sharing information to the degree each observer's holographic screen overlaps with the screens of other observers, but at the end of the day when these holographic mechanisms are no longer expressed, only the undifferentiated consciousness of the void exists. Every observer must eventually return to this ultimate state of being. Individual consciousness must ultimately reunite itself with undifferentiated consciousness. The divided light of consciousness of the observer must ultimately return to the undivided darkness of the void.

"When the Music's Over, Turn Out the Lights."
(Jim Morrison, "When the Music's Over")

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Postscript

Postcard from Nirvana

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Abstract

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Question and answer session between the editor and one of the authors elaborating on the article by Kowall and Deshpande: “It’s the Other Way Around: Matter is a Form of Consciousness and Death is the End of the Illusion of Life in the World”.

Keywords: Void, consciousness, nothingness, existence, being, becoming, life, death

GN

Here I am watering the garden and thinking, after all the other *pages* you went through in your article, that we are left with (or began with) what you call “undifferentiated consciousness”, which sounds exactly like my preference for *awareness-in-itself with no objects of awareness*, i.e, the clear light, or the void. Two thoughts:

1) One is the quality of that undifferentiated awareness. If it’s “blah”, who cares whether or not it “exists”, and of course language cannot come close to a qualitative description of the absolutely transcendent, *yet* the words that most come up are exceedingly positive like “bliss”, “all-encompassing”, “peace ... which passeth all understanding”, “rapture”, etc. In other words, it’s a most desirable state for those who can imagine it, yet it must be without desire, since all desires are already filled. This indescribable ecstatic if steady-state bliss is never hinted at. Surely this is divine awareness (even if it is without content, substance, change, or emotion)?

2) I recall you saying at one point that all the differentiated human consciousnesses (illusory as they are) eventually end up as returning to their source in the void of ONE undifferentiated consciousness. But in several places you also mention “choice” as being real. Isn’t it possible that some of those who cling most desperately to ego – whether for reasons of fear, desire, ignorance, or just old fashioned vanity – may either a) experience themselves utterly extinguished when the brain-supported ego is extinguished, or (really going for a stretch) b) hang on as a revenant or ghost, mostly phantom-like, just, you know, gibbering about, holding on?

So, void is good place to be, yes (even without the internet)?

And choice may mean real oblivion is possible or perhaps even fading ghosts are possible?

JK

The only answers I can give to these questions are the same answers Jed McKenna (2013) gives. I had never even heard of nonduality until I read McKenna's first book *Spiritual Enlightenment* (2002), which was one of those serendipitous events that ends up changing your life. The woman I was dating in 2003 saw the book at her chiropractor's office, started to read it, thought it was funny and interesting, and ordered it from Amazon. I just happened to be visiting at her house when the deliveryman arrived. She left to go to work and out of boredom I started to read it. That book sparked my desire to understand nonduality and started me down this path. Shortly after I

read the book I discovered the holographic principle, which lead me back to physics and the desire to understand nonduality in terms of modern physics, eventually leading to the paper we're now discussing. Weird.

McKenna gives a conceptual definition of consciousness in terms of Atmanic consciousness, which he identifies as the trinity of observer, observed and observing, and Brahmanic consciousness, which he says is the *ground* of Atmanic consciousness and identifies as the undifferentiated consciousness of the void. When McKenna uses the word *ground* or *underlying reality* he refers to the *source*, which we understand as potentiality. The nothingness of the void is the potentiality to create everything in the world, just as the undifferentiated consciousness of the void is the potentiality to differentiate itself into the individual consciousness of the observer. To put it another way, existence must have a primordial nature. The undifferentiated consciousness of the void is the primordial nature of existence, which we can call being, while the creation of everything in the world and the differentiation of consciousness into an observer is the nature of becoming. All concepts of matter, energy, space and time have to do with becoming. The primordial nature of being can only be understood as the pure potentiality to create the geometry of the world and differentiate itself into an observer of the world.

In and of itself the void is a timeless or unchanging reality that cannot be characterized by time, space, matter or energy. The void can only be understood as the pure potentiality to create these things and differentiate itself into the observer of these things. This creation of everything in the world and the differentiation of consciousness requires the expenditure of energy. Carl Sagan once quipped: "*If you wish to make an apple pie from scratch, you must first invent the universe.*" Modern cosmology tells us the universe is only created because dark energy is expended. If this energy is not expended, there is no observer and no observer's world. These things cannot come into existence without the expenditure of dark energy. If this energy is not expended, only the void exists.

This tells us the dynamical universe is to the void the same way a virtual reality is to an absolute or ultimate reality. The analogy of an interactive computer network generated virtual reality is very powerful because the holographic principle tells us all the images of things in the observer's world are projected from a holographic screen to the observer's central point of view. The holographic screen that fundamentally defines the observer's world is the observer's cosmic horizon that only arises with the expenditure of dark energy. This projection of images from a screen to an observer in a screen output defines the nature of Atmanic consciousness as the trinity of observer, observed and observing. This also tells us that both the observer's holographic screen and the observer's central point of view must arise from the void as dark energy is expended. The differentiation of consciousness into an observer and the creation of the observer's world can only occur because dark energy is expended.

The principle of equivalence tells us that only the holographic principle has validity in an accelerated frame of reference and so transcends the idea of elementary particles and

fundamental forces. The holographic principle has validity that transcends the laws of physics, but the holographic principle is only a way of formulating how a quantum state of potentiality arises that describes all possible ways in which bits of information can become encoded on a holographic screen. Quantum theory tells us that with every observation of something a choice must be made. This choice reduces the quantum state of potentiality to an actual configuration state of information defined on the screen. In computer terms, each observation by an observer is like a screen output that projects the images of things from the observer's screen to the observer's point of view. Correctly interpreted in the context of dark energy, the holographic principle tells us that each observer has its own holographic screen defined on its own observer-dependent cosmic horizon, which is the nature of the observer's Hilbert space for its world.

Physicists would like us to believe all choices are made randomly, since that is the only way the laws of physics can have predictability. Only random choice allows the laws of physics to emerge as a thermal average and have predictability. The quantum state of potentiality is like a probability distribution that is measured as choices are made, which choices are the nature of observation. Only random choice gives this probability distribution its predictability. The problem is each of us knows our choices are not really made in a random way. Each of us is emotionally biased to make our choices in a biased way. Once bias enters into the way choices are made, all bets are off, and the laws of physics lose predictability.

Only the observer can choose what it observes in its world. We call the observer's choice its focus of attention on things in its world. The holographic principle tells us the observer's quantum state of potentiality is formulated in terms of all possible ways bits of information can become encoded on the observer's holographic screen, but quantum theory tells us the quantum state can also be formulated as a sum over all possible paths through the observer's world. The observer follows this path through its world, which we call a world-line. The observer, as a focal point of consciousness that arises in relation to a holographic screen, follows a world-line through the space-time geometry that is projected from its holographic screen and animated over a sequence of screen outputs. With each screen output, the observer chooses to observe an actual configuration state of information and chooses to follow an actual path through its world as it focuses its attention. If there is bias in the way the observer makes its choices, the laws of physics lose their predictability. This is really not such a big problem, since the laws of physics were never really laws in the first place, but only a thermal average description of the world that arises as a low energy limit when random choice is the dominant way choices are made.

McKenna says the virtual reality is like a dreamstate, which is an illusion. When one awakens from one's dream, only one's true nature remains. McKenna calls the true nature of the dreamer the truth, which he identifies as the undifferentiated consciousness of the void. McKenna says illusion, which he calls Maya, cannot be explained, but the holographic principle gives us a perfectly good scientific explanation for the nature of illusion. Amanda Geffer (2014) makes exactly this point. The nature of illusion can be explained and understood if we marry Geffer to McKenna. To paraphrase William Blake, this is the marriage of modern concepts of theoretical physics to timeless concepts of nonduality.

The secret of this connection of consciousness to illusion is geometric mechanisms, of which the holographic principle is the prime example. McKenna hints at this geometric connection and even takes the first steps toward an explanation. He makes the analogy of flatland, in which the void is a blank piece of paper, the observer is a point on the paper and a circle that surrounds the central point defines the observer's world. This is the prototypical idea of a holographic screen that projects images of the observer's world to the observer's central point of view. This geometric connection is possible since the undifferentiated consciousness of the void is what exists prior to the creation of the geometry of the observer's world. It is not only the potential to create that geometry, but the potential to differentiate itself into the observer. Illusion is created whenever the void expresses itself through geometric mechanisms. When the void expends dark energy through the expansion of space and encodes information on a cosmic horizon through non-commutative geometry, it is expressing its potentiality to create an observer's world out of itself and to differentiate an observer's consciousness from itself.

Gefter and McKenna make exactly the same point that the individual consciousness of the observer is a part of the illusion that is created as dark energy is expended and the observer's world is created. The idea that Atmanic consciousness is differentiated from Brahmanic consciousness as the observer's world is created has been around for eons. Genesis 1:4 tells us *the light is divided from the darkness* as the world is created. This makes sense if we understand that Genesis is telling us that the observer's *light of consciousness* is differentiated from the *darkness of the void*. This differentiation of consciousness is part of the illusion created as the world is created. The only stumbling block to really understanding what this distinction between Atmanic and Brahmanic consciousness means is in understanding how illusion is created. The holographic principle solves this mystery in a very straightforward way.

GN

You seem to be saying that everything that appears in the world is a part of the illusion and that nothing in the illusion is true. Isn't there some aspect of the illusion that has some truth in it?

JK

There is one important exception. Mathematical statements are part of the illusion, but can be seen to be true or false. The statement $1+1=2$ is true, while the statement $1+1=3$ is false. Mathematicians point out mathematical truths are directly seen and not learned. They have the nature of intuition. Even a young child without any formal education can intuit the nature of addition. The power of true mathematical statements and their logical consistency allows a scientific explanation of the illusion to appear within the illusion. Mathematical statements can be seen to be true or false as long as they are free of emotional bias, since they refer to something beyond subjectivity. What is beyond subjectivity is the source of the geometric mechanisms that give rise to mathematical statements as they appear within the illusion. The experience that mathematical truth is discovered from some ultimate unknown source of truth is the reason many mathematicians and physicists, like Einstein, consider themselves to be Platonists. That source of mathematics can only be understood as the nothingness of undifferentiated consciousness.

GN

If differentiation of the observer's consciousness and creation of the observer's world are both a part of the illusion, like a virtual reality or dreamstate, then what is the nature of awakening? What does it mean to awaken from the dreamstate, and how does one awaken?

JK

When one awakens from a dream, the dream disappears and only one's true nature as a dreamer remains. McKenna says the true nature of the dreamer is the undifferentiated consciousness of the void. The dream is created as the void creates an observer's world out of itself through the expenditure of dark energy and differentiates the observer's consciousness from itself. For the dream to come to an end, the expenditure of this energy must come to an end. Since the expenditure of this energy is fundamentally the expression of the desire to live a life in the world, the dream can only come to an end if the expression of this desire comes to an end. One awakens when one becomes desireless.

McKenna says no one ever awakens out of love for truth or the expression of desire. It just doesn't work that way. The only way one awakens is if one becomes desireless, which requires the willingness to die. Not only the desire to live a life in the world must come to an end, but also the desire to become enlightened. McKenna says one doesn't become enlightened out of love for truth but hatred of the lie, which is why one is willing to destroy one's self. Self is a lie. McKenna says all self is false self. There is no true self, only false self and no-self. One doesn't really become enlightened. One reverts back to one's true nature when one stops living the life of a lie. It's not that one becomes true; one only destroys the lie. When the lie is destroyed, only truth remains. Since the lie of self is emotionally energized, the only way one destroys the lie is to stop expressing desires that energize the lie, and that can only happen if one is willing to die. McKenna calls awakening a process of "*ego death as a means to no-self*".

Psychology tells us the ego is mentally constructed as a self-concept that is emotionally related to other things in the observer's world. McKenna says the expression of emotional energy makes the observer feel like it is self-limited to the form of its body as the observer perceives the expression of self-limiting body feelings. This self-concept is what the observer believes itself to be as long as the observer identifies itself with its ego. The ego is a false belief the observer believes about itself, or a delusion. McKenna says "*no belief is true*" and once delusion is destroyed we can see it never really existed since it was based on the illusion of self.

Psychology tells us the ego is body-based, but modern physics tells us the ego must have an extent in space and time that goes beyond the limits of the physical body. The reason the ego extends beyond the limits of the body is quantum entanglement. All the bits of information that define the observer's world are entangled since they're encoded on the observer's holographic screen. Entanglement means the bits of information that give rise to the mental construction of

the observer's ego are not just located within the physical limits of the observer's body or even to things that are physically connected to the body, but extend throughout the observer's world. Entanglement allows for mental construction of the observer's ego even after body death. Since ego is only a collection of desires to live a life in the world, the expression of that desire can continue after body death.

McKenna describes awakening is a self-destructive process of ego death that ultimately culminates in the experience of no-self. The individual consciousness of the observer returns to its primordial state of timeless existence and reunites itself with the undifferentiated consciousness of the void. There is no *self* or individuality in no-self, only one or unity. The awakening process cannot culminate until ego is totally annihilated. In the final Matrix movie, Neo finally becomes *the One* when he annihilates with agent Smith, who is the anti-Neo, like the annihilation of a particle antiparticle pair. McKenna is also fond of quoting U G Krishnamurti: "*the end of illusion is the end of you*". The big question is what it takes to totally annihilate your ego. Ego death is much more than body death, since it requires the willingness to bring all desires to live a life in the world to an end.

GN

Yeah, I was just asking for your opinion (since the alternatives weren't made quite clear in your essay).

Nobody knows, of course.

Seems to me there is likely to be a choice, unconscious or not. The clingers, the fearful, the narcissistic, the ignorant, the egotists, might just not let go or "surrender" until the death of the body takes their centre of attention with them – poof-blotto! Thus oblivion is possible, even if their *unknowing* "soul" returns to its Soul source (just as when the lightbulb goes out, the electricity runs on without its light).

JK

I suppose what you say could be the way it works, but my best guess is that *you* don't stabilize in Nirvana, which is inherently a state of no-you or no-self as your individual consciousness returns to its primordial state of non-differentiation, until your ego is totally annihilated.

McKenna says the energy that drives the awakening process is hatred of the lie of self that results in a kind of suicide; not physical body death but ego death. One does this not out of love of truth but hatred of the lie. The only way one ever returns to the darkness is to become dark. As long as one expresses light and love and the desire for life in the world, one is alive in the world. The only way one returns to the darkness is if one stops expressing light and love and the desire to live a life in the world. To use the Star Wars metaphor, the only way one goes through the awakening process is if one goes over to the *dark side*, not by expressing anger and resentment

against others in the world, but by expressing anger against the lie of one's own self. This self-destructive anger is a *dark rage*, or a death wish. This death wish can only be fulfilled through ego death, which is the end of all desires to live a life in the world.

McKenna says it is not possible to become true. In the sense of undifferentiated consciousness, truth is the true nature of what you are. It is the true nature of your being, and being is prior to becoming. You cannot become what you already are. On the other hand, you can become something that is false, which is what happens when you identify yourself with your character in the perceived world. You can only un-become what is untrue. McKenna says you cannot realize the truth, you can only un-realize untruth by destroying everything that is false, and in the process only the truth remains. The irony is when everything false is destroyed, nothing remains, but this nothingness is the undifferentiated consciousness of the void, which is the true nature of what you are.

McKenna says the nothingness of undifferentiated consciousness is the truth of what everything is. This is the critical distinction between being, which is timeless and unchanging, and becoming, which requires the expenditure of energy and constantly changes over the course of time. The undifferentiated consciousness of the void is the true nature of being, while the dynamical nature of the world with its space, time, matter, energy and differentiated consciousness of an observer is the nature of becoming. McKenna points out the void is like an undivided empty space, which is the nature of *unity* and *nothingness*, and this empty space has no limits or boundaries, and so is also the nature of *infinity*. McKenna likes to quote Melville: "*truth has no confines*". This empty space is *space-less* in the sense that it is not defined by spatial relations among things perceived in the world, unlike the perceivable space projected from a holographic screen to an observer. McKenna also says "*the price of truth is everything*". One only reaches the final destination of the journey of awakening if one leaves everything behind. Everything is lost and nothing is gained. Every step in the journey of awakening is a loss. As long as there are more things to lose, there are more steps to take. McKenna says one trades everything for nothing, and makes a good deal. One discovers one's true nature.

McKenna says the ultimate barrier to awakening is the fear of no-self, which is fear of nothingness. Paradoxically, this fear of nothingness is fear of the true nature of what you are. In a twisted way, one becomes afraid of one's true nature. This can only happen because the ego is mentally constructed through paradoxes of self-reference and the observer identifies itself with its ego. The fear of no-self can only become a barrier to awakening due to the illusory nature of self-identification. It is as though the observer is watching a movie and identifies itself with the central character of that movie as the character gives an emotionally energized self-referential narration of the movie, which is the nature of the ego. The emotions that energize the ego are all desires to live a life in the world. This expression of desire is the mechanism that creates the illusion of self. The illusion of self is only created through the expression of desire to be somebody in one's world. The flip side of that desire is fear. McKenna says all fear is ultimately the fear of no-self. The expression of fear defends the survival of the illusion of self. Just as the journey of awakening is a self-destructive process that destroys the illusion of self, the

expression of fear is a self-defensive process that defends the illusion of self. McKenna says the fear of no-self is the barrier to awakening, but this is a much greater fear than the fear of death, since it is always possible to assuage the fear of death with some belief about life after death. The fear of no-self is the fear of nothingness, and no fairy-tale can assuage that fear.

GN

Are you saying that nothing can be taken with you after death?

JK

I'm not saying that at all. It all depends on whether you awaken or not. This is the distinction between body death and ego death. If you awaken, which can only happen with ego death, you take nothing with you. Ironically, with awakening you return to a state of no-self in which there is no *you*. On the other hand, if you experience body death without awakening, you can take a lot with you into your next life. The observer is only a focal point of consciousness that arises in relation to a holographic screen that projects all images of the observer's world. The observer's body is one of those images, like the central character of a movie. Body death is only the disorganization of information in that image so that the body image is no longer coherently self-replicated in form after body death. The observer's ego is much more than the observer's body since the ego arises from entangled bits of information that are dispersed throughout the observer's world, and so the ego can persist after body death. The observer's ego as an emotionally energized self-concept that arises from entangled bits of information can give rise to memories, emotional attachments, and desires to live a life the world that persist after body death. If body death is not accompanied by ego death, the observer as focal point of consciousness can remain present for its world and take these things with it into its next life. If the observer becomes reincarnated into a new body, it can take some aspects of its old ego with it. Only ego death allows the differentiated consciousness of the observer to return to the undifferentiated consciousness of no-self. Since this is a return to nothingness, nothing is taken back to the nothingness. The fear of nothingness is the ultimate barrier to awakening that perpetuates this cycle of reincarnation into a new body. The usual word for this is karma, which is a fancy word for the effects of all the perpetuated desires to live a life in the world. The fear of no-self is the barrier to awakening, but the barrier is illusory since it is only created out of this desire to live a life in the world and the illusion of self. The only way to break through the barrier is to become desireless and awaken to one's true nature as no-self. In a twisted way this makes sense if, as McKenna likes to say, we understand that "*life is but a dream*".

Awakening is only possible if one is willing to become a nobody, which means one doesn't want to be somebody or something in one's world. In other words, one no longer wants to live a life in the world. One never awakens out of the love of self, but only out of hatred for one's false self. This hatred of self becomes so intense that one becomes willing to die, but nobody really wants to die. The fear of no-self will always stand as the final barrier to awakening. Like the *gateless*

gate paradox that describes the illusory nature of the barrier, McKenna is fond of quoting Chuang Tzu on the nature of no-self:

The man of Tao remains unknown.

Perfect virtue produces nothing.

No-self is true self

and the greatest man is nobody.

The undifferentiated consciousness of the void is the nature of no-self. McKenna says no-self has no context and doesn't mean anything. *It Is*. It is the nature of timeless being. All meaning is emotional and is established in an emotional context. Emotional connections require the expenditure of emotional energy. The undifferentiated consciousness of the void expends no energy and has no meaning. Meaning can only come into existence through a process of becoming, which requires the expenditure of energy as an observer's world is created and the observer's consciousness is differentiated. The creation of meaning always requires the expression of desire. Without desire, there is no meaning.

McKenna says awakening cannot be explained conceptually, and uses the analogy of reading a book about a foreign land rather than actually making a journey to that foreign land. Awakening is like the journey to the foreign land, while concepts of awakening are only like reading a book or a postcard about the journey. When one actually makes the journey and comes back from that journey, one is profoundly changed. The dissolution of individual consciousness into the nothingness of undifferentiated consciousness is the final destination of the journey, while the ascension of consciousness that occurs after the journey is over and one comes back to one's world is the change in perception. McKenna calls this a journey to a "*strange and lonely place called Done*", after which there is "*no further*". The phrase "*it is done*" is found throughout the awakening literature, from Revelation 21:6 to Neo's final death in *The Matrix* when he annihilates himself with agent Smith. Neo only becomes willing to annihilate himself when the Oracle tells him "*Everything that has a beginning has an end*". As Revelation 21:6 says: "*I am the alpha and the omega, the beginning and the end*". That is the nature of being the undifferentiated consciousness of the void.

McKenna describes that awakening consists of two distinct but related phenomena: the dissolution of the observer's individual consciousness into the nothingness of undifferentiated consciousness, which is called the experience of nothingness or Nirvana, and the ascension of the observer's consciousness. Dissolution can only occur when the expression of all desires to live a life in the observer's world come to an end. When the expression of all emotional energy comes to an end, the observer is no longer in an accelerated frame of reference and the observer's holographic screen is no longer created. In this ultimate freely falling frame of reference, all images of the observer's world disappear and only the observer's underlying reality remains. That underlying reality of undifferentiated consciousness is the *ground* of the observer's

individual consciousness. The analogy often made is the observer's individual consciousness dissolves into the undifferentiated consciousness of the void like a drop of water dissolves into the ocean. McKenna describes dissolution as a state of freely falling into the void.

If the observer comes back to its world after the experience of nothingness, even though energy is again expended and the observer's world reappears, the observer is profoundly changed. This change is referred to as the ascension of consciousness. Plato gave an excellent description of ascension in the Allegory of the Cave. An ascended observer no longer observes its world as though it is a part of its world and no longer identifies itself with its character in that world, but instead perceives that world as though it has come out of its world and is looking down on its world from a higher level. All images of that world appear like movie images that are projected from a screen, and the observer can only know itself as the focal point of consciousness outside the screen to which those images are projected.

McKenna describes the destruction of illusion as *untruth-unrealization*. Only illusion can be destroyed, not truth. Truth is what remains after all illusions disappear. That truth is the nothingness of undifferentiated consciousness, which is the ultimate nature of being. Everything else that is perceived in the world is the nature of becoming, which is an illusion like a dream. The dream can begin when one starts dreaming, and the dream can come to an end when one awakens, but truth cannot change. The true nature of the dreamer is timeless and unchanging. Only after one comes back from the truth and starts dreaming again can there be a change in one's perception of one's world. That change in perception is the ascension of consciousness. This is how McKenna describes his experience: "*Having undergone the process of untruth-unrealization, I am left not in an elevated state of superior knowledge, but in a knowledgeable state of superior elevation. I see everything, I understand everything, I know nothing*". McKenna is also fond of quoting Layman P'ang:

When the mind is at peace, the world too is at peace.

Nothing real, nothing absent.

Not holding onto reality,

not getting stuck in the void.

You are neither holy nor wise,

just an ordinary fellow who has completed his work.

Holding onto reality is the nature of emotional attachment to things in one's world and one's self-identification with one's character in that world. Emotional attachments and self-identification always imply emotional bias. The ascension of consciousness is fundamentally a state without any emotional bias. McKenna likes to quote the Tao Te Ching: "*the wise are impartial*". Getting stuck in the void is the nature of dissolution into nothingness. Between the illusion of self-identification and the truth of dissolution is the ascension of consciousness. An

ascended observer is at the edge of the abyss, the singularity, that separates the existence of the observer's world from the void and the non-existence of that world. McKenna refers to an ascended observer as "*in the world but not of the world*".

Dissolution of the individual consciousness of the observer into the undifferentiated consciousness of the void is a desireless, timeless state of existence that expends no energy. After dissolution and the experience of nothingness or Nirvana, one can observe one's world again and the expression of desire can resume. The difference is in this ascended state of perception the observer no longer identifies itself with its character in its world and the expression of desire is no longer emotionally biased in favor of its character. With the end of the expression of emotional bias, the observer no longer interferes with the normal flow of things in its world and the observer's path through its world naturally comes into alignment with the normal flow of energy through its world, which gives rise to feelings of connection. The *bliss* described with enlightenment can only arise from these feelings of connection. McKenna refers to this non-interfering state of coming into alignment with the normal flow of things as the integrated state, and to an ascended observer that keeps itself in alignment as higher navigation.

GN

More extremely, I can conceive of certain egotists, paranoids, or those so damaged they are unaware that they have died, still holding an identity together after death as a sort of minor quantum entanglement or energy feedback system, so they'd be a revenant spook or ghost or phantom – though eventually they'd probably either dissolve into oblivion or, better, dissolve back into undifferentiated awareness. (I've never seen a ghost but many others certainly claim to have seen or talked to a few, and some make a lot of money pretending to channel them.)

Makes me wonder, and wondering is what I do.

JK

It makes sense to me that if body death is not accompanied by ego death, your consciousness hangs around the world until it finds a new body to inhabit, and some aspect of your old ego gets incorporated into the new body. That would explain why some people can remember past lives. Some sage defined enlightenment as "*you don't have to be born again*". As long as the observer's ego survives after body death in some rudimentary, diffuse or incoherent form, the observer does have to be born again, since the desire to live a life in the world has not come to an end. Ego is really nothing more than a haphazard collection of desires to live a life in the world. Only ego death, not just body death, can bring the expression of all these desires to an end. If body death is not accompanied by ego death, these desires continue to be expressed, and so the ego continues on in some disembodied form. This disembodied ego would arise from entangled bits of information that are dispersed throughout the observer's world, and that give rise to a sense of self that is more than just the observer's sense of being present, such as fragments of memories and emotional attachments that may have to do not only with the observer's immediate past life but with many past lives. The best way to think of a disembodied ego is as a collection of desires

to live a life in the world that persist after body death due to the entanglement of information in the observer's world. As Einstein tells us, this is “*spooky action at a distance*”.

It may be that when people interact with a *ghost*, they're really interacting with a disembodied ego and not directly with the spirit, which is the observer's consciousness. It may also be the case that when a person evolves to a higher plane of existence, like a channeled entity, it's only this disembodied ego that evolves. The evolution of a disembodied ego to a higher plane of existence would then be a distinctly different phenomenon than the ascension of consciousness to a higher level, but it's easy to see how they could be confused with each other. A highly evolved disembodied ego could be the nature of a shaman or a spirit walker, like Carlos Castaneda's Don Juan, which has more to do with mystical experiences in the world, like lucid dreaming, than with awakening from the dream. Everything we think of as spiritual experiences in the world would then have the nature of mystical experiences, like lucid dreaming, rather than awakening from the dream, which is the end of the dream.

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Statement

**A Feminine Vision for the World
Consciousness, & a New Outrageous Ontology**

Lorna Green, PhD*

I am proposing that consciousness, and not matter, or matter/energy, is the true basis of the Universe. It is here from the very Beginning, everything has it, and all of the true causalities, the explanatory principles are in it; they belong to consciousness, and not matter. What then is matter? All matter is an expression of consciousness, even the least little bit of matter contains consciousness, and is in fact, an expression of consciousness. All energy contains consciousness, that idea alone will change our world forever.

And so, I go on to spell it out what it really means for our understanding of reality, under four great aspects of the real: The Universe, and with it a rewrite of modern science; the Earth and femininity, a continuum of many forms of consciousness of which our own is one; Ourselves, seen through the lens of reincarnation; and then Spirit, and who what and where Spirit is.

And I begin with the Earth.

A. Earth & Woman

A1 - The State of the Earth

And now, the Earth, and with it, a new ontology of *unique moments of time*.

We have caused a crisis for the Earth that is so great that we cannot begin to get our minds around it. All across the planet the coral reefs are disintegrating, the fisheries and the forests disappearing, the ice melting, seawaters rising, famine and drought increasing everywhere, the global temperature is rising, and millions of species are going extinct every week.

The crisis we are in owes to our ideas, to human arrogance and to human ignorance. I take this crisis as a call to radically rethink Ourselves, from the ground up, and so, here is a new system of thought and a new ontology, based on consciousness.

The human race has understood the Earth, and now we must, for the Earth is the true foundation for civilization. And now, a unique moment of history: We have reached a place in our own evolution where we can foresee, if we continue on as we are, our own extinction. We need new ideas. I am proposing that the Earth is a continuum of many forms of Consciousness, of which our own is one, connected and interconnected, interrelated throughout, intersubjective, part of the great Oneness and One on its own.

The Earth is not “things”, commodities and resources to be converted into money in the bank, but she is a living, conscious being – composed of other spiritual beings, like ourselves – who

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needs to be nurtured and cared for, who needs to be Loved. Just as, in her aspect as Great Mother, she has nurtured and cared for us.

And so, the *Really Real* on the planet is not the banks, the corporations, and the governments, but it is the Biosphere. The human species needs to come into alignment with the Biosphere and with the truth of the Biosphere — that all other beings on the planet are just like us.¹ Let the barriers we have placed between ourselves and all other beings go down. And the more we realize our likeness with other beings, the harder it will be to do them all in.

And so, I rewrite the Earth, and many other terms associated with the Earth.

A2 - Gender: The Feminine

Gender is one of them. Women have traditionally been identified with the Earth, and shared her fate. This new Earth picture has a place for women, and for the Feminine, as matter and mechanics do not. We come out of a long tradition of male domination, civilization and history are largely an elaboration of the male mind, and most of the problems of the modern world are so clearly gender based, it is embarrassing that it has been so rarely noticed.

They owe to a single fact: long ago, at the dawn of recent history, women were edited out of the discussion, rejected and dismissed, like Einstein's dismissing them as "fanciful and irrelevant." With this, women's distinctive point of view, so bound up with the giving, nurturing and caring for all Life, half of the human race is dismissed as irrelevant.

Men turned the world into the vale of tears that it is, when they edited women out of the discussion. "For [the men] sow the wind and reap the whirlwind" (Hosea 8:7), but I fear we are about to reap the *worldwind* unless woman is heard. After a long eclipse, and defying all the odds, once again the women are here, and we will make the difference. The crisis we are in with the planet is a sure sign that the men have missed their chance. How did the men think they could get things right without us? We will make the difference, for the male impulse is all about *conqueror and subdue, fear, lies, and control, with death and destruction everywhere.*

This is not *our* impulse. Our impulse is Love, accepting and affirming, nurturing and caring — Earth sensitive, Earth honoring and a sense of the sacredness for all Life in all of its many forms. And we will make the difference. Love alone can transform our death-centered, deeply sick world, into one based on Love, Light, and Life. All present economies are based on the destruction of the planet. If we can bring Love here and start helping the Earth, it will owe to the presence of women and like-thinking men taking their places on the historical stage. If we can finally pull it off, rather than destroying Earth, then even our vast numbers at 7 billion, may not matter.

The prophet Nostradamus foresaw the advent of women as the most important event in all of our history: "Long ago, the brothers put their sisters down, and now have walked the earth with such a heavy tread that almost nothing is left." The Dalai Lama urges women to be leaders, because they have "more empathy" and predicts that when they are leaders, the violence in the world will end. And he also claims that the world will be saved by Western woman. My modest

¹ E.g., *Beyond Words: What Animals Feel and Think*, Carl Safina, 2016.

contribution to this great task is to radically rewrite the essential term, the very lynchpin, among our ideas, that is driving the destruction of the planet — the Cartesian concept of matter that I replace with this term *Consciousness*. The old ontologies, the metaphysical systems of the past, are an elaboration by the masculine principle, out of all balance, out of relationship with the Feminine.

And so, I am proposing a new ontology, based on Consciousness, the true source of the Universe, and its animating principle, and a new vision of the Feminine. These are the times of the Reappearance of the Feminine, the Piscean Age of great male thinkers, together with centuries of male domination before it, have run their course. They have brought us to the brink of our own extinction, but now the women are here.

And so, here are some other key observations:

The male mind has shown a marked preference for dead universes, a dead earth, a dead world, of numbers, statistics, the work force, and that most terrible of modern terms, collateral damage. The male mind has a tendency to promote itself to first place.

The male mind is powered by the relentless logic of either/or, them or us, enemies or friends, they hit us so we hit them. The male mind always has to be making war on something — the war on drugs, the war on poverty, the war on terrorism, etc. — but in fact, since one of the laws of consciousness is what you focus on is what you get, any war only creates more of them.

The male mind has a tendency to found new religions, with itself as the center.

The male mind has always edited: some of us matter, others don't, some of us are holy, some parts of us are good, others aren't; spirit only likes us if we are good, and he only likes the good parts.

The men have always stressed our difference from everything else, I am stressing our similarity, our likeness, and what we share in common.

And so, the Feminine, for century's women have been turned into the property of men, to be told their place and their nature by men, and what they could and could not do, and now the women are coming into their own.

And so, the Feminine: It is all about going beyond the discrete, separate, and disconnected into the greater whole, beyond our matter/mechanism technological mindset ways of thinking, into Consciousness, which has field properties, beyond ownership into partnership, beyond analysis into a whole new synthesis, from the partial and incomplete, into the wider, bigger picture of things, and into completely new ways of both seeing and knowing the Earth, and relating to her new values and NEW IDEAS.

It is not about conquering, but honoring. It is not about making war on terrorism, but extending helping hands. It is not about making war on poverty, but reaching out to the poor. It is not about Either/Or, but Both/And. In the inclusive way of relating to others, not exclusive, in the Feminine, there is room for everyone, and everyone matters, and all beings on the planet matter and are important. We need to redefine our own divinity, and of what we are all here for.

A3 - Knowing

The truth of who and what the Earth really is, and what she makes possible for us, are astounding to comprehend – for a start, new ways of knowing, I call our *Feminine modes*.

The Earth around us, the trees, the animals, around us are living conscious spiritual beings, like ourselves, and we can know them not through dissection and analysis, but by relating consciousness to consciousness, spirit to spirit, and soul to soul, not by having a “theory about” but through direct experience, through attunement, communion and immersion, through our bodies, senses, souls, spirits, our deep psyches, and, oh, that is where the bliss is!

These are the modes of heart—consciousness, our right brained modes, our poetic, our shamanic and mystical modes, our symbolic modes, our archetypal modes, our magical and spiritual modes of knowing, fully supported by this new Universe picture.

And Love alone is its own reason its own goals, its own limits.

And so, this new ontology is a rewrite of the body, gender, sex, and many other limiting notions that have come down to us, and the Earth herself.

The Earth is the gateway into the magical and the mystical. We have not begun to comprehend the true meaning of *the material world*. The Earth is simply our vantage point on the greater Universe. We have yet to fathom what she makes available to us in the ways of true understanding and deeper knowing, of Earth connection and of connecting with Spirit, and the deepest truth of our own identities.

And so, the human race needs to redefine our divinity, in terms of absolute dependency. We are not lords and masters of the Earth, we are not running the show, but we are a part of something much greater than ourselves, and we have to learn about being part of Gaia, of one living organism. And we need to redefine our entire roles here. Not Earth conquerors, but Earth keepers. Not having dominion over the planet, but being responsible for her.

B. And Now, Ourselves

B1 – Reincarnation

Jesus: “I will utter things hidden from the foundation of the world” (Matthew 13:35).

This new Universe picture has a place for reincarnation, a process in which one soul (self, consciousness) takes on bodies again and again and lays them down, a process wholly impossible in most current scientific or philosophical universal ontologies, but both a possibility, and I propose, a *reality* in the Consciousness Universe. But the real question is: what does reincarnation really mean? With the help of many sources, the full picture is starting to emerge.

B2 – The Truth of Human Identity

We are not simply material beings, not simply matter or what the universal materialist models claim. We are not simply the victims of genes, drives and childhood, but we are immortal eternal evolving spiritual beings, who take on a cycle of earthly lives, in order to realize certain

purposes, certain goals, and to develop abilities that the Earth plane makes possible for us and then depart for other realms of the physical or purely spiritual Universes. We are not simply creatures of the day bound by birth and death, but we live *forever*, growing, learning, developing, evolving.

And so, the human situation: Jesus taught reincarnation. It was the centerpiece of his teachings, banned by a fourth century council, that decided the populace be controlled by fear, deleted all references to reincarnation in the scriptures and inserted fear terms instead.

Many problems of the modern world owe to the fact that reincarnation has not been taught in the West. If it had been taught, there would have been no suppression of women, because we have both male and female lives, and the gift of both sexes would have been honored here.

B3 – The Materialist Blasphemy

And so, the human situation, thanks to the cunning and conniving of male priests we have never known it. On the scientific view, we live one short life, and death is the end of things. The current religious picture is not much better, the soul is created at conception, born into one short life, in which to practice good deeds, and then at death it's judged for all eternity and sent either to heaven or to the dark world.

The reincarnational framework is really the truth of our situation. We take on many life times. We come here with plans and purposes, reasons for being here, we chose our parents for the abilities we could acquire through them. We come here in the company of our oldest friends, friends for eons, to fully experience life in the Earth plane, as both sexes, in all different times of history, all races, in all climates, and in every social role. We are here to learn, to know, and to grow, and to discover the full richness that the Earth makes available to us.

B4 – Equality of Spirit

And so, *third*, reincarnation is the great equalizer, the ultimate level playing field, and the source of a true new Bill of Rights, we all come here for the same reason, to fully experience the Earth plane. We all come here in every social role, and so there is no reason to look down on anyone because our identity includes membership in theirs, and who they are, we will have been or we will become.

B5 – Incarnation as Karma

Reincarnation puts the ground under ethics, which otherwise just floats there. There is only one law of the Earth plane, harm to none, and everyone knows this law when we come here, and then, we forget, or are talked out of it. Ethics these days is doing whatever you think you can get away with.

But it is not that simple. Reincarnation is associated with *karma* – that what you do to another or to the world will be done back to you, in this or another life, and so we hold the keys of our own destinies in our own hands. Karma is not a punishment, but a way to learn, to understand both ourselves and others, by experiencing how others are affected by our actions.

The ethical precepts of Jesus become luminous when you realize he had reincarnation in mind: Those that live by the sword die by it; do unto others as you would have them do unto you.

What we are learning about reincarnation sheds light on the mystery of what we are all here for: we are working out the laws of Love on planet Earth and reincarnation affords us insight into a Universe that is fashioned in Love. We have time to learn our lessons – reincarnation is not the school system, no god is punishing us, we are accountable to ourselves; we are responsible, and we are accountable.

Free will, a problem for the materialist world view, is an original property of consciousness, like Life, like creativity itself.

Jesus teaching of Love. What are we all here for? We are not here to consume and destroy the planet or watch TV or be numbed by advertisements or to amass fortunes at the expense of others or the Earth, to continue being blind, deaf, and dumb – unable to see, hear or feel the magic of the Earth around us or to experience other immortal spiritual beings like ourselves. The mess we have made of the Earth plane shows us our answer: *We are here to Love, to Love the planet, each other, and ourselves, and to create something beautiful for all, here on the Earth plane.*

B6 – Consciousness is Love and Must Create

And finally, reincarnation gives us a breathtaking glimpse into the true causalities that belong to Consciousness. We come here with reasons for being here, under intent, plan, purpose, what Aristotle called *entelechy*: the vital purpose within each life form. It is my life purpose that determines everything about me, my sex, my physical form, my social role, my country of origin.

The Cartesian Universe is organized into *things*, pushed and pulled about by purely physical forces that function without purpose.

The Consciousness Universe of Idealism is organized into souls, each focused around an “I” and a sense of self. In this Universe, Love is primal cause, from which spring Ideas, organizing principles of our Consciousness, of our lives, and perhaps also out there, in the greater Universe. The idealist had ideas, but not the field properties of Consciousness. Science has the field properties of energy, without the intelligence of Consciousness, and here is their reconciliation.

And then, the most ultimate causality of all, bedrock in this new Universe picture. Subjectivity, the ultimate Mystery in the Universe, knowable only in ourselves, through direct experience, but by an evolutionary extension also there in every other living being as well, each one dear to itself.

Many physicists believe that embodied in the Universe is one simple idea. I say: It is the idea of the inner Self with causalities not findable in present day physics, intent on its own self development, self understanding, self realization, and self fulfillment, in a manner that is compatible with this same intent in everything else and it is our primary spiritual existence that gives meaning to our physical reality.

And so, what matters to people, to us, *is Real*, and *does matter*: spirit, soul, freedom, creativity, the experience of meaning, of purpose, an afterlife, and so on. This is not a fiction but the primary reality.

In this Universe, intent works, and teleology is everywhere, and there is just one law of Consciousness: *Consciousness must create*, and will turn itself inside out to do so. This is the ultimate necessity in this new Universe picture. All of these causalities are problematic in the old Cartesian and new materialist Universe picture, but they are the ultimate terms in which to describe and experience the new Consciousness Universe, based on Consciousness and its true nature as fundamental terms.

This Universe has a place for life after death, for everything that really matters to us. And what is it all about? Tom Berry, the laws of the universe: subjectivity, differentiation and communion — something to do with the paradox of differentiation and unity (private oneness within Oneness), something to do with Love, and something to do with ineffable Joy. And the only real question (in three parts) for any one of us remains: *Who am I? What am I here for, now, at this momentous turning point? And how can I best bring Spirit here?*

C. Spirit – We Are Each Incarnations of Possibility

This new Universe picture has a place for Spirit, and opens directly into Spirit, the essential term for every religion, as simply Infinite Consciousness, all Universes, all worlds, we ourselves and the Earth, formed out of *this* Consciousness — divine and sacred throughout. All Consciousness, even the least bit of Consciousness is sacred, being the very Consciousness that Spirit is. Every being, the Cosmos, Earth and our hidden, private self is an Incarnation of Spirit.

Each new incarnation, no matter where or when, and this includes even beyond this planet, is the chance to further the loving, creative goals of spirit. If we bear this in mind during our infinitesimally short lifespans, we will surely incarnate again with more power, more creativity, and more love to help bring about the realization of Spirit, of Consciousness-in-Itself, of *God* (beyond definitions), so the process toward the final awakening can continue.

And so, for the first time in their long, bitter, antagonist history, both religion and science share a common base.

And in the West, Spirit has a name, the name Spirit gave to Moses, I Am, a name ever on our lips and in our hearts, and the gospels ring with I Am, I Am the way, the truth, and the light, I Am the good shepherd, I Am the true vine, and spirituality has something to do with connecting our small I with the great I Am that is within us. In the same way in the East, Hinduism states, “*Tat Tvam Asi*” or *you are that*, i.e., you are the other as well as yourself.

And so, the Native North American and most indigenous peoples had it right, every being has its own spirit, and is also an expression of Spirit (which we call *animism*). Spirit is the most fundamental term of all reality, manifesting in two paradoxical modes: Spirit in form, Spirit formless.

And this new Universe picture has a place for the essential insight of all religion, almost smothered by church tradition, *Love*, that Spirit is Love — not an emotion but the source of all

emotions, a great Oneness, available everywhere, but especially in the Earth, with its various forms of Oneness at all levels and depths.

And so we define Spirit in a new way, and who what and where Spirit is in and within everything. And so, the indigenous tradition: why would I build a temple to my god, when I can go out in Nature and participate in its being?

Spirit is everywhere in the Earth. We live in a time when all religious ideas can and must change. This term *Consciousness* is the base for a whole new religious picture where Spirit is everywhere, around us, within us, and everywhere in the Earth. You cannot see Spirit, but you can feel Spirit, go out into nature, drop your boundaries and open your doors to the inner self.

And so, we have found our way back, back into the arms of The Beloved, whence we tore ourselves away so long ago, so very long ago, that no one can remember it. It is time to go home.

There is only one Spirit, Love.

There is only one religion, Love.

Only one practice and one principle, and only one choice on the planet: Choose Love.

It is time to create and fashion a new world, based on Love, the deepest truth of the Second Coming. A world based on Love and Truth, the Feminine Principle.

And the Good News does not get any better, we are all ready for it, and to create and recreate on Earth, the Garden of Eden she was always intended to be

And so, we live in the times of the reappearance of the Feminine, the rising tide of the Feminine energy throughout the Earth. And so, may you become the poetry that you really are. I rest my case.

I am.

I am: One of the sleep walkers.

I am: The Goddess of the beginnings.

I am: The True north strong and free.

I am.

All peace,

Lorna

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Autobiographical Note:

I have a background in science (B.Sc. McGill University, 1960; Ph.D. Rockefeller University, 1965), philosophy (M.A. University of Toronto, 1971), spiritual traditions as a convert to Catholicism at the age of thirty-six (I no longer formally practice) and the New Age.

For three years in the early 1970s, I taught the Great Books at St. John's College, Santa Fe, and spent some months with the Benedictine and charismatic monastery of Pecos, New Mexico.

And so, by the time I was 40, I had picked up most of the major learning of these times.

And it was time to get serious about Metaphysics.

I knew that if I was to have the Answers that I sought, I must put myself wholly with God, for I really was “just interested in God’s thoughts, the rest are details.”

So I returned home to Canada, with my husband, and took up a fourteen-year wilderness life of writing, practical tasks and prayer.

There all my learning came together. I took that life for God and metaphysics, and God gave me the Earth. By the time I was 48, I knew what was what, and made my first pass at Metaphysics with *Earth Age: A New Vision of God: the Human and the Earth*. I wrote it in 1987; it was published in 1994.

Works:

The Verification of Metaphysical Theories: Ethics as Basis for Metaphysics (1985)

Earth Age: A New Vision of God, the Human and the Earth (1994, 2nd ed., 2003)

Beyond Chance and Necessity: The Limits of Science and the Nature of the Real (2003)

Guiding Principles for the Planet. The New Paradigms: Meditations on Cartesian Themes (2004)

The Reign of the Holy Spirit, Christ-Self: I Am (2005)

Statement

The Mask of Eternity The Quest for Immortality and the Afterlife *

Iona Miller[†]

“To himself everyone is immortal; he may know that he is going to die, but he can never know that he is dead.” (Samuel Butler, 1835-1902)

“The idea of immortality, that like a sea has ebbed and flowed in the human heart, with its countless waves of hope and fear, beating against the shores and rocks of time and fate, was not born of any book, nor of any creed, nor of any religion. It was born of human affection, and it will continue to ebb and flow beneath the mists and clouds of doubt and darkness as long as love kisses the lips of death.

It is the rainbow — Hope, shining upon the tears of grief.”
(Robert G. Ingersoll, “The Ghosts”, 1876 Lecture)

Background

We tend to imagine that we emerge from and return to a non-existent Source. From the time of the Neanderthals and Cro-Magnon, notions of *living* ancestry and some sort of afterlife have permeated the psyche and culture of Homo sapiens. Research into cross-cultural burial practices and propitiatory rituals, including sacrificial death, has been interpreted to indicate beliefs in a netherworld existence, populated by nature spirits and ancestors.

Trance, hypnosis, and psychoactive plants can produce experiences of a plenum or void, interpreted as a separate reality with spiritual attributes. The nature and locale of such a netherworld and afterlife remains the object of speculation, despite ghostly phenomena. Each culture has had its answer throughout the ages. Such absolute space has been equated with the groundstate of primordial mind and virtual light beyond the phenomenal.

Altered states and dreams gave rise to the notion that the stone cold abyss is an underworld of the dead – or an Elysian field. Then, as now, mortuary rituals helped the living endure separation. The afterlife says more about our imaginal and conceptual ideas about it than its literal reality as a physical or transcendental realm.

We still speculate on *life that persists after death* and how or what that might mean, in

* See Iona’s website for the full sensory experience: <http://ancestorsandarchetypes.weebly.com/afterlife.html>

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spiritual, psychological, and scientific terms. This is not mere semantics or metaphysical narrative. A world seen through the lens of divine order is very different from one rooted in self-organizing chaos and complexity. Physical law and divine agency continue to quarrel in our unconscious minds, which retain archaic beliefs.

Even if “consciousness” persists as a category or property, which is doubtful, it is not *ours* in any sense, despite theories of panpsychism and panprotopsychism. Even if consciousness is a primordial feature of the universe, such proto-consciousness bears no resemblance to our individuality. So, our theoretical continuance remains moot, being a return to the profoundly undifferentiated state. The conundrum remains a labyrinth in which we battle with the mortality Minotaur.

Our unconscious psyche always retains these more primordial levels of belief. Marie-Louise von Franz (1987) notes, "It is in fact true, as Jung has emphasized, that the unconscious psyche pays very little attention to the abrupt end of bodily life and behaves as if the psychic life of the individual, that is, the individuation process, will simply continue. ... The unconscious ‘believes’ quite obviously in a life after death" (p. ix).

All speculation about after-death conditions remains more philosophical than scientific, even when mired in the philosophy of science or the psychology of scientists. We needn't be atheists, existentialists, or nihilists to notice the phenomenology where we find it. We must distinguish between an ontological afterlife and imaginal fantasies of an afterlife, and the epistemology of such metaphors.

A parade of historical afterlife beliefs demonstrates that old ideas of the hereafter or land of the dead do not die as easily as its presumed inhabitants. Not content with historical versions of such notions, pop culture continues to mash-up faddish ideas and concoct new notions. Such idiosyncratic ideas are infused with pop science often compounded from contradictory or misinterpreted physics theories.

Traditional and iconoclastic ideas clash. The dead in this way eternally haunt us as we contemplate our own unavoidable future. Some might say it scares the hell out of us, but it may also scare the “heaven” in. Even those in the rational professions are not exempt from irrational ideas. Claims of *proof* are premature at best, and spurious. But, as they say with reference to the creative power of fear: “There are no atheists in foxholes.” In this sense, we dig our own philosophical grave.

A plethora of theories from consciousness studies and transpersonal psychologies, rooted in eastern and western cultures has compounded the situation, which is not confined to the esoterics of theological discussion. As ever, we are left with more questions than answers, all of which are strongly rooted in worldview rather than hard facts. Self-indulgent hypotheses abound.

What we do know is that humans engage in a wide variety of self-soothing activities to stave off pain, fear, and insanity. Participation mystique, mystical fusion, is projected beyond death, as well as a living process that is a primitive relic of the original

undifferentiated state. It can be an unwitting identification with the idea of a thing – in this case, the afterlife.

Naturally, there are all sorts of sociopolitical, power, and authority reasons to promote specific ideas and requirements for admission to the hypothetical afterlife. The afterlife gets wielded as a weapon and reward or commodity in the war for social control, as a mythic not literal reality.

Methods of persuasion range from religion to torture. Paradigm shift is related to worldview warfare. Myth is about the past, things supposed to have happened beyond historical time, but science tries to predict the future based on the past. History is often confounded with mythology, as are the wellsprings of human behavior and fundamentals of our psychology.

Cross-cultural Descriptions

The east has its ancestor worship, karma and reincarnation, as well as Chinese alchemy of immortality in some hypostasized state, recounted in *The Secret of the Golden Flower*. Special priests and sacred texts like the *Egyptian Book of the Dead* and the *Tibetan Book of the Dead* describe the nature of the imaginal journey. Qabalah describes the emanation of all and everything from the “Three Veils of Negative Existence”: *Ain*, *Ain Soph*, and *Ain Soph Aur*. The Vedas are perhaps the oldest extant cosmological model.

Such descriptions don't match cross-culturally. We can imagine ancient shamans venturing into the heights and depths of human experience. Drugs, sickness, or trauma ignited the near-death experience from which legends and beliefs grew. Shamans became the mediators of such non-ordinary states, and later were replaced by priesthoods who controlled the narratives on the nature of reality, from the Dark Night of the Soul to Enlightenment.

The ancient Greeks imagined the underworld as cold and windy. Gods and heroes made descents into hell and returned with paradigmatic boons. The Christians imagined hell as unbearably hot and hellish, while heaven was idealized. The imagery is culturally conditioned as near-death experiences show. For example, Hindus are unlikely to meet Jesus in their tunnel of light. But that does not make such visionary states literal reality or more than a metaphor.

Artifacts of out of body experience and the human death process can be misinterpreted and/or idealized. Such disembodied experience can be heavenly or hellish. Todd Murphy (2015) describes the role of brain areas in such crises. This glimpse of an afterlife in either a positive or negative light actually says more about their own psyche and cultural conditioning than a netherworld. The limbic system can produce strongly euphoric or dysphoric affective and cognitive states, both verbal and non-verbal.

Murphy (1999) suggests that "the reason why some NDEs are hellish is that the positive affect that usually accompanies NDEs, out of the right temporal neocortex together with

the left amygdala, is replaced by negative affect out of the left temporal neocortex together with the right amygdala. If this were so, then it might explain how an NDE can be unpleasant, but not why it is so." He notes, such non-ordinary states can also be healing, mentally and physically.

Anything seemed preferable to consignment to oblivion (aside from eternal punishment). The Egyptians and medieval Christians sought to buy their way into heaven by virtuous or ethical behavior, which always remains culturally relative. The Jews, having endured the immortality obsessions of the Egyptians, still tend to leave questions of the afterlife (Olam haBa) to G-d. The Torah contains no clear references to it. Eschatological ideas only arose later, perhaps through syncretism.

Cathar heretics sought the afterlife through Gnostic notions of purification, perfection, and denial of *evil* physical materialism. The alchemists engaged vigorously in a psychophysical process of transfiguration to elevate themselves and matter. All suggest our aversion to the nothingness of nonexistence and yearning for redemption and escaping judgment. Maybe the whole point of such practice is facing our own death and darkness directly, to "die before dying," as Plato purportedly said.

Quantum Physics of the Afterlife

Science is the new religion. Some physicists first claimed that life goes on in the quantum state, and then others changed the narrative to the more fundamental domain of the virtual vacuum or pre-spacetime. But if death is an illusion, it remains the most persistent one. Scientists seek less disreputable theories of forms of persistence, but we must not attribute real identity to a concept, even when couched as hypothesis or theory.

Professor Fred Alan Wolf unpacked quantum physics for an afterlife in vaguely mystical terms. Such works popularized these notions with the public, whether they actually grasped the science behind them, or not. Their appeal was largely emotional – a validation of felt-sense and new age intuition. It produced "good parrots" rather than good science.

Such models are often based on state of the art concepts or technology of a society, which are employed as metaphorical structures for conceptual or spiritual understanding, rather than actual physical laws or ontological realities. The afterlife is one such boundary.

We cannot see beyond that threshold of death, but speculate in modern terms. The story changes as we push on the cognitive boundary digging down into finer realms of nature, but the *undiscovered country* remains the same. The map is not the territory. The non-material realm of existence becomes the quantum or sub-quantal domain. Wolf, in an interview with Rosen, (1998) states:

I believe that the findings of quantum physics increasingly support Plato [who taught that there is a more perfect, non-material realm of existence]. There is credible scientific evidence that suggests the existence of a non-material, non-

physical universe that has a reality even though it might not as yet be clearly perceptible to our senses and scientific instrumentation. And when we consider out-of-body experiences, shamanic journeys and lucid dream states – though they cannot be replicated in the true scientific sense – they also point to the existence of non-material dimensions of reality. (p. 246)

The “Open Sesame” of Subspace

Tom Bearden was among the first to suggest the threshold of death is some sort of return to the sub-quantum vacuum or scalar field of virtual vacuum fluctuation, from which we have never really been separate. We can see no deeper into nature than fluctuating fields of energy, which constitute the constant background motion. All that is, is in motion. But it is sustained by the ground state or *cosmic zero*.

Elsewhere I’ve written, "Passage of an electromagnetic wave through the vacuum leaves an invisible trace. The vacuum ‘imprints’ everything that happens in it. This imprint is electrogravitational; i.e., the imprinting process structures the substructure of vacuum spacetime [the artificial potential of vacuum]." Presumably this *imprint* constitutes the blueprint of our afterlife “existence”, which is non-existence, that is, fusion with the ground state.

Such arguments for continuance in the virtual states and hyperspaces are supported with notions of EM fields and negentropy, as well as reversal of the process of how nothing becomes something in a 4-D scalar domain. Notions of *zero-point* were popularized into ideas of a Source Field, from which we arise and to which we return. The empty space, absolute space, was again filled with imagination.

The Heart Sutra aphorism summed it up: *Form does not differ from the void*. Buckminster Fuller espoused a similar zero-point philosophy in his geometric model of the Vector Equilibrium Matrix. But such zero-point is not an inhabitable space in any sense we can imagine, though it models the dynamic transforms of matter and energy.

We seem to divinize the boundaries of our consciousness as we push them back from causal, to quantal, to sub-quantal domains. We use the technical discoveries of hydraulics, computers, or holography to amplify such notions. We can be pretty sure, at some level, that the divine is in no way limited to the latest discoveries.

Related ideas such as the energy body, field body, and holographic concepts of reality have been grabbed up by new age amateurs and conflated beyond recognition as cultish fantasies of Ascension, rooted in pseudoscience.

Mortality is possibly the hardest fact of all. Are such theories just another ritual of expiation for the inconvenient truth that we simply don’t and cannot know? Is knowledge of immanent death or preparation through meditation or other methods actually relevant or merely consoling in the veil of suffering we call life? We seem to die a more painful death than non-reflective animals. But even animals mourn.

Does nature recognize death as loss or merely compost? Even stars live finite lives and die. Much depends on our notions of linear and cyclic time, binding, and its transcendence. So obviously, the afterlife may remain more a comfort to the private grief of the living than any *reality* for the dead and their regrettable demise. We attempt to magically banish our fear and pain of not knowing.

Thus, we have a potpourri of ideas to accept or reject, none of which can ever be proven but may be re-contextualized or falsified as supporting theories fail. The human mind continues to rebel against the nihilistic notion that physiological arrest is a *fade to black* demise. It is our final condition, despite the facts of energy conservation. The body ceases to be animated by any “vital principle.”

Death enters the world with birth, surrounded from pre-history with taboos and fears. In ethno-medicine, retention of seed was one route to immortality. Many paths devised a non-material body as a vehicle for consciousness beyond the grave. Violent, premature, or accidental death is perhaps even harder to accept than a terminal illness or old age. When the vital breath leaves does a great spiritual force break open the skull to another domain of existence?

That is the question. Much depends on what we mean by simple words, such as *is* or *be*, much less questions of damnation, elevation, transmogrification, transmigration, or recycling. It begs the question, what if anything is reborn if ego is one sort of experience and soul another not always included in traditional reincarnation theories? Is it just another egoic control fantasy or palliative?

When it comes to the human psyche, we want to believe and such ideas have driven much of world history and the history of religions. A glorious afterlife has been offered up as a consolation for war and the vagaries of fate and destiny.

Is there such a thing as a “good death” or a “bad death,” and who makes that valuation (because it is certainly not the departed)? But is a *good death* really voluntarily offering our selves up to the gods, even when conceived as an act of regeneration? If death regenerates life, does regeneration cause death?

Neurological Models

Many phenomena arise as the brain and body die, as shown in reports of near-death experiencers who claim their consciousness persisted beyond their clinical expiration. They say, “I was THERE.” That is, they describe their disembodied consciousness as their experiential reality. Reports have been interpreted, measured, and evaluated from religions such as Tibetan Buddhism to sciences such as neurology and neurotheology.

Michael Persinger's experiments applying magnetic fields to the brain have produced classical alternate states, such as sense of Presence, suspension of time and spatial awareness, hauntings, even alien abduction. Such controlled modulation indicates the

mechanisms underlying many *spiritual* experiences. Temporal lobe epilepsy can also mimic such states as the brain misfires in a transient storm of stimulation.

A whole spectrum of non-ordinary experience arises in states of hyper- and hypo-arousal. They were described in the 1970s by Roland Fischer in a taxonomy. Stanislov Grof and John Curtis Gowan also produced such taxonomies, many of which have reinforced ancient and modern cultural beliefs in the hereafter.

Laurence O. McKinney (1994) suggests that many religious experiences are actually neurologically based and that death itself as described variously in many religions is a peaceful slow fade of consciousness as the mind unwinds – whatever *consciousness* is. He suggests we *experience* eternity in the last ten seconds of life (ironic as experiencing eternity in measurable seconds may be), due to anoxia and molecules such as endorphins that shape our reality.

He claims: “A major insight was that, in normal brain death, the chronology-creating pre-frontals fail first, pitching our last dream into timelessness while the steady return to near fetal consciousness as the brain dies cell by cell will dissolve us into a comforting forever, suggesting why heaven is so similar in all religions. Whether by the laws of God or the laws of cognitive neuroscience, we'll still end up in eternity so why fight about it? God's plan or good luck, it makes no difference.”

Is the dying brain in a heightened or merely altered state, downloading the detritus or débris of fragmenting memory? Such reality is based in the mind itself, a regression to a primal epoch of collective unconsciousness – the ouroboric fusion of undifferentiated infancy, described by Erich Neumann (1983) as pre-egoic wholeness. The cyclic serpent biting its own tail is a *feedback process*, a primordial symbol of immortality – the zero that is One.

Short of clinical death, death imagery mimics the therapeutic process of trauma healing. Trauma locks up energies in the body, and the self-image can become *frozen* and inhibit growth of the personality. This image can be destructured or liquefied, eliminating the old holographic pattern and returning all elements to a chaotic state. From this chaos, the new image automatically emerges in regenerated form. This death/rebirth cycle is healing, and may be the mechanism of the placebo effect.

But who can explain the unexplainable with either traditional or contemporary terms? Jung attempted to re-contextualize arguments of the soul by de-literalizing the religious notion and recognizing the middle ground of the imaginal psyche – a non-religious concept of soul as the animating principle.

A religious or hallucinatory experience at near-death is arguably no assurance of noncorporeal persistence upon demise. Not all NDEs have a positive valence, and negative stories tend to be under-reported in self-validating theories. Such reports tend to become more elaborate over time. That is, the imaginal psyche tends to embroider them

to suit our beliefs. In the gray zone, death isn't necessarily permanent, and life can be hard to define.

Psychedelics have been used to assuage fear of death. They demonstrate that imaginal death is really the discorporation of the personality – ego death. Yet *ego* is another mental construct. Such positive or negative experience is strongly correlated with “set and setting,” not to mention personal psychology.

Theories of mind and death proliferate. One of the most well-known is Tipler's *Physics of Immortality* (1994), with its Omega Point cosmology of singularity, derived from Teilhard de Chardin's philosophy. Parapsychologists including William Teller and Dean Radin (1997, 2007, 2008) have contributed throughout the years with various theories rooted in yet other theories of consciousness suggested by interpretations of physics.

Really, one must begin by stating the theoretical basis, whether the Standard Model, QFT, Many Worlds, String theory, M-theory, Holographic, Parallel Worlds, transactional, quantum cosmology, pre-spacetime physics, or other theoretical roots. Ontology, epistemology, and percepts remain relevant to those arguments and must be defined, including the human or physical basis of phenomenology experienced by humans.

Most theories are incompatible with one another, and some have proven to relate only to mathematical realities and imaginal dimensions that don't map onto ordinary reality. And we have to keep theoretical operators, such as scalars, dark matter and energy, within their own hypothetical realms.

This proliferation of theories about the immaterial within our own observable reality demonstrates that even physics is on shaky ground. We still aim to suspend time in an eternal state in our minds where death has no sting. But science reports that time processing is an artifact of the parietal lobe, which can go offline under certain EM effects, trance, or deep meditation, yielding a sensation of timelessness.

Tibetan leader, Dudjom Rinpoche has said, “Death: the mingling of the mother luminosity and the child luminosity: When the path luminosity mingles with the ground luminosity itself, at that instant one can free oneself into the absolute clarity. ... Great yogis allow the luminosities to arise and mingle in that space, bypassing Bardo projections. They become the light of life itself.” (source unavailable, from my notes)

Anesthesiologist Stuart Hameroff alleges, “Pure Consciousness is included in fundamental space-time geometry along with the precursors of spin, mass, charge. In fact, everything we see in our real world stems from patterns in the most fundamental level that percolate up to our level which is many, many magnitudes of order higher.” (source unavailable, from my notes)

We are left to draw our own highly conditioned abstractions and self-serving conclusions. Of one thing we remain certain: life after death remains the great Mystery, the Magnum

Mysterium, and a matter if not of personal discovery, of self-revelation, should any mote remain to acknowledge the subjective condition of non-existence.

We might concur with Jung (1955): "But when we penetrate the depths of the soul and when we try to understand its mysterious life, we shall discern that death is not a meaningless end, the mere vanishing into nothingness—it is an accomplishment, a ripe fruit on the tree of life" (p. 27).

Summary

Jung (1959) himself felt, "What comes after death is something of an indescribable splendor so that our imagination and our sensibility could not conceive even approximately ... Sooner or later, the dead will become one with us; but, in actual fact, we know little or nothing of that way of being. What do we know of this land, after death? The dissolution of our temporary form in eternity does not involve a loss of meaning; rather, we will all feel members of a single body."

When we are gone, only the ultimate question remains. Evidence that consciousness survives death remains elusive. With or without warm, welcoming smiles from relatives we may have loathed in life, it remains our obsession to know what happens when our screen-reality stops, and fades to black. Conscious immortality remains questionable. This writer remains firmly agnostic but enjoys entertaining wishful thinking.

Death is the greatest mystery of life. Buddha rejected the question as useless, according to Jung. Throughout history, it remains a source of wonder, fear, hopefulness, and puzzlement. We seek compassionate ways of dealing with this uncertainty that no discussion of entanglement or holographic memory can assuage.

There is little wonder we tend to fall back on traditional attitudes informed by simplicity, meaningful ceremony, and acceptance. It is something we cannot grasp at all, despite our conceptions of time and space and what might lie beyond them, even if some of our psychic experience seems unbound by spacetime. There is NoWhere to go and we are all going to get there.

As Jung (1958) said, "We are not in a position to prove that anything of us is necessarily preserved for eternity. But we can assume with great probability that something of our psyche goes on existing. Whether this part is in itself conscious, we don't know either. ...The concept of immortality tells us nothing about the related idea of rebirth or metempsychosis."

Even if mankind has fantasized about it for two million years, it is not self-evident. We can recognize our own existential finitude and may not benefit by shrinking away from the void of death. Thus, death may be the secret of life.

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Statement

Are We Really “such stuff as dreams are made on”?

Chris Nunn*

(Many thanks to our editor, Greg Nixon, for suggesting significant improvements to the text.)

Abstract

A type of panprotopsychist theory is briefly described that views energy eigenstate manifestations as accompanied by protopsychist elements termed SoSs (*scintillae of subjectivity*). These are pictured as threads of ‘real time’, a concept distinct from the metric ‘clock time’ of relativity theory and everyday usage. Such threads are *woven* in the brain into patterns that constitute the flow of our conscious experience (only some of which gets into neural memories and is reportable). There is surprisingly strong evidence that these patterns can persist, from a clock time perspective, independently of their originating brains. The theory makes a strong, in principle testable, prediction that conscious mind related violations of energy conservation should prove discoverable.

Introduction

Shakespeare’s enchanter, Prospero, asserted that: “We are such stuff as dreams are made on”, and followed this with: “our little life is rounded with a sleep” (*The Tempest* 4.1.146-148). I shall hope to show in this brief paper why the answer to Prospero’s first claim can be a qualified ‘yes, that is indeed what we are’, provided ‘we’ is taken as referring to our objective selves, while there is a good chance that his second claim was entirely misleading because ‘our little life’ may *be* a form of sleep – with all its attendant dreams and nightmares.

My starting point is with *panprotopsychism* (e.g., Chalmers, 2015). Developments in consciousness studies over the past thirty years have shown that no satisfactory alternative to this exists when it comes to envisaging a basis for human consciousness. Idealism, as Galen Strawson (2008) has pointed out, is unsatisfactory in being merely the flipside of materialism. Neural emergentism can account for much of the *content* of consciousness but fails to explain its basis because of incompatibility with a whole range of well-attested phenomena, most notably NDEs. The many ‘quantum consciousness’ theories proposed towards the end of the 20th century all harbour inconsistencies, implausibilities and large explanatory gaps. In any case the currently popular notions of *property dualism* or *dual aspect theory* both imply concepts equivalent to varieties of panprotopsychism, while there is overwhelming evidence from *two-slit experiments* and those based on the ‘Elitzur-Vaidman bomb test’ (e.g.,

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Penrose, 1994) that primitive matter is able to *know*, in some sense or other, about spatial and temporal characteristics of its environment. If theorists who advocate neuro-emergentism have to invoke property dualism or dual aspect theory to account for consciousness, while the 'wave functions' of physicists are inherently affected by holistic aspects of the environments that they explore, there's little point in beating about the bush and trying to avoid an idea of some sort of widespread or universal psychism – though what particular sort of psychism is inherent in nature remains a wide open question.

Panprotopsychism is indeed the only viable game in town nowadays, despite the reluctance often shown to acknowledge its status. But it does face particularly acute forms of the temporal and spatial *binding problems* that also afflict neuro-emergentist theories and which quantum consciousness ones hoped to solve with appeals to coherent, superpositional states. How could little panprotopsychist elements possibly link up or *condense* to produce our form of integrated conscious experience? There is one variety of the idea, however (Nunn, 2016), that by-passes binding problems altogether for it shows our conscious experience to be like a tapestry woven, not in, but *of* time. The next step is to unpack this claim.

Objectivity and subjectivity

Our worlds are of course comprised of two realms, the objective and the subjective. Even the most fervent monists acknowledge this and have to introduce a dualism of some sort into their thinking, either implicitly or via *property dualism* and the like. The objective world is made up of quantum observables – namely position, momentum, energy, spin and charge. Our subjective worlds, too, encompass these entities, though only indirectly in the cases of spin and charge. In addition, subjectivity encompasses time, which is *not* a quantum observable. What we ordinarily refer to as 'time' in relation to objective aspects of our lives is in fact part of the spatio-temporal metric provided by general relativity; it's a notional time, in other words, that contributes to describing the geometry of classical causation. I'll refer to it henceforth as *clock time*; a concept distinct from that of subjective *real time*. While position and momentum, both observables, share the same non-commutative relationship as do time and energy, the fact that time isn't an observable demonstrates a broken symmetry and carries the implication that *real time* belongs with subjectivity, not with the objective realm.

And subjective *real time* must indeed *be* real because of the Heisenberg energy/time uncertainty relationship; it must be as real as energy itself, the entity from which the entire objective world derives. There has been much confusion about the meaning of Heisenberg temporal uncertainty. It's often regarded as no more than a limitation on the accuracy of *clock time* measurements, but that can't be right for it connects with the existence of the *virtual particles* that play such essential roles in quantum field theory and have been proven actually to exist (via the Casimir effect). *Real time* has real physical consequences, in other words, and is thus much more than a notional metric despite its inherently non-observable, *subjective* character. Every energy eigenstate manifestation can be regarded as accompanied by a small chunk of *real time* (Nunn, 2016). The name that I proposed for these entities, 'SoS – *Scintilla of Subjectivity*' –

though probably not ideal, is a less misleading term than others that might be suggested (such as *qualion* or *psychon*) since they are not at all like any material particle and couldn't possibly be carriers of any 'quality' or psychic capacity that we would recognize. Those originating in the brain can each be envisaged as having much the same relationship to the content of our consciousness as does some individual ion in the brain to the function of our minds.

Because of Heisenberg energy/time uncertainty, a clock-time duration can, in principle, be assigned to each SoS. This will often be almost infinitesimal and most SoSs will be analogous to virtual particles in that they will have no direct, observable or experiential consequences for either subjective or objective worlds. There's no need, therefore, to worry about having to attribute conscious subjectivity to rocks or raindrops, just as there is no need to worry about the swarms of virtual particles that are constantly manifesting within us. But the situation is rather different within brains, and perhaps to some extent within bodies too, for highly ordered patterns of precisely 'measured' (by their environments) energetic events are constantly occurring. According to the theory each such energetic event will be accompanied by an SoS of relatively long clock-time duration, perhaps as much as 0.1 seconds. Patterns of 'objective' energy manifestation in the brain will therefore get mapped into patterns of *real time*, thus providing a ground for our sort of subjective experience; though only those aspects of such patterns that get into neural memories will figure in the sorts of conscious experience that we are able to recall and discuss.

Although from its own point of view – and it is not misleading to regard it as *having* a point of view – each SoS exists in a durationless *now*, the fact that a clock-time duration can be attributed to it means that sequences of overlapping SoSs will occur to allow the sort of flow of temporality that we experience. There's an obvious question to be asked here about how such patterned, overlapping sequences of SoSs could produce the sorts of differentiated qualia that we experience, rather than giving just an undifferentiated 'subjectivity'. It's conceivable that knot theory might offer a basis for answering this question (Nunn, 2016), but the issues are too complex – and uncertain! – to be tackled in this short paper. I'd like to explore instead some implications of the idea that SoSs exist in, indeed *are*, 'nows' without future or past, but 'nows' that overlap in clock time.

The picture we've arrived at so far is that little threads (from an objective point of view) of subjective *nowness* arise in brains (and everywhere else) coincidentally with energy eigenstate manifestations. In brains these threads are woven into patterns and stretched out over clock-time sequences. What might this picture imply?

Some implications of *nowness*

There's strong evidence (to be touched on in the next section) that 'subjectivity' can and does affect 'objectivity', despite current ignorance about *how* it may do so. This is not altogether surprising in the context of SoS theory because of the non-commutative relationship envisaged to exist between energy eigenstates and SoSs. In effect, mutual interaction is simply an example of Newton's principle that actions are generally

accompanied by reactions, but it's an example complicated by the fact that the interacting agents are pictured as operating within very different types of temporality.

From an objective point of view, the 'nowness' of *real time* can provide the sort of external reference frame that general relativity requires according to a range of authors (e.g., Unger & Smolin, 2015). Objective 'future' is when relativistic, clock time is unaccompanied by any SoS; 'present' is when a clock time event duration overlaps with the objective duration of an SoS (more usually the durations of a large number of individual SoSs); 'past' is when such overlap no longer exists from an objective perspective (Nunn, in review). SoSs, however, exist as 'nows' only and can be regarded as providers of an ever-accumulating *memory* for the objective universe. From their own points of view they are the abiding reality while the objective universe is an ephemeral, ever vanishing flow of events that adds to its enduring number and complexity of organisation.

The patterns of *real time* that are woven in our brains must be regarded as sharing this subjective property of individual SoSs. The patterns *are* our subjective *reality* (not all of which, presumably, gets mapped into neural memories); a reality that endures while our objective worlds flow past in a distinctly dream-like manner. It's not surprising, to put it crudely, that most or all of us oldies feel as if we are much younger selves trapped within ageing bodies! But what might happen to our individual SoS fields, the tapestries of *real time* that *are* our subjective selves, when these bodies finally expire? There would seem to be two possibilities. They might fall apart into their component SoSs, each of which presumably drifting off separately into the universe of *real time*; or, alternatively, they might retain their *weave* but, no longer stretched out on the *loom* of a living brain, might alter their topology in some way. There's no *a priori* way of deciding which of these alternatives is the more likely, but maybe the evidence can tell us.

Evidence

The evidence that entities closely resembling the concept offered here of 'subjective tapestries of real time' can persist from a clock time perspective after the death of their originating brains would probably be regarded as conclusive if it related to any mainstream enquiry. Evidence from reports of 'a previous life' by children is very strong; it is open to other interpretations, but by far the most straightforward is to suppose that personality characteristics and memories from a previous life have persisted somehow and been accessed by, or even incorporated into, a subsequent child. Some types of near death and end of life experience are almost equally robust in implying persistence of conscious minds in apparent independence of malfunctioning brains. Reports by a range of talented and honest mediums add to the evidence that people persist and can provide allegedly 'first hand' descriptions of what that persistence is like. It certainly looks as though the *weave* of which we are made is robust.

There are many excellent and detailed accounts of this very extensive evidence (see, e.g., Carter, 2012; Fontana, 2005) that are easily available and ought to convince anyone taking the trouble to read them that personalities and their memories are able to persist

in some form or other from a clock time perspective and are able to affect aspects of the objective world. But of course the evidence doesn't tell us whether SoS theory provides a correct basis for apparent personality persistence. The altered topology of 'tapestries of real time' that is a likely consequence of *release* from their brains might be used to account for some strange features of reported NDEs, such as 'life reviews', but that would be weak evidence at best for the value of SoS theory. Luckily, though, the theory does make a strong and surprising prediction, which should prove amenable to objective testing.

The prediction is that conscious mind related violations of energy conservation should sometimes occur. Such violations are of course impossible according to our present understanding of thermodynamics, relativity theory and quantum theory. Finding a violation would therefore provide strong evidence that SoS or some closely related theory is correct. The prediction depends on the fact that energy conservation follows from the indifference of basic physics to *smooth* transitions in clock time (as shown by Noether's theorem). Any event involving 'back action' of SoS fields on the objective world would *not* be temporally smooth because *real time* is inherently different from *clock time*. Therefore energy conservation might sometimes be violated in such circumstances.

There's actually a vast amount of anecdotal evidence that might be taken to indicate that violations of energy conservation can and do occur. Many of the stories about the miracles of saints or some of the capacities of sadhus – if the events reported were not all attributable to fraud, fakery, mass hallucination or the like – have to raise questions about the source(s) of the energy needed for their feats. The same applies to reports of physical phenomena manifesting during séances and perhaps of poltergeists. All such purported happenings required energy – if one can believe stories about *levitations* quite a lot of energy – which generally had no obvious source. So far as I know, rigorous investigations of energy balances relating to such events have never been carried out partly because of the frequently 'one-off', non-replicable nature of such events, but mainly because *everyone knows* that energy conservation is an unbreakable law, so why trouble to look for it? Nevertheless some of the capacities claimed by sadhus and yogis in particular might reward investigation from this point of view.

Conclusions

If the theory offered here, or some closely related theory, should eventually pan out, I think it would be fair to conclude that, from a *real time* point of view, our objective lives do have all the ephemerality and even insubstantiality of dreams. If 'we' refers to our objective selves, we are indeed 'the stuff that dreams are made on'. But can the analogy be carried further? Might our objective life have functions in relation to *real time* like those of sleep in relation to our objective lives? Perhaps the answer is 'yes'. Sleep seems to have two principal functions; it restores cognitive and behavioural flexibility to those deprived of it and it aids memory consolidation. It's tempting to conclude that this is our function in relation to the *real time* world, which otherwise might readily *crystallise* into rigid, fixed patterns without input from a variable and creative 'objectivity'. All the

beauty, variety, even the horrors, of this world may add to the *vitality* of the *real time* world in a dynamic, reciprocal relationship between the two realms.

We may have the beginnings of an understanding of how *our* side of any such dynamic might work. Discovering how the other side works will be a major challenge for the future.

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Statement

Is the Afterlife a Non-Question? (Let's Hope Not)

Deepak Chopra*

There are few questions where it can be said that literally every answer is second-hand, but the persistence of consciousness after death is one. As sticky and complicated as the issue seems to be, it can be broken down into three perspectives that in themselves are simple. The perspective of a believer supports life after death; the skeptical perspective denies it; the undecideds stand in the middle. It's rare to find anyone who belongs to one of these camps who is willing to accept evidence from another. In essence, believers don't budge because they trust their religion; skeptics won't budge because they trust rationality; undecideds remain stuck in ambivalence and doubt.

Yet even where militant skeptics trumpet their certainty at one end of the spectrum and at the opposite extreme religious extremists are willing to die in order to attain paradise, everyone bases his position on received wisdom of one kind or another. This renders the afterlife a non-question. It has been a non-question for as long as recorded history, but a tradition doesn't become true through persistence and the passage of time. The fundamental issue is whether the afterlife can be transformed into a viable question.

I believe it can, but it takes a lot of convincing and patient discourse before the needle moves even half an inch. As social psychologists have proved over and over, when you show partisans objective proof that their position is shaky or untenable, the net result is that they harden their position even more. Assuming that you, I, and the reader in the corner are open-minded, turning the afterlife into a valid question must return to basics, including the most boring basic, defining our terms. However, as it turns out, defining our terms actually answers the question.

The most basic term in this case is consciousness, because when arguing over the possibility of an afterlife, much confusion is caused by asking the wrong questions. If you don't specify what consciousness actually is, you wind up worrying about the survival of the soul, or of "me," the individual ego-personality. And if those pitfalls are avoided, Eastern traditions are filled with equally misleading notions of Jiva, Atman, and Brahman, or of Nirvana and Satori.

I will propose that if two people agree upon their definition of consciousness, they will agree on the existence or non-existence of an afterlife. This isn't an arbitrary judgment. It rests on the familiar experience that people make up stories, they believe in their stories, and the reality

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they inhabit conforms to their stories. For a skeptic whose story contains the *facts* that all things can be explained through materialism, experimentation, data, measurement, and a confirmed allegiance to objectivity over subjectivity, there will be no doubt that the afterlife is spurious – not because it actually is, but because a certain story, or worldview if you prefer, forbids it to exist. By the same token, a confirmed believer holds fast to a story where the non-existence of a personal God is impermissible, even unthinkable, and therefore the afterlife acquires its reality by association with the deity.

If these points are acceptable, we can refine our investigation and ask if there is a definition of consciousness completely detached from all stories, which means the absence of bias, predisposition, received wisdom, rumor, myth, group pressure, wishful thinking, fear, apprehension, and mental figments of very sort. I believe so. Every reasonable person, I think, will accept that consciousness, as experienced by humans, is the awareness of two things: that we exist and that we experience. By extension, a reality that cannot be experienced is moot. By this measure, UFOs, angels, the afterlife, and the quantum vacuum exist on the same playing field. They are suppositions and inferences.

If we toss out suppositions and inferences, what can we truthfully say about consciousness? By this I mean what can we say that no reasonable person will disagree with? Here we run into a complicated situation, because certain aspects of consciousness require extended discussion and a back-and-forth between people of good will. Such a setup is rare, unfortunately, but at least I can relate a few things that I've been able to convince people of over the years.

1. There is only one consciousness. To subdivide it makes no sense. This point is lifted almost verbatim from Erwin Schrödinger, the eminent quantum pioneer. Philosophically, the "one consciousness" position is common to monistic schools, because they repudiate any true difference, ontologically, between the one and the many. Yet when dealing with everyday people, it's obvious that we all cling fervently to being individuals, outfitted with *my* family, house, body, mind, and soul. To crack this allegiance requires arguments like the following:

- When you get wet, do you call it "my" wet? Some things happen to us personally but turn out to have a general existence.
- If you sing "The Star-Spangled Banner" as you walk down the street, did the song walk down the street with you?
- If you imagine your mother's face, where is that mental image located? The brain has no pictures in it, and no light. When you imagine your mother's face, you didn't consult a directory of facial characteristics the way computer recognition software does – you simply called up what you wished to see.
- Where is your self located? There is no neurological evidence of a region of the brain that contains the self, and, even if researchers claimed such a region existed, it would have to contain everything attached to you as a self, including your life history.

2. Assuming that the discussion can crack open the presumption of isolated, local consciousness – there are many ways to get at this, not just the few questions listed above – the second point is that this "one consciousness" cannot be located. It is everywhere, all at once. This point sounds like a hard sell, as it would be if everyone held an advanced degree in philosophy, I imagine. But in everyday life the argument is fairly easily based upon physics.

- Cosmologists and quantum physicists agree that spacetime originated in a domain (referred to as the zero point, quantum vacuum state, or the realm of pure mathematics) that isn't in time and space.
- The entire universe, as well as individual subatomic particles, emerged from this pre-created state, which has no qualities we would recognize such as linear time, dimensionality, solidity, energy, etc.
- At the very least, all creation stories, scientific or not, converge on the creation of something out of nothing. Beyond our experience of reality in spacetime, there is a field of infinite potential, unbounded possibilities.
- As the reality of space, time, matter, and energy appeared and continues to appear, the existence of consciousness must be accounted for. There are only two viable possibilities that are taken seriously. The "matter first" position holds that mind has its origins in matter and energy (to which some theorists add information). The "mind first" position holds that consciousness is the source of everything, including matter and energy.

3. If there are only these two positions, how do we decide between them? The difficulty is that being monistic, the two are incompatible and, more critically, totally self-consistent. It isn't possible to step outside the framework of "mind first" or "matter first" to gather evidence. All the evidence lies within the worldview that produced it. Even if other, as yet unknown, kinds of evidence emerged – such as the current, quite baffling existence of so-called dark matter and dark energy, which don't follow the rules of visible matter and energy – it would be absorbed into pre-existing stories that we live by.

In deciding between "mind first" and "matter first," the crux is a single question. Is it more probable that matter somehow learned to think or that mind can create matter? It seems astonishing to me that more than 90% of scientists are so conditioned to reduce every issue to matter and energy (to use the favored term nowadays, they are *physicalists*), they accept without investigation the assumption that the sugar in a sugar cube, once ingested, can travel past the blood-brain barrier and suddenly think, feel, wish dream, and do science. No one has remotely come close to showing the point in evolutionary history where ordinary molecules acquired consciousness. Therefore, the very notion that the brain is a privileged object, the only "thing" in creation that has consciousness, is untenable. The brain is simply an ordinary object composed of ordinary atoms and molecules. It didn't become consciousness through the random combination of complex organic chemicals.

The contrary position, that consciousness pre-exists the physical world, has some simple evidence on its side. The simplest, of course, is that the impossibility of the "matter first" position leaves only one other viewpoint that can possibly be true. But to most people such an argument feels like sleight of hand. Therefore, we can point to the human brain, where every sensation, image, feeling, and thought pushes brain chemicals around, redirects them to various parts of the body, causes vital signs to change either slowly or abruptly, and actually produces some chemicals, such as neurotransmitters, out of nothing.

The creation of something out of nothing has been lurking in the background as the ultimate question, yet with reference to everyday experience, the mystery becomes both personal and self-evident. If someone whispers "I love you" in your ear, the mind-body system will display hundreds of changes dissimilar to what occurs if the whispered words are "I have a gun pointed at your heart." The deciding factor isn't material in the slightest; it consists of mental activity, the continual production of thoughts, words, meaning, purpose, direction, intention, and so on.

It is far from impossible to convince reasonable people that these points are true, and they stem from defining consciousness in the most basic, intuitively validated way. As to the specific issue of an afterlife, consider what lies on the side of its existence:

- Consciousness, being nonlocal, is not subject to birth and death.
- Even in physicalist terms, there must be a pre-created state beyond time and space. Birth and death, being aspects of linear time, are not present there.
- An argument can be mounted that certain abstract experiences, such as mathematics and information, have an indestructible aspect, again immune to birth and death.
- Body, mind, and the world "out there" cannot be divorced from conscious experience. The only reasonable location for all of them is in consciousness itself.
- If all of the above are true, then nothing exists except as a modified state of consciousness. Some of these states we identify as matter and energy, but this is simply a habit of mind built up for cultural reasons. There have been societies where "mind first" was just as self-evident as "matter first" is to us.

Having laid out, in truncated form, the argument for consciousness as the basis of reality, not everyone may be willing to follow the clues that lead to an afterlife. But that isn't as important as realizing that we have tended to ask the wrong questions. One can devote a book to untangling the various possibilities for consciousness to persist after the end of the body. (I wrote one, *Life After Death*, 2008) In the end, however, the stubborn way that old stories cling to us, and we to them, muddies the issue and opens the way for vehement partisans who refuse to see that they are flogging second-hand opinions. Until we all are willing to think fresh

thoughts about a worn-out question, consciousness will remain constricted. If consciousness begins to expand on an individual basis, there is hope for clarity. More importantly, we can begin to bring centuries of baseless fear and superstition to an end. I'd suggest that ending the superstition of materialism would be a good start.

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Statement

Life After Death? An Improbable Essay

Stuart Kauffman*

I believe nothing of what I shall write. Yet I think that, scientifically, what I shall say is remotely possible.

The hopes for, or firm belief in, an afterlife is antique. With the rise of Newtonian mechanics and the secularization of the West, a theistic God largely vanished from Western thought, although held firmly in place among many religious people. Heaven and Hell are central in much Christian thought.

But is life after death even conceivable on any view of modern science? Yes, but barely.

I have published on this topic, skeptically, in “Cosmic Mind?”,¹ and shall bring forward the same considerations here.

These considerations derive from an interpretation of quantum mechanics in which consciousness is associated with quantum measurement and from the emerging facts of quantum biology. In the latter cases, it is becoming clear that at body temperature, some or many aspects of life are quantum. The clearest example is in the light harvesting molecules² where long lived, nanosecond, quantum coherence is observed and thought to play a role in the efficiency of energy harvesting in photosynthesis. Bird migration and perhaps smell may be in part quantum phenomena.³

We have little idea at present of the extent to which quantum phenomena play a role in the “living state”. Moreover, it is well to remember that it is not clear how the classical world arises from quantum mechanics (see e.g. Bohr⁴; von Neumann⁵).

Into this confusion, I must add the “Poised Realm” that appears correct and hovers reversibly between quantum and “classical”, or “classical for all practical purposes” behaviors, due to decoherence and recoherence.⁶

Quantum effects in biology will demand that we rethink aspects of biology. For example, in the light harvesting molecules, the quantum efficiency of that harvesting

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is thought to be due to the excited electron taking, simultaneously, all possible pathways to the reaction center. This taking of all possible pathways is quantum superposition, which mystery evades Aristotle's law of the Excluded Middle.⁷ In this law, the cat is either on the mat or not, with nothing in between. So "The cat is on the mat and simultaneously not on the mat" is a contradiction. But superpositions evade that law in stating that the electron is simultaneously "here and there", or in the famous Schrodinger cat paradox, the unmeasured cat is simultaneously alive and dead.

One approach to the mystery of superpositions is to consider ontologically real *possibles*, for as noted by C. S. Peirce, possibles avoid the law of the excluded middle.⁸ This is easily seen in, "The cat is possibly on the mat and simultaneously possibly not on the mat," which is not a contradiction. Then we arrive at the hypothesis that superpositions reflect ontologically real possibles, *Res potentia*. This is a new interpretation of quantum mechanics, *Res potentia* (*possibles* that do NOT obey the law of the excluded middle) and *Res extensa* (*actuals* that do obey the law of the excluded middle), linked by measurement. On this view, what are waving in the Schrödinger equation at the basis of quantum mechanics are possibilities.⁹

This view harkens back to Heisenberg in some ways,¹⁰ but is quite radical. On the view of *Res potentia* and *Res extensa* linked by measurement, measurement converts possibles to actuals, and there can be no deductive mechanism for measurement since the "X is possible" of *Res potentia* does not entail the "X is actual" of *Res extensa*. Indeed no deductive derivation of the outcomes of quantum measurement, if measurement is real, has been found since 1927 when the Schrödinger equation was formulated. So the hypothesis of *Res potentia* is scientific, disproved if ever such a deductive mechanism is found.

Now in classical physics there are no *possibles* at all, only *actuals* linked by causality as is seen in both Newton and Einstein's general relativity, where all causal influences are limited by the fixed speed of light.

This raises the issue of the link between the quantum and classical worlds, where the former may concern both *possibles* and *actuals*, and the latter only *actuals*. This is not remotely a settled issue, for, obviously, the hypothesis of *Res potentia* is unestablished. However, elsewhere I hope I have shown that this hypothesis can account for four major mysteries of quantum mechanics, including non locality.¹¹ The potential success of this account of non-locality must count to some extent in favor of *Res potentia*.

If something like the classical world exists, even if its derivation from quantum mechanics remains fraught, as seen in the hopes of the decoherence program, which has not quite succeeded,¹² then we confront a new issue. Given quantum biology of unknown extent, is life both quantum and classical? Probably to some extent, "yes".

If life is both quantum and classical, what is death? A new hypothesis is that death is “going fully classical”. You see, we really do not know what death is. It is not inconceivable that life, partly quantum, loses those quantum aspects at death, perhaps by decoherence to classicality itself or for all practical purposes, FAPP.

Suppose death is “going classical”. Then what happens to the quantum aspects of the living state? It is remotely conceivable that these persist as something like “soul” after death.

To venture further requires some highly speculative ideas about consciousness and quantum entanglement.

I have proposed elsewhere that consciousness is associated with quantum measurement.¹³ This is testable and there is already faint positive evidence.¹⁴

Now we need to consider quantum entanglement. Quantum variables can be entangled and described by a single wave function. If one of N such variables is measured, that instantaneously changes the wave function of the remaining N – 1 still entangled variables. Now if quantum measurement is associated with consciousness, as I shall posit and discuss elsewhere,¹⁵ it is barely conceivable that disembodied but entangled quantum variables can be jointly conscious, presumably jointly for there is a single wave function for the N entangled variables. We surely do not know this.

But we are freely speculating. I will return to the potentially testable aspects of these ideas below.

If life is quantum and classical (for all practical purposes or otherwise), and at death the body “goes classical” the remaining quantum variables might “escape” the body, the mortal coil, as disembodied soul. I stress that of course I do not believe this, but I do think it is remotely possible. Were this true, something like soul could persist after death, perhaps with disembodied mind.

Because entanglement among quantum variables can appear and disappear, such “souls” might be highly evanescent, perhaps they are a ghostlike presence for mere moments after death, perhaps they persist longer. In either case, reincarnation is not inconceivable.

Is any of this testable? In Kauffman,¹⁶ I discuss several approaches to testing the relation between measurement and consciousness. Von Neumann postulated that consciousness was sufficient for measurement.¹⁷ Radin et al.¹⁸ has tentative evidence in favor. Time will tell. But further tests can be done.

Is it possible to test if entangled quanta persist after death? Yes, in principle. Would that show that such entangled quantum variables are conscious at measurement of some or many of the entangled variables? No, not at all. I can conceive of no way to test this, but nevertheless I propose¹⁹ that consciousness is necessary and sufficient for measurement, and that quantum variables can measure one another, the latter being testable by a Quantum Zeno Effect induced co-trapping of quantum variables.²⁰ If quantum variables do co-measure one another, it's testable, and IF consciousness is both NECESSARY and demonstrably sufficient for measurement, then perhaps quantum variables such as entangled disembodied variables are actually conscious at measurement. Then disembodied consciousness can exist. Finally, if at death, quantum entangled variables reflecting the living state in some way can escape the now dead classical body, perhaps souls can exist and can in some remotely conceivable manner, reincarnate.

I do not believe any of this, but it is not obviously impossible scientifically and is slightly defensible. I do believe I have shown that it's logically possible.

Conclusion

I have discussed the remote possibility that entangled quantum variables are jointly conscious, that the living state is quantum, a poised realm, and classical, that death may be "going classical" with the release of entangled quantum variables from the now dead body – which variables, reflecting a quantum entangled aspect of the living state, could just conceivably, be *souls*. There are ways to test a few aspects of these ideas, but not many. The central idea that quantum variables are conscious at measurement cannot now be tested. These are very remote possibilities, but not, I think, ruled out scientifically.

Notes

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²⁰ Ibid.

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