

Space, Time, and Consciousness

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First, I must thank Glenn Roberts who kept making sure I did not stray from or offend the spirit of scripture in the Old and New Testaments with any explicit contradictions, although I did manage to skirt the edges a few times by including ideas not directly mentioned in scripture. I must also thank my former colleague from the Army Research Institute (ARI) Dr. Hal Ozkaptan who found no contradiction with Islamic principles. My old friend and colleague from ARI, Dr. Robert Seidel, made many productive suggestions for improvement. My former boss, two levels over my pay grade, Dr. Neil Siegel, aided with pointed comments aiming for precision, and is pointedly quoted. Dr. Lee Whitt provided continual challenges to what I was arguing that invariably served to clarify my thought and writing, and so has earned great appreciation. My good neighbor Dr. John Kiley introduced me to Carlo Rovelli's interesting book on time, and never expressly objected to what I wrote.

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Introduction

Having achieved a second career retirement, and having bought my final retirement home, my only serious concern in retirement was selling my prior work home before retirement funds ran dry from paying mortgages and maintenance on two houses. One evening, I casually watched a tv program on the Science Discovery Channel about the nature of Creation that was led by Stephen Hawking. He contended that Creation of the world could adequately be explained by quantum mechanics. The singularity hypothesized to have exploded as the Big Bang was simply stated to have been a spontaneous eruption triggered in accordance with the theory of quantum mechanics; nothing was actually created by the Big Bang, because it was reasonable to suppose that equal amounts of positive and negative energy had erupted, with the negative somehow moving away, or with the energies having been created with a slight imbalance, so that they cancelled each other out, with some positive energy left over to form our world. No need here to attribute creation to any supernatural force, such as religions posit for God.

Not myself practicing in any religious faith, the slighting to God was not offensive, but the array of supposed facts about equal amounts of energy having been created, or a slight imbalance in favor of positive energy, or the existence of the hypothesized singularity, and its explosion being triggered by the laws of quantum mechanics, supposing there were any laws in effect when there was no energy or materiality, struck me as a string of inconsistent hypotheses, and as highly speculative, at best. Where did the singularity come from, or anything else? What could have triggered the formation and explosion of any singularity? While it's reasonable to speculate that equal, or nearly equal, amounts of positive and negative energies could have been created, citing quantum mechanics as the reason for the singularity's explosion was more of an arm waving explanation than any true explanation; in the legal profession, such an assertion would be scorned as conclusory—a conclusion lacking adequate supporting evidence. Physicists hope eventually to gather sufficient reliable facts to construct a feasible explanation, a theory, for how the world came

into existence—but an arm wave does not work. So, for a few days I grumbled to myself about Hawking's inadequate theory, and most especially wondered how Creation might validly be explained.

When faced with any complex problem, it's always helpful to write down the issues, facts, and explanatory guesses, so I started to write. While writing, I was reminded of strange reports about a non material existence, a continuation of consciousness even while the brain was measured to have stopped functioning, in a few books on the Near Death Experience (NDE), such as P.M.H. Atwater's *Beyond the Light*, Raymond Moody's *Life After Life*, and Ken Ring's *Heading toward Omega*. If there were an alternate reality that was being described, it was theoretically possible that the NDE reports might contain explanations for Creation, or useful hints. I found the Near Death Experience Research Foundation web site established by Jeffrey and Jody Long (NDERF), and read there over 4000 first hand NDE reports, along with responses to a comprehensive questionnaire about their NDE. In the course of reading the NDE reports, it struck me that Descartes' theory of mind-body dualism, and Plato's theories of knowledge and forms might be insightful, whereas before as an undergraduate student these theories seemed farfetched. It was at that point that I started to write in earnest, although yet remaining a presumptive materialist.

As I continued to study the NDE with its Out of Body Experience (OBE) reports, I saw a relationship between such experience with elements of Relativity Theory and quantum mechanics, so I focused on examining their mutual relationships. The first paper written was Frozen Time Theory (FTT). An early draft of FTT benefitted from helpful comments by Pim van Lommel who has published one of the most comprehensive reviews of the NDE research literature, *Consciousness Beyond Life*, which also included a discussion of possible theoretical links to modern physics. After finishing the FTT paper, I thought I was done. However, additional thoughts were percolating about the nature of reality that I had not directly addressed, so I started writing about my new discoveries in a second paper, *Universal Consciousness: A Tripartite Domain Theory*. Again, I thought the work was done after finishing it, but I continued to see the need to delve even deeper.

With no particular plan, a series of related papers followed over the next few years.

In reading over the many NDE accounts for background information relevant to theory construction, I eventually realized that I was discovering a dimension of human existence of common human interest far higher than topics generated by conventional philosophy, physics and psychology. The experience reported about after a soul leaves the body is transcendent over life on Earth with its physical pleasures and pains, ego oriented successes and failures, joys from friendships formed, and heart crushing loss of friends and family to permanent death. Instead of the common belief that life arrives here as a transient affair by birth from out of a void, followed by a death forever ending such a random flicker, the picture formed from the NDE/OBE was dramatically different. Individual life only "appears" to be ephemeral. In reality, the soul has been formed within a timeless domain to live for eternity, with its Earth lives providing for adventures into a dangerous "game" ended by death, but providing for excitement, fun, and the sharing of love along the way.

One day while looking across the collection of papers I had written around the NDE topic, I realized a self-consistent and coherent body of theory about the nature of the world had evolved, as had my understanding of life, so I was no longer a materialist. All of these papers are collected in this monograph, along with a "playful" Epilogue.

Overview

Chapter 1. Frozen Time Theory (FTT)

Frozen Time Theory (FTT) reports discovery of a reliable, but surprising, feature of the Out of Body Experience (OBE) reports associated with traumatic Near Death Experiences (NDE). At the instant of a severe trauma, such as a heart attack or violent vehicle collision, the suffering individuals report being puzzled about what has happened, as they are suddenly viewing their environment from a different perspective. Typically, they are now located above their body, so that they no longer see through their eyes, but see from a different location. There was no apparent transition in consciousness or conscious perception to cue separation of consciousness from their body leading to their confusion over what had just happened. *The lack of any distinctive transition for consciousness and conscious perception from the normal bodily state to consciousness and conscious perception during the OBE strongly implies that it is not the brain itself that is generating conscious experience.* They also then start to notice that the nature of their sight has changed, as they can see through objects, can focus to the atomic level or out to the cosmos, and see in 360 degrees. Individuals who have been born blind also report experiencing this remarkable manner of perception. Realization develops that they have been effectively knocked dead, but still remain conscious.

A striking feature of OBE perception is that all entities observed exhibit consciousness, not only relatives and friends who have passed, and angels, but rocks, grass, flowers, trees, animals -- even water. This experience is consistent with the ancient philosophy of panpsychism.

One of the great mysteries remaining for the psychology, neurology, and philosophy of perception is termed the issue of qualia, i.e., how can we perceive different qualities such as vision with different colors, sounds, and fragrances, but do so without the brain exhibiting differential structures for processing information after the senses have transduced energies to electrochemical energies in neurons. In the frontal lobes, where we believe perception is present, no differential structures or processes are found

there corresponding to the differential qualities of perception. The FTT hypothesizes that the consciousness experienced during the OBE exists in a field or domain of consciousness in which individual entities share their existence without boundaries. *Thus, FTT hypothesizes that perception during normal perception for the body and brain occurs not in the brain itself, but in the consciousness (soul) that had been attached to the normal body. The differential qualities of perception are dependent on how the field of consciousness functions, not on the brain producing the qualities of perception we experience.*

One of the most interesting features of the OBE is the feeling that time no longer runs, and during the OBE it is reported that they have simultaneously viewed past scenes, their current environment, and future scenes. In addition, all entities viewed, including their own “body,” glow with the appearance of being made of light. The FTT relates the absence of time running, i.e., frozen time, with the formulation of Special Relativity that photons do not experience time. Thus, FTT hypothesizes that time during the OBE translates to a fourth spatial dimension, such that the past, present, and future correspond to differing locations in the domain of consciousness.

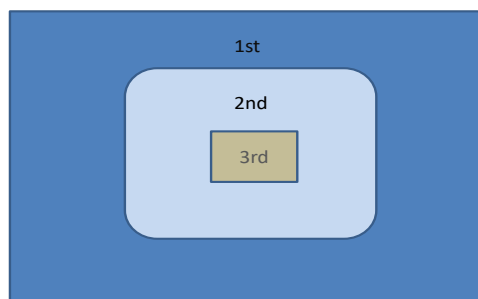
Chapter 2. Universal Consciousness Underlies All of Reality: a Tripartite Domain Theory

In the FTT, I had accepted from the NDE reports that there existed two realities, our normal domain of reality associated with the paradigm of materialism, and an alternative domain of experience characterized as a field of consciousness in which all entities experienced appeared to be made of light, and time did not run.

An obvious question was about how these two domains might be related. Were they causally independent of each other, even if somehow correlated across time, or might they even be causally linked? Based on the NDE reports and the curious phenomenon of quantum entanglement, what Einstein spoofed about as “spooky action at a distance”, I inferred that our material reality was connected to the domain of consciousness. The NDE

reports reliably stated that all thought of movement was capable of instantaneity, so if entangled particles existed in the domain of consciousness as well as the material domain, their instant communication would be accounted for.

Another question was about the possibility for a third domain. Was there anything that might have preceded the material and consciousness domains? The hypothesis that seemed best was that there initially existed a domain of pure consciousness in which nothing else existed, not light, not space, not time. This initial domain might be termed, in common with most religions, as God. This speculation is in fact consistent with the Old Testament according to which all that existed at first was God alone. God's first act of creation was light. After light He created the firmament, or material world. Thus, a tripartite domain theory was formed that is consistent with NDE reporting and The OT. The relationships among the three domains are shown by the Venn diagram below. God is represented as Domain 1; the world of consciousness which includes light is the 2nd Domain; and the physical world we occupy is Domain 3.



Set theoretic representation of the three hypothesized domains

Chapter 3. Possible Enablers and Barriers to Dimensional Perception

The FTT and Tripartite domain papers acknowledge that our ordinary perception in our material domain separates time as an abstraction with

space having three extended spatial dimensions. But in the second domain, as defined to be filled with consciousness and entities made of light, it was hypothesized that time also exists as an extended spatial dimension, so that different times in the material domain would correspond to different locations—without time running. This paper analyzes why common sense regards time in the material domain to have a different character than space. The analysis keys off of Abbott’s clever Flatland satire. It is argued that, while common sense regards space as perceptible, but time is regarded as an imperceptible abstract concept only, when time is termed “duration,” perception of time and space are equally abstract, and equally perceptible for the objects of sense-perception in the material domain.

Chapter 4. Analysis of the Differential Perception of Time in the Second and Third Domains

This paper analyzes how perception of time progression (i.e., time is perceived to run) occurs in the material 3rd Domain, but does not occur in the 2nd Domain of consciousness to which the 3rd Domain is connected. The argument is made that perception of time depends on the domain being experienced.

Chapter 5. Definitions of Now

In philosophy and psychology, some argue that only now exists, the past has forever gone, and the future is yet to be. Given the importance of “now,” alternative definitions are presented and discussed.

Chapter 6. An Absolute Limitation to the Rational Analysis of Experience, Consciousness, and World Origin: the Principle of Interior Unknowability

After working for approximately a decade to produce a defensible theory for how the world came to be, I realized that I had made zero progress. I questioned why that effort was entirely futile, and came to an interesting conclusion—the question itself implied an observational framework external to a Creation event, but scientists could never in principle locate externally as “privileged observers” to be able to see what happened. Thus, a new

postulate for the metaphysics of creation was defined. This postulate was termed **the Principle of Interior Unknowability (PIU)**. It was argued that the PIU stands on two legs of support. The first leg is an analogy posed about fishes born in a fish tank having no opportunity ever to locate outside of their tank. From their interior location in the tank, they (or scientists in the material world) would never be able to learn where it came from or how it was made; the same argument applies if the world were instead conceptualized to be infinite with no boundaries. The second leg is a conjectured analogy with Godel's Theorem of Undecidability, developed while he was working on his Incompleteness Theorems. This leg of the argument for the PIU reasons that postulates, axioms or assumptions based on internal observations of our world, applied to mathematically model its creation, are susceptible to creating a paradox (historically known as the Liars Paradox) by self-reference. To escape the potential for producing a valueless or misleading paradox, information would have to be gathered external to a system to be used for modeling its creation. Nevertheless, as pointed out by my friend Neil Siegel, a great deal of scientifically valid and useful information may indeed be acquired within the material world, despite the barrier to knowledge acquisition about creation postulated by the PIU.

Chapter 7. Review of Carlo Rovelli's Book: The Order of Time

Loop quantum gravity physicist Carlo Rovelli published an entertaining book that explained his preference for denying the utility of a time variable in physics, and even in psychology. This book review identifies points of agreement, but notably points of disagreement.

Chapter 8. A Postulate Set Governing Existential Knowledge

In an earlier chapter, 6., the Principle of Interior Unknowability (PIU) was defined as a postulate which excluded any possibility for scientists to observe the conditions of the origin of the world, or to be able to infer from information collected within our material world how the world was constructed with any certainty, or "where it might have come from." In this chapter, three additional Postulates are defined. One of these concerns the

nature of existential reality, and states there are two domains for knowledge exploration: 1. the material domain in which we normally perceive the world, and 2. the domain of consciousness that underlies consciousness and conscious perception that may become available during the NDE/OBE or by meditation. This is the Postulate Governing Existence (PGE). The PGE defines the consciousness domain as fundamental. The third postulate is the Postulate Governing Knowledge (PGK) which defines knowledge to be incorporated in consciousness. As was also explained in chapter 2.on Universal Consciousness, all individual entities possess consciousness, and “knowledge” is information incorporated into their consciousness. The fourth postulate affirms Descartes’ Mind-Body Dualism that mind and brain ordinarily communicate, despite being different in kind. This is the Postulate for Mind-Body Dualism (PMBD).The set of four postulates governs the nature of Existential Knowledge (EK). With the EK as a set theoretic foundation, the potential for extra-sensory phenomena is explainable. We may summarize that the nature of any and all knowledge about existence, EK, is a function of PIU, PGE, PGK, and PMBD.

Chapter 9. What is Consciousness?

A brief historical review of the concept of consciousness is provided from the perspectives of philosophy, psychology, and neurology. The weaknesses in traditional analyses of the nature of consciousness are explained, followed by a synthesis of consciousness (with mind and soul) based on the previous eight chapters. The 2nd Domain of consciousness is recognized as the foundation for how the 3rd Domain of materialism functions. It was concluded that the reality of what consciousness is and how it is known denies any useful ability to define it by reference to objectively observable experience, so it must be regarded as an indefinable, primitive term.

Chapter 10. A Theory of Knowledge: The Transcendental and the Mundane

Knowledge is analyzed to fit two main classifications: 1) the Transcendental idealized forms as described by Plato, and 2) the mundane experiences generated by the body/brain living in the material world. Knowledge of each

of the two types is examined for how it is acquired (from the 2nd Domain) or learned by sense-perception experienced in the 3rd Domain. Knowledge learned through life in the 3rd Domain is unreliable because of imperfections in our sense-perception mechanisms, and because memory storage and retrieval are prone to intervening learning distortions and aging processes. By contrast, knowledge acquired directly from or while in the 2nd Domain is perfectly accurate and not subjected to any aging process because time does not run in the 2nd Domain.

Conclusions

Overall, the text argues that Creation and "consciousness" fundamentally exist beyond the boundaries of conventionally acquirable scientific knowledge. The specific arguments employed made use of analogy and the Liar's Paradox to support an out-of-bounds conclusion defined by the Principle of Interior Unknowability (PIU), and appear to be novel for the metaphysics literature. The NDE reports demonstrate a high degree of perceptual consistency for the OBE experience, such as time no longer perceived as running, all entities perceived to be made of light, and actions driven by thought perceived as instantaneous; all of these perceptions were found to be consistent with Relativity Theory and quantum mechanics. A theoretical foundation was laid for the reality of paranormal phenomena. It was found from the review of over 4000 NDE reports available on the NDERF and IANDS' web sites that the NDEs were dominated by experiencing the light and love of a God Creator, even for those who were agnostic or atheist before their NDE. Based on these NDE reports and the neo-Platonic concept of Transcendental knowledge having been provided to the human conscience, a proposed code of conduct was included in the Annex. The quest to develop knowledge about *Creation* and *consciousness* ends in a conclusion that, by our being immersed in them, they are not ever directly observable by us as material beings. However, conventional science is plagued by those who either seek to deny their existence, or instead seek to scientifically describe and explain them, whereas the PIU shows that both of such opposing perspectives are wrong.

Chapter 1. Frozen Time Theory

Abstract

The theory presented uniquely integrates findings and principles from:

1) Relativity Theory (e.g., time does not run for entities traveling at light speed),

2) Quantum mechanics (e.g., paired particles demonstrate a mysterious form of communication instantly at any distance, called by Einstein "spooky action at a distance" when he spoofed the possibility, and "quantum entanglement" by Erwin Schrodinger), and

3) Analytic geometry in which ordinarily perceptible space (3D) includes time as a hypothetical 4th spatial dimension. A multi-dimensional universe existing beyond 4D may explain why visible material and energy account for less than 5% of the universe (based on gravitational effects observed, i.e., so called dark energy and matter may exist in the higher dimensional realms beyond direct observation), with observer reports about time, principally from the Near Death Experience (NDE) literature:

A) Time does not run on the "other" side, so that past, present, and future may be accessed together (visualize an observer located high over a road with the road conceptualized as the time dimension);

B) Perception and consciousness experienced before having an out-of-body experience (OBE) may continue uninterrupted when consciousness leaves a dying body,

C) Perception is enhanced during the OBE to be able to see, not by reflected light, but "directly" at any measurement scale, sub atomic to galactic, and at any location, termed "mindsight," and

D) Matter on the other side exists at frequencies far higher than ordinary matter, implying super strings on the other side vibrate faster than in the material realm and may provide the basis for dark energy and matter.

Scientific credibility has been established for the reality of OBE perceptions from a substantial number of cases in which information, that was acquired during the OBE that could not have been accessible to the dying body at its

location or while brain activity had measurably ceased, had been verified by independent fact checking (Holden, J.M. (2009) Veridical perception in near-death experiences, in Holden, J.M., Greyson, B., and James B. (eds.) The Handbook of Near-Death Experiences: Thirty Years of Investigation. Santa Barbara, CA: Praeger/ABC). An excellent case is made for consciousness operating without a functioning brain by Dr. Greyson, (<http://dharma-documentaries.net/bruce-greyson-is-consciousness-produced-by-the-brain>).

Introduction

It will be important to recognize the distinction between the context of discovery or hypothesis formation and the context of verification -- unlike speculations about an other side or spiritual realm that cannot in principle be empirically explored, the theory presented here provides for empirical testing; for example, brain waves, which are rather slow, may be tested to communicate with higher frequency electromagnetic waves hypothesized to emanate from the other side by using the superheterodyne process we now routinely use for radio reception and amplification of signals broadcast at higher frequencies than the carrier waves used in radios, a signal mixing process.

The 2011 Discovery Channel program on, "Did God Create the Universe?" stimulated by the views of Stephen Hawking, provided one perspective on the nature of the universe and its creation which eliminated any need to include the concept of God, as the traditional uncreated Creator. He reiterated that perspective in a follow on tv program in 2019, adding that the "singularity spontaneously erupted" in a Big Bang following the rules of quantum mechanics. He plausibly explained that the sum of energy and matter in this universe (positive and negative energies and matter) could be zero, so that the material universe starts out from nothing. He did correctly explain that if time only began at the Big Bang, then any attempted causal analysis about the formation of the singularity would be impossible, because causation requires time to have been running. time does not function prior to the Big Bang). My own analysis finds that no scientific theory having essential dependence on observation can be constructed, much less even tested, as will be discussed extensively later in chapter 6.

The sum of energy and matter in this universe (positive and negative energies and matter) could be zero, so that the material universe starts out

from nothing; however, there needs to be a catalyst to trigger the creation of balanced positive and negative states of material substance, and of course that could be the action God, although Hawking calls this a “spontaneous eruption” consistent with quantum mechanics in which particles are seen to come out of the vacuum of space. If God caused Creation, that yet leaves open the issue of how God came into being from nothingness. Described here are speculations about the nature of Creation based on Special Relativity Theory, with its provisions that time is frozen at light speed, and General Relativity with its provision that infinite gravity also freezes time.

With time frozen, the situation prior to the Big Bang may rule out the meaningfulness of the question of causation before the universe was born, because when there is no time, causation ceases to function. In other words, from accepted theories of Relativity, physics shows that it is possible to meaningfully conceptualize a state of existence in which time does not functionally exist or is frozen, so causal analysis is futile.

However, whereas Hawking takes the logic of that result (i.e., that causation becomes a meaningless question when time does not function prior to the Big Bang) to eliminate the need for including the uncreated Creator, this logic is flawed by his attributing the cause simply to quantum mechanics. His explanation conveniently presupposes an eternal existence for quantum mechanical rules, but that presupposition is no more plausible than presupposing God to have created quantum mechanical law.

Hawking also relies on equating the ephemeral existence of quantum particles (e.g., protons coming into and out of existence randomly, the uncaused quantum flux) with the Big Bang involving an immense conglomerate of mass/energy in contrast to isolated bits of quantum level elements. Surely the huge mass at the core of the singularity would not precisely follow the identical quantum rules for the behavior of "separated" quantum particles, just as the behavior of the macro world of everyday existence is radically different from the ephemeral quantum flux; the fact that reductionism has failed to generate macro-level world theory from atomic and subatomic science is well explained by physicist Robert Laughlin (Laughlin, Robert (2005), *A Different Universe: Reinventing Physics from the Bottom Down*, Basic Books, ISBN 0-465-03828-X), who argues for the philosophy of emergentism.

Frozen Time Theory (FTT) proposes a different line of analysis from Hawking's explanation of a spontaneous eruption of a singularity. Instead the FTT is based on reports generated from the Out of Body Experience (OBE) typically associated with an NDE that are compatible with principles from quantum mechanics (for example what came to be known as Einstein's "spooky action at a distance," now commonly termed quantum entanglement), and Relativity Theory. The FTT includes findings from study of the Near Death Experience by Ken Ring's interviews of the congenitally blind who describe what they saw and how their perception was different from normal perception. (<http://near-death.com/experiences/experts04.html>). Reincarnation research also points to the persistence of consciousness beyond death. The reincarnation research findings of Prof Ian Stevenson (http://en.wikipedia.org/wiki/Ian_Stevenson) and Carol Bowman (http://en.wikipedia.org/wiki/Carol_Bowman) are especially helpful. A set of well documented cases of reincarnation, complemented by You Tube videos, is at this website: (<http://www.victorzammit.com/evidence/childrenwhorememberpastlives.htm>), including an informative interview of Jim B. Tucker, MD, who was mentored in this field by Dr. Ian Stevenson. Pim Van Lommel, M.D. has published an excellent, comprehensive review on the NDE research literature which is valuable as a basic reference, "Consciousness Beyond Life."

(http://www.amazon.com/s/ref=nb_sb_ss_i_9_5?url=search-alias%3Dstripbooks&field-keywords=van+lommel&srefix=van+l%2Cstripbooks%2C189) .

The Frozen Time Theory addresses one of the great curiosities reported by seers, and by ordinary individuals who had the NDE -- that time does not run in the spirit world. It is hypothesized that our 3-D material world, with time as an adjunctive dimension, operates in the spiritual domain experienced during the OBE as a four dimensional domain, or higher, in which time exists as a fourth spatial dimension. One particular NDE report directly supports the conjecture that time in the spiritual world corresponds to a form of spatial dimensionality, of location, in a higher order space. One with the Light: Authentic Near-Death Experiences that Changed lives and Revealed the Beyond by Brad Steiger (Sep 1, 1994) Chapter 22, page 145, The Extraordinary Near Death Experiences of Two medical Doctors, is recounted. The source reported by Steiger is a paper presentation of Sir

Auckland Geddes, MD, to the Royal Medical Society of Edinburgh, Feb 26, 1937. In one of these two cases of MDs having NDEs, Geddes reported the following for a doctor experiencing an out of body experience (pages 146 and 148):

"... he became aware of the presence of a guide, or "mentor," who explained to him he was, 'free in a time dimension of space wherein *now* was equivalent to *here* in the ordinary three-dimensional space of everyday life.' With the new understanding related to him by his guide, the doctor next noted that he was able to see things in four or more dimensional places. At the same time, he could see equally well in the three-dimensional space of everyday life."

This NDE report characterizes time in the spiritual world as being represented--not by a clock-- but by spatial location. Thus, time on Earth may be mapped to a spatial location in the spiritual realm, and that may explain how valid premonitions are possible; premonitions may be reconciled with free will by allowing that what is located at any time in the future may be changed as events unfold.

Philosophical Perspectives on Existence and Creation

The foremost question for the ontological branch of metaphysics is -- how did beingness come into existence and what is its nature (<http://en.wikipedia.org/wiki/Ontology>)? Conceptualizing any process that can introduce matter and energy into what had been a perfect void confronts the issue of where this matter and energy came from to begin with (so reference to such materiality in the singularity preceding the Big Bang begs the question in a circular manner), and ponders further about the process by which materiality was incorporated into the primordial void. Modern Big Bang Theory avoids consideration of how the material at the core of the singularity was created or where it came from, and speculates only about the nature of physical law explaining the singularity explosion process; or alternatively, the Big Bang Theory of creation is replaced with theory attributing creation to collision of preexisting brane universes, the ekpyrotic scenario (http://en.wikipedia.org/wiki/Ekpyrotic_universe).

This quandary about how to conceptualize the origin of a material universe traces back to ancient Greek philosophy, with no substantive progress after the issue of creation was formalized. This short note defining

Frozen Time Theory explains how an illogical application of the concept of time, which forms the foundation concept for understanding and applying the concept of "causation" to explain origins, blocks resolution of the ontological quandary. Frozen Time Theory applies Special Relativity Theory to explain the ontology of creation and spiritual beingness.

Special Relativity Includes a Condition of Timelessness

* Time as we understand and measure it according to Special Relativity slows for increasing speed; more specifically, an object traveling at light speed exists in frozen time, e.g., a photon does not age.

* Thus, when existence corresponds to light speed with its time stopped, asking what preceded or comes after that existence has no meaningful answer for the context of that existence.

* The dimension of time is constructed by Frozen Time Theory as a 4th dimension of a Cartesian-like 4-D space; in other words, different times in 3-D may be mapped to different spatial locations of 4-D space. This analysis can actually be visualized by imagining 3-D chunks of space placed at different points along a dimensional axis representing time, just as x, y, and z dimensions are usually represented in Cartesian graphing for spatial locations. The resulting 4-D spatial graphing will later be employed to explain how spatial dimensions higher than 4-D may be conceptualized.

The NDE Phenomenon with Perception During OBE Verified

The NDE reports encompass observations made by consciousness, while it is detached from an individual's dying body, about events taking place in the Earth realm, and beyond. Observations made by individuals during their OBE may be usefully classified as occurring while consciousness focuses on events within the Earth plane of existence, and, for relatively extensive NDEs after consciousness has moved beyond, usually thru what appears to be a tunnel, to focus on a spiritual realm, typically corresponding to the concept of Heaven for its beauty and the experience of feeling loved, but infrequently corresponding to a Hellish environment.

OBE observations about events transpiring on the Earth plane may readily be tested for reporting accuracy by checking on the facts known to participants in the NDE event or bystanders. However, it is has also been possible to test selective observations made during Heavenly visits. There

are a few cases of NDE reports made about relatives who were unknown before meeting them on the other side, such as siblings, or other relatives (see, for example, cases reported in Dr. Lommel's text at pages 32 and 33). Dr. van Lommel's thorough NDE summary of an extensive research literature on OBE perceptual reality concluded:

" [The] out-of-body experience is of scientific importance, because doctors, nursing staff, and relatives can check and corroborate the reported perceptions and the moment when they were supposed to have taken place. [Dr. van Lommel quotes here from the Holden OBE chapter cited in the Preface: "In a recent review of 93 reports of potentially verifiable out-of-body perceptions (or 'apparently nonphysical veridical perceptions') during NDE it has been found that 43% had been corroborated to the investigator by an independent informant, an additional 43% had been reported by the experiencer to have been corroborated by an independent informant who was no longer available to be interviewed by the investigator, and only 14% relied solely on the experiencer's report. Of these out-of-body perceptions, 92% were completely accurate, 6% contained some error, and only 1% was completely erroneous. And even among those cases corroborated to the investigator by an independent informant, 88% were completely accurate, 10% contained some error, and only 3% were completely erroneous. "] This [review] proves that an OBE cannot be a hallucination, which is a sensory perception that is perceived as real by the hallucinating person, but does not correspond with reality..." Pages 19 and 20 from the cited text of Dr. van Lommel, with following pages in his text presenting compelling cases of verified OBE perceptions, otherwise impossible from the position and condition of the dying body. It is only reasonable to conclude, from the many verified cases, in which individuals "perceived" events out of possible view from their dying body and "heard" audible conversations or unvoiced thoughts, that OBE perceptions have occurred by out-of-body consciousness -- and this conclusion has been well authenticated by checking on factual accuracy.

Universally consistent observations from individuals returning from near death experience (stopped heart and no brain activity <http://www.near-death.com/>) are that time as experienced in our material world does not exist in the spiritual world.

* After death, relatives and friends, angels, and Christ all appear as made from or glowing with light.

* After death "on the other side," ordinary time as felt here is reported not to exist.

* Past, Present, and Future are unexplainably observed to coexist.

* All entities perceived (e.g., trees, grass, water, rocks, and animals) are experienced to exude consciousness, consistent with the philosophy of panpsychism attributing "mind" to everything as made by and of God.

Philosophy of Science Perspective on Time and its Role in Causation

* Causation is defined according to actions tied sequentially across time (<http://www9.georgetown.edu/faculty/ap85/papers/CausationAndArrow.html>). Time at the macro level is conceptualized and measured as a continuous, uninterrupted flowing sequence. Quantum Time Theory speculates that time takes the form of a discrete quantum existence (<http://www.scientificamerican.com/article.cfm?id=splitting-time-from-space>). Regardless of the preferred theory, the concept of directional time underlies the concept of a series of connected events happening along a dimension of time.

* Given that time does not function, so that time is frozen, then "causation" loses its operational meaning, and to search for causation is meaningless--the quest to comprehend how the world originated becomes meaningless.

Psychology of Perception and the Scientific Problem of Qualia in Perception

Conscious perception of the real world delights in varieties of colors seen, sense of fragrances as when a rose is breathed, and the richness of music heard (a good summary review of the concept of qualia is provided by "Mind & Brain," Jeffrey Schwartz, MD, Harper Collins, NY, 2002, pages 36-41). However, microscopic examination of the brain neurons, and their cortical layers involved in perception, fails to identify any features capable of "seeing" different colors, or experiencing fragrances, or differentiating sounds to appreciate the patterned sound of music. This problem has long been appreciated in philosophy of perception as the problem of qualia(<http://en.wikipedia.org/wiki/Qualia>) . Prof Alva Noe states his conclusion about the nature of consciousness in clear, blunt language, " Consciousness does not happen in the brain. That's why we have been

unable to come up with a good explanation of its neural basis.” Chapter 1. An Astonishing Hypothesis (<http://www.amazon.com/dp/0809016486>).

Erwin Schrödinger, one of the pioneers of quantum physics, offered the following perspective on conscious perception contrary to any materialistic explanation of it: "*The sensation of colour cannot be accounted for by the physicist's objective picture of light-waves. Could the physiologist account for it, if he had fuller knowledge than he has of the processes in the retina and the nervous processes set up by them in the optical nerve bundles and in the brain? I do not think so.*" (Schrodinger, E. Quoted in *The Observer* (11 January 1931); also in *Psychic Research* (1931), Vol. 25, p. 91.) The eminent neuroscientists Charles Sherrington and John Eccles, and the pioneering neurosurgeon Wilder Penfield all came to the conclusion that the brain does not itself originate or propagate consciousness, but instead serves the function of a transmitter between materialistic sense-perception and mind—soul. Even with today’s special tools for examining brain activity, such as functional magnetic resonance imaging (fMRI), conscious perception remains a mystery (http://en.wikipedia.org/wiki/Philosophy_of_perception).

For the sake of argument, let's say we attempted to explain consciousness of color perception by hypothetically locating different specific colors in different places or in specially integrated neuronal circuits of the visual cortex-- but that would not serve to explain color perception, because we would then have to suppose a homunculus to be viewing the color representing regions, and that would lead to reductio ad absurdum, for the conscious perception by the homunculus would also need explaining.

This problem of how to explain conscious perception was tackled by Rene Descartes in his dualistic theory of mind (soul) and brain, with the quaint idea that brain and mind communicated through the pineal gland. Placing this gland point connection aside, mind as the source remains a possible explanation, and is consistent with those having NDEs who report that, when leaving the body, perception is continuous from within the body to out of body, thus implying that ordinary conscious perception is reliant on mind or soul (see *Mindsight*, by Ken Ring: <http://www.amazon.com/Mindsight-Near-Death-Out-Body-Experiences/dp/0966963008> and a BBC TV production on the NDE that concludes with solid evidence for spirit, but of

course no proof positive (http://www.youtube.com/watch?feature=player_detailpage&v=uuf-xct2sHk)

There is a possibility that conscious perception does not need to be explained by reference to mechanical brain processes, if consciousness and conscious perception are not culminating functions of brain processes, but are instead found in soul attached to brain, as theorized by Descartes. Theoretically, locating perception in soul then merits an explanation for how the soul works perception, so, at first blush, the issue of how perception works remains when the site is shifted from brain into soul. The recently reported NDE by Eben Alexander, MD, ("Proof of Heaven" Simon and Schuster, 2012) offers inference of an elegant solution, really an Occam's razor-like solution, that soul directly perceives information, both perceptual and conceptual. Alexander describes his spirit's perceptual experience while in God's "core" realm:

" Seeing and hearing were not separate in this place where I now was. I could *hear* the visual beauty of the silvery bodies of those scintillating beings above and I could see the surging, joyful perfection of what they sang. It seemed that you could not look at or listen to anything in this world without becoming a part of it-- without joining with it in some mysterious way. Again, from my perspective, I would suggest that you couldn't look *at* anything in that world at all, for the word *at* itself implies a separation that did not exist there. Everything was distinct, yet everything was also a part of everything else, like the rich and intermingled designs on a carpet...or on a butterfly's wing. " Pages 45/46.

In other words, spirit and its "sensory" and conceptual surround integrate as a coherent whole, so that perception does not need to be specially created, but is instead a seamless aspect of spirit existence.

Frozen Time Theory

The proposed theory of frozen time postulates that the spiritual world is the original and dominant form of existence. Many seers claim that the Earth realm functions at a lower frequency range than the objects of the spiritual

realm. In terms of current super string theorizing, the strings and loops of the spiritual world would vibrate at much higher frequencies than objects in the material world. However, as described in the quote from Alexander above about the holistic nature of experience in the spiritual realm, the Reductionist program in physics (<http://en.wikipedia.org/wiki/Reductionism>) is likely inapplicable in the spirit realm, and all phenomena there are best characterized from our material perspective as Emergent in nature (<http://en.wikipedia.org/wiki/Emergentism>).

Frozen Time Theory speculates that time in the Earth realm can be mapped to coordinates of a fourth spatial dimension in the spiritual world where time does not exist as a moving arrow but as different places. Thus, in the spiritual world, beingness exists all at once for past, present, and future. Alexander acquired this understanding of time during a visit with God, and reported about time as a spatial dimension." From these higher worlds one could access any time or place in our world " Page 49, and see the next section below for further explanation. This theory resolves the paradox of Predestination (in the sense that God knows the future) and Free Will in which the future must be able to accommodate unpredictable behavior. A four coordinate spatial realm (wherein different Earth time existences are located in different places) always exists, but the contents may change as events unfold in the material world. The theory thus also accommodates paranormal instances of precognition (<http://en.wikipedia.org/wiki/Precognition>). Perhaps what exists at the four dimensional locations corresponding to future events may be thought of as similar to quantum superposition states (http://en.wikipedia.org/wiki/Quantum_superposition) in which an infinite flux of potential states exist with only one culminating when an operational interaction (observation or measurement operation) takes place.

Frozen Time Theory can be applied to explain how particle entanglement (spooky action at a distance), as first proposed to refute quantum mechanics in 1935 by Einstein in the EPR Paradox paper (http://en.wikipedia.org/wiki/EPR_paradox), and later demonstrated first by Alain Aspect in an experiment in 1982, to be a valid quantum theory prediction (<http://www2.cnrs.fr/en/447.htm>), can create apparent instantaneous communication across unlimited distance. In ordinary 3D space, the two paired particles that can be made to demonstrate entanglement are observed as distinct entities separated in space. In Frozen Time Theory, the separately appearing particles would be observed

as a single particle and could be located in 4D space at a single point in the time dimension.

Higher Dimensional Worlds in the Spiritual Realm

Conceptualization of time as a spatial fourth dimension provides a framework for conceptualizing higher order dimensions, as required by M theory's needing eleven.

Consider the process of encapsulating a 3-D cube of ordinary material space, and placing it at a point on a time line, with time as a single dimension. Visualizing the material world cube at any point in time presents a 4-D spatial image. Now, take the time line and cross it with another line to form a two dimensional Cartesian graph; if the cube were displaced off of the original time line to any point in the new graph, we then have a five dimensional coordinate system imaged. Next, run another dimensional line thru the graph of the 4th and 5th dimensional Cartesian graph (for 4 and 5 D), and the 3-D material cube may be moved into a higher order 3-D space, with six dimensions represented. With the original 3-D cube as a reference, we may encapsulate its position in the new 3-D higher order space (6-D space), and then place it in yet another higher order 3-D space, achieving conceptualization of 9-D. This process of moving into higher and higher dimensions is limitless.

Dr. Alexander mentioned above stated that God communicated to him that the spirit world does exist in many dimensions:" *I saw that there are countless higher dimensions, but that the only way to know these dimensions is to enter and experience them directly. ... The world of time and space in which we move in this terrestrial realm is tightly and intricately meshed within these higher worlds.*" Pages 48 and 49. Similarly in a report on NDERF.Com, a multidimensional world was reported:

"This place was an expansive forever and yet the room was there, like in a glass cube. The cube is the dimension we live on earth and it is but a tiny fraction of the reality of existence. We on earth, in our lives, only see with these few little senses. Meanwhile, in REALITY, and that's what I had the sense of, is that true REALITY consists of far more than the small dimensions we have on earth. We have our 5 senses on earth and it is upon this that we build our entire sense of what we are and who we are and what we are doing here. In REALITY, there are far more elements and

far more senses that our soul beings have. Now this sounds insane, but if you can imagine this, to a theoretical physicist or to a Jewish Mystic, it almost makes sense I suppose. I have been studying these things to try to make sense of the information I received. “ NDERF, com reference: 4288. Heather V NDE 1/29/2017. NDE 23192.

The mystery of dark matter and energy, estimated from gravitational effects to include more than 95% of the universe, with observable energy and matter less than 5%, may be explained by a multidimensional universe in which the “dark” energy and matter, although not directly observable, exist in the higher dimensions. Research is underway to map the locations of dark energy and mater (<http://www.nature.com/news/cameras-to-focus-on-dark-energy-1.11391>)

Mechanisms Enabling Mind-Brain Dualism to Function

A feature of this theory that is entirely common to reports of seers and NDEers is that our soul, existing in a spiritual realm without material bodies, is joined to a body at some time after fertilization of the human (or higher animal) egg, and before birth.

The joining of soul with brain functionality has been a traditional problem in philosophy that was made clear by Descartes Dualistic theory that distinguished between mind/soul and brain. In Descartes theory, somehow brain and mind communicated in the pineal gland; regardless of the site of communication, the mechanism was not itself explained. Recently, Dr. van Lommel has hypothesized (text earlier referenced, page 248) that consciousness operates according to the principles of quantum theory that enable non local communication, e.g., entanglement, and further that wave resonance between information in non local space with long (a meter) DNA molecules (acting as an antenna) may explain brain-consciousness communication (page 275). However brain and mind communicate, it is clear from the lack of any interruption of consciousness when soul departs body during traumatic NDE experiences, that mind/soul operates while soul is attached to brain/body to inform conscious perception.

Seers across the ages and contemporary folks who experience a Near Death episode commonly report that the material realm has a frequency range that is much slower than spiritual "substance." In terms of modern super string theory, we can hypothesize that the strings in the material

world vibrate at a much lower frequency than the strings in the spiritual realm.

It is the case that the superheterodyne technology, earlier well developed for radio broadcast reception and amplification (<http://en.wikipedia.org/wiki/Heterodyne>), offers a potential explanation for the means of communication between brain and mind. The basis of the technology is the use of an oscillator in the radio to provide a lower frequency carrier wave form that is then mixed electronically with the higher frequency broadcast signals by simple sine wave merger of the two signal sources. The brain has been measured to create electrical (electronic) wave forms that correspond to different modes of brain wave activity, such as occurs during sleep, wakefulness, and meditation. By use of a superheterodyne mixing of soul and brain wave forms, each could be made to communicate with the other. The so called "God Helmet" apparatus might provide a means for testing this hypothesis (http://en.wikipedia.org/wiki/God_helmet).

Normal Consciousness and Conscious Perception Do Not Require a Normal Brain

Frozen Time Theory concludes that conscious perception cannot be found in the electrochemical workings of neurons in the brain, because there is no way to explain differentiated qualitative states, such as seeing red or green and hearing music and experiencing fragrance; and because the NDE reporters frequently mention that when they experienced leaving their bodies, conscious perception from the body state to the out of body state was continuous, with no interruption, strongly implying that conscious perception was from the soul and not the brain. There is also striking evidence that conscious perception may take place routinely in individuals who not only lack the normal brain structures believed to be required for consciousness and conscious perception, but essentially have no brain at all. Prof John Lorber has found from some of his hydrocephalic patients who have suffered a massive loss of normal brain matter that they are able to function normally without the normal brain lobes (e.g., missing their occipital cortex for processing stimuli from the retinas and w/o the frontal cortex http://www.rifters.com/real/articles/Science_No-Brain.pdf). Lorber cites one extreme case of a normally functioning university student with a recorded IQ of 126 who was at the time of research by Lorber earning an advanced degree in math. "In place of the normal cortical lobes that are

about 4.5 cm thick, there was a thin layer of the mantle measuring about a millimeter thick, with the cranium filled with cerebrospinal fluid in place of the normal brain.”

Conclusions

Our current understanding of physics, incorporated in both Special and General Relativity, establishes that time is frozen under light speed velocity or extreme gravity (black hole conditions), so the concept of frozen time is compatible with modern physics. Reports by individuals having had NDEs and by seers across centuries state that time in the spiritual realm does not run as experienced in our material world, but instead they are able to simultaneously view past, present and future. Frozen Time Theory conceptualizes time as experienced in the material world as capable of mapping to a 4th dimension in the spiritual world as a form of spatial location. By freezing time in the spiritual realm, the search for explanation of when or how the material world (or spiritual realm) was caused loses meaning, as causation requires time to inform its meaning. The EPR Paradox from quantum mechanics for spooky action at a distance is explainable by hypothesizing that the entangled particles separated in 3-D in the material world are collocated in the spiritual world, so action on one particle naturally instantaneously affects the "other." A 4-D spatial model of reality that replaces a 3-D model, with time added as a spatial dimension, has no trouble explaining reports of precognition, as well as reports about spirit ability to perceive past, present and future at will.

Chapter 2. Universal Consciousness Underlies All of Reality: A Tripartite Domain Theory

High Flight

By

John Gillespie Magee, Jr (1941)

"Oh, I have slipped the surly bonds of earth,
And danced the skies on laughter-silvered wings;
Sunward I've climbed and joined the tumbling mirth of sun-split
clouds -
and done a hundred things You have not dreamed of -
wheeled and soared and swung high in the sunlit silence.
Hovering there I've chased the shouting wind along
and flung my eager craft through footless halls of air.

"Up, up the long delirious burning blue
I've topped the wind-swept heights with easy grace,
where never lark, or even eagle, flew;
and, while with silent, lifting mind I've trod
the high untrespassed sanctity of space,
put out my hand and touched the face of God."

Introduction

The mind and brain are distinguished by their intrinsic nature in philosophy and psychology, but there are two different dominant schools of thought about how they work together. The materialists, to include most neurologists and other "hard" scientists, do not believe in an immaterial consciousness, but expect research to eventually demonstrate how consciousness is either a brain process, or an epiphenomenon not worthy of continued research. The other school accepts that body and brain process the physical sensory input for conscious perception, but argues that the perception that is realized in conscious perception exists in an immaterial mind or soul; that is the position taken by this Tripartite Domain Theory, but it goes a step further that has not been theorized by any other philosophers or scientists-- the Tripartite theory claims that all of the physical, material world is intrinsically always connected to, or a part of (a subset of) the universal consciousness that is the natural home for the soul in what is defined as the 2nd Domain (the 1st Domain is the pure thought or consciousness which is God) when not connected to a brain.

The Tripartite Domain Theory analysis of the "spooky action at a distance" demonstrated by quantum entanglement is what led to the conclusion that the phenomenon of instant "communication," regardless of the size of the distance separating entangled elements, could only be explained as characteristic of the instantaneous communication reported by NDE/OBE observers while present in the spiritual world. Thus, it followed that the material objects of our physical world (i.e., the 3rd Domain) also exist in the 2nd Domain, and it is their action in the 2nd Domain of universal consciousness that enables the instantaneous communication exhibited in the 3rd Domain of physical reality. This theorized connection between the 2nd and 3rd Domains may also explain the nature of the source for the estimated 95% "dark" energy and matter that remains unobserved, i.e., the source may be in the 2nd Domain.

The bizarre phenomena of instantaneous communication between entangled particles, predicted, but unexplained by quantum mechanics, and impossible to explain by classical mechanistic physics, is applied by the new analysis presented here to imply that only an "energy" free continuum, also free of time

and space constraints, may explain it-- and we term that continuum the "universal field of consciousness."

A variety of analysts have claimed that materialism ought to be replaced by consciousness as the basic paradigm for science, but "consciousness" defies the cardinal requirement for modern physics of enabling objective observation of phenomena with reliable measurement-- as it is by definition and usage unobservable to any but an individual's private mind. However, the entanglement phenomenon (as explained below) provides strong evidence for inferring that the basis for all experience is disembodied consciousness. Furthermore, physics can no longer deny consideration of consciousness as an explanatory paradigm, because it has elevated super string theory to its best hope for developing a "theory of everything" (i.e., a single theoretical framework that includes both Relativity theory and quantum mechanics) when the string has a size on the order of the Planck length (approximately equal to 1.6×10^{-35} meters) which is in principle far too small to be directly observed, and may only be inferred from indirect evidence, such as this analysis does with entanglement.

The Near Death Experience (NDE) research literature established that Out of Body Experiences (OBE) are reliably associated with the trauma of an NDE; significant reference works include MD Raymond Moody's, *Life after Life*; MD Jeffrey Long's *Evidence of the Afterlife*, and MD Pim van Lommel's *Consciousness Beyond Life*. The reality of the OBE, as demonstrated by substantial empirical fact checking, creates a problem for the standard paradigm of modern science, materialism, because consciousness does not follow the laws of standard materialistic physical science.

The OBE reflects disembodied consciousness

The OBE is well characterized by a consciousness separated from the traumatized body that enjoys perception which is enhanced over normal perception; examples include the vividness of colors; feelings of perfect peace, and often the feeling of being loved without judgment by God. Despite these remarkable reports about disembodied consciousness, substantial

evidence for the functioning of human consciousness without a normal brain has been collected and well organized in research reports. A powerful video presentation by Dr. Bruce Greyson (<https://www.youtube.com/watch?v=2aWVM95RuMqU>) cites evidence for disembodied consciousness, such as accurately viewing activities distant from the traumatized body, meeting previously unmet and unknown relatives whose existence was later verified, recollecting former lives with verification of how they reported death injuries; seeing by blind individuals who experienced a form of visual perception that was accurate, and traveling made to a heavenly realm where deceased relatives were typically met.

Features of the OBE experience (e.g., time having ceased to run, and all entities appearing to be made of some form of light) were explained to be compatible with Relativity Theory and quantum mechanics in the FTT chapter where it was hypothesized that the baffling phenomena of quantum particle entanglement (what Einstein aptly termed, “spooky action at a distance”) might be explained by applying the four dimensional space-time model of Relativity theory with time recast as a true fourth spatial dimension.

The reality of instantaneous signaling between entangled particles implies materialism is an incompletely defined paradigm for science

This note seeks to extend the explanation earlier presented in FTT of how the instantaneous interaction of particles, separated in space, may take place, regardless of their separation distance. It was found to be necessary to replace the materialist paradigm with immaterial consciousness for the entire realm of existence. The implications of particle entanglement drive the need to reformulate our understanding of the nature of reality.

During the development of quantum mechanics, Einstein noticed that its formulation implied the mathematical possibility for the atomic particles of a unified (entangled) system to signal each other instantaneously, regardless of how far apart they were, thus violating the stricture of his Relativity Theory limiting signals to the speed of light (EPR paradox, https://en.wikipedia.org/wiki/EPR_paradox). However, empirical research has

demonstrated that communication for entangled particles does appear to be instantaneous (https://en.wikipedia.org/wiki/Quantum_entanglement). Instantaneous communication baffles any conceivable explanation by any contemporary materialistic physical theory. Just to be clear, the entanglement model is next described in detail.

The Quantum Entanglement Model and Paradox

it's worthwhile to recognize that quantum physics has managed to construct a model of phenomena that works amazingly well, yet the math model employed (the Schrodinger wave equation) departs from common sense without providing any replacement for human understanding (rational or intuitive) of the mechanisms of the phenomena modeled. The eminent physicist Richard Feynman's famously quipped, "If you think you **understand quantum mechanics**, you don't **understand quantum mechanics**." This lament applies especially well to the mathematical modeling of quantum entanglement.

The basic description of quantum entanglement is well provided by Roger Penrose in his monumental text, *The Road to Reality, A Complete Guide to the Laws of the Universe*. New York: Alfred A Knopf, 2004, page 583. Penrose's description works from David Bohm's construction of the EPR paradox originally published by Einstein, Podolsky, and Rosen (*Can Quantum-Mechanical Description of Physical Reality be Considered Complete?*, *Physical Review*. **47** (10): 1935, 777–780.) as follows. A two particle quantum spin 1/2 system is created starting at a combined spin of 0 (zero) in which the particles travel away from each other, left and right, some considerable distance toward particle spin detectors each having a localized measurement capability. Under the conventional interpretation of the spin states, each of the particles is in a superposition state that is not set and thus indeterminate until some interactive observation or measurement is made for at least one of the particles.

The remarkable result is that the Schrodinger wave equation predicts that upon measuring one of the paired particles by its detector, its wave function collapses, so that it has a definite spin—and the other particle then *instantaneously* reacts by also having its wave function collapse, and does so with the required complementary spin. Penrose invokes Bell's Theorem to rule out any possibility of ordinary classical signaling between the particles. There is no implied information transmission faster than light

speed, because the spin of the second particle was definitively set by the measurement action on the first. So communication defined as information transmission does not violate the speed limit of light, but there is some form of signaling between the particles that is instantaneous

Thus, the nature of the instantaneous signaling mechanism between the particles remains to be explained; even if the two particles were elements of a single physical wave, the instantaneous signaling violates Relativity Theory. As Penrose phrases the mystery, "*The only way that the particles can consistently provide the correct quantum-mechanical answers is by being in some way, "connected" to each other right until one or the other of them is actually measured. This mysterious "connection" between them is quantum entanglement.*"[p 589].

Frozen Time Theory Explains Instantaneous Communication

In the FTT chapter, it was proposed that the apparently separated particles of an entangled system (e.g., an atom or molecule) may communicate instantaneously by being collocated on the time dimension. For this explanation to work, the Schrodinger wave equation (*Schrödinger, E. (1926). "An Undulatory Theory of the Mechanics of Atoms and Molecules" (PDF). Physical Review. 28 (6): 1049–1070.*) and (https://en.wikipedia.org/wiki/Schr%C3%B6dinger_equation) would have to be interpreted to represent particles being manifested as waves extended across space, instead of as merely probabilities for spatial location of a discrete particle. (Whether the Schrodinger equation implies discrete particle spatial location probabilities, or the phases of a wave extended through space, has been an ongoing debate from the days of its formulation; see Particles as Waves in the wiki at [https://en.wikipedia.org/wiki/Schr%C3%B6dinger_equation#Particles_as_waves]) .

The concept of a particle wave defines it to be extended across space-time

In a wave form, a particle's wave is extended across the manifold of space-

time. For simplicity, visualize a two dimensional Cartesian graph (a vertical y axis by a horizontal t axis) of two separated particles; each particle is plotted separately on the y axis while being set to the same value for the time dimension t. In the FTT, two entangled particles were proposed to be in constant communication by their waves from the instant that the particles were formed as an entangled system. Thus, when one of the particles is “touched” by an observation that measures any characteristic of its existence, such as having a spin in one direction or another, the touched particle is activated into manifesting with either an up or down spin (in terms of the Schroeder wave equation, it is said to collapse into one of its possible solutions). The surprising prediction from quantum mechanics as discussed above was that the second particle would instantly react to the first particle’s manifested state by manifesting a complementary spin to keep the entangled system in balance (if the first particle were measured as, say, having an up spin, then its partner would manifest as having a down spin). The results of a considerable amount of experimentation have confirmed that the first particle observed appears to randomly acquire its spin as up or down, and then the second particle reliably manifests the theoretically expected balancing spin.

Instant communication between entangled particles implies they are not fundamentally material entities

A counter argument might be made that the energy level of waves extended over a great distance ought to be too low to enable any effective communication between such separated particles, and this argument makes sense for the materialistic paradigm. Consider, however, that effective instantaneous communication is commonly reported between spiritual entities during OBE episodes. Thus, an apt conjecture, based on consideration of OBE phenomena, would be that entangled particles communicate by a wave connection that exists in a field of consciousness whose power to operate is continuous throughout its entire field regardless of separation distance. The conjecture that the material particles we may observe also exist as entities in a universal field of consciousness is consistent with the quantum theory hypothesis formulated by de Broglie that all matter is wave-like in nature. ([https://en.wikipedia.org/wiki/Matter_wave#The de Broglie hypothesis](https://en.wikipedia.org/wiki/Matter_wave#The_de_Broglie_hypothesis)).

Ordinary perception of the material world is a construction of the mind

It is proposed here that the light we perceive, that informs us of a material reality, exists in an underlying field of consciousness. Furthermore, our ordinary perception of our external reality, the world that we normally see, while informed by the light of objects, is itself a mental construction formed by our consciousness, with our consciousness itself operating in a universal field of consciousness. Our ordinary perception conveys to our minds the existence of a material world of solid objects that we see, touch and feel. But we have known for over a century that material objects are composed of atoms which are themselves mostly space separating electrons in orbits relatively far distant from their nucleus of protons and neutrons; thus, the material world we “see” is not really what exists. Centuries ago, before modern physics discovered the atomic structure we now accept for the material world, Immanuel Kant’s analysis recognized that human perception was unable in principle to see the world the way it might truly exist, the “noumenon” underlying the seen phenomenon; we see appearances of entities, but cannot possibly see and know them as they truly exist (https://en.wikipedia.org/wiki/Immanuel_Kant , or *Critique of Pure Reason*. New York: Random House, Inc., 1958).

All existence is found in a universal field of consciousness

Analysis of how entangled particles, separated across any vast distances, communicate instantaneously, defies explanation by classical, mechanistic, physical theorizing. Quantum mechanics itself offers no explanation, or even hints at any explanation, for “spooky action at a distance.” The explanation proposed here for entangled particle communication, instantly across any extended distance, was driven to rely on an immaterial concept holding that reality is based on a universal field of consciousness in which time and ordinary space do not exist. Our ordinary perception of the world is surely helpful for living and surviving, but cannot in principle display the underlying reality. Thus, it may reasonably be speculated that reality consists of a field of universal consciousness. How was this field created? How could it have been created? There are no answers found in ordinary life. Fortunately, the NDE with its OBE have provided reports relevant to explaining Creation.

Synchronicity fully characterizes activity in the realm of consciousness

Carl Jung developed the concept of synchronicity (<https://en.wikipedia.org/wiki/Synchronicity>) as a concept about acausal events, meaningful coincidences occurring without any apparent causal connections. Interestingly, Jung's development of this acausal concept was informally assisted by the quantum physicist Wolfgang Pauli (https://en.wikipedia.org/wiki/Wolfgang_Pauli). However, an analysis of time not running during OBEs, as explained in Frozen Time Theory, implies that all activity in the realm of disembodied conscious spirit is acausal, and thus synchronistic. Where time does not flow, causation becomes an empty concept, because activity does not sequence from one action to the next. Because the realm of consciousness contains no mass (or energy, considering that Einstein proved that mass and energy are interchangeable), it lacks the energy required in our material world to drive activity.

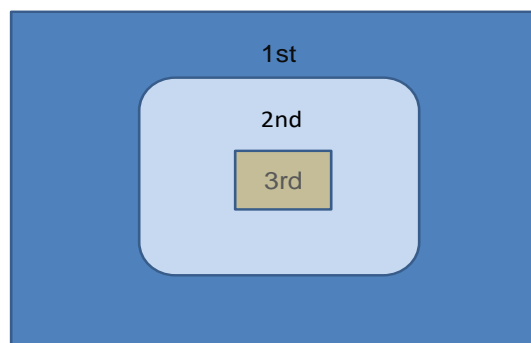
Existence functions in three inter-related domains

This paper delineates three inter-related domains of existence. The first domain is the foundation domain, what is termed here as the "universal field of consciousness." This "field" is God, and included in God are His spirit (human and "other") creations also as pure consciousness with all connected together as a unitary field. An ordinary definition for consciousness could allude to self-awareness, thought, imagination, and decision making-- but these actions are the result of consciousness, and not the noumena, as Kant defined for unknown entities that give rise to perception, the thing in itself. Instead, consciousness is basically a primitive term that cannot be defined with words, but may only be known thru experience; for example, if we try to define the fragrance perceived from a rose for someone who has never experienced the fragrance, the words would provide meaningless terminology.

The second domain, which is more fundamental than materialistic space-time, is a multidimensional world that is populated by spirit beings that take the form of light, with God also manifesting as light. The NDE/OBE reports are typically about perception within this domain. The second domain is generally referred

to as Heaven. Heaven is characterized by uninterrupted love from God, the total absence of stressors, such as produced in the material body for food, clothing and shelter, and lusts, such as for sex, money, and power.

The third is the material domain we normally perceive while living on the Earth, which includes the three spatial dimensions, and consciousness of time passing, with a distinctive past, and a future. The hypothesized purpose for God creating the material domain is to provide for spiritual development through the experience of stressors, lusts, and the free will reaction to them. Such spiritual development is impossible in the second domain, Heaven, for lack of stressors and conflicts. As depicted in the diagram, the 3rd Domain is included in the 2nd, and the 2nd and 3rd are nested in the 1st.



Set theoretic representation of the three hypothesized domains

Resolution of apparent conflicts between morality and amorality for life

It is frequently reported from the NDE/OBE, and from spiritually transformative experiences or deep states of meditation, that God does not judge the spirit as His love is given unconditionally. Self judgment is natural during life reviews subsequent to trauma, and individuals may deeply regret hurtful or immoral behavior, but God is felt NOT to judge. Yet, all cultures and the Judeo-Christian religions are deeply concerned about morality—good vs. evil, and

condemn, not only immoral behavior, but even immoral thoughts or imagination (the precursors to potential action). The Ten Commandments and Christ's Golden Rule make it clear that the moral dimension of life is paramount, and thus important to God. Thus, there is an apparent conflict between conventional culture and religion and reporting from NDE/OBE and meditative states that good and evil are unimportant to God and reflect a mistake in Western culture and religion. A resolution for this apparent conflict is inherent in the tripartite domain theory.

When individuals are having an OBE or deep meditation experience, the context is the second, Heavenly, domain in which stress and evil do not exist—God would not be judging what does not then exist, although individuals in their life review may typically judge the moral character of their own behavior. However, morality surely applies to the material, Earth, domain by God's design to enable spiritual development. Here is an NDE report on Point:

" I died when I was little, but can't accurately remember how old I was. I might have been 8 or 9 years old. I do remember that I was in grade 2.

It was an accident. My brother and sister put a pillow over my face and smothered me. They didn't see it as bad. At the time, they were trying to stop me from winning a game.

I remember clearly and I felt in such peace. I was suspended on the ceiling, which seemed higher than the actual ceiling. I watched them below and realized that I better go back because they might get in trouble if I didn't do so. I did wonder if I should stay, but decided to go back.

I sat up and told them what happened. They never believed me and nor does anyone I tell to this day.

Since that day a lot of strange things happened.

*I am at peace with all the horrific things that have happened to me since this experience. **I have this strange understanding that it's all for me to***

grow as a spirit, to learn what I can, and teach others in a non-direct way. For example, I feel I need to guide and teach people about good because when they come back and they've been evil, a long and scary life awaits until they learn how to be spiritual. [My bolding]

I am now 52 and although I still struggle emotionally and spiritually, I am consciously aware that I have purpose. I know there are spirits around us. I know about making a white bright light protection bubble around myself and those I love. [My bolding]

I didn't go to 'another place' when I died. But I know I was dead and I knew of the other place, the real place. I chose to come back by myself. Although nobody can confirm that I died, I know I did."

(https://www.nderf.org/Experiences/1natalie_c_nde.html)

The New Age idea of uninhibited "going with the flow" when it's pleasurable, that rejects stern morality as based on archaic religions, fails to recognize that morality in life is at the core of God's design for life on the Earth to enable spiritual development. The NDE reports do, however, tend to validate the New Age belief that humans are all fundamentally spiritual beings, not the randomly constructed mechanical objects that scientific materialism defines.

The universal field of consciousness is God

Max Planck, the founder of quantum theory, concluded that consciousness provides the foundation for material reality, "*I regard consciousness as fundamental. I regard matter as derivative from consciousness. We cannot get behind consciousness. Everything that we talk about, everything that we regard as existing, postulates consciousness.*" Furthermore, "*As a man who has devoted his whole life to the most clearheaded science, to the study of matter, I can tell you as a result of my research about the atoms this much: There is no matter as such! All matter originates and exists only by virtue of a force which brings the particles of an atom to vibration and holds this most minute solar system of the atom together. . . . We must assume behind this force the existence of a conscious and intelligent Mind. This Mind is the matrix of all matter.*" (See, https://en.wikiquote.org/wiki/Max_Planck). The

explanation found for Creation is that God created the world, that the world created is fundamentally consciousness, and that the world is in fact God's very being. A frequent report from those traumatized individuals returning from an NDE is that, while their soul existed in a spirit form in Heaven or in the direct presence of God, they realized that everything, every thing, is connected and actually part of God. Given that God is eternal and all that exists, so too are all of God's creations. Our lives, our experiences, good and bad, harsh and beautiful, are all the play of God creatively exploring possibilities throughout eternity.

Chapter 3. Possible Enablers and Barriers to Dimensional Perception

The purpose of this analysis is to frame an understanding of how human perception forms for lines (1D) and planes (2D), and 3D spaces, but appears to be absent for 4D and higher dimensional perception. Reports from the Near Death Experience claim that the world has many higher dimensions, even if unseen in the material body. Super string theory makes use of multiple dimensions, only they are defined as curled so tightly around an origin as to be imperceptible. Reports of Out of Body Experience, associated with the Near Death Experience, report time as ceasing to flow, with past, present, and future all accessible from consciousness (corresponding to the theory of Eternalism in which the past and present always exist, and perhaps the future as well ([https://en.wikipedia.org/wiki/Eternalism_\(philosophy_of_time\)](https://en.wikipedia.org/wiki/Eternalism_(philosophy_of_time)))). So, the main question addressed is why we do not see in 4D time as a real dimension on par with the three spatial dimensions that we do "see."

In Abbott's clever Flatland satire (Abbott, E. *Flatland*. Cambridge: Perseus Publishing, 2002.), he portrays the perceptual limitations of dwellers in a flat plane (2D world) who may be points, line segments, or two dimensional objects, and pokes fun at their difficulties in seeing, or even imagining three dimensional entities; while the frustrations of these zero, one, and two dimensional entities in seeing or understanding higher dimensions is satirically funny, Abbott nevertheless created a metaphorical treatment of dimensionality that may be helpful in conceptualizing four and higher dimensions.

Analysis. Fundamental concepts include the dimensionality of a perceiving entity, the dimensionality of the entity's sense-receptor and perceptual systems, and the assumption of perceptual capacity inherent in the perception system. As an aside, it was explained in Chapter 1. that human perception is not possible by brain function alone, but requires an immaterial consciousness that receive sense-perception information from the brain (which is to say that some form of Descartes' mind-brain dualism is required to explain perception).

Point (0D), line (1D) and plane (2D) entities

Sensor system A dimensionless point may theoretically receive light from another point by using a point sense-receptor, except that a mathematical point is dimensionless (it only offers a location designation). If we take the innovation of superstring theory to expand a point to a circle with the radius of a Planck length (1.616199×10^{-35} meters), then a Planck point may receive the light from the multiple points of a line by rotating or moving to receive light from different points along a line, or by employing an arrayed line of point sensors. The sensed line energy points may be processed to create data storage enabling some form of re-creation of the original line point observations; in other words, light rays can be transduced to "data" representing the original light impinging on the sensor system, and the data can be stored for retrieval and processing as individual points or as a line array. However, a point entity yet has only a single point for perceiving the data created by sensing. It is interesting to note that a point sensor with approximately 0 dimensionality is able to collect data from higher, 1D, energy sources.

Perception system Data constructed from sense-reception can be processed to enable perception of a single point spot or line segment. In the human perceptual system, there are more neurons providing feedback to the primary visual cortex (V1 or striate cortex) than come from the retinas; the primary visual cortex gets feedback from higher level visual cortical areas up thru to the hippocampus and its neocortex, implying that memory is used for the sensory data recognition and interpretation that support perception. Thus, the memory system directly supports elementary feature recognition that contributes to perception. In fact, Hubel and Wiesel have found ganglion structures in the retina itself that facilitate detection of a range of features (lines at a variety of angles and movement ([https://en.wikipedia.org/wiki/Feature_detection_\(nervous_system\)](https://en.wikipedia.org/wiki/Feature_detection_(nervous_system))) and the feature detection output maps directly to associated areas of the primary visual cortex (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2718241/>). It is important to note that the sense- perception system does not act as any kind of veridical transmission system for retinal images that might otherwise be thought of as functioning like a simply camera copier for stimuli. The retina is itself a complex organ, and the visual cortex even more complex in managing input from the retinas and from long term memory to process sensory information. Note too that there is no structure or function known in the frontal lobes which register conscious perception of any eye-like receiver. The nature of perception associated with the frontal cortex

remains a mystery (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4168671/>).

Plane (2D) and spatial (3D) entities

Sensor systems The retina, as a planar entity, can use an array of points (connected as a ganglion) to detect a line segment. A single retina exists in a slightly curved plane, so it is inherently slightly in 3D space; however, the use of two spaced retinas separated in 3D space achieves a distinctive capability to receive and process stimuli that reveal 3D spatial cues, such as reduced size and displacement of objects as they extend away from the fovea (there are additional cues such as haze and amount of haze with distant objects suffering additional haze distortion).

Perception systems It is clear that the human perception system constructs a complex neural registration of sensory information that in no way provides a simple, direct "copy" of objects and spatial cues stimulating the retinas. The brain is thus responsible for creating information that is somehow "interpreted" and supports spatial perception. The retinas do exist as 3D entities (for humans) in 3D space, so it ought not be surprising that spatial perception is achieved, even if principally from two planar retinas. However, the retinas also exist in a temporal dimension, but no extension of time is directly perceived, only inferred (granting there are neural structures that serve as time keepers in the brain, as clocks (http://link.springer.com/chapter/10.1007/978-1-4757-4131-5_11#page-1).

Hypothetical 4D entity (time defined as a fourth spatial dimension)

The hypothetical 4D entity, i.e., a normal human, does not directly perceive a spatial 4D world view in which past, present, and future are available by looking at different points of a physical time dimension. But we do see 3D, and 2D, so what is the barrier? One possible explanatory hypothesis would be that we do not in fact perceive any 3D or 2D spatial realities either, that, instead, our perception is entirely a construct or fabrication—the human visual system is not in any way constructed for veridical copying or modeling of its environment the way ordinary film cameras or tv cameras function. Starting with the retinas, the visual system selects cues, such as light intensity gradients and edges according to orientation, for transmission and processing, and cortical processing importantly includes long term memory guidance, with perceptual expectations generated both by

unconscious memory and consciously held expectations. In other words, we do not directly perceive the world, but actively fabricate a representation that appears in conscious perception (<http://psychclassics.yorku.ca/Bruner/Cards/>). So then, why does conscious perception stop at 3D?

Common sense holds that we see three spatial dimensions, not four. But we do experience time as a continuation of objects in our perceptual environment. So, in a real sense, we do perceive continuation, or the existence of time by instant perception and near term memory of percepts, with an ability to detect changes in object perception over time, e.g., a pitched ball to a batter, the batter's swing, and the ball flying away when struck. In other words, Eternalism theory for past and present temporal states corresponds to actual perception, with the future alone missing. Given that the future exists as an infinity of possible states, a quantum superposition (https://en.wikipedia.org/wiki/Quantum_superposition), any construction of such perception of the future would create some form of a useless, bewildering blur. Presumably brain evolution has continually screened off any emergent capabilities to image any such useless blurs.

A question may be raised about why we do not perceive higher order dimensions, such as a 5th or 6th, etc.. An answer may be found in the metaphor employed in Abbott's Flatland. Higher order dimensions may exist, but as 4D entities, we lack the sensor systems required for observation into the higher dimensions, e.g., 3 or more retinas. One might consider how sensors could be arranged to capture 4D and higher spatial images. However, with regard to 4D, we actually such perception routinely any time we view or take a picture of a real physical object that was made possible by the sensor and object viewed "existing" together for more than the Planck length of time (10 to the minus 43 seconds, defined as the time it takes a photon traveling at light speed to cross the Planck length, 1.616199×10^{-35} meters). So then, an issue becomes why our common sense ordinarily denies our viewing the real world in 4D-- when we do that.

The conceptual trap of imposing mathematical concepts on interpretation of the real physical world

In the text above, we refer to points as dimensionless location in "space", line segments as 1D, planar area as 2D, and spatial objects as 3D. We also wonder about not "seeing" a hypothesized 4th dimension. However,

the dimensions referred to have been implicitly defined as idealized mathematical concepts (eternal Platonic ideal forms https://en.wikipedia.org/wiki/Theory_of_Forms) such that any real, physical world object's persistence in time is ignored as a form. However, Abbott's creatures, for example, to possess definable character and activity, must persist, and by conventional terminology, they exit or persist in time. So, Abbott's point creatures to be placed into the real would not be 0D, 1D, and 2D, but 1D, 2D, and 3D to acknowledge their temporal existence. By this reckoning, we do have direct awareness of time as persistence according to its duration, and also as change (e.g., movement and alteration).

We might then inquire about the perceptual differences for physical world spatial dimensions and time, with time thought about as a dimension of persistence. We think there is a difference in quality between time and the spatial dimensions , because we can see, for example, a real ruler as an edge or planar object (ignoring its thickness), but we cannot see time as such—or can we? If we think about time as the persistence of any real world object, then we do indeed see the effect of "time" when we see any object either persist statically or change. We do perceive the effect or result of time by seeing persistence or change in observed objects. In point of fact, we do NOT see ideal spatial dimensions either, as they are only mathematical objects that cannot be "seen." For example, it would be impossible to see a mathematically defined point, as it occupies no tangible space, but merely is assigned a location in an idealized multidimensional space ([https://en.wikipedia.org/wiki/Point_\(geometry\)](https://en.wikipedia.org/wiki/Point_(geometry))). The same is true of any of the ordinary dimensions of length, height, and width. What we can see are real world objects, with spatial dimensions—but only if they persist in time for sufficient duration to affect retinal sensation.

However, even when seeing real world physical objects persisting in time, we do not really "see" such, in the sense that a camera senses reflected energy from any object and fairly directly transduces the acquired energy into some data set or image in a film or viewing screen. The energies collected by the retina are complexly woven by cortical processing, aided by long term memory elicited by "similarities" recognized consciously or subconsciously for the object of vision. Our perception is a construction, and as too often revealed by witnesses at trial, is subject to substantial error (https://en.wikipedia.org/wiki/Eyewitness_testimony) that goes beyond mere problems of memory retrieval. *Human perception does not create any veridical copy of any viewed object, but instead relies on a*

mental representation—but we do not yet understand how that representation is fully constructed and then perceived in consciousness. The conclusion here is that perception of extended spatial dimensions is no more substantial in quality than the perception of persistence and change. Spatial extensiveness is an abstract concept as much as time is fundamentally an abstract concept.

Tangible 3D objects require temporal existence, but not quantum particles

However, it may yet be argued that, while the ideal mathematical constructs for 3D space may be intangible, and idealized space is likewise intangible, physical objects in space do manifest the three dimensions, and spatial objects are observable. While we do not "see" the spatial dimensions as such, we see objects from which we can usefully impose a 3D coordinate system. That is true enough, but it also follows that any such objects, and their tangible frame works or environment, must also persist in time, i.e., without temporal existence objects do not exist. Thus, time, as represented by observed persistence (including change), must persist for any physical 3D object. In other words, without time, at least as long as the Plank time constant, objects do not exist, so time is a required companion of spatiality. We cannot properly think about real objects without also including time, or potential real objects would not last long enough to observe, much less behave according to any laws of classical physics.

It might be argued that real world objects are not simply a constructed illusion of the brain's visual perception, because we can also include correlated tactile perception of objects, we feel them. However, it is just as true for tactile perception that it must also persist in time, so persistence is also required for tactile perception. Without persistence in time, there is no perception of objects in space possible in our material world.

In the realm of quantum phenomena, however, persistence in time is not required for entities to "exist," as elementary particles routinely "disappear" into the quantum flux (https://en.wikipedia.org/wiki/Quantum_fluctuation), while quantum entities also pop out of the space vacuum into existence. So, there is a difference for quantum phenomena and the macro level matter we commonly experience regarding persistence.

A conjecture about material space-time and consciousness

Ordinary space-time, as experienced in the material world with time moving in a direction from past to future, is well signified by entropy in the second law of thermodynamics

([https://en.wikipedia.org/wiki/Entropy_\(arrow_of_time\)](https://en.wikipedia.org/wiki/Entropy_(arrow_of_time))), and it includes an assumption of regular change, or progression automatically operating as a universal law. The real world we experience is subject to ongoing change. In contrast with the material world, reporting from individuals experiencing the OBE is that there is no sense of time running, that change is in no way automatic, and that, while time does exist, it corresponds to different locations in a true 4D space where the past, present and future all exist concurrently and are accessible instantly by thought. During the OBE, individuals also report that they have "bodies" that glow, as if made of light, and that all other entities likewise glow; if the realm of consciousness is populated by photons, then time does not run as is held by Special Relativity.

The ability to think in the realm of consciousness with instant results, and to instantly access different locations along a time dimension, is reminiscent of quantum entanglement in which the collapse of the Schrodinger wave function for any particle is somehow instantly communicated to a partnered particle --regardless of their separation distance (Einstein's complaint of spooky action at a distance). Thus, quantum entanglement shares its instant mode of operation with descriptions of how consciousness operates during the OBE when mind is separated from the material brain.

Furthermore, the popping into material existence of quantum entities from the vacuum of space implies that, if such particles are coming from somewhere that is unseen, it may be from the field of consciousness as their home, with the ordinary material world existing as a subset of a higher order multidimensional space (a claim made by some reports from the Near Death Experience and from seers across the ages).

Conclusion

Primitive concepts, initially defined unto themselves, include "location" in "space" and extensibility in space. Extensibility includes the four dimensions we refer to as space-time. We have culturally regarded spatial extensibility to be directly observable in real world objects, but not time, with time considered a mysterious abstraction. The argument has been made here that the three dimensions of spatial extensibility, and space itself in which extension may be present either in mathematics or real world

physical objects, are abstract concepts equivalent in their intangible character with "time" as an abstraction. However, Einstein's Theory of Special Relativity in fact links the primitive concepts of space and time together as interdependent concepts. "*Time and space cannot be defined separately from each other. Rather space and time are interwoven into a single continuum known as spacetime.*" (https://en.wikipedia.org/wiki/Special_relativity).

Human consciousness is required to comprehend the abstract ideas of space-time, and human conscious perception is required to conduct space-time observation and measurement for real world environments. While ordinary visual perception is not itself culturally regarded as mysterious for ordinary everyday living, or even regarded as strange by those accepting their NDE with its associated out of body experience, consciousness and conscious perception remain true mysteries for material science.

Chapter 4. Analysis of the Differential Perception of Time Progression in the 2nd and 3rd Domains

One of the remarkable features of the Out of Body Experiences (OBE) associated with the NDE, or with Spiritually Transformative Experiences, is the cessation of time. From our ordinary experience, we just know that time runs—how could time possibly not run? We know with certainty that there was a past, contained in our memory, and we are thus sure there must be a future that we will encounter as time runs. The purpose of this chapter is to analyze and explain why we perceive time to be running in our ordinary, material, life, but when in spirit form, we no longer experience time running.

In the Universal Consciousness chapter, three domains were delineated as: 1. God's consciousness before creating the world of light; 2. The world of light, Heaven; and 3. The material domain in which Earth life is experienced. During the NDE with the observer experiencing Domain 2, it is universally reported that time did not progress as experienced in the material 3rd Domain. The Universal Consciousness theory proposed that Domain 2 is connected to Domain 3 to explain how communication for entangled quantum particles can be instantaneous regardless of the separation distance of the particles. This chapter analyzes how perception of time progression occurs in the 3rd Domain, but does not occur in the 2nd Domain to which the 3rd Domain is connected.

Why does time progress in the 3rd Domain? What might push it along, and how? Factually, time does not progress, although our minds create such a perception of time running for good reasons. In the 3rd Domain, just as in the 2nd Domain, there is a perception of the instant NOW. However, the material brain registers an ongoing memory of localized instants (and in isolation from the totality of existence), corresponding to locally perceived ongoing activity in the material world, and by recognizing the fact of such new memories being compiled, logically organizes a stream of a past instances in which William James famously termed a "stream of consciousness." The idea of a future results from a simple logical expectation from all of experience in life that there will be additional

memories to be formed from a hypothetical future). In the material 3rd Domain, because all activity is perceived in isolation from the totality of existence (a concept that is meaningless in ordinary life, but brought on by the NDE), such isolated activity is perceived as new experience that correspondingly generates new memory, and thus the feeling of time running from the immediate past, to the present now, to an expected future.

But why doesn't consciousness existing in the 2nd Domain of light also perceive time progression as it does when attached to a brain located in the material 3rd Domain? The NDE reports not only state that time does not run in the 2nd Domain, but that all of eternity, the totality of the world of universal consciousness, is directly perceptible, so that all events are concurrently perceptible—what is experienced is an eternal NOW for all of existence. To understand how all of existence, with all of events, may be “seen” at once, consider a scheme in which an observer is positioned on a high observation post placed on a specific, if perfectly arbitrary, highway location (equivalent to a NOW instant) with the ability to perceive both sides of the highway, with one direction corresponding to a formed past, and the other to a future yet to be finally formed.

The location of the observation post was said above to be perfectly arbitrary, because if all of eternity simply exists, with no clock running, then any particular event selected as NOW has no fundamentally special position. A mathematician (Yuri I Manin, https://todayinsci.com/M/Manin_Yuri/ManinYuri-Quotations.htm) discussing the implications of Special Relativity Theory, explained well why there is no special isolated Now instant, and how beings would experience existence in a world of light (what Chapter 2. defined as the 2nd Domain):

“What binds us to space-time is our rest mass, which prevents us from flying at the speed of light, when time stops and space loses meaning. In a world of light there are neither points nor moments of time; beings woven from light would live “nowhere” and “nowhen”; only poetry and mathematics are capable of speaking meaningfully about such things. “

Perception in the 3rd Domain is constrained by the body's limitations in sensing only its immediate physical environment of Now. Our brain, working from its constrained immediate environment, cannot sense but a fraction of what exists. Furthermore, the brain's knowledge is limited to its contained memory, and thus constrained by its "past" experience, while the future is only imagined as a possibility.

By contrast, consciousness functioning in the 2nd Domain is reported to have instantaneous access to all knowledge, and that knowledge is not by external perception, but through direct participation in the Universal Consciousness that contains all knowledge. The individual's consciousness is often described after the NDE by analogy as a drop of water (the individual's consciousness) placed into the ocean that is God's own consciousness. Thus, in the 2nd Domain, all of eternity simply exists as a steady state that contains what is artificially segregated by brain operating in the 3rd Domain into a past, present now, and future potential. In a now famous letter to the family of a dear, departed friend, Einstein wrote:

"Now he has departed from this strange world a little ahead of me. That means nothing. People like us, who believe in physics, know that the distinction between past, present and future is only a stubbornly persistent illusion."

It is seemingly contradictory to claim that time does not run, as did Einstein referring to space-time as the architectural model of reality in the above quote, but also state here that the world, reality, is ever changing. The instant note here hoped to explain this apparent conflict as rooted in our limited perception of reality, but it is so difficult for us, trapped by our limited mortal perception, to understand how time does not run when we "see" activity and a wider world in constant flux.

Consider that if there were no change (as appears to be the case in the eternalized space-time model of Einstein), then the world would be frozen, dead, completely uninteresting, and not worthy of existing. It appears from our study of quantum mechanics that change is, in fact, a predominant character of the reality created by God for the 3rd Domain.

We will all find out the truth later, but by then it will not matter.

Chapter 5. The Nature of “Now’ According to Brain Neurology, Physics Theory, and Consciousness Research.

Conceptualizing time with clarity to achieve intra and interdisciplinary agreement has proven to be most difficult. How to conceptualize the past and future times is especially difficult, so this analysis focuses on the present time, or “now,” for achieving possible simplification.

A physics based conceptualization of “now” may assume it to be a mathematical point instant lacking duration, or apply the Planck time constant which is the time required for light to travel, in a vacuum, a distance of 1 Planck length, which is an unimaginably brief instant.

For human perceptual experience keyed to brain processes, “now” is fleeting, with boundaries set by limits for neural processing speeds. So, a perceptual “now” is not available as a mathematically defined instant or point in a time line, but for some none zero region of time to enable processing of impinging stimuli to be transformed into perception, if fleeting in nature. Research, “...results provide evidence that a cortical area can perform its computation necessary for the recognition of a visual stimulus in 20-30 ms, and provide a fundamental constraint which must be accounted for in any theory of cortical computation.” (Processing Speed in the Cerebral Cortex and the Neurophysiology of Visual Masking Edmund T. Rolls, Martin J. Tovee Published 22 July 1994. DOI: 10.1098/rspb.1994.0087 }(<http://rspb.royalsocietypublishing.org/content/257/1348/9.short>).

So, it’s fair to conclude that light projected on the retina takes measurable time for processing into visual perception on the order of less than a second. Human perception of now is thus in the range of a few seconds, and with persistence in short term memory, may be available longer; short term memory may also possibly extend a subjective perception of an instant event on the order of minutes. When philosophers or others work to conceptualize the subjective experience of now, they ought to avoid the

mathematical concept of now as a mere instant, as it has some tangible duration.

The human subjective experience of time has also been empirically researched (https://en.wikipedia.org/wiki/Time_perception). There are known brain systems that are involved in perception of time:

“ Although the perception of time is not associated with a specific sensory system, psychologists and neuroscientists suggest that humans do have a system governing the perception of time. It is composed of a highly distributed system involving the cerebral cortex, cerebellum and basal ganglia. One particular component, the suprachiasmatic nucleus, is responsible for the circadian (or daily) rhythm, while other cell clusters appear to be capable of shorter-range (ultradian) timekeeping.”

Induced fear has been found to increase the subjective experience of time, and is thought to reflect an evolutionary development for mental processing to deal with immediate threats (see above wiki reference). Meditative states may possibly affect perception of time, and thus the perception of “now.”

For human consciousness, its “now” naturally extends from the now of visual perception to an indeterminate duration. Furthermore, for consciousness of time reported during the Out of Body Experience, there is no unique period of “now” at all, as time ceases to “flow,” and consciousness is reported capable of looking backwards to the past, or forward to the future during its eternal “now.”

Thus, upon analysis, “now” offers distinctly different options for definition:

1. Mathematics: “now” has no duration, but is a point, and that point may or may not be located on a hypothetical line representing time.
2. Quantum Physics: “now” has a quantum duration envelope of the Planck length, absolutely infinitesimal, but extensible. Werner Heisenberg’s text, provides an in depth discussion for the Planck length (*The Principles of the Quantum Theory*).
3. Brain neurology: Visual perceptual for “now” is less than a second to achieve, but may be extended by short term memory for greater duration
4. Subjective experience or perception of time: Empirical research has found that time perception may be varied by context, such as by

inducement of fear. It is possible that meditation may produce an extended “now.”

5. Consciousness: a subjective now may be of an extended duration.
6. Consciousness during an OBE: Reports from individuals having an OBE during a traumatic experience (typically associated with the Near Death Experience) reliably report that time does not exist, so they experience a permanent feeling of “now.”
7. Religious perspective: Consistent with the analysis here that time in the 3rd Domain is a comparatively short or temporary affair of living in the “now” time frame, whereas the soul in the 2nd Domain, Heaven, exists for an unbounded eternity, an eminent Puritan scholar and minister, Stephen Charnock, during the 1600s stated:

“There is no proportion between time and eternity, we must dart our thoughts beyond all of these, for years and days measure only the duration of created things, and of those that are only material and corporeal, subject to the motions of the heavens, which makes days and years.” [Quoted by Charles Spurgeon, an influential Baptist preacher, “the prince of preachers,” from the 1800s, in *The Treasury of David (3 Volumes Set)*, Peabody Mass: Hendrickson Publishing, 2008, Vol II, page 71].

Explicit selection of a specific definition of “now” from the alternative meanings would naturally follow from context and purpose to clarify its usage.

Chapter 6. An Absolute Limitation to the Rational Analysis of Experience, Consciousness, and World Origin: the Principle of Interior Unknowability

“For the truth of the conclusions of physical science, observation is the supreme Court of Appeal. It does not follow that every item which we confidently accept as physical knowledge has actually been certified by the Court; our confidence is that it would be certified by the Court if it were submitted. But it does follow that every item of physical knowledge is of a form which might be submitted to the Court. It must be such that we can specify (although it may be impracticable to carry out) an observational procedure which would decide whether it is true or not. Clearly a statement cannot be tested by observation unless it is an assertion about the results of observation. Every item of physical knowledge must therefore be an assertion of what has been or would be the result of carrying out a specified observational procedure.”

Sir Arthur Eddington, *The Philosophy of Physical Science*

*The existence of existence reflects His ongoing persistence,
But when and where did He become the entire Kingdom
Mystery of mysteries for there is no way ever to know
Except by what He willingly tells or shows-- If even He knows*

*But how could He not see His own becoming
Because he once told me so,
That "Even I don't know"*

Jack Hiller, *Space, Time, and Consciousness*

Brief: An analysis is presented which demonstrates that definitive, complete knowledge about the origin of any system defined as classical or quantum, to include the entire world as a system, cannot in principle be achieved from any observation made interior to the defined system, or by inference from an interior observation. Definite knowledge about a system's origin requires an observational framework such that a "privileged observer" would be located external to the system. Regarding the world we inhabit, because we cannot ever observe it from its exterior, we cannot ever know or infer how it came into existence. Thus: ***Any question about the nature of the world's origin is not in principle one that may be addressed, much less answered, by observers constrained to locations within their world.*** By analogy, fishes born and living in a fish tank cannot possibly observe anything about the manufacturing of their tank's glass or the collection of the food and water placed into their tank. Being always immersed in our material world, we likewise are incapable of observing the nature of its construction as might be seen from a perspective external to its existence. This metaphysic's hard rule of unknowability for an observation framework confined within any system (classical or quantum) is termed herein **The Principle of Interior Unknowability (PIU)**. Note however, that this Principle is as yet only postulated, and not formally proven, as was accomplished by Gödel for his Incompleteness Theorems. In the words of my friend Neil Siegel, *"I would make a "softer" characterization of a postulated PIU range of application: Gödel, in proving his Incompleteness Theorems, had the advantage of working within the artificial, rigorous system of mathematics. The real world is more complicated, and (so far, at least) not subject to such rigorous analysis at the system level. The PIU, in effect, only postulates (does not prove) a generalization of Gödel's proof. As I have noted before, our increasingly-capable observational tools have increased the zone for*

which we can make observations, and therefore, over which we can make measurement-based suppositions, and in some sense, these increase the boundary of the knowable. The PIU posits that there is a limit to such knowability. I agree, only this is postulated, not proven.”

Rene Descartes famously declared his own reality by acknowledging that if he found himself to be thinking, then he must surely exist, whatever the form of existence might be (https://en.wikipedia.org/wiki/Cogito,_ergo_sum). As a technical philosophical matter, the “I” that thinks is vague, and the nature of the thought is ambiguous, because the hidden, subjective nature of thought is not available for direct, objective, scientific scrutiny. However, while the subject and action of Descartes’ proposition, as a first principle of philosophy, are nebulous, the action of thinking does point to an existence, whatever its true nature. This note starts with Descartes’ line of reasoning that we may by rational analysis contemplate a reality in which we exist, but places a severe limitation on how well we can learn how this reality originated. In fact, the argument is made that we can truly know nothing definite about the nature of Creation from reasoning.

We start our analysis from a wonder about what the reality of existence is truly about by wondering about how any reality may exist. There are two main lines of philosophical thought about the origin of our world, the world that we perceive and think about: Creation by God, and random materialism, as held by atheists and agnostics.

The atheist position (<https://en.wikipedia.org/wiki/Atheism>) is that there exists no supernatural God or deities, so that the world is an unguided machine that randomly acts; this perspective is supported by Heisenberg’s Uncertainty Principle in which quantum mechanics recognizes that at the sub atomic level, precise measurement of fundamental qualities is impossible, so what happens has a random basis. The origin of the material world is of no special concern. The world may have always existed, or it may have originated in some Big Bang from an indescribable singularity, and it may even pass thru cycles of birth, death and rebirth. No matter how it came to be, it just is.

The religious perspective is that a supernatural being, God, created the world. The philosophical issue about that concerns the origin of God, as Creator. As a logical matter, either God always existed (a strange thought for mortals who experience causation in which a given existence changes by an act to a new status of existence), or God somehow came into being from nothingness, a stranger yet explanation.

A scientific perspective is well represented by physicist Heinz Pagels in his excellent book, *Perfect Symmetry*. In his chapter, *Before Inflation: the Origin of the Universe* (pp 353-368), he asserts:

“...Certainly the very existence of the entire universe and the Big Bang is evidence that there was some kind of origin. There are other features of our universe that may provide information about its origin, though we may not at first think of them as clues. For example, the inflationary picture requires that before inflation the universe was immensely hot and very dense—requirements that should logically follow from a theory of the very origin. Yet another example of a clue is the most dramatic feature of the universe to have survived the inflation: the three-plus-one dimensionality of space-time. A further feature of the preinflationary universe is that it exhibits a high degree of symmetry and this also should be explained by any theory of the origin.

As we embark on the attempt to understand the very origin of the universe, it is worth reminding ourselves of “Einstein’s postulational method.” This method consists of intuitively guessing a physical postulate (which cannot be directly tested), then logically deducing its consequences and subsequently testing these results against experience. If the tests fail, the assumed postulate must also then be rejected.” Pages 354-355.

This paper argues that such a reasonably formed program for empirical research about a hypothesized origin would be futile, that discovery of an origin, if there were an objectively conceivable origin, is precisely excluded by applying the recommended “postulation method.”

The meaning for any question about the nature of world Creation or even any defined localized system supposes an external observer frame of reference for its answer

The argument made by this note is that whether one accepts God as the Creator of the world, or holds that the world is a non-rational machine, we cannot possibly reason about the true nature of existence—we cannot possibly know the truth of how our world exists, regardless of whether it is static (always having existed) or transitional, from an inexplicable origin, *because our ordinary perception and knowledge can only be acquired within this world that we inhabit, but the question about its origin has an external basis for its answer. To answer the question about Creation, we would have to be outside of it to perceive “where it came from” or “how it was made.”* **Thus, the question about the nature of the world’s origin is not in principle one that may be addressed, much less answered.** By analogy, fishes born and living in a fish tank cannot possibly know anything about the origin of the glass container or the collection of the food and water placed into their tank. Being always immersed in our material world, we likewise are incapable of observing the nature of its construction as might be seen from a perspective external to its existence. Alternative to a finite “fish bowl” model of the universe, if we posit that the universe was always infinite, then no observer could be placed external to it, so once again no observation of an origin would be possible.

In an ingenious experiment on quantum superposition which demonstrated that separate observers may make differing, contrary, observations of a given superposition state (being collapsed or not), (Experimental rejection of observer-independence in the quantum world, Massimiliano Proietti, Alexander Pickston, Francesco Graffitti, Peter Barrow, Dmytro Kundys, Cyril Branciard, Martin Ringbauer, Alessandro Fedrizzi, Feb 13, 2019, <https://arxiv.org/pdf/1902.05080.pdf>), the authors posed a possible solution as follows: *“one way to accommodate our result is by proclaiming that “facts of the world” can only be established by a privileged observer—e.g., one that would have access to the “global wave function” in the many worlds interpretation...”* Thus, their possible solution for avoiding

observational inconsistency within a system (here a mini-world system of separated labs examining superposition states) was to seek a "privileged observer" located external to the mini-system of separate laboratories.

We may generalize the concept that requires elevation of observers to a frame external to the system or world to be observed as a hard rule for achieving self-consistent and valid system knowledge. This hard rule of unknowability for observers limited to observations being made only within the system to be known is termed **The Principle of Interior Unknowability (PIU)**.

Consider that we cannot humanly, reasonably, imagine how something could originate from nothing; even if we hypothesize a world consisting of equal amounts of opposite energies, i.e., positive and negative energies summing to zero, there yet needs to be a catalyst or creator, and that creative power would be something. So, we cannot in principle fathom how God or any mechanical universe could come into existence from nothing. This line of reasoning is dead in its formation.

Let's alternatively consider that God or the mechanical universe always existed, given that the form of God or the material universe may not be static. Well, how can anything have "always" existed, granted the form of the existence may not be static. In principle, we cannot imagine a situation in which the world always was there, always existed. We can state the proposition that the world always existed, but it defies human understanding.

Science and mathematics are not helping either, as both have admitted to irreducible uncertainties of knowledge, as well as the impossibility in principle of predicting the future based on past knowledge. As alluded to above, quantum mechanics had demonstrated in the lab a difficulty in pinning down with precision the measurement of momentum and position for the electron, because as the measurement apparatus was adjusted to measure one variable better, measurement of the other lost precision; Heisenberg ultimately realized that the phenomenon of uncertainty was not merely a fault of lab equipment, but was inherent in the nature of subatomic

existence. The Schrodinger wave equation representation of quantum phenomena (Heisenberg had initially used a form of matrix algebra that he invented) formalized the uncertainty as intrinsic to quantum phenomena. In the study of cosmology, consensus is that approximately 95% of the matter and energy in our universe is currently not directly observable, thus termed “dark,” so that we observe less than 5% of existence.

The eminent cosmologist, prof Joseph Silk, while recognizing that we cannot even imagine what data might exist to be used to explain creation before the singularity formed and the Big Bang occurred (with the Big Bang being the best theory available now for understanding the nature of the universe), he yet maintains hope that the development of superstring theory, quantum gravity, or some future theory may lead to knowledge about how the world was created:

*“Such developments [referring to superstring and quantum gravity theories] provided for substantial grounds for hope that we may eventually be able to understand the era of creation near the singularity, where similar physical conditions are attained. For now, however, we must reluctantly admit that the big bang theory is not complete: it lacks a beginning [referring to earlier discussion that we do not know how the singularity was formed, and why it erupted in the Big Bang], and we cannot confidently predict its ending. If a better theory of the universe is forthcoming, there seems little doubt that it will incorporate the big bang theory as an appropriate description of the observable universe. **Perhaps a new theory will encompass the big bang in the same way that Einstein’s theory of gravitation encompassed and generalized Newtonian gravitation. Although the ultimate theory of the universe is still beyond our vision, we can feel fairly confident that we have at least seen its form emerging.**”* [My bolding] page 411. Unfortunately, if the PIU were true, we cannot ever acquire any such “vision.”

In mathematics, Kurt Godel (https://en.wikipedia.org/wiki/Kurt_Gödel, or see Godel’s Proof, Nagel, Ernest, and Newman, James) proved that for non-trivial logico-mathematical systems (such as arithmetic), there may be

theorems that cannot be proven. Within seemingly internally self-consistent coding systems (which encompass today's massive computer programs), the Turing halting problem applies (the problem being equivalent to Godel's first Incompleteness Theorem), so there may be lurking inconsistencies that may only be found by trial and error runs. Godel's first theorem of incompleteness effectively implemented Bertrand Russell's realization that the historic Liar's paradox is based on self-reference to create the paradox, thus enabling Godel (and Alfred Tarski) to define an Undefinability Theorem that bars the use of self referencing in a system to analyze its validity. The problem of self-referencing recognized by Godel may be an analogue to the impossibility of completely understanding the nature of the material world by inspecting it from within itself, much less discovering by observation how our material world was created. The PIU postulates that observations made from within the material world cannot in principle ever discover how the world was created with any certainty.

Any attempt to understand the nature of consciousness also faces the problem of a lack of any external perceptual frame of reference

The impossibility of fully understanding the nature of the consciousness we have, whether or not created by God, may likewise be limited by our immersion in a field of consciousness. We may know something about it by experiencing it, but we are in principle unable to stand back and observe how it functions in the way that the science of physics requires for study of objects and phenomena. Just like the fishes in a fish tank, we are unable to objectively study consciousness because we are immersed within it. Thus, the Principle of Interior Unknowability may apply to objective, disciplined attempts to understand the nature of consciousness.

- Consciousness theory development faces a second insurmountable hurdle imposed by any requirement to apply Popper's principle of falsifiability (https://en.wikipedia.org/wiki/Karl_Popper); a proper scientific hypothesis must be capable of an empirical demonstration or observation of its falsity. However, as was explained in Chapter 2. about Universal Consciousness, based on the numerous reports from the OBE, everything was found to exhibit consciousness. These reports are consistent with theorizing that

everything made by God is made from God (after all, God could not go shopping anywhere to acquire new material such as at any cosmic Home Depot or Lowes), and God is essentially consciousness. Consciousness would not only imbue the entities experienced in the 2nd Domain, but also everything in the 3rd Domain. Yes, even dumb rocks and slippery droplets of water would be imbued with consciousness, and, as explained by the phenomenon of quantum entanglement, the material in the 3rd Domain is functionally connected to the consciousness field of the 2nd Domain. Thus, all materiality is imbued with consciousness to include photons, electrons, atoms, molecules, biological cells and their constituent parts, assemblages of cells in tissues and organs, symbiotic organisms, and holobionts (a fascinating article on the human gut microbiome for health and disease is at: [Humans as holobionts: implications for prevention and therapy](#) Maarten van de Gucht, Hervé M. Blottière, and Joël Doré *.Microbiome*2018**6**:81. [<https://microbiomejournal.biomedcentral.com/articles/10.1186/s40168-018-0466-8>]). All of these constituent elements of any complex organism could aggregate their individual consciousness, with perhaps the functioning of the organism benefiting from their shared consciousness. And there is the rub with falsifiability —there would be no way to create anything without consciousness to test for any differences that could falsify this hypothesis.

Likewise, it is hypothesized from the OBE reports of a unified consciousness departing its connection with the body during trauma, that the soul is an entity apart from the aggregated consciousness of the body's cells and organs. Consider that there are many OBE reports of the body behaving (moving after severe trauma) as if it still had a form of life after the soul detached during the OBE. However, such theorizing must be done despite its failure to adhere to the falsifiability principle.

Conclusion

We have the predicament that both of the two available explanations for the reality of existence are in principle not understandable to the human mind, whatever the nature of “mind” or its consciousness may be. To restate this dilemma, we cannot rationally understand or explain how either explanation for existence, i.e., it always existed or, instead, it sprang from nothingness

(e.g., God the Creator always existed, or a non rational mechanistic universe always existed, or either sprang from nothingness), can be true.

Given that we cannot view the creation of existence from any externally objective reference frame, so that the Principle of Internal Unknowability applies, there is nothing certain about existence that we can conclude by reasoning about what we humanly perceive or what we scientifically observe and measure from the interior of creation. We are reduced to acknowledging that what we experience, perceive, and believe we know about the material world may only be the mind's "imaginary" construction of an apparent reality.

As Human, we are at a loss to be able to understand the nature of the reality we experience with any firm confidence. However, there is much truly valuable to ordinary life and to advancing the sciences that we can accomplish. Neil Siegel expressed well such optimism while commenting on the PIU: *"I would stress that the unknowability postulated by the PIU is only at the boundaries of existence; I strongly believe that we can use reasoning to analyze and guide most of life's situations, and can do so to great advantage. That is, I do not interpret the PIU as a pessimistic statement at all, but just as one that establishes a zone of reasoning, within which we can realize our full potential as humans, through the use of reasoning. Humans are the animals that think, rather than depend primarily upon instinct."*

In religion, there is a reliance on faith. In science, there is the hope for certainty about empirical knowledge, while recognizing that future research may revise how we model and understand the world, as so well demonstrated by Einstein's advance in modeling gravity through General Relativity over Newton's modeling. Perhaps the one remaining source of knowledge we may have that skirts the uncertainties natural to science and religion comes from the Near Death Experience in which God is said directly to share all of knowledge about existence.

Chapter 7. Review of Carlo Rovelli's book, *The Order of Time*

Rovelli's book' (Rovelli, C *The Order of Time*. New York: Riverhead Books; 2018) presents a central message concerning the nature of time. Time is defined from the perspective of loop quantum gravity in which time is not itself included as an independent variable in its modeling of physical phenomena. Rovelli justifies exclusion of a deep role for time by explaining that time is not any fundamental variable in physics, except for the 2nd law of dynamics which does include it as a useful fiction, much as human psychology makes use of time as an ordering construct for the past, present, and future—but ultimately it's still just an illusion.

Universal Time is Newton's fictional construct for modeling movement

Rovelli explains well why there cannot be any universal time according to Relativity theory. In Special Relativity, the clock at any particular location, a location at the quantum level preferred, is affected by its speed relative to any other location selected as a reference; the faster our location moves, the slower its clock runs. Since there are an infinity of particular locations and references, each moving at different speeds for any number of reasons, and no particular location is special, it makes no sense to define a universal time as Newton had done. In General Relativity, the particular location we may select of interest exists in a gravitational field, and the stronger that field is, the slower is its clock, so, again we must conclude that the concept of a universal time fails.

However, Rovelli does not consider the case where a location is traveling at light speed, and in fact a case in which all possible locations possess light speed. According to Relativity theory, all such locations have their clocks turned off, and so all such locations have a true universal time, which is zero. In the Tripartite Domain Theory, making use of NDE/OBE reporting, all entities in the 2nd Domain are made of light, and time is not experienced as running, with different times in the 3rd Material Domain represented in the 2nd Light Domain as set at different locations in a four dimensional space. In the 2nd Domain, no particular location is special, so

there is no past, present and future, just different locations associated with different events.

It is interesting to note that Rovelli never mentions quantum entanglement, and thus never considers the implications of instantaneous communication across any distance, a communication that takes place with no time. One might think that he would employ quantum entanglement to reinforce his idea of formulating loop quantum gravity without any variable for time, since it is not employed as a variable in the Schrodinger wave equation. Perhaps quantum entanglement was avoided, because it makes real the space between entangled particles, whereas space, as well as time, are conceptualized by Rovelli as mere illusions of the human mind.

There are no real entities, only processes based on the quantum flux

Rovelli also argues that, from a quantum perspective, there are no real things because of the incessant quantum flux, so we may only consider reality to be processes exhibiting events (page 155). In particular, human consciousness is characterized as an illusion lacking any objective referent, for, after all, it is not available for observation by objectively minded physicists (page 176).

The concept of self is merely the memory of our interactions with others who convey to us what we are like (page 177). Although he does refer to the Buddha's collection of human sources of pain, he never refers to the meditative process so well associated with Buddhism for calming and developing the mind (https://en.wikipedia.org/wiki/Buddhist_meditation), presumably because Rovelli argues there is no entity that may be properly labeled as mind or consciousness.

What his argument lacks is any recognition that, despite the uncertainty of the random quantum flux, real entities emerge (as proposed by emergentism <https://plato.stanford.edu/entries/properties-emergent/>). Thus for Rovelli, entities have no real existence, only their corresponding quantum processes. This may be seen as an ultra-sophisticated rejection of what is common place reality. So, for example, Rovelli would have to consider as merely hypothetical entities such as the Washington Monument

and the Egyptian pyramids, because they are at foundation tenuously hanging on to an unstable quantum flux.

The Human is a random evolution of random quantum processes following the law of entropy

Perhaps the central irony in Rovelli's analysis of time, space, and reality is his conclusion that humans are merely the result of a random flux of quantum processes that have evolved in accord with the law of entropy (page 209). Nothing in Rovelli's quantum world has any particular significance, granted we may experience pleasure along with pain. All just random quantum flux.

To destroy the idea that there is any real human mind or consciousness, he plays back the words of novelists and poets as true authorities on the human mind (it is at most only neurology in a brain—oops, a brain process), and even alludes to the psychedelic experience induced by mushrooms, along with the delusional nature of schizophrenia (page 211). Missing is any serious research contesting the absurd conclusion that the complex DNA molecule and the cells it manages with RNA could be statistical artifacts of entropy (see *The Complexity of the Cell*, http://www.esalq.usp.br/lepse/imgs/conteudo_thumb/The-Complexity-of-the-Cell.pdf). Missing is any research that demonstrates that mind or consciousness functions even when the brain has ceased to function (see the presentation by prof Greyson, <https://www.youtube.com/watch?v=2aWM95RuMqU>).

Overall then, the book presents a narrow perspective justified by the author's specialization in physics, although written in colorful style.

Chapter 8. A Postulate Set Governing Existential Knowledge

A postulate denying any scientific ability to acquire conclusive knowledge about the creation of the universe, its possible origin, was defined as the Principle of Interior Unknowability (PIU). There are three other postulates required to complete a set governing possible existential knowledge (EK). Given that the PIU addresses insurmountable constraints on acquiring knowledge of the circumstance of an origin, there is naturally required a postulate defining the nature of the “real existence” about which knowledge is delimited, as opposed to an “imaginary existence.” Furthermore, there is required a postulate governing what “sentient knowledge” means, its relationships with existence, and its boundary conditions. Finally, the interconnectedness between the 3rd material domain and 2nd domain of consciousness provides an essential mechanism for communication between the brain and mind, as had been proposed by Descartes in his philosophy of mind-body dualism.

Postulate Governing Existence (PGE)

Ordinarily, reference to the world in which we exist presumes against the solipsistic idea that the only thing that may be known to exist is the mind engaged in thinking, in accordance with the common sense experience of solid objects, and the scientific paradigm of materialism. According to the Encyclopaedia Britannica:

“Mechanical materialism is the theory that the world consists entirely of hard, massy material objects, which, though perhaps imperceptibly small, are otherwise like such things as stones. (A slight modification is to allow the void—or empty space—to exist also in its own right.) These objects interact in the sort of way that stones do: by impact and possibly also by gravitational attraction. The theory denies that immaterial or apparently immaterial things (such as minds) exist or else explains them away as being material things or motions of material things. “

An interesting feature of materialism, as defined above, is that it excludes immaterial concepts, such as mind or consciousness from having any useful reality, and intends that they be ignored or denigrated, for only solid entities may truly exist. By contrast, in chapter 2 on Universal Consciousness, it was argued that immaterial entities possessing consciousness exist, and exist within an immaterial field of consciousness termed the 2nd Domain. Therefore, the definition for “existence” used here specifically includes both material objects, previously explained to exist in the 3rd Domain, and consciousness assigned to the 2nd Domain as its eternal home. ***So, the Postulate Governing Existence (PGE) includes both material and immaterial existence, and, as had been argued in the Universal Consciousness chapter, the Domain of Consciousness is fundamental.***

Postulate Governing Knowledge (PGK)

As was illustrated by the conventional Britannica definition for materialism, the mind and its knowledge were excluded from having any official status for science —mere sticky illusions for a properly “thinking” scientific community--also laughable given that scientists think they communicate their discoveries to others by expecting they too have minds in which knowledge exists and may benefit from learning new “information.” It is proposed that “sentience” must be acknowledged as a fundamental human capability (really for higher order animals as well) for any possible theory about the nature or the world and its origin. As was also explained in the chapter on Universal Consciousness, ***all individual entities possess consciousness, and “knowledge” is information incorporated into their consciousness.*** The prominent physicist/mathematician Eugene Wigner wrote about the fundamental role of consciousness, " *The laws of quantum mechanics itself may not be formulated ...without recourse to the concept of consciousness*" (essay by Eugene Wigner, 'The Probability of the Existence of a Self-Reproducing Unit', contributed in M. Polanyi, *The Logic of Personal Knowledge: Essays Presented to Michael Polanyi on his Seventieth Birthday, 11th March 1961 (1961), 232*), and, "*I believe that the present laws of physics are at least incomplete without a translation into terms of mental phenomena*" **Physics and the**

Explanation of Life', *Foundations of Physics* 1970, I, 35-45. Erwin Schrodinger, who wrote the fundamental wave equation for quantum mechanical behavior, was adamant about the role of consciousness in physics:

“Although I think that life may be the result of an accident, I do not think that of consciousness. Consciousness cannot be accounted for in physical terms. For consciousness is absolutely fundamental. It cannot be accounted for in terms of anything else. Quoted in *The Observer* (11 January 1931); also in *Psychic Research* (1931), Vol. 25, p. 91.

Postulate for Mind-Body Dualism (PMBD)

Rene Descartes recognized that the ability to think, and what was thought about were radically different in kind from the body, from the body's sensory mechanism worked by the brain to produce perception (<https://en.wikipedia.org/wiki/Mind-body-dualism>). However, he had a problem with how the material body and mind, being different in nature could communicate. For his own purposes, he found an adequate explanation to theorize that somehow the communication was enabled by a special function of the pineal gland. No scientific evidence has ever been produced to validate the pineal gland as providing the mechanism for mind brain dualism, Nevertheless, substantial evidence for such communication has been provided in chapters 1 and 2 that furnish two legs for defining a PMBD..

Continuity of Consciousness as the OBE Occurs at the Instant of Trauma

One of the remarkable features of the NDE reported in chapter 1 was the consistent *surprise* by those who suffered a trauma in which their consciousness suddenly separated from their body, because even though they were no longer seeing through their eyes *their consciousness had not been interrupted*. Thus, we can infer that the body routinely communicates with mind as an imperceptible normal function.

The mechanism of instantaneous communication for quantum entanglement

In chapter 2, the phenomenon of quantum entanglement was discussed as having been well validated in numerous empirical tests. Einstein in the EPR paper had insisted that the prediction of instantaneous communication by Schrodinger's wave equation implied that the equation was wrong or incomplete. Einstein argued that Special Relativity's prediction that the speed of light provided an upper bound for any communication in the universe, so the wave equation had to be wrong. Furthermore, the equation failed to offer any possible mechanism that could enable instantaneous communication. Because the NDE reports consistently state that movement in the 2nd domain was instantaneous, with no time experienced between a thought and its execution, it was hypothesized that Einstein's spooky action at a distance would be explained if the communicating particles were embedded in the 2nd domain where instantaneous action was natural.. Thus, it was inferred that the domains of consciousness and materiality were connected to each other, as had been illustrated in the Venn diagram. Because ordinary sense-perception by our body is drastically limited to a narrow range of energies (for example, our retinas are sensitive to a small region of the electromagnetic spectrum), we simply do not normally perceive entities and activity in the 2nd Domain.

Given the evidence that mind and body do routinely communicate as demonstrated during the NDE and by quantum entanglement, ***it is then reasonable to define the Postulate for Mind-Body Dualism (PMBD).***

Existential Knowledge, EK is a function of (PIU, PGE, PGK, PMBD)

The following corollaries about existential knowledge may be derived from the EK set:

1. There are sentient minds, and their knowledge varies with experience in the 2nd and 3rd Domains.
2. Knowledge available to any mind tied to the 3rd Domain while functioning with normal everyday experience has limited awareness of the greater knowledge that is available while functioning in the 2nd

Domain. The nature of knowledge available from the 3rd Domain is inaccurate, perishable, and is only a representation of the pure knowledge available from and in the 2nd Domain.

3. Mind functioning in the 3rd Domain may gain enhanced access to the greater knowledge available in the 2nd Domain by having an OBE, and likely by meditative training.
4. The NDE/OBE typically results in a relaxation of the blockage to the greater knowledge available in the 3rd Domain. The OBE may also occur spontaneously without triggering from an NDE. Active effort at meditation may produce an OBE.
5. Meditative states may facilitate extra-sensory perceptual (ESP) skills, such as precognition and remote viewing, by accessing information available from the timeless field of consciousness forming the 2nd Domain. There is normally a "gate" between the mind attached to the brain and the mind's access to the 2nd Domain. The OBE entirely escapes this gate, whereas meditation opens it.

The OBE report below [with its corollary numbers set in brackets] illustrates well the sensibility of the existential knowledge postulates:

[While experiencing great pain from a gallbladder attack, she kept trying to escape with an OBE, and after four hours trying finally succeeded.] *"The very first thing that hit me was the noise. I could hear everyone at once who were talking, thinking, and praying. But I was able to understand each one of them, which I found amazing. I didn't have to single them out to know what they were talking or thinking about. I was still aware that I was in hospital. I could hear the nurse across the room talking to one of the patients at the same time as somebody talking on the phone. It was all happening at the same time but it wasn't confusing at all. [1, 2, 3 and 4] Then I was transported to another corridor in a different part of the hospital. I saw a couple walking there and conversing. I remember the man was wearing a yellow shirt.*

I don't recall a sudden shift after that. I just suddenly realized that I understood everything. It was a big 'aha' moment. I could understand physics, math, chemistry, and all the formulas that went with that

understanding. I realized that I didn't have any questions. I suddenly understood my purpose. I saw how everything together made a perfect sense. It's difficult to describe where I was because it was as if I was approaching the universe at a great speed. And at the same time, I was amazed at being able to understand absolutely everything. [3 and 4]

Then I got this amazing sense of unity. It felt like the whole universe was in me and I was in the universe. I could feel every person living in me and me living in each of them. Then I had this very strong awareness that I'm in God, God is in me, therefore I'm a part of God. I felt very excited, humbled and in euphoria.” [3 and 4]

(https://www.nderf.org/Experiences/1eva_m_ndelike.html)

The NDE research literature well establishes that discarnate consciousness may exist, as supported by findings from empirical NDE research checking on the accuracy of reports about perception made across substantial distances, and from commonly observed restoration of normal behavior just before death for hospital patients who had suffered for years from critical brain malfunction generated by Alzheimer’s disease. The community of skeptics about paranormal phenomena has published and given numerous lectures claiming there never was any good evidence produced, although my review of the body of this work found it reeked of a religion of skepticism in place of scientific rigor. By contrast, a professional statistician (prof Jessica Utts, U Cal Irvine) who conducted an extensive review of the available research reports on extra-sensory perception concluded in her own report as follows:

Utts’ CONCLUSIONS AND RECOMMENDATIONS

It is clear to this author that anomalous cognition is possible and has been demonstrated. This conclusion is not based on belief, but rather on commonly accepted scientific criteria. The phenomenon has been replicated in a number of forms across laboratories and cultures. The various experiments in which it has been observed have been different enough that if some subtle methodological problems can explain the results, then there would have to be a different explanation for each type of experiment, yet the impact would have to be similar across experiments

and laboratories. If fraud were responsible, similarly, it would require an equivalent amount of fraud on the part of a large number of experimenters or an even larger number of subjects.

What is not so clear is that we have progressed very far in understanding the mechanism for anomalous cognition. Senders do not appear to be necessary at all; feedback of the correct answer may or may not be necessary. Distance in time and space do not seem to be an impediment. Beyond those conclusions, we know very little.

I believe that it would be wasteful of valuable resources to continue to look for proof. No one who has examined all of the data across laboratories, taken as a collective whole, has been able to suggest methodological or statistical problems to explain the ever-increasing and consistent results to date. Resources should be directed to the pertinent questions about how this ability works. I am confident that the questions are no more elusive than any other questions in science dealing with small to medium sized effects, and that if appropriate resources are targeted to appropriate questions, we can have answers within the next decade. “

(AN ASSESSMENT OF THE EVIDENCE FOR PSYCHIC FUNCTIONING,
Copyright 1995)
(<https://web.archive.org/web/20080513174112/http://anson.ucdavis.edu/~utts/air2.html#copyright>)

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This chapter defined a set of postulate for consciousness consistent with the theory of reality presented in chapter 2.” Universal Consciousness Underlies All of Reality: a Tripartite Domain Theory.” The EK postulate set and Universal Consciousness Theory support study of various ESP phenomena. Such consciousness theorizing accommodates understanding that when mind (consciousness or soul) is functioning in the 2nd Domain, it is enabled in locating information not directly available to the brain functioning in the 3rd Domain from ordinary sense-perception limited to the local range of sight and hearing. As a practical matter, this theory also bolsters the credibility of research on intuition, such as conducted by Gary Klein who estimates that on the order of 90% of critical decisions

made are influenced in whole or part by “gut” intuition (Intuition at Work, 2003). Where might that intuition come from? The source may indeed be the individual’s consciousness pulling information or guidance from the 2nd Domain. This view is consistent with the perspectives of Carl Jung, Edgar Cayce, and Rupert Sheldrake.

Carl Jung, who had reportedly had an NDE, theorized that there is formed in the universe a shared memory he termed the Collective Unconscious. He theorized that, before birth, the Collective Unconscious was implanted in the brain:

*“The collective unconscious - so far as we can say anything about it at all - appears to consist of mythological motifs or primordial images[i.e., archetypes], for which reason the myths of all nations are its real exponents. In fact, the whole of mythology could be taken as a sort of projection of the collective unconscious... We can therefore study the collective unconscious in two ways, either in mythology or in the analysis of the individual. (From *The Structure of the Psyche*, CW 8, par. 325.)* A primary resource for Jung’s theories about the collective unconscious and the archetypes contained in it is: *The Archetypes and the Collective Unconscious*. New York: The Princeton University Press, 1969.

Edgar Cayce, famous during his lifetime as the “Sleeping Prophet,” had a remarkable career as a healer (*My Life as a Seer*, New York: St. Martin’s Press, 1997). Cayce explained that during sleep when dreaming develops, the consciousness may separate from the body and benefit from the advice of spirit beings:

“The subconscious, separated entirely from the material self, is able to go out into the universal, or the cosmic consciousness. And those on the other side who see and know the conditions that surround us may put within our own selves what will be helpful, or detrimental, depending on how we use it. (*My Life as a Seer*, New York: St. Martin’s Press, 1997, page 238)

Cayce also described a cosmic memory bank termed in philosophy the Akashic Record. An expert on Cayce’s entire life work, Kevin Todeschi, states about the Akashic Record, “Also known as the Book of Life, the Akashic Records is the storehouse of all information -- every word, deed, feeling, thought, and intent -- for every individual who has ever lived upon the earth.” Todeschi explains how, according to Cayce, we can access our

own Book of Life to learn about our past, present, and future. (Todechi, K. *Edgar Cayce on the Akashic Records*. Virginia Beach: A.R.E. Press, 2010.)

“When there is the thought or the activity of the body in any particular environ, this very activity makes for the impressions upon the soul...As to the records made by such an activity, these are written upon what is known as time or space; much in the form or manner as are the messages that are of a familiar nature to the body in its present activity. As the instruments of recording are used, so does the activity of ENERGY expended leave its imprint upon the etheric wave that records between time and space that DESIRED to be put, as to that impelling or producing. Just as the figures or characters make for communications between individuals, so does the soul upon the pages or records of time and space. (Cayce A.R.E. Reading 416-2) “

Rupert Sheldrake, currently active in research, has supported a non materialist concept similar to Jung’s collective unconscious and Cayce’s Akashic Record, the “morphogenic field”: “The most important organismic concept put forward so far is that of morphogenic fields. These fields are supposed to help account for, or describe, the coming-into-being of the characteristic forms of embryos and other developing systems. The trouble is that this concept is used ambiguously....The concept of morphogenic fields can be of practical scientific value only if it leads to testable predictions which differ from those of conventional mechanistic theory. And such predictions cannot be made unless morphogenic fields are considered to have measureable effects. (Sheldrake, R. *A New Science of Life*. New York: St. Martin’s Press, 1987, pp-12-13.). Sheldrake’s website: <https://www.sheldrake.org/research/morphic-resonance/introduction> .

The main thesis of this book on the nature of space, time, and consciousness is that in science and philosophy the dominant paradigm of materialism should accommodate ongoing research that implies materialism is incomplete for explaining all of reality. Reports from NDE/OBEs and paranormal phenomena imply that there is a reality hidden from ordinary materialistic sense perception that informs our brain and mind to form true knowledge. Furthermore, it is the 2nd domain of consciousness that is primary and that enables the 3rd material domain to function. Such a perspective is advocated in a recent text by Immants Barus and Julia Mossbridge:

“We are in the midst of a sea change. Receding from view is materialism, whereby physical phenomena are assumed to be primary and consciousness is regarded as secondary. Approaching our sights is a complete reversal of perspective. According to this alternative view, consciousness is primary and the physical is secondary. In other words, materialism is receding and giving way to ideas about reality in which consciousness plays a key role.” Transcendent Mind: Rethinking the Science of Consciousness. WDC, APA, 2016, page 3).

Quantum Mechanics Needs to be Cured from Its Schizophrenia

In accordance with conventional, materialistic quantum mechanical theory, all entities exist independent of any minds that may or may not be apprehending any specific entities, such as photons or Black Holes. Observation by humans of any “large” Black Hole relies on passive observation of its emitted radiation and on its effects on the motion of objects subjected to its gravitational field. However, directed Human observation of atomic and sub atomic particles ordinarily requires subjecting those particles to physical forces, such as electromagnetic radiation, that are so energetic that the particles will be influenced by the inspecting energies. Thus, for the atomic level of existence, a human, controlled by the mind, influences the reality that may be observed, but materialistic science is conflicted about how to regard the scientist’s role in observing phenomena. Erwin Schrodinger pointed out the paradoxical nature of quantum theory when the observer’s role is considered by describing the ambivalent existence of a hypothetical cat placed in a sealed container where it is subjected to possibly lethal radiation; under the terms of his thought experiment about the workings of quantum superposition, until the box were opened to observe if the cat were dead or alive, it would be probabilistically modeled as both alive and dead. The nature of quantum superposition remains a paradoxical feature of quantum mechanics.

Chapter 9. What is Consciousness ?

There are these two young fish swimming along, and they happen to meet an older fish swimming the other way, who nods at them and says, "Morning, boys, how's the water?" And the two young fish swim on for a bit, and then eventually one of them looks over at the other and goes, "What the hell is water?"

—David Foster Wallace, *This Is Water*

If you were asked to define or explain in common sense terms the fragrance of a rose, how well might you do that for someone who has never had that experience—if you even tried? You might please yourself with some description or other, or even invoke the sciences of chemistry, biology, neurology, and psychology to get at the mechanics, but that could not ever convey the experience itself (red Lincoln roses are blooming in my yard as I write, and their fragrance is wonderful). If asked to define and explain "consciousness," something that we all must surely have in common, even with the help of our common experience, the effort would be difficult, if not impossible. The purpose of this chapter is to review what scientists and philosophers have had to say about what consciousness is, and to compare that to what may be implied from the NDE/OBE reports. The analysis will attempt to apply the paradigms of reductionism and emergentism as may be relevant. Depending on the context of usage, "consciousness," "mind," and "soul" are used interchangeably for most apt connotation. For example, when the OBE occurs at the time of an NDE trauma, and then transits thru the tunnel, reference *to soul* leaving the body is common, because it is thought to be heading to Heaven.

The paramount obstacle for understanding the nature of consciousness appears at the outset to be that there is no good reliance to be found from the tangible experience provided by our senses, such as for sight, sound, touch, smell, and motion. There is perception possibly involved, but it's self-referential when environmentally induced sensation is removed as a stimulus, and thus offers an uncertain utility, if any. We all experience

what's labeled "consciousness," but how to describe it is hard, and how to explain it with certainty has eluded philosophers and scientists forever.

RELEVANT ATTRIBUTES

Awareness. Reference to consciousness in the Encyclopedia Britannica (<https://www.britannica.com/topic/consciousness>) provides perspectives from philosophy, neuroscience, and psychology's Behaviorism.

Philosophical perspectives. The nineteenth century philosophers tended to rely on introspection to understand what consciousness was. Research on introspection led to the formation of scientific psychology as an offshoot of philosophy. However, introspection research in the new field of psychology collapsed for lack of scientifically objective observation (objective observation and measurement having been elevated as a requirement by contemporary physics), to be replaced by Behaviorism.

Behaviorism. This early model for psychological research after having rejected Introspection, eventually lost popularity itself with psychologists precisely because it avoided the study of activity within individuals that induced observable behavior. Behaviorism simply avoided dealing with consciousness.

The contemporary philosopher John Searle, while actively analyzing language, found it useful to consider a role for mind, with consciousness the focus. He found that one aspect of consciousness involves attention, a directionality in thought, termed "intentionality." However, he recognized that not all thought exhibits intentionality, such as experiencing pain, but an active healthy mind always has consciousness. Searle has argued that consciousness is exclusively a biological function such that computer systems designed to be artificially intelligent cannot in principle ever possess consciousness. In his paper *Minds, Brains, and Programs* (in the journal *Behavioral and Brain Sciences*, 1980, and published in *Mind, Language and Society*, New York, NY: Basic Books, 1999.), he posed a hypothetical

experiment, the Chinese room thought experiment, to logically argue that no machine could possibly possess consciousness, even if it were behaving intelligently. Searle argues that a well programmed computer may be able to translate a defined language (by applying syntactical rules and employing words, some of which are semantic), but the program automatically following its translation coding has no idea of what it is doing—it mindlessly, without any consciousness, executes the code. I think Searle is precisely correct about the machine performing without real (“strong”) intelligence, and had myself made that argument in a paper on computerized content analysis (Hiller, J. Fisher, G., and Marcotte, D. Current Perspectives in Computer Aided Content Analysis, Invited paper to the Association of Computing Machinery, National Meeting, San Francisco, Aug. 1969, page 1). Alas, while we may argue that non-biological machines, however well they may perform at programmed tasks, will lack the kind of consciousness that humans (and perhaps higher order animals) possess, we yet lack any clarification here of what consciousness is.

The Psychology of William James. James is considered by many to have been the most significant American psychologist, as well as the first, and is known for his term, “the stream of consciousness.” He recognized the reality of consciousness, of mind and soul, as the container or background for thought: *“Consciousness... does not appear to itself chopped up in bits. Such words as 'chain' or 'train' do not describe it fitly as it presents itself in the first instance. It is nothing jointed; it flows. A 'river' or a 'stream' are the metaphors by which it is most naturally described. In talking of it hereafter let us call it the stream of thought, of consciousness, or of subjective life.”* [James, W., (1890). *The principles of psychology*. Cambridge: ed. Miller, G., Harvard University Press, 1983, 238].

Neuroscience. There has been a great deal of speculation that consciousness is a product of the brain in general, and generally is expected to be most associated with activity in the frontal lobes. However, there never has been found any distinctive neural processes or structures in the brain that can be directly tied to consciousness. In fact, Prof B. Alan Wallace cogently recognized that materialism in the form of neo-darwinism has likely inhibited effective research on consciousness by assuming that

“...mental phenomena are equivalent to neurophysiological processes in the brain, an empirically uncorroborated belief. “ (Wallace, B. *Hidden Dimension*. New York: Columbia University Press, 2007, page 5). There has, however, been highly successful empirical research on electrical brain wave functions that correspond to introspective states of consciousness and levels of meditation and wakefulness. Real time functional magnetic resonance imaging (fMRI) is able to observe blood flow activity in the brain, and that enables experimenters to observe localized areas of the brain that are activated by various tasks—but the consciousness associated with “mental” tasks is unobservable, leaving skeptical neurologists to conclude that consciousness, if it were to exist, is merely an epiphenomenon of brain functioning, and thus best avoided by professionals.

Self Awareness. Now this is as tricky as the Liars Paradox. The consciousness that is at my core being and owns awareness as its primary feature (if there were even any other features) is said by this idea to be self aware, that is aware of itself. But if we were to play with this self-referential construction by referencing a consciousness that was not aware of itself (or, in other words, an awareness that was not aware of its awareness), we would have –utter confusion, the Liar’s Paradox at play. So, we shall be content to simply define awareness as a primary feature of consciousness, if not perhaps the whole story about it.

Thinking. May consciousness be simply the felt experience when engaged in active thought? If we are “reasoning,” we are surely using our minds, as Descartes observed. But is the processing in or by consciousness when thinking simply a clue that there is consciousness at work, without revealing its true character? Consciousness does engage in thought, whatever it is.

Emoting. When experiencing emotions, we are aware of them, but is the awareness of pleasure or pain any open window for seeing or apprehending consciousness? Consciousness experiences feelings, but the feelings are surely not the whole story about what it is that feels.

Memory in action. When recalling anything, we believe that information has been stored somehow in the brain (or, somehow in the soul, or as

discussed in Chapter 8., somewhere in a field of consciousness that exists beyond the individual being), and that the information is brought into consciousness, but consciousness is not itself revealed when retrieving and comprehending those memories—it is an “unseen” background.

Lack of awareness. “Awareness” is clearly invoked as an attribute of consciousness, if not all of what is generally meant by “consciousness.” Intentionality or direction of thought, e.g., to think about eating or moving a hand, has likewise been routinely associated with the idea of consciousness — but awareness and intentionality of thought may really best be characterized as merely indicators of the existence of consciousness, of *phenomena* in Kantian terms, but not the *noumena*. In fact, in the Buddhist practice of meditation, the goal is to remove all contents of the mind, to calm the mind by removing all active thoughts to achieve a state of pure, uninvolved consciousness that can achieve deep insight into the nature of existence. Deep meditation would leave consciousness to be free of all distractions and interference from its pristine state. When all active thought is eliminated, then consciousness remains, but what is that?

I’m reminded of an incident in the early 80’s when I thought to explore applying meditation before engaging students in training. The idea was that students having a calm and clear mind would then be highly receptive to instruction without interference from the potential distractions of pains and frustrations coursing through their everyday lives. Achieving meditative states is regarded to take extensive practice, but a shortcut has been advocated by employing what’s called a sensory deprivation floatation chamber. A liquid bed is formed by a heavy saturation of epsom salts into water. The solution is warmed to a temperature that disappears from sensation, and the epsom salt solution creates an exquisitely soft bed to lie on. The bed is located in a cabinet that insulates against light and ambient sound. So, I arranged to have an hour long session made available to me by an outfit in Los Angeles, Samadhi. Flew early one morning from Monterey to LA, got there on time, undressed, and got into the tank. Heard a slight sound from auto traffic at first, and then it abated. Thought to clear my mind, to meditate—and an hour later heard knocking on the chamber

that rose me out of the best sleep I ever had. I felt wonderfully refreshed as I drove back to the airport. Although I never did get to experience deep meditation or any whiff of what my consciousness was about.

Nevertheless, I continue to believe that meditation would be worthwhile, although my loud tinnitus seems always to interfere with my achieving such.

THE HYPOTHESIZED ROLE OF CONSCIOUSNESS IN THE TRIPARTITE DOMAIN THEORY FORCES “CONSCIOUSNESS” TO BE AN UNDEFINABLE PRIMATIVE TERM

Dr. Antonio Damasio, in his highly regarded text, *The Feeling of What Happens*, (New York: First Harvest, 2000) has reduced the problem about understanding consciousness to two related functions:

1. The generation of perception, what he refers to as the-movie-played-in-the-brain, in which he subsumes the issue of qualia, as qualia was discussed here in Chapter 1.
2. The generation of the self that is viewing the movie. (Page 11).

He further analyzes that generating the self is also attributable to the same brain mechanism responsible for generating the movie seen by the brain.

However, despite his own in depth analysis of the issue about what consciousness is, as a materialist working on its biological explanation, he admits to some skepticism about discovering the basis for consciousness (page 12). As will next be demonstrated below, such skepticism was fully justified.

In Chapter 2., the 2nd Domain was defined to be a field of consciousness in which all entities share their consciousness, from God, to humans, to rocks, all the way over to photons and electrons. It was argued in Chapter 1. that consciousness is not in and of the brain, although the two interact. In Chapter 6., It was argued that the individual human consciousness, by always being imbedded in the 2nd Domain of universal consciousness, is never able objectively to observe itself or the universal field in which it is

embedded. We are aware that we possess awareness, but can never objectively observe it as an external observer.

This inability to objectively observe a phenomenon not only applies to the futility of any scientific search for discovery of the cause for Creation, because scientists and their observations are limited to the interior of the created existence, but also prevents development of any scientific knowledge about the nature of consciousness. However, when the soul is freed of the body, it becomes directly aware of the 2nd Domain, a perception that had been denied by the body's material nature. When the soul is thus liberated from the body, it shares consciousness with all else in the 2nd Domain. Thus, a hope may be justified that we could eventually understand more about the nature of consciousness, and really about the entire world, by acquiring such knowledge from the 2nd Domain. That hope comes from the virtually unanimous reports by those who passed thru the NDE tunnel to the Light that all knowledge there is made available effortlessly, and at no cost to all souls. Quoting a passage from a previously quoted OBE report in Chapter 8: *“I just suddenly realized that I understood everything. It was a big 'aha' moment. I could understand physics, math, chemistry, and all the formulas that went with that understanding. I realized that I didn't have any questions .“* (https://www.nderf.org/Experiences/1eva_m_ndelike.html)

Now, consider that we also live immersed in space and time —so perhaps these terms must also be regarded as undefinable primitives? The answer proposed is that it depends on which Domain is referenced.

Third Domain Definitions for Space and Time. In the 3rd Domain, while the term “space” has an abstract conceptual basis, as argued in Chapter 3., it lends itself to objectification by application of real, physical rulers for defining distances at a given location in space-time. Space in the 3rd domain is objectifiable. Likewise, “time” in the 3rd Domain, while clearly an abstract concept, also lends itself to objectification by instrumentation calibrated in microseconds by using the System International (SI) procedure in which the highly uniform vibration in a cesium 133 atom (https://en.wikipedia.org/wiki/SI_base_unit). This atomic based time

measurement is regarded to be so precise that the SI definition of the length of a meter is based on the distance light travels in a specified fraction of a second (https://en.wikipedia.org/wiki/SI_base_unit).

Second Domain Definitions for Space and Time. The definitions here are beset by lack of any objective ability to match space and time in our physical experience within the 3rd Domain objectively to experiences reported from the NDE.

Here is what the NDE reports tell us about space and time:

- Time does not run; instead there is an experience of an eternal now.
- Time does have representation of past, present, and future states, but not as any flow, such as we experience here. Instead, different times correspond to different locations in a multidimensional space which is reported to be higher than the four of space-time.
- An observer located within the 2nd Domain is able to simultaneously view segments of the past, present, and future at will (the future is at times reported to be fuzzy).
- Space has a form of reality in the 2nd Domain, because entities are experienced in perception to be separated from each other, and at varying degrees of separation.
- One of the remarkable features of the function of consciousness operating within the 2nd Domain is that the soul is able to move about and across any “distance,” however great it appears to be, with apparent instantaneity.
- It has been reported (see Chapter 1.) that the higher dimensions must be “entered” into to experience them, but they are all enmeshed in each other, not set apart.

Thus, space and time show corresponding features across the two Domains, but also differences. The 3rd Domain appears to be immersed within the 2nd Domain, and it was argued in Chapter 2, that it is this linkage that accounts for the predicted and validated instantaneous communication between particles in quantum entanglement.

CONCLUSION

The reality of what consciousness is and how it is known by our immersion within its field denies any useful ability to define it by reference to objectively observable experience, such as we have in space and time. Just as the fragrance of a rose may not be usefully defined by other terms--so too consciousness must be regarded as an indefinable, primitive term. Just as fish who never experienced an absence of the water in which they are immersed would be unaware that they always exist within its invisible presence, so too are we unable to objectively "see" the field of consciousness in which we have always participated.

Chapter 10. A Theory of Knowledge: The Transcendental and the Mundane

What would a theory of knowledge incorporate for its dimensions or features to explain what it's about? To start with, what is "knowledge" itself, and how may it be described? What are the major *types* of knowledge, such as A) Plato's Idealized forms, or mathematics, logic, models of physical reality (classical and quantum), and B) the *mundane* idiosyncratic bric-a-brac formed by living day to day. What is the nature of the *individual holder* of the knowledge that we seek to characterize and explain (i.e., a human is not any pattern recognition and information data storing mechanism similar to a digital computer, despite various attempts to compare humans and computers) . What are the essential characteristics of the "holder" of knowledge (e.g., brain, and mind)? How does the holder of knowledge acquire it, and may such acquisition be dependent on the kind of knowledge involved? Is the *rationalism* of Plato, Descartes, and Kant correct that the brain has preformed categories or percepts essential for recognizing and incorporating experience into knowledge (e.g., consider the evidence from the visual cliff, neonate preference for faces, pareidolia, and turkey hatchlings' aversion to hawks)? Does the mind access idealized knowledge when in contact with the 2nd Domain by an OBE or meditation? Finally, might it be possible that certain kinds of knowledge, especially about the mundane, are inherently temporary or transitional, despite their appearance of certainty or permanence? Thus, mundanely acquired knowledge may only be temporary concerning truth value. Given that mundane knowledge is potentially uncertain and transitional—leaving a mystery of uncertainty regarding truth-- perhaps God has intentionally designed the 3rd Domain to preclude full knowledge of His eternal design.

It will be argued that the 2nd Domain is the source for idealized forms or "universals" such as justice, good, circle and sphere, table and chair, above and below, common sense time, etc.. Plato theorized that the mind was able to recollect knowledge of these universals that it had known as a soul before coming to the Earth, and The NDE research supports his

perspective. Mundane knowledge is acquired thru sense-perception by a body and brain constructed to be selectively sensitive to receiving limited forms of sensory information which it works to form perception as argued by Descartes and Kant. However, the perceptual information constructed in the brain does not itself exist as conscious perception, as the brain itself lacks the power of consciousness possessed by its attached soul. Conscious perception is achieved only in consciousness, not in the material brain, as had been explained in chapter 1 to account for qualia in perception. Transcendental and mundane knowledge are contained in the individual holder's personal consciousness, and also in the universal field of consciousness that is the 2nd Domain. It will be argued that, consistent with the Tripartite Domain Theory, the particular knowledge that exists is a function of the theater of the beholding mind:

1. The mind of the ordinary human locked to the brain functioning in the 3rd Domain is highly constrained to acquiring mundane knowledge by the body's materiality.
2. The mind freed of the body/brain functions, as may occur during an OBE or deep meditation, may then access the 2nd Domain field of universal consciousness with its vast information made easily available.
3. The mind that is God knows all that may be known.

The disciplines of philosophy and psychology offer insight into the nature of mundane knowledge of the 3rd Domain, and how it is acquired and applied. The NDE reports provide for insight into how the mind works as a participant in the 2nd Domain. The mind of God will not be discussed other than acknowledging that such must exist, and in fact may be all that exists, with the 2nd and 3rd Domains entirely existing within the mind that is God.

1. A) TRANSCENDENTAL KNOWLEDGE OF THE 2nd DOMAIN

Nature and acquisition of transcendental knowledge.

Platonic idealized forms, or Universal ideas. Plato regards the information gained by our senses, such as sight, to reveal objects that lack any idealized perfection. For example, a circle may be physically inscribed in sand or wood by moving a stylus tied by a string to a central point, but inspection of the physical circle drawn will display imperfections from an idealized curve. He made the argument that if knowledge were restricted to sense-perception, we would not directly know about idealized abstractions. Included in a list of such idealized abstraction would be concepts such as justice, the good, the beautiful where we may lack experience of perfect examples of such. Relationships such as above and below, to the right of are abstractions from real experience, but there are no standard examples applied to form such relational concepts. Yet we realize the concepts from knowledge acquired by the soul before birth. The 2nd Domain of the Tripartite Domain theory is the home of the soul before born to a body in the 3rd Domain.

Mathematics.

Philosophy of mathematics offers two alternative interpretations for the nature of mathematical truths: 1) "Discovery" of what was inherent in the particular branch of mathematics in focus, such as number theory; or 2) creative invention that, while consistent with the branch conventions or axioms, yet had to be creatively invented. Given what the NDE reports say about suddenly knowing all of mathematics and empirical sciences, this evidence implies that mathematics is included in the universal consciousness that is the 2nd Domain. Thus, the clever mathematician may work creatively at invention, and earn pay and rewards, but the truth is that the invention is actually a discovery.

Physics (algorithmic modeling and prediction).

The grand success of modern physics has been its translation of ideas, whatever their source, into the disciplined expression of mathematical models such as Einstein constructed in Special and General Relativity. However, the great success of quantum mechanics found in the Schrodinger wave equations went beyond abstracting lab results at the time to a speculative formulation. Einstein with two colleagues (in the EPR paper) seized on an implied prediction from the wave equation that “entangled” paired particles would instantaneously communicate with each other when one particle would be observed/measured so that its range of possible states would materialize to a specific form of existence and thereby trigger the other into being its complement. The EPR paper logically pointed out that this prediction violated the Special Relativity speed ceiling set for communication as the speed of light, (very fast but not instantaneous), and provided no idea of an underlying physical process. As it turned out, the wave equation prediction for spooky action at a distance has been replicated across many experiment. Except for the hypothesis proposed in Chapter 2., quantum entanglement remains a deep mystery.

Ethics and morality.

Kant worked to explain a source for cultural recognition that good will toward each other is known and appreciated. He synthesized the variety of good intentions to reflect a “categorical Imperative” for good will (what Christianity knows as the Golden Rule). Kant reasoned that the categorical imperative cannot be attributed to experience, with rewards and penalties, but must have an a priori source, and so must have a metaphysical source (see wikiesource at: https://en.wikisource.org/wiki/Groundwork_of_the_Metaphysics_of_Morals). Hypothesizing the source for morality to be the universal field of consciousness, that is the 2nd Domain, is consistent with Kant’s analysis for the source of morality.

Direct Knowledge acquisition within the 2nd Domain as an effortless immediate knowing of everything.

As discussed earlier in Chapters 8 and 9., reporting about the OBE typically states that all possible knowledge was easily and instantly available: *“I just suddenly realized that I understood everything. It was a big 'aha' moment. I could understand physics, math, chemistry, and all the formulas that went with that understanding. I realized that I didn't have any questions”*

Participant observation across history.

One of the most remarkable feature of the OBE is not only that after having passed thru the tunnel, they could easily see the past, as well as the present time—all together. It is hard to imagine how such a possibly large array of perception across time could be understood. Most of us have to concentrate on one task, such as doing mental arithmetic, with all else left to a dim background perception. This feature of consciousness functioning with great capacity is, however, a common report from the OBE. For example, people during an NDE/OBE episode while lying dormant in their hospital bed report simultaneously understanding nearby conversations, conversations outside their room, seeing activities outside the hospital--all at once with no difficulty for comprehension. Thus, the soul freed of its attachment to the brain appears to have a huge capacity as compared to ordinary life experience.

Display of future scenes.

A frequent feature of the OBE is the conduct of a life review. The review leads to understanding the value of experience for self and all others, and includes participation to see and emotionally feel the ripple effects from even seemingly minor instances of negativity or kindness. During the life review, the participant is generally experiencing a high, overwhelming level of love as a background condition. The typical life is full of “mistakes,” and thus recognition that life ordinarily has hard times and pain, so the individual is often tempted to ask to stay. Of course we do not know what they were told when that wish to die was granted, but from those returning they often were shown their role in the future, such as raising children, and agree to return. Years later, there are frequent reports that the future visions came true, so to some extent the future is set or may be shaped

according to the prior vision. However, we may infer that the future is not already completely set, because we are also aware of miraculous interventions that change the course of lives and countries. On the other hand, it could be argued that miracles were themselves predestined. There are also frequent reports from individuals about arguing with God to let them stay in Heaven, with God eventually winning the argument. If there were legitimate arguments, then it is unreasonable to conclude that the future has been fully set.

Transcendental Knowledge acquisition from the 3rd Domain

Plato's theory of reminiscence.

A newborn infant using eyesight must learn to see, The lens inverts the image on the retina so top and bottom are reversed; an infant would initially see a parent with feet in the air instead of grounded. We know from the experience of those who were born blind that when their visual system is repaired good perception does not immediately follow. The perceptual system needs to be trained. One possible support for learning how to perceive would be the reminiscence function as theorized by Plato. His theory was that the soul was born with knowledge implanted from Heavenly existence prior to birth. Some of the NDE reports tell of seeing the Earth and parents before birth. Plato's concept of knowledge as reminiscence may actually be descriptive of how raw sensory data are processed to find stored percepts, thus guiding the perceptual system to its goal of accuracy. A recollection of the ideal forms and truths may aid our ability to understand the material world.

Intuition.

Intuition as was discussed in Chapter 8 was reported to play a major role in day to day decision making, as well as for major decisions. We are familiar with the notion of a "gut feeling" guiding our decision making, and so it's natural to think that such intuitive guidance emanates from the body and brain. However, as has been argued here, it is the mind, consciousness, that does the decision making, and that capability is not produced by the body and brain. Given that consciousness is the source for intuition,

intuition may be enhanced by meditation. This is a worthy topic for empirical research.

Possible influence of past lives shaping general outlook.

Edgar Cayce, the “Sleeping Prophet” reluctantly came to a conclusion from his medical readings that anxieties, fears, phobias, conflicts with relatives were in a significant number of his hundred of consultations the product of incidents in past lives that remained to be resolved (Cayce’s reluctance to accept reincarnation came from his scriptural scholarship, but he eventually decided that scripture did not preclude having multiple lives). Talking through these past problems did appear to be helpful. As discussed in Chapter 1., substantial research by Ian Stevenson with adults and children, and Carol Bowman with children, have furnished evidence that past lives are recalled by some (not I at all). Bowman estimates that on the order of 40%^ of children under the age of 6 can recall elements of having come here from Heaven, or even details of past lives if carefully asked.

1.B) THE MUNDANE KNOWLEDGE OF THE 3rd DOMAIN

Nature and acquisition of mundane knowledge.

Normal daily experience consists of numerous interactions with the environment (sitting in a chair, carelessly stubbing a toe), and interactions with the family and household animals, etc. As an adult, we know what to expect from the environment, unlike toddlers, but even as adults we can never be sure about interactions with the living. For example, after some 50 years of marriage, I finally realized that when I’m supposed to take a drubbing for any conceivable fault, of which I have none, it’s best to react with feigned hurt, despite my innocence, so progress can resume. The intrinsic unpredictability of life consists of reacting to innumerable stimuli, and performing countless mundane activities, with most contributing tiny additions to knowledge. When Plato philosophizes about idealized forms, his focus is in direct contrast with the multitudinous interactions of life and the associated mundane knowledge produced.

Piagetian theory of cognitive structures acquired by children for mastering environmental interaction.

The Swiss child psychologist, Jean Piaget (1896-1980) constructed a four stage model of how children progressively learn to function before becoming adults.

(https://en.wikipedia.org/wiki/Piaget%27s_theory_of_cognitive_development)

Piaget's four stages of child development

Stage	Age	Developmental Goal
Sensorimotor	Birth to 18–24 months old	Object permanence
Preoperational	2 to 7 years old	Symbolic thought
Concrete operational	7 to 11 years old	Operational thought
Formal operational	Adolescence to adulthood	Abstract concepts

These stages have been found by numerous studies to be approximately accurate; not perfect as human psychology is complex, and different cultures have effects. There is much mundane knowledge for children to learn and function well in the internet society. Piaget's research led educators to recognize a beneficial focus on the child's frame of reference (a Child-Centered educational strategy, similar to the prescriptions of John Dewey's prescription of Learning by Doing, *Intelligence in the Modern World*. New York: Random House, 1939, pp 607-13)

Vagueness of thought and of expression (not ambiguity).

In acquiring language well enough to learn knowledge from others, and to pass on knowledge as parents and educators, we also realize that our knowledge may be inexact, and at times ambiguous ("ambiguity" meaning alternative senses are available for interpretation). Meanings may be slippery, and subject to shifts in denotative and connotative meanings as a function of a particular topic, the context of communication, and the target audience. For example what meaning comes to mind by mention of Napoleon. Well, that would depend on the context for mentioning him, and what the recipient already knew about him. For example, when *Napoleon*

Bonaparte is mentioned, do you recollect the twenty year old Italian artillery officer serving in the French army, or his image as emperor from 1804 to 1814, or perhaps his exile to Elba, or even the tortured soul learning of Josephine's death? Most likely you vaguely recollect some indistinct collage of whatever bits of knowledge come to mind, and there is no definitive, specific knowledge retrieved.

Definition of Vagueness in meaning, and in thought.

Early in my career as a graduate student at the University of Connecticut, I ventured to construct an operational definition for *vagueness in language usage*. My action was motivated by my status as a newly appointed pre-doctoral fellow in research methodologies. My major doctoral committee professor had acquired a handsome grant from the Educational Testing Service (the College Board Testing company) to investigate the feasibility of having the digital computer programmed to assign valid and reliable scores for short essays to replace essay grading by slow, expensive, and unreliable humans. I was one of a group of ten new fellows joining this new program. Our major advisor had just laid down the law—we were to publish while yet research puppies, or perish.

The semester courses included an evening class about learning theories. Heck I knew all about them, and so tried to drop the course, but could not. The professor was an elderly gentleman, a kindly sort easily liked. As he fumbled through his first evening lecture, as if unprepared, he also made obvious factual errors.

I drove home fuming at having to waste my time. But he was obviously a good professor despite his fumbles, so why was I so annoyed? As I mentally reviewed his performance, I remembered hearing words and phrases that signaled his own awareness that he was fumbling. Well, what exactly were those clues? “As everyone knows,” “Clearly,” “Obviously,” and after pregnant pauses—“As a matter of Fact,” “Actually,” There were also lot's of “as you know,” and just plain, “you know” repeated frequently. So, there were identifiable clues to his lack of preparation and faulty knowledge-- and even the dumb computer could be easily programmed to

catch them. What if student essays also exhibited such clues? Given clues to lack of preparation to perform, might there also be clues for being knowledgeable? “For example,” “Specifically,” “Illustrated by.” So, that night, I applied my own devious mind to recall the weasel words, and also positive clues for communicating topical knowledge. Our doctoral program major professor had available for research a set of well graded short student essays (similar to what the College Board tests would require). Teams of the “best” English teachers in Connecticut had scored each of hundreds of essays, and stable average ratings were available for research. I could test my hypothesis that graders would be sensitive to vagueness and attempted specificity. Here is the abstract for the published paper from this research:

Abstract: *Three characteristics of writing quality were selected for study from among the many discussed in English texts on the assumption that single words or discrete phrases reliably cue the presence of such characteristics in essays. A set of 256 graded essays was searched by computer for cues, and the measures thus obtained were correlated with the essay grades. All predicted correlations were significant at $p < .01$. (Hiller, J.H., Marcotte, D., & Martin, T. (1969). Opinionation, vagueness, and specificity-distinctions: Essay traits measured by computer. *American Educational Research Journal*, 6(2), 271-286.)*

A program of research was underway at Stanford to discover what differentiated effective and ineffective teachers as they gave topical lectures to their own classroom students. The data from this research had been examined for two years, but the program leader, Prof Nate Gage, was not satisfied that they had learned all they could from their data. So, I was called over to spend the Summer on loan to this research program to figure out how to milk the data using computer-based analysis.

Well developed objectively scored tests were administered to classroom students to measure what they learned and retained from their teacher’s lectures on two topics. A single audio taped lecture was played to all classes to get a baseline measure for individual class competence. All teacher lectures had been videotaped.

The teachers had not been shown the test items, so their coverage of test information was variable; to correct for this source of measurement error, teams of graduate students rated how well each teacher lecture happened to cover the test items. A teacher's performance should not be faulted for accidentally not having covered sample test items. I applied a statistical procedure (covariance) to remove the effects of class competency and test item coverage from each teacher's classroom lecture test scores. Bingo! The measure of Vagueness worked very well to predict student test performance, and a rough measure of verbal Fluency also worked. Here is the Abstract:

The Vagueness construct was applied to data collected by the Stanford Explanation Project (see Gage, N.L, Belgard, M. Dell, D., Hiller, J., Rosenshine, B., and Unrah, W, "Explorations in the Teachers Effectiveness in Explaining." Tech. Report 4 of the Stanford Center for R&D in Teaching, School of Education, Stanford University, 1968). Teachers delivered self-prepared lectures to their regular classrooms of students based on two magazine articles, one about Thailand and the other about Yugoslavia. Their students were administered standardized, objectively scored multiple choice knowledge tests after the lectures, and these scores served as the criterion for teacher performance. The class test scores were refined by covarying out class performance on a test for a third lesson (on Israel) that was delivered by a single lecture recorded by a professional speaker, thus removing variance having to do with differences in ability and motivation for the individual classrooms. The teachers had not been shown the student tests before they gave their classroom lectures, so lecture coverage of test contents was variable. A team of graduate students scored the teacher presentations for degree of test coverage, and the coverage scores were also covaried out to achieve a more accurate score of how well classes performed based on what their teachers did cover.

In the available sample of 32 lectures about Yugoslavia, the correlation between proportion of Vagueness items in the lectures (vagueness items counted divided by total number of words for the given lecture) and the test scores was $-.59$ ($p < .005$), and in the available subsample for the Thailand lecture, the correlation was $-.48$, $N=23$, $p < .05$.

(Hiller, J. H., Fisher, G. A., & Kaess, W. (1969). A Computer Investigation of Verbal Characteristics of Effective Classroom Lecturing. *American Educational Research Journal*, 6(4), 661-675.)

Next, an experiment was conducted to test the hypothesis that manipulating the clarity of information made available to speakers would affect their level of vagueness utterances. The vagueness construct was defined as follows:

Abstract: The plight of being caught without a needed word while speaking or writing is a common experience. A sudden lapse in memory or momentary confusion may underlie the difficulty. Or the problem may arise when a speaker, in the midst of expression, discovers he doesn't command the knowledge required to complete his gambit. This paper presents an analysis of the verbal behavior of the speaker or writer confronted with the immediate necessity to express himself while he struggles against one or more such handicaps.

By now, the Vagueness Dictionary had been fully developed, along with subcategories. This Dictionary has been made available for research by Provalis Research. A description of the completed Dictionary follows:

Provalis VAGUENESS COMMUNICATION DICTIONARY by Jack Hiller

Ten separate categories of vagueness have been defined to permit an optional finer analysis of the nature of the vagueness exhibited (see table below).

SCALES	DESCRIPTION	EXAMPLES	# ITEMS
Ambiguous Designation	Something potentially specifiable is referred but not definitely identified.	somewhere, stuff, a certain, and so on	50
Negated Intensifiers	Negations can be evasions.	not always, not quite, isn't necessarily	57
Approximation	Use reflects real or referential vagueness or imprecise knowledge.	nearly, sort of, fairly, almost, pretty much	35
Bluffing and Recovery	Used when a writer is not communicating effectively and tries to shift responsibility for making sense of content to the reader.	actually, anyway, as a matter of fact, of course	53
Admission of Error	Repeated admissions indicate lack of confidence or lack of competence.	I made a mistake, maybe, I don't know	20
Indefinite Amount	An amount is potentially knowable but is not specified.	a bit, a bunch, a couple, a little, some	29
Multiplicity	Pseudo-specification or glossing over of complexity.	aspects, types, lots, factors, kinds	35
Probability and Possibility	Indicates lack of clarity or lack of definite knowledge.	at times, could be, generally, perhaps	33
Reservations	Expressions of doubt or reluctance to commit to a definite point of view.	apparently, appears, relatively, seems.	35
Anaphora	Excessive and repetitious use of pronouns rather than direct references makes content more difficult to follow.	former, she, he, it, latter, other, them	

Research results were summarized as follows:

An experiment was conducted by having one group of student teachers give prompted small lectures after hearing a clear audio tape recording of a lecture about current affairs in Thailand or Yugoslavia as the basis for their mini-lectures; this was the experimental baseline Control group. A second group was played the same recordings, only after they were garbled by randomly interspersing lecture material on another topic. The prediction was that the teacher mini-lectures based on the garbled audio recordings would lead to confusion about their contents, and that would yield a level of vague speech higher than for the Control group. The group experiencing the garbled audio tapes exhibited a statistically significant increase in the proportion Vagueness terms in their speech (p less than .005).

(Hiller, J.H. (1971). Verbal response indicators of conceptual vagueness. *American Educational Research Journal*. 8(1), 151-161).

The Vagueness dictionary has been used to study business speech (https://www.researchgate.net/publication/314127738_Language_and_Compensation_Communication_Vagueness_Interpretation_Difficulty_and_Market_Entry), and political speech.

Hogenraad Political Speech Research.

Vagueness in political speech as an indicator of flexibility. Robert Hogenraad developed the hypothesis that political leaders during an early stage of negotiation would employ language specifically signaled by Vagueness to communicate flexibility, but as positions solidified would reduce the use of Vagueness to communicate the firming of their positions. In a number of studies he has found solid support for this hypothesis. For example, there is a study of speech associated with the conflict between Russia and Georgia circa 2008 (Hogenraad, R. L., & Garagozov, R. R. (2010). Words of swords in the Caucasus: About a leading indicator of conflicts. *Peace and Conflict: Journal of Peace Psychology*, 16(1), 11-28.)

“ *This study analyzes statements by President Saakashvili of Georgia, by President Medvedev of the Russian Federation, and by Georgia's allies over this period. The study analyzes these statements using a computer-aided procedure of quantitative content analysis equipped with semantic filters tailored to forecast the risk of conflict based on the gap between*

power words (increasing) and affiliation words (decreasing) in texts, as McClelland (1975) showed. The larger the gap, the greater the risk. Because possible conflicts increase uncertainty, how much vagueness there was in the statements was also quantified. The statements by President Medvedev display a growing power motivation about Georgia and a style characterized by increasing precision. Despite the need to defend the territorial integrity of his country, President Saakashvili showed a decreasing risk of war while also using vaguer words, betraying uncertainty. Georgia's allies also show an increasing risk of war, but restraint prevailed. “

Another Hogenraad study examined the speech of leaders in Iran, Israel, and the USA between 2008 and 2012:

Textual fingerprints of risk of war . Robert L. Hogenraad Universite ´ catholique de Louvain, Louvain-la-Neuve, Belgium Rauf R. Garagozov Center for Strategic Studies, Baku, Azerbaijan (Literary and Linguistic Computing. The Author 2013. Published by Oxford University Press on behalf of ALLC. All rights reserved).

Abstract. *We compute the rate of textual signals of risk of war recognizable in series of consecutive political speeches about a disputed issue serious enough to entail an international conflict. The speeches concern Iran’s nuclear program. We trace textual signals forewarning of risks of war that reactions to this affair lead to. The thrust of the textual analysis rests on the interplay of affiliation and power words in continuous texts, following D. C. McClelland’s model for anticipating wars. The speeches are those of Iranian President Mahmoud Ahmadinejad, US Secretary of State Hillary R. Clinton, Iranian Grand Ayatollah Ali Khamenei, and Israeli Prime Minister Benjamin Netanyahu. Prefiguring a military confrontation before it occurs involves structuring information from unstructured data. Despite such imperfect knowledge, by the end of January 2012, our results show a receding risk of war on the Iranian side, but an increasing risk on the American one, while remaining ambiguous on the Israeli one.... We computed a global rate of vagueness from the [Hiller]*

vagueness scale (the percentage of the number of vague words to the total number of words in the section of the document under analysis)...

4.3 The course of the rate of vagueness. The average rate of vagueness is 6.7 in Ahmadinejad (min/max¼0/7.8, SD¼1.2, N¼42), 8.7 in Khamenei (min/max¼8/9.5, SD¼0.3, N¼47), 7.6 in Netanyahu (min/max¼6.4/8.4, SD¼0.4, N¼34), and 7.4 in Clinton (min/max¼6.1/9.2, SD¼0.6, N¼34). The course of the rate of vagueness increases linearly and significantly in Ahmadinejad, Clinton, and Netanyahu (but not Khamenei) (Table 4 and Figs 5–7). The speed of increase is slow in each data set, between 0.02 and 0.03 a month. The course of vagueness in Netanyahu adds up to the absence of direction noted earlier for the risk of war: his speeches remain in a lasting state of vagueness throughout. We further bothered to find correlations between the risk of war and the rate of vagueness. We found only one, in Clinton’s speeches, a statistically significant lagged one between the risk of war at T_0 and the rate of vagueness at T_{p1} ($r¼0.66$, $n¼33$, $p<0.0001$, CI 95%¼0.37/0.86 using 20,000 resamplings). Changes in the risk of war in Clinton are followed in proportion by changes in the rate of vagueness one month later.”

Thus, while teachers committed to conducting recitation in class, even when unprepared, resort to vagueness inadvertently to slide over their uncertainties about facts, politicians may intentionally signal flexibility with vagueness, while also signaling resolve by removing vagueness from their speech.

Knowledge acquisition in the 3rd Domain

As it turns out, a strong case has been made by Psychology for very different kinds of learning activities, and most of these, perhaps even all, apply only to acquisition of the mundane knowledge generated in the 3rd Domain. The major theories about learning are reviewed below to reveal what kind of knowledge is created.

Classical, Pavlovian conditioning.

This form of learning is arranged by the timing the presentation of a naturally evocative stimulus (termed the Unconditioned Stimulus, US), such as fresh meat presented so a hungry dog can see and smell the meat, which triggers an Unconditioned Response (UR), here salivation, with a previously neutral signal, such as a bell rung or light shown without any prior history for the animal. It is found over repeated presentation trials of pairing the US with the CS that the presentation of the previously neutral CS without the US will trigger a response similar to the UR termed the Conditioned Response, CR. This form of learning is covered in every basic psychology text, so coverage here will be thin. The timing of the CS with the US is important. If the CS follows the presentation of the US, the CS will fail as a trigger for the CR. The optimal timing appears when the CS precedes the US by approximately a half second. Also of interest is the nature and rate of extinction for the CS when trials are run in which the US is no longer paired with it. For our purposes, Classical Conditioning appears to involve “mindless” learning of mundane information that is of little to no significance for conscious functioning.

Imitation and modeling.

This form of learning is obvious to any who have watched young animals and children mimic or imitate what an adult or peer does. Because the responses are under voluntary control (unlike classical conditioning in which the response are under autonomic control), it would be expected that consciousness plays a significant role in such learning. However, neurologists has discovered what they term a “mirror neuron.” When such neurons are not working, imitation ceases. “*Human brain studies using FMRI (Functional magnetic resonance imaging) revealed a network of regions in the inferior frontal cortex and inferior parietal cortex which are typically activated during imitation tasks.*” (Iacoboni, M.; Woods, RP; Brass, M; Bekkering, H; Mazziotta, JC; Rizzolatti, G (1999). “*Cortical Mechanisms of Human Imitation*”. *Science*. **286** (5449): 2526–8.). Thus, despite the use of consciously controllable movements, consciousness may play a small or nonexistent role in imitation of mundane activities.

Stimulus-Response Associative learning.

This was one of the most studied topics in Psychology over the past century. Research included verbal associative learning and sensory-motor skills learning by adult humans, as well as by rats, monkeys, and pigeons. Early on S-R Associative Learning Theory was popularly known as Edward Thorndike's Connectionism theory in which humans and animals learned to reliably make voluntary responses after reward or punishment stimuli. Trial and Error learning is a major topic for S-R Learning theory. Trial and error learning is the epitome of mundane learning, because there is no necessary or natural association between for an arbitrary stimulus-response arrangement. Thorndike's Law of Effect was for a long time the most prominent guide for psychological research. Simply stated, behavior that is rewarded in a discriminable situation will be reinforced to be performed in that situation, and conversely, behavior that is punished will be suppressed in that situation. Thorndike's Cats in the Puzzle Box research model illustrates the possibility for a lack of any necessary natural S-R learning association. In one procedure, a cat could escape entrapment in a box by pressing a lever that opened the box for escape. Cats quickly learned from trial and error to push the bar to escape. However, Thorndike also arranged for escape, not by a bar push, but by the cat's jumping (lashing about); as soon as the "frustrated" cat would jump, the box would be opened for escape, and cats quickly learned to jump. Thorndike also explored a seemingly unnatural escape behavior by opening the box when the cat made an anal lick (they are good at self cleansing). Many researchers thought mistakenly that the S and R could be associated regardless of what the stimulus was like, because learning trials, and extinction trials (the cat's stopping bar pushing or jumping when the box no longer opens) appeared similar, so stimuli choice appeared arbitrary. However Thorndike also reported, with no fanfare catching attention, that extinction for the anal lick was different. He made two points. First, the anal lick performed was unnatural, it was partially done, not fully. Second, after only one or two extinction trials, the cats no longer did their false lick to get out. Much later researchers found that some S-Rs were naturally, easily learned with a high resistance to extinction, but other S-R combinations

were not learned well and rapidly extinguished. The popular explanation is simply that animals have evolved to make particular mundane associations, e.g., a rat getting sick from eating an unusual food will avoid eating that food (or drink) after only one punishing trial and the avoidance persists without extinction (see Seligman, M. *ON THE GENERALITY OF THE LAWS OF LEARNING*. Psychological Review 1970, Vol. 77, No. 5, 406-418 at

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.741.7989&rep=rep1&type=pdf>).

BF Skinner's Operant Conditioning.

Operant Conditioning is the term for a highly controlled and systematic delivery of rewards (or punishments, politely termed aversive stimuli) delivered in response to bar presses (the "operant" behavior), with experimental Subjects ranging from humans, to monkeys, rats, pigeons and other animals. Speed of learning and extinction were studied, and done so across simple tasks and chained-linked tasks. Skinner was a staunch behaviorist who avoided speculating about what a human or rat might be thinking about while learning. His research never asked Subjects what they thought, because he distrusted introspection for gaining any scientifically credible evidence. Prediction and control of behavior were demanded by his science strategy. Strictly black box research measuring what goes in and what comes out. He was gifted at gaining adherents to his form of Behaviorism. But, alas, it appears to have provided a blind alley for Psychology. Just too much data about mundane operant response arrangements and equally mundane somatic rewards.

Gestalt insight.

The Gestalt school of psychology germinated in Germany and was brought to America after developing European adherents. Its research program was focused on the nature of perception (mainly visual). It had rational roots in a Platonic view of reality of universal forms providing the basis for perception. Perception was guided by innate rules that could be discovered by introspection, and by intuiting what led to animal behaviors when

conversation was precluded. A major proponent was Wolfgang Koeler with his book, *the Mentality of Apes* (1925). Koeler depicted situations in which animal responses were not randomly made to randomly presented stimuli, but instead presented situations (involving boxes or sticks) in which an intelligent animal could intuit or mentally construct the solution to a puzzle to gain a reward. In the box experiment, a banana reward was attached high off of a ceiling so that an ape could not reach it, even by jumping. With a box placed in a chimpanzee's cage, after a while, one chimp (brighter than the rest), suddenly moved the box under the banana and was able to reach it by climbing on the box. Koeler described this behavior as demonstrating problem solving insight. In another situation, it took one or more sticks to reach through their cage to snag the banana. Based on such phenomena, the Gestaltists derided the American research using mundane stimuli and responses. Gestalt psychology was comfortable about theory building and research that involved mental concepts, such as introspection and insight. By contrast, American Psychology was a new field, and thought that aping physics as an operational science was their key to academic acceptability. Apparently, the bizarre nature of the new theory about quantum mechanics had not caught their attention. Gestalt psychology proved to be a side branch for American Psychology.

Cognitive learning.

By the mid twentieth century, some prominent American psychologists had become disenchanted with the minutia of little isolated mundane Ss and Rs forming associative bonds. For example, the eminent perception psychologist, James Gibson, published a book of research which explained that S-R bonds lacked any useful explanatory power for understanding natural perception (Gibson, J.J. (1950). *The Perception of the Visual World*. Boston: Houghton Mifflin.). Gibson argued that natural visual perception was the result of the holistically projected imagery on the retinas with the brain processing the information to fit into the brain's construction of a conceptualized 3 D space that of course did not physically exist in any way within the brain. The brain's neuroanatomy was organized to create visual perception without extra intentional mental management. He thus thought

that mentalist psychology was about as wrong as Behaviorism for understanding perception. The Tripartite Domain Theory agrees with Gibson that cogitation does not produce perception, but for a different reason than his. Our explanation is that the body brain mechanisms processing sensory data eventually deliver that data to a consciousness that realizes perception—the brain is a data sourcing mechanism, but not the seat of conscious perception.

Evidence has been found indicating inborn anatomical design for feature detection.

Evidence that the visual system is born with feature detection capabilities

Retinal and striate cortex feature detectors. Research on cat retina and striate cortex found movement and bar pattern detector sensitivity in both the retina and the striate cortex area of the visual cortex. Researchers found that light movement and light pattern detection were anatomically supported. (Hubel, T., and Wiesel, D., Receptive fields of single neurons in the cat's striate cortex. *Journal of Physiology* (1959) **148**: pages 574-91).

Visual cliff avoidance by inexperienced neonates. A visual cliff apparatus is a sheet of plexiglass, stiff enough to support crawling infants, placed over two distinctively different underlying patterns. One pattern is a checkerboard placed under the glass, and the other is created by dropping the pattern four feet down, so that a “visual cliff” appears. Preterm (16) and term infants(16) were set on the glass and prompted to crawl. The researchers observed that the infants showed aversion to the cliff, and did this before having acquired any experience from falling. (Lin, Yuan-Shan; Rielly, Marie; Mercer, Vicki S. (2010). "Responses to a Modified Visual Cliff by Pre-Walking Infants Born Preterm and at Term". *Physical & Occupational Therapy in Pediatrics*. **30** (1): 66–78)

Infants have a greater interest in faces than other patterns.

In one study, infant brain activity was found to be most active when shown faces as compared to other stimuli, indicating an inborn capability to perceive and find attraction in faces

(<https://news.stanford.edu/news/2012/december/infants-process-faces-121112.html>). In another study (Development of infants' attention to faces during the first year, Michael C. Frank,¹ Edward Vul,¹ and Scott P. Johnson². Published online 2008 Dec 27. doi: [10.1016/j.cognition.2008.11.010](https://doi.org/10.1016/j.cognition.2008.11.010)), researchers found that, "In simple tests of preference, infants as young as newborns prefer faces and face like stimuli over distractors. " This preference to attend to faces is found at birth, and so appears to be inborn.

Pareidolia.

This is the tendency for humans to interpret a vague stimulus as something known to the observer, such as seeing shapes in clouds, seeing faces in inanimate objects or abstract patterns, or hearing hidden messages in music. A wide variety of studies have found such a tendency exists, and that implies innate structural design in the nervous system (<https://en.wikipedia.org/wiki/Pareidolia>).

Hawk/Goose effect.

"In ethology and cognitive ethology, the **hawk/goose effect** refers to a behavior observed in some young birds when another bird flies above them: if the flying bird is a goose, the young birds show no reaction, but if the flying bird is a hawk, the young birds either become more agitated or cower to reduce the danger. It was first observed by Konrad Lorenz and Nikolaas Tinbergen." (https://en.wikipedia.org/wiki/Hawk/goose_effect). Thus, such young birds showing fear appear to have evolved to have inborn feature detection and fear for dangerous predators.

Reasoning and common sense logic.

Most of our perceptions about what's going on in the world, at work, in society, while driving on the road, when interpreting the shenanigans of politicians, shopping, watching movies, reading stories, playing competitive games... comes from the multitude of instances in which we have experienced life's twists and turns, tried to reason and failed, sometimes guessed right and sometimes screwed up badly We do Not apply any

formal reasoning, such as applying Aristotelian syllogisms. Mature folks know they are susceptible to being misled, tricked, and cheated. By contrast, youth brought up in happy middle class homes (is that what happened to millennials?) may be radically optimistic about applying their presumed accumulation of vast knowledge to solve the problems their seniors fumbled. Thus, our youthful visionaries can argue with sincerity that use of all carbon fossil fuels must be stopped soon, before the world ends. Cows must be slaughtered to stop polluting the atmosphere. All airplanes must be grounded. Nuclear power plant technology, always dangerous, must be abandoned. Glass faced skyscrapers must be torn down as energy wasteful. Wind power, sunshine, with perhaps some tidal wave technology, will provide for all of our energy needs. Common sense logic has gone with the wind.

2. KNOWLEDGE TRANSFORMATION

Transformation by the sciences (Kuhn's insight on paradigm shifting).

We are taught in school that science is a grand human enterprise. It suffers no fools, employs only objective data to evaluate its modeled predictions, and is thus self-correcting with great contrast to other institutions, such as the stock market, politics, and law. Creativity is rewarded for achieving new models that work, or improving on older models, we are taught.

The myth about welcoming innovation (Magueijo).

A brilliant grad student in physics at the time I address, Joao Magueijo (now a PhD Cambridge graduate in theoretical physics focused on cosmology). JM was involved in many collegial discussions about a hot topic of the day, the so called Inflation Theory of the Big bang. Inflation theory provides a model for the Big Bang expansion to resemble how the world appears now. It relies on the speed of light as being constant just as theorized by Special Relativity. Inflation theory was not popular with the Brits as being a speculative American product. To create another model for the expansion, JM thought to relax the Einstein postulation of light always traveling at a constant speed regardless of its surround. If light could travel faster than its current speed, then so too might the material exploding at

the singularity, and the relative uniformity of the universe might be comfortably modeled. The constancy of the speed of light is a foundation principle for physics, so hypothesizing that it might have been different at the time of the Big Bang was threatening to all sorts of other models in physics. What MJ experienced was not mere intellectual jousting from established professors and editors, but nasty personal ridicule (Magueeijo, J. Faster than the Speed of Light. Cambridge, MA: Perseus Publishing, 2003) What JM realized was the physics establishment was built on the foundation of accepted beliefs, and was threatened by change, not reinvigorated by innovation.

Kuhn's paradigm shifting Stages

Kuhn's review of the history of science found that there were four discernable stages by which an established paradigm for science changed (such as the classical physics of Isaac Newton). There was no sudden Ah Ha moment when a world view would change.

The first stage is when the normal scientific beliefs then current and used for teaching and research become suspect.

The second stage develops when prominent professors attend to anomalous research findings or reinterpretation of accepted theory, with serious doubt generated about the currently accepted paradigm.

The third stage is adoption of a new paradigm to accommodate accepted findings.

The fourth stage is the new paradigm's general acceptance as the best one known.

The central point is that there is no sudden, overnight, rejection of the former paradigm, but an extended period of challenges, and debate for replacement to take hold.

Transformation in life.

Hard knocks (the 2-hour drive).

I once took a two hour drive with a very bright PhD colleague to meet a client. As we started out, I mentioned something about a movie star making the news over a tragedy, bright, beautiful, and rich, but suffered from a romance gone bad. I reflected a moment, and added that her prominence made the news, but this is the way ordinary life flows with ups and downs for everyone, even for the well off. My young friend shot back that I was too pessimistic and wrong about life. After driving down the highway about a mile, I challenged him to identify just one person he knew who went through life happy go lucky, spared of bad stuff, except taxes and natural age deaths. Easy to do, he said. After about 15 minutes he said that he had found just such a happy, carefree person. I did congratulate him for his discovery, and hid my doubt. After another few minutes passed, he then said he made a mistake. How? Well, he said that he had selected his middle aged Mom as the blissful soul, but forgot or suppressed a few sad facts. She was yet anguished over an extramarital affair Dad had about five years ago. She also had arthritic fingers, knees, and shoulders that hurt from moderate activities, such as washing the dishes. I cheerfully said that we still had about an hour and a half on this leg of our trip to think of an uneventful happy life.....

Meditation.

The NDE/OBE phenomena all but proves there is another reality than what we experience in our day to day mundane lives. The advocates for meditation claim that it can enable the mind effectively to detach from the body and thereby enter the domain of pure consciousness. According to the Tripartite Domain Theory, meditation would have a legitimate target in the 2nd Domain.

Religious education (teacher centered).

People who become very serious about religious education may experience epiphanies in which they feel a direct contact with the Divine. According to the Tripartite Domain Theory, such felt experiences may indeed be true.

Self-study of scripture (the spirit of Protestantism).

Lengthy and intensive study of scripture has reportedly generated an experience of contact with the Divine.

The born-again experience.

A Pew Research survey of 35,000 Americans in 2014 found that approximately 28% experienced being born again. The intensity of religious feeling associated with being Born Again implies they had entered the 2nd Domain to have achieved their Intense feelings.

(https://www.pewforum.org/2015/05/12/chapter-1-the-changing-religious-composition-of-the-u-s/pr_15-05-12_rls_chapter1-08/)

Spiritualism.

Spiritualism is a quasi-religious belief that the dead have not perished, and may be contacted. Spirit mediums claim to be able to communicate with those who have passed over. Christianity sensibly warns that enlisting the services of mediums risks treachery by charlatans, which is not to deny that there may be a few who can communicate with spirits, but it's risky business

What does it Mean to “Know” about Something?

For purposes of the following discussion, the classes of knowledge are defined as either transcendental, in the sense of idealized Platonic forms, or mundane, in the sense of “arbitrary” states of the environment as perceived by the ordinary sense-perception mechanisms of the body for sight, hearing, movement, touch, etc. There are two specific topics of knowledge that we will analyze, and these are about *creation of the world*, and the *nature of consciousness*.

Knowledge about the Creation of the World.

If we were able to extricate ourselves from our material world (the 3rd Domain) to observe it, we would then be positioned to “see” how its appearance might possibly differ from how it seems when viewed from its interior. The main benefit of an external observation location would be to

see how it came about, how it was formed, assuming it had a creation. However, as argued in chapter 6 by the Principle of Interior Unknowability (PIU), we cannot ever be located outside of the material world, even if we could go backward in time, to observe its formation. Thus, any definitive scientific search for knowledge describing the nature of Creation is precluded by applying the PIU.

For our souls when functioning in the 2nd Domain of consciousness, either by a NDE, by a true death, or possibly thru meditation, knowledge about the nature of Creation is reported to be made available -- that is what the NDE/OBE reports reliably claim.

Knowledge about the Nature of Consciousness.

As argued in chapter 6, according to the PIU analysis we cannot see what consciousness is, how it may appear to an external observer, and thus have no way to objectify its nature by comparison with anything that may be scientifically observed. We experience consciousness thru immersion in a field of consciousness, but cannot objectively describe it anymore than we could describe the fragrance of a rose to someone else. While alive in the 3rd Domain, we are intellectually aware of having consciousness, particularly when we become *aware* that we are observing or thinking about anything, but we are not able to otherwise observe its nature as we might real objects existing in the material domain. Neurology, Psychology, and Philosophy are unable in principle (according to the PIU) to objectify “consciousness” as an observable phenomenon.

During the NDE/OBE, it is claimed that the individual consciousness participates in a universal field of consciousness in which all knowledge is instantly available, but even then “consciousness” does not appear as any entity itself that may be observed.

The quest to develop knowledge about *Creation* and *consciousness* ends here with the conclusion that, by our being immersed in them, they are not ever directly observable to us. However, conventional science is plagued by those who either seek to deny their existence (i.e., by contending that nothing can be said about existence before the Big Bang, and that

consciousness is an unimportant epiphenomenon), or conversely seeking to scientifically describe and explain Creation and consciousness, whereas the PIU shows that both of such opposing perspectives are wrong.

I expect that it would only be God that would have any ability to objectify knowledge of “consciousness” and Creation.

CONCLUSION

A theory of knowledge was proposed here that recognizes two distinct forms, Transcendental and Mundane, and two different associated mechanisms for knowledge acquisition, retention, and retrieval:

1) Transcendental knowledge is perfect, is acquired directly in or from the 2nd Domain, and is eternal. Transcendental knowledge is provided to conscience before birth and is surely intended to guide moral conduct; a proposed guide based on morale precepts conveyed during the NDE is included at the Annex; no further discussion is offered, as the rules are self-evident from our Transcendental conscience. Transcendental knowledge is acquired by perception that includes features not found by Mundane perception:

- 1 Time no longer has meaning, does not flow, and the past and present, even some future events, are available to see and experience;
- 2 Consciousness is much more acute than normally experienced;
- 3 Perception is radically enhanced, e.g., colors are brilliant, and have greater variety, likewise all of the other senses are enhanced.
- 4 Visual perception is 360 degrees, with an ability to focus down to atomic particles or up to the cosmos;
- 5 Everything seen appears to be made of light;
- 6 Movement by thinking to move is instantaneous, and thinking is radically speeded higher, as if also instantaneous with no time running;
- 7 All entities experienced exude consciousness, not just people and angels, but animals, plants, and even rocks and water;
- 8 The world experienced is multidimensional, more than space-time;
- 9 If "going" all the way thru the "tunnel" to the other side, once there it is recognized as an eternal home that was left to have an Earth life.
- 10 By existing in the universal field of consciousness, all knowledge is felt as available.
- 11 By existing in the universal field of consciousness, one feels they are part of God and feel His love for all.

2) Mundane knowledge is gained through experiences generated by the body/brain living in the material world, is imperfect, and typically requires repetitious practice to build stability and retention. Mundane knowledge is imperfect because the body's sense-perception mechanisms are not perfect, and because memory storage and retrieval are subject to distortion (such as caused by memory interference from similar experience interposed between initial storage and retrieval), and aging.

Epilogue

Arguendo, there is a God, and He is outside of time and space. In fact, there may be no time and space, only their illusion, because there is nothing except God, and his imagination. Yet, we experience time and perceive space extended in three dimensions as very real. How so?

Consider that a point may be the asymptote for infinite division of any extended line dimension, area, or volume in time. For example, place a point on a line $\frac{1}{2}$ unit (of anything) from an origin point of any spatial manifold (0, or 0,0, or 0,0,0 ...) unit (of anything) and divide it by 2; continue to divide the remainders by two for as long as you please out to infinity, and the resulting points will asymptote to zero, with a delta even smaller than the Plank constant for length. With enough halving of the distance between any arbitrary extended point on a line and its point of origin, the resulting point separation becomes "negligibly" distant from its origin.

Brian Greene gives credence to a theoretical speculation that there may be no real space and time as such according the zero brane theory formulated by Banks, Fishler, Susskind, and Shenker as the foundation for the 11 dimensional M theory (10 spatial and one for time in the currently accepted version of super string theory) [Mentioned in *The Fabric of the Cosmos*, Brian Greene, 2004, pp 488 – 489].

Just how far from the origin must the extended point of displacement need to be to create a "real" extension from the origin? Well, that extension is

merely the width of close to nothing at all. So, a three dimensional reality with duration in time may have approximately no size. Thus, the answer to how the world may have been created by God from nothing is that the world has approximately no size at all.

It may be conceptualized that all entities existing within this effectively null sized world would be substantially smaller even than the scope of such a world. Thus, all of our world may be infinitesimally small, although appearing to us large, estimated at between 14 and 156 Billion light years or more in diameter. Now, because absolute distances within this tiny world are small from God's perspective, communication within this world is virtually instantaneous by measurement, just as theorized for quantum entanglement.

How many such worlds may God have created? Why or course an infinite number, with plenty of room to spare.

The world that we apparently see appears to us to be very large, perhaps infinitely large, but from the perspective of a God Creator, it could be tiny.

From what source did this philosophy emanate? Having thought about the nature of space-time, I had come to the conclusion that "time" is simply a marker for an eternal now, and in a world of change, the eternal now accumulates a past and holds the potential for an infinity of futures. But the nature of space was yet a mystery. I have now run across an Out of Body Experience report that as the person was oscillating between seeing outer space and the inner workings of body cells, *"it was all the same."* *"I found myself staring into a tunnel and moving very quickly backwards. First I saw the moon and stars and they were very beautiful, then I moved back (at tremendous speed) and the image changed to microscopic views of the inside of blood vessels, then I moved back again and saw more of space, then again organic cell matter. A message was given to me. It wasn't through a voice or a being, it was instant knowledge. It said 'It's all the same. The expanse of space and the cells of the body...it's all the same.'* " (https://www.oberf.org/marcy_d_obes.htm). This mystifying claim that it's

all the same is consistent with the mystifying fact that there is any form of existence in contrast to nothingness.

The primary purpose for analysis contained in this book was to reason how any world may have emerged from a state of pure nothingness, no space, no time, just a perfect void lacking any size. With nothing existing, there would not be any basis for action within or interaction between or among anything—just a pure void lacking any extended dimensions. What could have possibly entered in to cause anything to emerge into existence? We can conceptualize that equal and opposites may sum to nothing, but how could any opposites arise from nothing? On the face of it, nothing could not by itself produce or emerge into anything, and so philosophy and religion postulate the unmoved mover, God, to be the source for Creation—but that begs the obvious question of how God could either have always existed or emerged from nothing. We cannot imagine how a world would have always existed uncreated by anything, or how a world could have erupted from nothingness. So, the fact that there is existence, whatever its true nature, is profoundly mystifying.

Annex

Implied Code of Conduct and Its Rationale

1. Every discernable entity is created by God, and so merits respect, even if at a bare minimum.
2. Each person merits self-respect, but self adoration goes too far.
3. Every other person likewise merits respect, even when they act badly, or cruelly. However, do not accept their bad behavior. Discuss to encourage correction, as self correction is best. Next, discourage peacefully by persuasion, and work to prevent or stop. Apply force only as the last resort.
4. Love goes beyond respect, and is due for God and His creations unless they use free will harmfully on others or on nature.
5. Love yourself as a starting position. Mid course corrections may become necessary.
6. Love thy neighbor as a guide for peace.
7. Altruism is not coded in civil law, but is desired by God.
8. Good deeds accomplished do NOT themselves earn any credit from God, but a good heart trying to help does.
9. Birth “defects,” illnesses, hardships, and accidents all create opportunities for individual growth and community development.
10. Mistakes in life are inevitable for mortals having free will, but provide a basis for spiritual development if handled constructively.

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