

GOD

e x p l a i n e d

www.GodExplained.org

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List of Illustrations (in order of appearance):

Whole sand castle	Dreamstime
Meditation	www.spiritually.com
Neural interconnection	Dreamstime
Superimposition	Bernd Thaller, PhD
Spoons	E. Rebecca Junkin
Spiral staircase and Stift Cathedral	Martin Haesemeyer
Sand castle subsuming	Dreamstime
Floating	Dreamstime
Beach	Dreamstime

If you have ever had the good fortune as a child to play on a sandy beach by the ocean you would have likely attempted various constructions in the sand you found there. With the aid of small shovels, trowels, perhaps seashells or just your hands, you would have created castles, walls, canals or a host of other structures as elaborate as your imagination at the time dictated. As a child you would have not felt the time pressure of the tide that would soon sweep up the beach and erase the fruit of your labors. Time for you at that point seemed endless. You proceeded languidly or with decision depending upon the fire in your soul. The receding of the tide and its eventual return were in your peripheral vision at best and would hardly have been noticed.

In due course, however, the tide stops its ebb and returns to the top of the beach to reshape everything in its path. Among that which it finds in its path would have been your constructions. Inevitably, they would have washed back into the surrounding sand with the advancing tide or, in a more animated sea, been obliterated and their substance cast up and down and to the sides to disburse more widely along the coast. Whatever the result, the fruits of your labors would have disappeared back into the sandy beach whence they came. Yet the entire constituent parts, all those grains of sand, ornamented, perhaps, with seashells or seaweed or beach stone, would remain on the beach. Another turn of the tide, or another day or week, and some of the constituent parts of your construction would be gathered together in different configurations by the next child to play on the same beach; or perhaps not on the same seashore, for the sea can carry its cargo over great distances.

Indeed, the seaboard does not need the intervention of your own actions. It is shaped and reshaped twice daily by the sea and is never quite the same from one turning of the tide to the next.

For what is the story of the ever-changing shape and content of this beach a metaphor? It is a metaphor for our existence. We are brought into this world through the miraculous interaction of just three fundamental particles: the up quark, the down quark, and the electron. These interact in varying combinations to form neutrons, protons, and on up to complex molecules such as

DNA, and finally to you and me. In due course this collection of molecules not only take on the shape of a person but, with the lapse of time, begins to be recognized as a human being with differing traits and personalities depending upon its experiences in its environment, along with the particular qualities conferred by the genetic recipe with which it has been blessed or cursed, as the



case may be. Through experience its essence emerges. This creation from the tidal zone of our universe carries on for a period of time and then lapses before the inexorable advance of the tide of life. Like the sand castle on the beach before the advancing tide, so to its constituent molecules this human being will be disbursed and fade into the background of the universe from which it sprang. But while the coming into existence and fading away of a corporeal being is easily understood in terms of the sand castle metaphor, it is often further asked, as the pop singer Peggy Lee famously sang in a well-known refrain, "Is that all there is?" Most of humanity hopes not. The parallel for existence in the story of the sand castle does not assume that the sand castle has any property other than its shape and its various constituent parts. It is otherwise inert. Human beings, on the other hand, don't tend to be inert and, apart from their physical selves made up of inheritable molecular instructions and the myriad consequential molecules which build, signal, and control the dizzying array of electrochemical events in the great choreography of a living organism, we human beings fancy ourselves to have a second constituent part we often refer to as consciousness or, for the more religious, a soul. This concept of consciousness or soul is ill-defined even though much

thought has gone into it over the millennia. It is an aspect of us that seems to defy analysis or characterization. When we are considering the end of our existence we know what happens to our body. We are generally convinced that we have this second constituent part, this soul of ours, which is the result of our conscious experiences, our essence if you will. What happens to it, if we can agree that it exists at all? Does it fade to nothing? What is “nothing,” anyway? At least the body in its constituent parts remains behind like the sand on the beach after a receding tide. But what of the soul? Indeed, what of the soul and its disposition?

It is this latter question that this essay will address.

Chapter Two: A Question of Perception

In determining our place in the universe, and so to ease our way out when nature takes its course, it should be borne in mind that we are really contemplating fields with which we do not have the skills of perception to properly understand. We have developed what skills we have to ensure our survival on the earth as it has evolved over the past few billion years. These are great skills for the purposes intended as we have managed, in a manner of speaking, to succeed. These skills, and in particular the skills of perception, as finely tuned as they are for their particular purposes, are of little help in understanding the deeper nature of the universe, our place in the universe, and finally, our melding with it. Some of this imperceptible stuff we can get a glimpse of with metaphors such as the one cited earlier or by way of arcane mathematical modeling, but it is difficult to actually grasp the essence of a lot of the mechanics of the universe. Even mathematically, there are elements of the universe for which there are simply no solutions.¹ Our experience, the requirements of that experience, and very possibly our own physiology augur against a deeper understanding. It simply hasn't been necessary for our continued existence. In order to be clearer about our perceptual limitations, it might be useful to look at the example of the cow and how it perceives things.

No doubt some of the following discussion may raise questions as to why we are not able to better perceive what is going on, why we have to resort to mathematics and similar esoteric indirect methods to "explain" things, and why there are some things that even the mathematicians, physicists, and theoreticians haven't been able to explain. It really boils down to our limited abilities to perceive and understand the world around us with the tools that we have. We perceive the world in three dimensions and have a passing perception of another dimension, time. That isn't to say there aren't more dimensions, only that our perception is limited to three or possibly four. Hence

1. See Alan M. Turing's halting theorem or Gödel's incompleteness theorem. See footnotes 13 & 14.

we may not be equipped to understand the intricacies of the universe and in particular that force which has come to be known as God in some circles of discussion or the Ultimate Reality in others. We only have the ability to perceive that which has been necessary to ensure our survival on the African savannah where we started out. Any further perceptive ability would be redundant and hence natural selection would not have so selected.

To get a better grasp on our limited perceptions it might be useful to look at how another being, who can only effectively see in two dimensions, perceives its world. That being might well be a cow. A cow only has 60 degrees of vertical vision compared with 140 degrees for humans.² It has to lower its head to focus on something on the ground. In essence, it can only effectively see in two dimensions. Practically what that means is that when the cow is in the barn and someone in the hayloft throws down a bale of hay, the cow sees it all of a sudden but has no idea where it came from. It doesn't get the up and down of the world so it is as if the bale just appeared from nowhere. Cattle handlers are aware of this deficiency in cows and so try to minimize the cows having to deal with three dimensions.³ They do this by using solid sides for working alleys, minimizing shadowing, using uniform colors, keeping cattle working areas free of debris and so forth. All this dumbing down of dimensional perception helps the cows remain calm when their personal space is being invaded in other ways. They don't have to wonder what is going on, on the other side of a railed fence or the paper cup in its way which appears like a chasm and so forth. I suppose if a cow were taught a little mathematics it might be able to come to theoretical understanding of the third dimension though never able to actually perceive it.

Perceptual difficulties are not limited to cows, however. I, the author, am color blind and tone deaf. I remember once walking into a hardware store for the purpose of

2. Bulletin 906, "Cattle Handling and Working Facilities," (The Ohio State University), 1.

3. Thanks in large measure to the efforts of the extraordinary Temple Grandin.

ordering paint for my house. I presented the paint chip to the woman in charge and ordered five gallons. She looked at the paint chip and then back to me and asked, "What are you painting, sir?" "My house," I replied, whereupon she asked questioningly, "Purple?" I said, "No, I am painting it dark blue." "Well then, let me help you with your choice," she rejoined. For a graphic example of this deficiency do a search for a color blind test on the Internet. You will find a number of circles or squares of varying colors. Hidden in each of them will be a number or shape or letter. With the exception of black and white, I can perceive none of the figures while friends and colleagues without the deficiency of color blindness can see them clearly.

Then there is the case of the accomplished saxophonist with a perfect ear who complained about never being able to go to the dances held in the local community hall. As it turns out, he found the music too jarring on his perfect ear. There was always some instrument slightly out of tune which would drive him up the wall. At the same time, my ears, deaf to tone, perceived no difficulties at all and could enjoy an evening of music and dance whether in tune or out of tune, on beat or off beat. So while I share the ability to understand three dimensions with the rest of humanity, I have other perceptual difficulties which forbid me from seeing the world as others do.

In the same way we are limited in our ability to conceptualize much of what goes on beyond our faculties of perception. Like the bale in front of the cow, some things just appear out of nowhere and we have no idea whence they came and, in many cases, can't even wrap the math around certain phenomena. Likewise your purple may be my dark blue or my pleasant evening at the community hall may be hell for you. So, as we move through these explanations of the universe and the Ultimate Reality and our place in the great scheme of things, don't get too upset if you just don't get it. You don't need to "get it"; you just need to know what to expect and what happens and how best to react when things come to an end for you. We can reach back in time to sum up the thoughts in this chapter by taking a quote from Aristotle's *Nicomachean Ethics*: "It is the

mark of an instructed mind to rest satisfied with the degree of precision which the nature of the subject permits and not to seek exactness where only an approximation of the truth is possible.”

Chapter Three: Consciousness

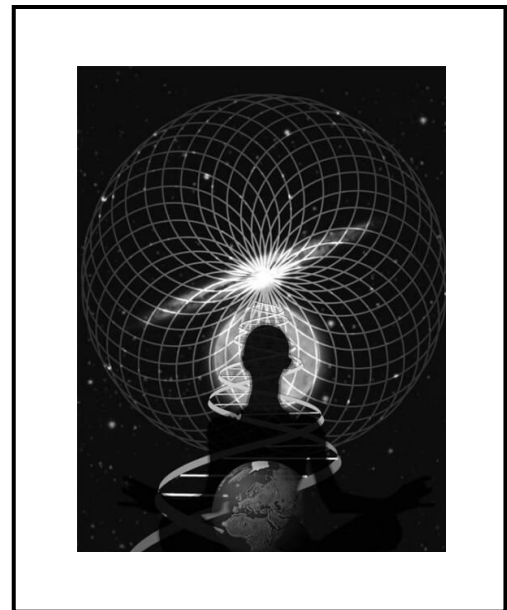
In the previous chapter we talked about how we perceive things and our possible deficiencies in this area. But this raises the question as to who we are. Are we anything, really? What makes us ask such questions as what is going to happen to us upon our demise? Who do we think we are? Our propensity to raise such questions is thought to arise from the fact that we are conscious human beings. This sense of consciousness provides the platform for us to ask such penetrating questions and leads us to a dual perception of ourselves: that of our corporeal body and that of another essence (at different times and places known as our spiritual self, our soul, ātman, person, and so on). So it is perhaps worth examining this second, less concrete aspect of human existence as it is its eventual disposition that really concerns us. Indeed, what is this part of ourselves we often call consciousness that some of us hope will somehow transcend its corporeal vestments and go on to . . . where?

By and large, whither you look, you will find this dualist nature of self. There is the corporeal being and there is the spirit or the soul or the ātman which occupies the corporeal being as a renter would occupy an apartment. What happens with the renter when she leaves her apartment is a matter of differing opinions among the various religions, philosophical schools, atheists, and others. However, the dualist nature of our existence is unquestionably part of our thinking as can be noted in our use of language. We speak of *my* brain or *my* body as if it were something quite apart from ourselves. The disposition of the “renter,” per se, on leaving its abode in a corporeal body has been less fixed in our minds. Does it persist or not?

While the notion of duality is reasonably fixed in our view of ourselves, the question of the persistence of the soul has been more controversial. There are the atheists who deny a continuing existence as well as God. There were the Sadducees who denied a continuing existence after death but did recognize God. Then there are

the Buddhists who recognize a continuing existence of a sort but do not recognize an overarching God-like force. And finally there are most religions, both past and present, which recognize an afterlife in differing forms along with an overarching power most commonly known as God or a collection of God-like powers.

Moving to ideas outside of conventional religion, there is the view of René Descartes who suggested there is the mind which is not physical and does not occupy space, and there is the physical existence of the body and the world around it. However, no satisfactory explanation exists as to how the physical body interacts with the intangible spirit or soul. Then there are those called the Monists who reject dualism and so solve the problem of how body and soul interact. Yet this is problematic as well. If the mind is



fundamental, whence comes the physical? How then can we unify the intangible mind, not apparently subject to the physical laws of the universe uncovered to date, with the physical world? There are those who suggest that matter is fundamental but fail to explain what this intangible phenomenon of consciousness is. This is the “hard problem,” as Australian philosopher David Chalmers called it, so far not answered by more than speculation. Perhaps our innate abilities of perception restrict us from ever being able to understand the answer in much the same way as I cannot perceive purple from dark blue or High C from High E. We have our built-in limits.

All the same, it might be useful to examine the mind and see if a better understanding thereof can help us to penetrate this “hard problem.” So far it seems that the brain is a large array of interconnecting networks: a network of networks if you will. Unlike a computer which has a central processor but more like the Internet, where

everyone is connected but no one is in charge. Having said that, our consciousness seems to be a unifying element in the brain's activities. For one thing, we are experiencing the moment and appear to be directing the brain's networks accordingly. Further, there appears to be continuity to our actions and experiences. We are not proceeding in a random way. Finally, there is an historical scenario that we can look back upon and claim as our own experiential framework, a totality of that which has happened to "me" and no one else. So, physical evidence aside, there appears to be someone in charge, i.e., that which is you for you and me for me. Were it not so, there could only be randomness and no direction.



A good example of this extracorporeal or intangible effect can be seen in the operation of intuition. Intuition is that inexplicable, miraculous something that allows us to solve complex logical problems without the use of logical processes. In fact, they may simply be too complex for the application of rules of logic. Computer gaming offers concrete examples of intuition at work. There are programs which challenge gamers to move a given situation from a status quo to a higher level. The gamers have little or no understanding of the intricacies involved in the underlying simulation program and yet can very quickly accomplish the ends sought. Our mind or consciousness can somehow bypass all that fiddly analysis and background minutia and move things to productive ends through the intuitive powers resident in consciousness. Interestingly, people with a penchant for focusing on the minutia of problems often perform worse than the person with a wider view.

In the scientific community, work has been moving apace to solve the riddles of the brain whence it is thought comes consciousness. While the fascinating processes of

thinking, through the generation and exchange of ions and other esoteric molecular activity, are reasonably well known, the secrets of consciousness lie well beyond the arena of molecular mechanics. We are coming to understand what is going on but do not nearly approach explaining the collective result on our patterns of thinking. To some this investigation, whose goal it is to at least partially discover the nature of consciousness, is self-defeating. It is like a police department investigating itself. There are unconscious blind spots from which someone outside the department would not suffer. Unfortunately, we as human beings cannot call in someone from outside the department and so our analysis of the essence of soul must always remain imperfect.

Although we may remain equivocal on the question of dualism, it certainly appears to be the more fruitful assumption if we are to address the bigger issues of our future and, indeed, of the universe and God. If we can accept the dualist aspect of our existence we should then investigate the different views of consciousness. There is the obvious view which you have likely developed in an unconscious way through your lifetime, which is you are who you are and you are not someone else. Your experiences are yours and yours only. Not everyone would be in agreement with this however. Buddha, for one, was a famous naysayer in this regard. He rejected the idea of a personal self. He was of the view that our troubles were a result of thinking there was in fact an individual self and that we should realign our thinking to no-self. In this way we end suffering because if you are No-one then no one will suffer. This view was later advanced in the West by thinkers such as David Hume who viewed his own life to be a collection of experiences from which he could not really distill a "self." He theorized that the most we could say about ourselves is that we were a set of experiences. However, a set did not make an individual and so individuals did not exist but were just "bundles" of experience. Life as an individual is an illusion. As difficult as it is to comprehend our existence in these terms there are those experienced in the art of meditation and similar esotericism who suggest that given certain practices the apparently ordered world can evanesce leaving a series of experiences with No-one

experiencing them. As we shall see later in this essay, Hume and Buddha are closer to the mark than the so-called “ego” theorists, as represented by most living religions, who posit that individuals are indeed unique manifestations in their souls with some sort of unique future.

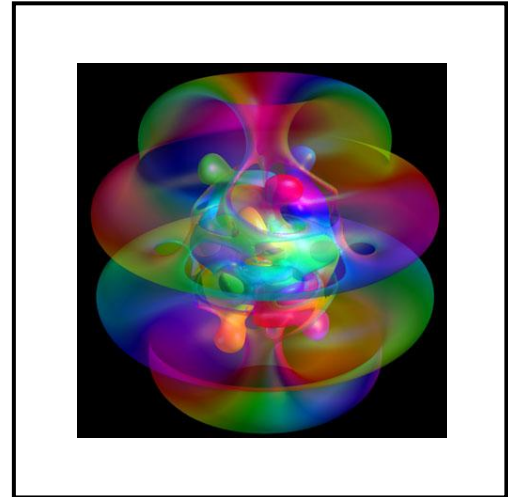
Chapter Four: Fundamentals of the Universe

By this point we have a metaphor for where we will go when nature takes its course as well as an understanding of the potential limits of our understanding. Finally we have wrestled with the concept of ego or the conscious self, the disposition of which is the subject of this essay. It would be helpful at this juncture to consider the physical backdrop of the universe and so perhaps begin to gain an understanding of the metaphorical sand on the beach into which we must all subsume. Confucius thought it important to understand the fundamentals before considering the more esoteric. A student once asked him about death to which he replied, "You do not understand even life. How can you understand death?" In other words, let's get to understand the basics before positing theories on the great beyond.

The universe is a fascinating place as it turns out, much more so than you might have imagined. We are all familiar with that which we know: the macro stuff. Stuff we can see and touch and other more distant objects we can only gaze at. We may also have a passing familiarity with that which we cannot see, such as microbes, molecules, atoms and their constituent protons, neutrons, and electrons. If you have really been paying attention you will know that protons and neutrons can be further broken down into the fundamental of fundamentals (as far as we know), the quark. This latter particle comes in six flavors known by the charming names of up, down, top, bottom, strange, and charm. Of these six flavors only the first two are reliable enough to build anything and they, in differing combinations, form protons and neutrons and so on up the ladder to you and me, all of which is aided and abetted by the weak and strong nuclear forces along with electromagnetism.

You and I evolved and developed our sense of perception based on the macro world. In order to survive and prosper we did not need to worry about what was going

on in the sub-atomic world. Hence we are reasonably good at perceiving our immediate world, and based on that sense of perception we can begin to imagine what it is like on a micro level. We can see and understand how microbial bacterium can move around and we can appreciate things at that level to the point where we can build small machines at the molecular level through the emerging science of nanotechnology. However, when we get down to the atomic level, our perceptual abilities to imagine the abstract based on our evolutionary experience in the macro world fail to do the job. After all, we learned to survive on the savannah and not the sub atomic or quantum world. In fact, we find that the sub-atomic world is just plain weird and makes very little sense. Some of the stuff we can explain mathematically or with probabilities, but to conceptualize it is just a little too difficult.



Let us begin with a look at the electron. These negatively charged particles (which can also be described using energy distribution probability functions having wave-like parameters) are whirling around the nuclei or cores of various atoms in strictly regimented levels of activity. When stable, there are as many electrons as there are the positively charged protons in an atom. Now the interesting thing about electrons is that we can find out two things about them, but we cannot know both things at the same time. If we know their velocity, we cannot determine their position, and if we know their position, we cannot at the same time know their velocity. In fact, even the position can never be certain. The best we can do is offer a probability that it will be here or there. That is like saying that if a letter is mailed it can't be read or if the letter is read it was never mailed. The technical term that physicists use is the Heisenberg uncertainty principle.

To further confound matters, an accomplished chap by the name of Nils Bohr pointed out that electrons could be one of two things, either a photon, which has a degree of mass, or a wave, which is without mass. However, it could not at once be both a photon and a wave. So an electron cannot walk and chew gum at the same time, but it can do either perfectly well.

While on the subject of the perplexing electrons, there is a real juicy head scratcher known as the EPR effect.⁴ Let us say that an atom gets excited to the point where it casts off two electrons in the guise of photons or particles of light. They can be going in the same direction or in opposite directions, the EPR effect is the same. Both of these particles can acquire certain characteristics, one of which is polarization. The polarization of either photon is indeterminate, that is to say, neither has established itself as polarization +1 or -1. However, if one observes one of the photons and through the act of that observation finds that the photon being observed has acquired a +1 polarization, the other photon, whether it has traveled on a parallel course or has traveled in an opposite direction to the other side of the universe, will acquire the opposite polarization of -1. The information that the observed photon has acquired a +1 polarization is instantaneously transmitted to its partner, *wherever* it is in the universe, and the partner then takes on the opposite polarization. The conundrum here is that according to Einstein's own theory of relativity nothing can travel faster than the speed of light, including information. Therefore things cannot happen instantaneously as the information that would allow simultaneity cannot move faster than the speed of light. And yet this is exactly what happens with the EPR effect. The speed of information transmission, to be instantaneous, would need to be infinite, something not specifically allowed for by any theory of which the author is aware.⁵ We should also note that light

4. Named after the three physicists (Einstein, Podolsky, and Rosen) who first postulated the effect in a 1935 paper. This effect later became known as quantum entanglement.

5. While the speed of information transmission may be infinite in this instance, it should be borne in mind that that does not mean we humans can develop the technology to use the EPR effect to our advantage. To be able to send information faster than the speed of light would mean acquiring the ability to send information back in time. This would lead to untenable causal loops. The ability for us humans to do this transfer was first postulated by Nick Herbert, but on closer examination it was found to be impossible by the quantum no-cloning theorem developed by Wojciech Zurek, William Wootters, and Dennis Dieks.

may not be the constant we thought it was. It may in fact have been slowing down ever so slightly over the past few billion years.

Let us move on to a further conundrum known as the quantum superposition principle. Earlier we noted that you could measure the velocity of an electron but not its position and vice versa. Well, the effect of the superposition principle goes further to say that you can only really know the probability that an electron can be here or there. You can add up all of these probabilities and thus account for all its positions, but at any given point in time you will be dealing with a probability, and not absolute assurance, that an electron is in a particular position. This underlies a basic enigma of the subatomic universe. The enigma we are dealing with is that the probabilities and the certainties of our own corporeal world have little to do with the surreal reality of the subatomic underworld of our existence.

Let us move one step further to something that may not exist except in theory and that is the fabric of the universe. In a later chapter we will find that the nothing we think of as the vacuum of space is, in fact, something. This something which is nothing or almost nothing is that which pervades all of space.

Einstein touched on it in his theory of relativity with particular reference to gravity. Some years ago Newton suggested that, in the absence of an outside force, a moving object would continue on its course in a straight line. Einstein refined Newton's law by noting that a moving object, while in the presence of a gravitating body such as Earth, would continue on its "natural" course rather than a straight line. So what is the difference? To understand what the natural course is we need to introduce the concept of curved space. He replaced our traditional view of gravity with the notion that it is space that is curved by gravitational force and that an object is following curved space as its natural course and not being acted upon by gravity per se. Conceptually we can think of a railway locomotive going down a straight track. In due

course the track will gently curve and, as it does so, the locomotive will follow the gentle curve rather than go in a straight line. In terms of Einstein's view of motion an object is traveling in a straight line in space as the locomotive was traveling in a straight line on the track. When an object comes near a gravitational force such as Earth, space itself actually curves and the object follows the curved space in much the same way as the locomotive eases through the curve of the track on which it is hurtling. Gravitating bodies actually bend the continuum of space rather than attract other bodies to it. A satellite orbiting Earth is doing so not so much due to its attraction to Earth; rather, it is following its natural course which is the continuum of space curved under the influence of Earth's gravitational field. This continuum is an even more fundamental aspect of the universe than those we have broached so far. Let us wait for our chapter on nothing to explore that which is the root of it all.

Most societies, including our own, have posited explanations about the beginning of history or existence. There appears a common theme that initially there was nothing, or a void, and from that void something was created. “And the earth was without form, and void; and darkness was upon the face of the deep” comes to mind in the Judeo/Christian context. Alternatively we can look at the Hindu perspective as outlined in the Rig Veda creation hymn which asks:

There was neither non-existence nor existence then.
There was neither the realm of space nor the sky which is beyond.
What stirred?
Where?⁶

The question of something from nothing, or the very possibility of nothing, has bedeviled philosophers and scientists and theologians and ordinary folk for time immemorial as the foregoing passages suggest. Naturally the Greeks, being at the beginning of recorded questioning analysis and argumentation, were among the first to ponder the question of No-thing and the eventual emergence of something. Among those addressing this subject was Thales around 600 BC who formed the view that No-thing cannot create something. Indeed, the very act of thinking about No-thing makes it something. Through the acrobatics of logic, Thales arrives at the conclusion that there cannot simply be No-thing. Something, i.e., you and me and the universe, cannot have come from No-thing. His view, which has largely held sway over the millennia, was that there must be some ubiquitous “je ne sais quoi” or ur-matter pervading all that there is. We won’t digress into what it is that “is” yet. Speculation as to what this substance may be has varied over time, from water, as Thales suggested, to fire, as

⁶ Translation by Wendy Doniger O’Flaherty, from the Book, *The Rig Veda - Anthology*

Heraclitus insisted, to air, as Anaximenes argued, to the four elements of air, water, fire, and earth as Empedocles posited. Empedocles spiced up his view of the primeval with the notion of the action of forces which he suggested were love and discord, precursors to attraction/repulsion, negative/positive and so on. Empedocles went further by noting that even in empty space there is something, something which he called ether. Thus the void of space is filled with ether. There could actually be no void per se. Aristotle agreed, noting in the end that nature abhors a void. There can be no No-thing. This became self-evident and the view survived without much objection for 2,000 or so years.

In the middle ages this view was challenged when technology advanced enough to allow the creation of a vacuum, which was done by Torricelli, one of Galileo's students, in 1643. It was later demonstrated in dramatic fashion by the Mayor of Magdeburg, Otto von Guericke, who lined up two teams of horses to try and pull apart the two halves of a metal sphere which were being held to each other solely by a vacuum he had created inside with the use of suction pumps. This public display not only confirmed that a vacuum could exist, but also how powerful it was in that the spheres could not be pulled apart. And so it was thought that Aristotle and those that preceded him were wrong in the supposition that there could not be No-thing. As we have already seen, however, in the previous discussion on fundamentals, Einstein had noted that the apparent vacuum of space can be bent by gravitational fields. If this is so, as seems to be the case, can a vacuum be No-thing? As we will see later, Aristotle and his contemporaries may have been right after all.

As a prelude to our discussion into what No-thing is, if it exists at all, it might be useful to examine the concept of emptiness. What exactly does emptiness mean? For this let us return to our discussion of the fundamentals and recall that atoms are the building blocks of molecules and on up to you and me. Further recall that an atom has a nucleus made up of protons (and sometimes neutrons) surrounded by electrons in

waves spreading out along the surface of the pond long after the pebble has disappeared into the depths of the pond. Such it is with these electromagnetic and gravitational fields. They continue to manifest themselves even in the absence of that which may have given rise to them. Moreover, we haven't even broached the subject of "dark energy" which will also pervade the vacuum as much as it does everything else. Beyond that there are the virtual particles which appear and disappear instantaneously and continuously using borrowed energy from . . . somewhere. A vacuum, perhaps, but still filled with something. Remove everything, were that possible, for a defined volume of space and there would still remain residual energy, hardly noticeable on a macro scale but abundantly evident for very small levels. So, what are these waves of force, energy, and ephemeral particles in? They are ripples in the fabric of space-time itself as mentioned in our previous look at the fundamentals of this universe. The vacuum, devoid as it seems, is in fact boiling with activity and the medium which carries it all is a something, for nothing has not been found to exist. Back to the creation hymn of the Rig Veda: *There was neither non-existence nor existence then.*



There is general agreement on the hyperactive state of the vacuum in quantum or subatomic terms. As will follow, this has profound implications for creation from the void and finally for our eventual submission to the void as we finish up here on earth.

We have seen that voids or vacuums are not what they had seemed. They are rife with goings-on. None of this is disputed. Again the question arises, active in what? A swimming pool may be seething with activity, particularly if there are children

around, but we don't have to ask the question, active in what? The activity is taking place in water. What of the quantum soup then? What is the medium that accommodates a constant level of low energy, virtual particles coming and going, waves of various sorts of energy and so on? What is the dark stuff we can't yet define which eventually gives rise to quarks, atoms, molecules, and you and me? The mathematicians and physicists have certainly had a go at it and one in particular has scoped out what is likely the answer. This medium which is the source of it all, the water in the pool of the boiling universe, is the eponymous Higgs field.⁷ This is the field, it is postulated, whence cometh all. It is the stuff of the universe. The physicists and others have yet to actually put their finger on it. But the mathematics of this very weird area, quite beyond our sentient perception, appears to point to its existence. No doubt the Large Hadron Collider at CERN⁸ will provide us with the indirect evidence of this field, which is to say if they are not beaten to the punch by the Tevatron.⁹

But what exactly is the Higgs field? Bear in mind our chapter on the limits of perception. At this point we are like the cow on the barn floor wondering where the bale of hay came from. Nonetheless, the limits of our perception do not deny the existence of this or that as we have discovered in noting that nothing is, after all, something, and a very active something at that. The Higgs field is the ur-matter which has been the source of so much discussion over the millennia. The best description that I have been able to uncover in plain English is that of John Ellis, a scientist working at CERN, which follows: "Different fundamental particles are like a crowd of people running through mud. Some particles, like quarks, have big boots that get covered with lots of mud; others, like electrons, have little shoes that barely gather any mud at all. Photons don't wear shoes – they just glide over the top of the mud without picking any up. And the Higgs field is the mud." In other words, that which is comes from the

7. Named after Peter Higgs who scoped out the mathematics.

8. At the Fermi National Accelerator Laboratory (Fermilab) near Chicago.

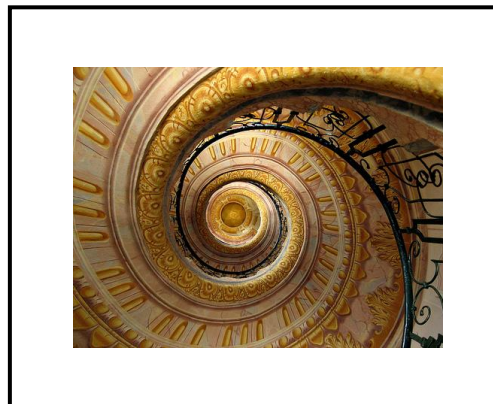
9. CERN as an acronym which originally stood in French for *Organisation Européenne pour la Recherche Nucléaire* but is now known as the European Organization for Nuclear Research based on the border between Switzerland and France. In essence they research the quantum universe.

Higgs field. It is the bottom of the ladder. Quarks and electrons acquire their mass from the field and form atoms with the aid of the electromagnetic and nuclear forces noted earlier. Alone, atoms don't do much, but as they bounce around they form alliances with other atoms and can thus attain certain properties and propensities which allow the combinations to make ever more complicated combinations to the point where we have self-aware matter with the gift of consciousness, like you and me.

So No-thing is something, and happily so, or I wouldn't be stimulating your imagination.

Chapter Six: What It All Means

While admitting some uncertainty, the foregoing chapters have established that you are you in much the same way as the sand castle is a stand-alone structure. You have a set of experiences which become the conscious record of that part of your life that you have perceived. It is your essence, as an existentialist might have it. Nature eventually takes its course and your corporeal body is discarded. What is left of self is the body of experience which melts into the



background of the cosmos or the Universal Consciousness in much the same way as the sand castle melts into the background of the beach when the tide makes its inexorable return journey. In the same way that the materials of the sand castle become part of the beach, so too the experiences, deeds, and orientation you have developed over your lifetime become and affect the Universal Consciousness, for better or worse. The upshot of this is that the Universal Consciousness or God or the Absolute, if you will, that pervades all that there is, is evolving either for the better or the worse. Our experiences, orientation, and thoughts merge with God on our corporeal expiration and we lose ourselves as individual manifestations of consciousness. This necessarily means that God changes and evolves based on the record of our experiences which we deposit therewith. As God is the universal vessel which houses the experiences of the universe, God and God's role in the future is affected by our own thoughts and actions, as they will inevitably merge with God.

With this knowledge of where you are going may come the realization that you can look forward to neither heaven nor hell nor any particular golden or blackened afterlife. When your essence subsumes into the background energy which has been

called God, it will be the state of that background energy with which the dissipated you deals. That background is made up of the collective experience of all that there has been: the good, the bad, and ugly. If it is more ugly and bad than good, it is with that which you will have to deal. Given the reality that God is the collective experience of the universe you should govern your own life bearing in mind that when you do step into that spiritual fabric wherein your dissipating “soul” will find rest, you will have contributed through your own actions to the spiritual soup into which you will be enmeshed.

God, you should remember, has not always shown, at least in Christian literature, the best of attitudes or intentions. God’s complicity with Satan in Satan’s unhappy intervention in the life of Job is a case in point. One could also argue that God provoked Cane in his murder of his brother Abel. However, we are not here to criticize God, but only to understand that God is not an ideal, but rather a collective consciousness of all that has happened in the universe of which we are but an unknowably small part. If we do what is morally good we nudge God in that direction. If not, we nudge God in another direction. Which, of course, opens another avenue of discourse: what is morally good and evil? That we can perhaps leave for another treatise.

But we jump ahead of ourselves. At the present moment we can assume that God exists and manifests itself through the Universal Consciousness. God is the Absolute or Ultimate Reality. But did God always exist or did God only come into existence with the first experience? If God is a collection of the experience of the universe then God did not exist before the universe existed.¹⁰ The universe emerged from nothing and, therefore, so did God. But as we have seen in the previous chapter,

10. Pursuant to the big bang theory, the universe was thought to have come into existence all at once in a huge explosion 13 to 15 billion years ago. It has also been posited that the big bang will end with a big crunch when the universe collapses on itself as gravity begins to overwhelm the expansion of the universe. And so the universe is an on-going series of bangs and crunches without end or beginning. Recently Drs. Penrose and Gurzadyan, in their studies of the cosmic microwave background, have found what appear to be residual waves of former big bangs. This further supports the Higgs field theories discussed in this paper. See <http://arxiv.org/>.

No-thing is something. No-thing is the seething energy of empty space, a concept that our limited abilities to perceive finds difficult to grasp. Yet we know of its existence. Through the fabric or organization of this seething nothingness we know, as a consequence of the EPR effect, that one end of the universe can communicate with the other in an instantaneous fashion defying the apparent and possibly declining barrier of the speed of light. Analogously to the way that you or I, through the collusion of individually featureless atoms, become a collection of molecules producing “informed matter” capable of consciousness, so the underlying ether or ur-matter of the universe, through the action of connected experience, can become informed nothingness or the Universal Consciousness of existence. It is this all-pervading presence of universal experience which has become known as God or the Universal Consciousness, which is the destination to which we all must reconcile ourselves when nature finally takes its course.

So what exactly is the effect of God or Universal Consciousness? At the start of the current universe, the effect would have been minimal as God had only just come into existence, so to speak. God was still in infancy – but as the universe found its feet and grew in experience, so too did God. The collection or archiving of the footage of universal experience through the organization of the seething background energy of the vacuum of space over the inexorable march of time¹¹ formed the Universal Consciousness. From this our own conscious selves sprang and to which we must all subsume in the end. In essence, the Universal Consciousness or God is the library of the universe’s experience from which we are free to draw. A small minority of we human beings can access it more directly, but for most of us it is in the background and we are unconscious of its existence. Yet it has its effect. I am reminded of the story that Otto Lowy used to tell of a particular piano piece that Franz Liszt had composed and

11. The author understands that there may be no time, that time may have had no beginning or end but always was, that you can experience the past, present or future depending upon where you happen to be, what direction you are travelling, and how close to the speed of light you are, and so forth. But let us consider that a refinement and assume for the purposes of this discussion that time proceeds in a linear fashion.

which only he was skilled enough to play. On his death a few of the great pianists of the time picked it up and were able to play it. With the passage of time it became standard fare in the repertoire. In due course it became a requirement for graduation from the better music schools. Finally it became a required piece for entrance into those same institutions. How is it then that that which was impossible for all but one person to play can become, over a few centuries, an entrance requirement for students? I suggest that the skills developed initially and refined over time became hardwired into the fabric of the Universal Consciousness and so available to future generations to draw upon in an unconscious manner . . . the Universal Consciousness or God, that great repository of the good, the bad, and the ugly of comprehensive experience together with the skills so developed.

There is also the further story of the maze experiment done with a group of rats in Great Britain. The rats were put to the test and, with accumulated experience which time allowed, were able to negotiate the intricacies of the maze more quickly. Sometime later, the equivalent experiment was done in Australia with the same type of rats. It was found that the new set of rats started at more or less the same skill level as the highest attained by the British rats and improved from there. Somehow the experience of the British rats was transferred to the Australian rats such that they did not have to start from scratch. This was accomplished through the action of the Universal Consciousness. The concept is easy enough to grasp, but explaining it in terms of rigorous science is not possible as of yet. This is likely due to our challenged ability to perceive the fabric of the universe more than anything else. What may exist but cannot be explained does not mean it does not exist.

Finally, to reintroduce humans and the advantage they glean from access to the Universal Consciousness, there is the story of the arcade game Pac-man, introduced to the world in 1980. It took nineteen years before a person by the name of Billy Mitchell was able to navigate all 255 levels without losing a single life. In the years following

another five individuals have done it. The challenge is no longer whether it can be done but how fast it can be done. As in the two previous examples, the Universal Consciousness has gathered up the collective nerdiness of this experience and housed it for all to tap into. Hence we can all perform better at Pac-man, even if we have never seen the game, than would have been the case when Pac-man was first introduced. The Universal Consciousness and all that it houses is at our disposal.

Benjamin Libet, through his famous experiments on the role of or absence of free will in decision making and subjective consciousness of experience, determined that there must be a mental field in play within the brain to account for conscious experience. Although he does not parlay this into a theory of Universal Consciousness, it is clear that if such a field exists then it would not be unreasonable to view this localized field activity as part of or a venue for the communication of personal consciousness with the Universal Consciousness.

The presence of this energy field of consciousness from which we all spring and inevitably return has been acknowledged at different times over the millennia. In the opening of Sun Bu-er's poem "Gathering the Mind," she writes:

Before our body existed,
one energy was there.

In her poem "Nurturing Energy" she recognizes that this "one energy" starts off as a blank slate which then becomes transposed by our experiences as she writes:

The basis (energy) starts out uncontrived,
Unexpectedly (through our birth & life) it falls into the temporal.

The pervasiveness of this energy was recognized when Jesus said, "Lift the stone and you will find me; cleave the wood and I am there." To bring the Universal

Consciousness to a more personal level we can quote Mohammad who said, “Whoever knows himself, knows God.”

Thus far we have determined, within the limits of our admittedly inadequate perceptual abilities, the fabric of existence. We have also taken the dualist approach to our personal existence noting that we are body and soul, a group of molecular structures which are self-aware – the one subject to degradation to its component parts and the other, the soul, subject to assimilation with God or the Universal Consciousness, or the “basis” as Sun Bu-er would have it. Though we know of the “dust to dust,” “ashes to ashes” of our corporeal self we are less aware of the process of the melding of our soul with God. And so on to our concluding chapter.

Chapter Seven: Enjoy the Climax

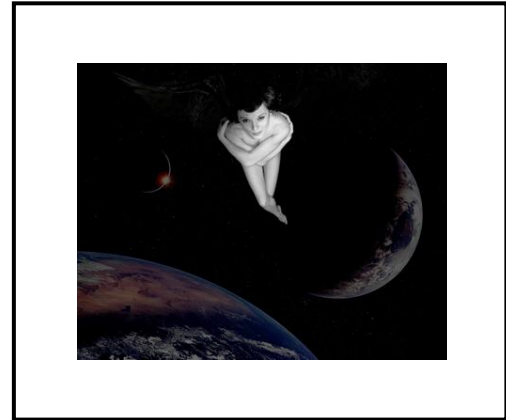
We are now aware that within the confines of our perceptual inadequacies we exist in two parts and so ascribe to the dualist view of the body and soul. The body, that extraordinary collusion of molecules, is the vessel for our soul and has a finite life. Through the passage of that life we pass through a series of experiences which form and develop our soul from its initial “uncontrived” state. To you and me they appear to be our personal experiences as they are occurring to our corporeal selves. During this time we have largely unconscious access to the great pool of experience that has been collected before us. In due course we discard our bodies and our soul remains. Gradually, though, it dissipates into the surrounding Universal Consciousness that is God or Brahman. We lose our oneness and become one with the ultimate reality of a universal God which permeates all that exists in the same way that the castle at the seaside subsumes to the sand on the beach before the rising tide and becomes indistinguishable from the surrounding sand. We take with us the experiences of our lives and we become part of the Universal Consciousness or organized energy field that is the record of all the proceedings of the universe. Those experiences are there to be drawn upon by future generations as their perceptual abilities allow.



I have set forth the metaphor of the dissolving sand castle by the seashore to give you an idea of what goes on at our transcendence from existence as an individual to our fusion with that ultimate reality which is God or Brahman or the Universal Consciousness. Now let us take a look at the mechanics of what exactly is going on at that time. To our knowledge, no one has come back from the dead and left us a record of their experiences. However, we do have a reasonably consistent record of people

who have come close to death and yet never crossed over the threshold. These are the people who have experienced so-called near death experiences (NDE). Although there are cultural variations and differing orders, the broad brush strokes of near death experiences can be summed up as follows:

- A tunnel experience. The sense that one is moving through a passageway or up a staircase towards a light.
- A rapid movement into and immersion into this light.
- Largely profound positive emotions of peace, well being, love, and painlessness.



Along with this there is also the somewhat startling realization that the body is gone as the vessel for housing the soul.

- Sometimes flashbacks to past experiences in one's life with possible roles by people who had been important to you.
- An understanding of one's life and the nature of the Universe.
- Out of body experiences.
- Approaching a border and being compelled to return to life or alternatively carry on with the subsuming of the soul in the Universal Consciousness that is God.

Not every near death experience contains all of these characteristics, and some have additional features occasioned by cultural or spiritual considerations. But there remains one common characteristic and that is a new sense of self as part of an ultimate reality, the reality being that of God, Brahman or the Universal Consciousness.¹²

12. For detailed accounts directly from those who have experienced NDEs and more in particular the described oneness with something greater, review the website at <http://www.nderf.org/>.

So what is actually going on here? It is certain that we will all die, but what has been uncertain is the mechanism of the parting of the soul from the body and its subsequent disposition. It is this latter uncertainty that causes some confusion in the minds of the uninformed and so leads to differing experiences. In the end, however, we all end up in the same place regardless of the interpretations our individual cultures, religions, beliefs, non-beliefs, and experiences may put upon them.

You will recall from earlier chapters that existence, in fact, emerged out of the vacuum. Counter-intuitively, we have also noted that the vacuum is actually something, a seething field of energy. And so it was in the beginning. To quote the Rig-Veda once again:

The non-existent was not; the existent was not
Darkness was hidden by darkness
That which became was enveloped by The Void.

In Genesis, quoted somewhat out of context, we read:

And the earth was without form, and void; and darkness was upon the
face of the deep.

The universe with which we are familiar, given our perceptual challenges, arose from the vacuum of space. This was obvious to ancient religious scholars but is only now being confirmed by the scientific community. Contrary to what is revealed in Genesis, “In the beginning God created the heaven and the earth . . .,” God or the Universal Consciousness actually came into being when the universe emerged from the vacuum. As noted earlier, God is merely the collective and self-aware experience of the universe since its beginning. Initially quarks and electrons extruded their existence from the Higgs field that is the vacuum of space and organized themselves into neutrons, protons, atoms, molecules, and, finally, self-aware organisms such as you and

me. So too did the seething energy of the void organize itself into a self-aware mental field that has come to be known as God or the Universal Consciousness or Brahman. In the beginning God was a vessel without form, empty of experience as surely as the universe was empty of mass. With the passage of time the mental field of God organized itself and collected the experience of the universe into a universally available field. Our soul or self or ātman is an indistinguishable part of that field and when nature takes its course it is into that field that we must inexorably enter or re-enter. So it is this re-entry which should concern us on our death rather than the cessation of our corporeal vessels. What actually happens?

From the foregoing summary of near death experiences and our knowledge that the void of space is actually boiling with energy, we know that there is light involved. The light described in the NDEs is in fact the background energy of the universe. The sense of quickening motion is similar to the acceleration that a body with mass experiences when it traverses a region of space curved by a gravitational field. The field in the case of your death is the mental field of the Universal Consciousness. The sense of joy, peace, and relaxation, come from the very real end to all those trials and tribulations and suffering with which we have had to deal during our time as corporeal beings. There can also be a sense of loss or even panic because you are indeed disappearing into the void, and the entity you thought was you will no longer exist. You are now part of the great presence that is Brahman or the Universal Consciousness or God. You are now a “no-self” as Buddha would put it and part of a greater and universal presence in the same way as the sand castle becomes an indistinguishable part of the beach once the tide recedes. You no longer exist and yet you exist everywhere in the void of space. As noted in the earlier chapters, there is as much emptiness in a cubic foot of platinum as there is in all of space. You become part of that self-aware emptiness and, through that absorption, part of all there is. This is not a new concept. The notion that God is everywhere (through the void as we now know) has been around in spiritual circles since our thoughts have mused on the subject. My favorite

summation of the omnipresence of God comes from a song that many Jewish kids have learned to sing:

Hashem [God] is here, Hashem is there, Hashem is truly everywhere...
Up, up, down, down, right, left, and all around ... Here there and
everywhere, that's where He can be found.

Alternatively, Sir James Jeans put it another way, “The universe is beginning to look more like a great thought than a great machine.” That great thought is in you and me and is all about as that children’s song takes note. When our corporeal vestments are worn out we merge with and become that “great thought” that is God or the Universal Consciousness or Brahman. What an interesting transition that will be.

As you digest the contents of this essay, bear in mind there are some things that exist of which we know nothing. Quite a few things in fact – witness dark energy and dark matter which composes 96 percent of the known universe and of which we know nothing. There are problems for which we can have no solution. See Alan M. Turing’s halting theorem¹³ proving mathematically that which cannot be proved or Gödel’s incompleteness theorem¹⁴ which proves the same thing axiomatically. We as corporeal individuals were turned on the potter’s wheel of the universe’s fabric from the clay of the Higg’s Boson. Two small ephemeral particles, the up and down quarks, emerged from the Higg’s field to self-organize in differing combinations to form neutrons and protons, to attract electrons, build atoms and so on through natural selection on up to self-aware beings such as you and me. Overlying all this is the field of the Universal Consciousness, that seething yet organized self-aware field of energy sometimes referred to as God or Brahman. As the Jewish child’s rhyme suggests, it is everywhere,

13. Turing’s halting theorem proves that there are some computational algorithms that are undecidable, causing a computer program to carry on forever.

14. Gödel’s incompleteness theorem, really two theories of mathematical logic, prove that no system of instructions, i.e., an algorithm or computer program, can determine, for example, all the facts about natural numbers.

within all of us and in everything. Our corporeal bodies die and their constituent parts (molecules, atoms, and quarks) reintegrate into the world around us . . . dust to dust, ashes to ashes, to re-emerge in different combinations as different things. Our conscious selves as well, on leaving their corporeal vestments, subsume into the background of the Universal Consciousness losing their individual essences, merging with the all pervading “I don’t know what” of the universal intellect, finally, or again, to re-emerge in differing combinations as other manifestations – field to field, energy to energy. The details of all this continue to vex both philosophers and scientists alike. But do we really need to know the details? When we drive a car, do we need to know the workings of the internal combustion energy overlaid with all its electronic gizmos? Hardly! We just get in and go. Likewise with life. We now know whence we came, our destination, and our eventual disposition. The operating details, as vexing and interesting as they are, are unimportant. After all, our ancestors evolved learning to survive on the savannah and did not need to develop the perceptual skills to understand the esotery of their/our existence. We shouldn’t be too concerned either. We’re in the vehicle of life, let’s enjoy the ride and, most importantly, enjoy its conclusion. To quote Homer Hendricks’ exclamation when he realized that his death was imminent, “That’s pretty exciting . . . I’ve never done that before.” So it will be . . . for you and me. In the meantime, let’s live a life which is worth living. It is a gift.

