



## A UNIVERSAL BASIS FOR RELIGION AND SPIRITUALITY

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### ABSTRACT

*The article discusses a new theory — that the dimensions of space and time are accompanied by a non dimensional expanse, primordial void, or zero dimension. This zero dimension would have existed 'before' and would have remained after the big bang. And just as the expanse of space-time dimensions results in separation between all things — so would an expanse lacking dimensions result in a lack of separation between all things. A zero dimension would therefore have a unifying nature, causing all thing to become at-one with each other within such a realm. A zero-dimensional realm that lacks dimensions would also be infinite and eternal. This and other attributes developed in the article, show that an underlying/invisible expanse of zero dimensions would be synonymous with an infinite-eternal realm of heaven — providing an eternal home for consciousness or soul — and providing a universal and scientific basis for at least 42 tenets of religion and principles of spirituality.*

**Keywords:** Primordial Void; Zero Dimensions; Heaven; Oneness; Eastern Philosophy; enlightenment;

### INTRODUCTION

There are many ideas about spirituality and religion. So it can be hard to know what the underlying truths may be. Some base their beliefs on faith and religious writings, or a personal experience with the divine. Some say that the beliefs of religion are nothing more than superstition and myth. And others say that religion is merely a ‘god of the gaps’ — where religion is simply anything not currently explained by science. According to this school of thought, religion should recede and even disappear when science findings of the future fill up the gaps in our present body of knowledge.

In addition, the scientific community is divided about experiences of a spiritual and religious nature. There is a question whether such experiences can be real in an objective way, or are simply the result of internal neurological workings of the human brain. As discussed by Andrew and Alexander Fingelkurts, there is an on-going debate about whether our brain is hardwired to produce God, or whether it is hardwired to perceive God” [1]. Of course any experience is real for the person experiencing it. But the question is whether such experiences are real only in the mind of the observer — or whether they are interactions with something external to us in the natural world. Most in the scientific community would probably say that spiritual kinds of experiences happen only to the person having the experience, and are therefore not related to any objective reality.

This article discusses a new theory about the dimensional structure of the universe, which can supply a scientific basis for many tenets of religions and principles of spirituality. It turns out that the idea of dimensionality can fill in many of the gaps in our knowledge. But as will be shown, when the theory's dimensional point of view fills in the gaps in our knowledge, it does not end up replacing religion. Instead, science and religion can be seen as



overlapping each other. And the various kinds of spiritual experiences are shown to have a real basis in nature — a basis that would be the same for all observers. But while the basis for such spiritual experiences would be the same for everyone — each person would perceive such experiences in their own way, due to our differing cultural, religious, and philosophical histories. All of us could perceive the same universal light of truth — but each of us would understand it through a filter of our expectations, cultures, and life experiences.

The theory discussed in this article provides a new perspective and understanding of spiritual experiences — where science and religion share a strictly definable area of common interest. And since this new understanding is based on the dimensional structure of the universe, our discussion will begin with dimensions and how they came into being. It will first explore the properties of dimensions, and then explain why these dimensional properties are important to the understanding of religion and spirituality. (See note about the following four sections in the End Note section.)

## 1. THE BEGINNING OF DIMENSIONS

It is generally agreed in the scientific community, that the present universe began in a highly dense state, followed by a rapid expansion known as the ‘big bang.’ At this initial starting point, everything in the universe suddenly came into being — including dimensions. Stephen Hawking has shown that based on the properties of light, the dimensions must have come into existence about at the beginning of the present universe [2], which is estimated to have begun about 13.8 billions years ago [3]. And ever since then, the universe has proceeded to expand into the world we perceive around us today.

When we look around us, we see a universe apparently composed of three dimensions of space and one dimension of time. And these four dimensions then provide the basic ordering principle or structure of the universe. So whatever may occur in the physical world — it happens within this four dimensional expanse of physical reality.

In the creation stories of many religions and mythologies, there is said to have been a time before time — or rather, a timelessness before time. This would have been a primordial void of nothingness that existed 'before' the physical universe came into being. Such a preexisting timeless void of nothingness would have lacked dimensions. So it would have been a non-dimensional expanse — having no space and no time. However — a potential for the physical universe to exist must have been present, so that the universe was able to come into being. So the model developed in this article, begins with a preexisting expanse of primordial void or zero-dimension that has within it some kind of potential to generate the current physical universe.

In this scenario, the material world would have emerged from a non-material world. As Vlatko Vedral has argued, “We must explain space and time as somehow emerging from fundamentally spaceless and timeless physics [4].” After all, the physical universe had to have come from something — even if its origin was from a spaceless and timeless 'nothingness' of a primordial void. So in the scenario under consideration, there was an original primordial void or state of zero-dimensions. But this zero-dimension would not have been composed of absolutely nothing. There would necessarily have been some sort of potential within it for the universe to form. And this primordial potential would have been realized when the universe came into existence at the big bang about 13.8 billion years ago. However — just because dimensions came into being does not mean that the original state of the primordial void or zero-dimensions went away.



When we look at the world, we perceive that it is composed of four dimensions in addition to all of the material entities in the world. But the dimensions — with their material entities, and their multitudinous activities — could easily overshadow the presence of a zero-dimension, which contains nothing that is material. So even though we may not have perceived the presence of such an underlying state of non-dimensional ity, a zero-dimension could still be present. It would simply be that it has been overlooked until now. So the purpose of this article is to develop a model for this zero-dimension that we may have overlooked. And the first step in developing this model is to explore the properties of dimensions.

## 2. PROPERTIES OF DIMENSIONS

There are eight properties of dimensions that pertain to this discussion. The first of these properties is that dimensions are a fundamental property of the universe. The dimensions affect the behaviors of all things that reside within them. So the particular number and type of dimensions that are present will determine how the basic laws of nature will be carried out — and how the entities that reside within them will behave. A universe that has a zero-dimension could therefore operate differently than a universe that has only four dimensions.

A second property is that dimensions supply an ordering principle for the universe. Wherever the physical dimensions are present, they result in separation of all things within them (with a few minor exceptions). So in general, the presence of space results in the separation of distance — and the presence of time results in the separation of duration. However, a zero-dimension that is lacking in space and time would not have the properties of distance or duration. So anything in a zero-dimension would therefore exist non separately. All things in a zero-dimension would simply exist in a unified state.

A world of space-time that has a beginning could also have an end. And if the physical universe does come to an end some day, reality would return to a state of non-dimensional ity. The non-dimensional expanse or zero-dimension would still remain. A zero-dimension could therefore exist independently before and after the physical universe. And even when space-time is present, a zero-dimension would necessarily retain its independence of space-time — because it would still remain if space-time ceased to exist. So a third property of dimensions is that a zero-dimension can only be infinite and eternal — while the physical universe could be finite and temporary. And as a result, a fourth and fifth property is that a zero-dimension would be fundamental and independent, while space-time would be emergent and dependent.

A sixth property is that all dimensions exist at all points in the physical universe. So the three dimensions of space and the one dimension of time would exist at all points in the physical universe. And if there is a zero-dimension present in the world today, the zero-dimension would also exist at all points in the physical universe. But if space-time is finite, then a zero-dimension could also exist where space-time does not. But in any case — space-time and a zero-dimension would co-exist with and interpenetrate each other wherever space-time exists.

Positions in space-time have conventionally been designated by coordinates — for the three coordinates of space  $x$ ,  $y$ , and  $z$ , and the one coordinate of time  $t$ . So together these coordinates  $\{x,y,z,t\}$  can indicate a location in space-time. A zero-dimension on the other hand, has no space or time to provide coordinates. So anything that exists in a zero-dimension could not exist in a particular position. It would necessarily be spread throughout



the entire zero-dimensional expanse. And this kind of expanse lacking dimensions can be indicated by the symbol of the empty set,  $\emptyset$ . So anything that exists in the space-time expanse can be expressed as a set of coordinates  $\{x,y,z,t\}$ . While anything that exists in a zero-dimensional expanse can be expressed as the empty set  $\{\emptyset\}$ . And a zero-dimensional set co-existing with a space-time set can be expressed as the union of these two sets,  $\cup$ . Formula 1, below, shows the union of a non-coordinate bearing zero-dimensional set with a coordinate-bearing space-time set. Within the space-time set, all things would exist separately — with minor exceptions. But all things in the zero-dimensional set would be unified as well as being spread throughout its expanse.

$$\{\emptyset\} \cup \{x,y,z,t\} \quad (1)$$

A seventh property of dimensions is that every thing will occupy every available dimension. Any thing that exists in the spatial dimensions will exist in the time dimension. And in a universe with a zero-dimension, any thing that exists in space and time will also exist in the zero-dimension. However, an eighth property of dimensions is that only non-physical things can exist in a non-physical zero-dimension. So physical objects would exist in all of the dimensions of space-time. But only non-physical things could exist in the non-physical environment of a zero-dimension — such as information about an object or event.

There just so happens to be a perfect candidate for the non-physical information about objects that could exist in non space-time. And that is an object's quantum wave function. Wave functions are mathematical entities that contain the essential information of physical objects or events — such as their spin, position, and momentum, etc., or quantum state — and the related probabilities of how and where they will be manifested over time. Wave functions and their associated probabilities embody all knowable characteristics for everything in the universe. And wave functions are non physical, so they could exist in a zero-dimension.

It has been debated whether wave functions are a real entity or mere information about reality. But it has been shown by Pusey, Barrett, and Rudolf, that “any model in which a quantum state (wave function) represents mere information — must make predictions that contradict those of quantum theory” [5]. And this means that wave functions are not just a mathematical convenience. They must be real entities for the world to work the way that it does. So as real but non-physical entities — wave functions could exist in a zero-dimension. And so in the model under consideration, an object such as an electron would exist in physical space-time — while the non-physical basis of the electron, its wave function, would exist in the non-physical zero-dimension.

A wave function is considered to be the fundamental part of an object or event, embodying everything that can be known about it. So a wave function which would be the fundamental basis for an electron would then manifest the electron in space-time. Since the wave function for an electron also embodies the probabilities for its expression, the wave function would also determine the probabilities of where and how the electron would be expressed in space over time. And these probabilities would be expressed in an on-going fashion. So material entities may be expressed in space-time — but wave functions existing in a zero-dimension would provide the basis for all of these material entities — being expressed as they are — being expressed where they are — and being a basis for their changing over time. As a result, wave functions would be the basis of all material things coming into existence, as well as their propagation through time. And in a similar manner — if the universe can be considered a quantum 'particle' as Stephen Hawking has suggested — a wave function for the universe would have likewise existed before the universe came into



being [2]. So a wave function of the universe would have been the potential that existed in the primordial void or zero-dimension that supplied the basis for the universe to come into being as it did. And so, wave functions reside in a zero-dimension. Would be the fundamental basis for all things in the material world coming into being, as well as being the basis for the material world itself.

### 3. WHERE CONSCIOUSNESS MAY RESIDE

We usually experience consciousness as if it exists within our heads or brains. This may be because the major sensory inputs of sight, sound, taste, and smell happen in our heads. But at any rate, no one really knows how our non-material consciousness can arise — whether it is from a side-effect of our brains or otherwise.

If consciousness is an ‘epiphenomenon’ or side-effect of the brain, then it must be tied to the body. For example, consciousness could exist as the result of electromagnetic waves in the brain. And in this case, it would be associated with the wave functions of these electromagnetic waves of the brain. On the other hand, if consciousness can exist separately from the body, it would similarly exist at the same place as our brains — but it could also then exist outside of our brains. Either way however, consciousness would be non-physical — existing as wave-functions of brain processes that give rise to consciousness — or existing as a consciousness that is not tied to the body, or is not only tied to the body.

So non-physical consciousness — or the wave-functions that give rise to consciousness — would exist at the point in space-time where our brains exist. And per the fifth property of dimensions — anything that exists in one dimension will exist in all dimensions. So in a world that contains non-dimensionality, our non-physical consciousness would also exist in the zero-dimensions. Within a zero-dimension, consciousness would exist in a unifying environment, but would not exist at any specific location. So this would cause consciousness to be present throughout the expanse of the zero-dimension. And since the zero-dimension would co-exist with and interpenetrate every point of space-time, consciousness would end up being present at all points in space-time as well.

Consciousness may begin at a single point in space-time. And it may be dependent or independent. But in a universe with a zero-dimension, its presence would expand throughout a zero-dimension — to ultimately become present at all points of space-time. So all consciousness and all wave-functions would then co-exist non separately in the unifying environment of the zero-dimension. And since they would be co-existing non separately, this would place consciousness in a position where it could affect wave-functions and change their probabilities. These changed probabilities in a zero-dimension would then ultimately be expressed as a change of the associated material system in space-time. So consciousness and wave-functions existing non separately in a zero-dimension could be the basis of mental processes affecting material systems.

In quantum physics, quantum objects can exist in several positions and several states simultaneously for each attribute. And these attributes are embodied in the various probabilities of an object's wave-function, where any of these possible states and possible positions might be expressed. However — when a quantum entity like an electron is observed or measured, it is of course only seen at one specific position and in one particular state. This is known as the collapse of the wave-function, since the wave-function collapses from multiple states and locations to a single state and location. So in the scenario of a zero-dimension being present in the world — consciousness would be in a position where it could interact with and collapse the wave-function of a material object in the zero-dimension, and





the object would then be manifested at some specific state and some specific position in space-time where it is observed by consciousness.

Henry Stapp has consistently argued that consciousness does indeed interact with wave-functions, resulting in the collapse of the wave-function [6]. Such an effect would allow consciousness to affect the wave-functions' associated physical systems — thus establishing a way for consciousness to affect material systems. This situation has been criticized however — by Danko Georgiev, among others — contending that consciousness would not have its own wave-functions to allow such an interaction with (other) wave-functions to occur — and that anyway, such an interaction would also violate the principle of locality [7]. However — in a zero-dimension, consciousness would exist non separately with wave-functions. So consciousness and wave-functions would not be separate things interacting with each other. They would exist as a unified part of each other. And the omnipresence of a zero-dimension would also allow consciousness and wave-functions to interact locally anywhere. So these arguments against the interaction of consciousness and wave-functions may apply when it occurs in the separating environment of space-time. But they would not apply when it is occurring in a fundamentally unifying environment like a zero-dimension. The presence of a zero-dimension therefore has the potential to resolve the problem of how a non-material consciousness could interact with material entities such as the body, thus also resolving the problem of 'mind-body duality.'

#### 4. DEVELOPING A SPACELESS AND TIMELESS MODEL

As Vlatko Vedral has said, the space-time world must somehow be based on a fundamentally spaceless and timeless universe [4]. And a scenario for such a fundamental zero space-time reality has been presented in this article. A starting point for this scenario was expressed earlier as formula 1.

$$\{\emptyset\} \cup \{x,y,z,t\} \quad (1)$$

Formula 1 shows the present universe being composed of two sets — one being a set of zero-dimension, and the other being a set of space-time dimensions. And this formula can be further developed, as follows.

1. As Albert Einstein showed with his special relativity, space and time should be viewed as being the one entity of space-time, because they interact with each other — although this is readily apparent only under relativistic conditions, such as high velocity or gravity [8]. So the set of coordinates for space-time can be represented as a unified space-time{st} — as shown in formula 2, below.
2. Also, wave-functions are often represented by the Greek letter psi  $\Psi$ . And in this scenario, wave-functions exist within the zero-dimension. So in formula 2, wave-functions are represented in the zero-dimensional set as the letter psi  $\Psi$ .
3. In addition, the sum of everything currently known by physics about the material space-time world is called the standard model — which includes all energy and matter objects, etc. So in formula 2, the standard model of the material world is represented as  $m$  in the space-time set.
4. And finally, our individual consciousness is apparently associated with — and dependent upon — the brain in the physical world. But in a world with a zero-dimension, consciousness would necessarily be spread throughout a zero-dimension that interpenetrates all points in space-time as well. And since a zero-dimension would be independent from the material world of space-time — consciousness in a zero-dimension would therefore exist independently from any material entity, such as the



body. So in formula 2, independent or universal consciousness is represented as C in the zero-dimensional set — while dependent or individual consciousness is represented as c in the space-time set.

$$\{\emptyset \Psi C\} \cup \{st m c\} \quad (2)$$

So in each of these sets, there are three similar things: 1) dimensionality, 2) materiality, or the basis of materiality, and 3) consciousness. On the left side, the potential of all material things which is wave-functions  $\Psi$ , resides with extended or universal consciousness C, in the zero-dimensional set  $\emptyset$ . While on the right side, the expression of all material things, m, resides with separate or individual consciousness c, in the space-time set st. And the union of the two sets  $\cup$  constitutes the non-material world of zero-dimensions co-existing with and interpenetrating the material world of space-time. And so, because of the mutual interpenetration of the two sets, the members of the two sets can interact with each other.

Here, the material things of space-time can come and go — including the material realm itself. So our individual consciousness like our material bodies, would have a temporary existence in the material world. However, the zero-dimension would remain independent — even being able to exist without space-time being present. So a zero-dimension that is infinite, eternal, and independent would therefore cause consciousness residing there to be infinite, eternal, and independent.

In this scenario, a zero-dimension would have existed by itself, without the space-time realm being present. And the big bang would have given rise to a universe composed of a zero-dimensional set and a space-time set. But since space-time had a beginning, it could also have an end. So the universe with dual sets being present, could potentially revert back to a universe with only a zero-dimension. This situation is represented in formula 3.

$$\{\emptyset \Psi(u) C\} \leftrightarrow \{\emptyset \Psi C\} \cup \{st m c\}^n \quad (3)$$

As seen this formula, a zero-dimensional set would give rise to a space-time set — resulting in a universe with two sets of dimensions. And this state of non-dimensional set existing by itself, or a non-dimensional set existing along with a dimensional set could then alternate back and forth ( $\leftrightarrow$ ) any number of n times. So an immaterial set or expanse would always be present — while a material set could be present or absent. But no matter how many times material universes may come and go — the fundamental being-ness of consciousness and the fundamental manifesting potential of wave-functions would remain in the zero-dimension — as an infinite-eternal realm that exists beyond space and time containing the potential for all things.

Without space and time, a wave-function for the universe  $\Psi(u)$  would exist in the zero-dimension as a potential for the material universe to form. But this potential could result in the big bang — as it did at the beginning of our universe. The presence of space-time would then allow the potential of wave-functions to be expressed in a material world that would then change with the passing of time. And this would take place in an environment where quantum probabilities — along with the personal choices of sentient beings — would provide two kinds of 'free will' or on-going variability into the future. So with this ever-changing expression of wave-function potentiality in the universe, the events within the universe — as well as the very form of universe itself — could not be predicted before-hand.



Formula 3 above shows a 'primordial void' or non-dimensional realm containing a potential for the material world to form  $\Psi(u)$ , existing along with an expanded or universal consciousness  $C$ . It shows a realm of space-time containing our individual or personal consciousness  $c$ , existing along with all things of a material nature  $m$ . And it shows the material space-time realm itself — along with all material things within it — to be emergent from a fundamentally spaceless and timeless origin. But the spaceless and timeless realm would exist independently — whether or not the material world is present. So the fundamental state of the universe would therefore be an all-pervading consciousness — and the potential of wave-functions for all materiality — existing in an infinite-eternal realm, beyond space and time.

Without space and time, a zero-dimensional realm would exist infinitely and eternally, without any matter, fields or energy, etc. being present. So this independent non-material realm would exist as the 'least energy' ground state of the universe — a ground state of dimensions — a ground state of materiality — and a ground state of consciousness. In short, a zero-dimension containing all wave-functions and an all-pervading universal consciousness would be the ground state for all things, and would be the basis for all things.

## 5. DERIVED PRINCIPLES OF SPIRITUALITY AND RELIGION

As discussed earlier in section 3, infinity is about space — or the lack of space. And eternity is about time — or the lack of time. So infinity and eternity are about dimensions or the lack of dimensions. Religion and spirituality — which are about the infinite-eternal — can therefore be considered to be about dimensions or the lack of dimensions.

In this scenario of dimensions, a primordial void existed as an infinite non-dimensional expanse. And from this non-dimensional basis, the big bang occurred, which ushered the material world into existence. But the realm of zero-dimensions — being independent and eternal — would have persisted after the big bang occurred. And this zero-dimension containing neither the separation of distance nor duration would provide a unifying environment where all consciousness would be unified with all things — or consciousness would be unified with the information and basis of all things which is wave-functions. So in a zero-dimension, our consciousness would be at-one with all things and all other consciousness — beyond space and time — in an infinite-eternal realm. And this could be seen as our consciousness or 'souls' existing eternally as a unified Consciousness, in an infinite and eternal realm of heaven that exists beyond space and time.

In the Christian Bible, Jesus said that “The Kingdom of God is among you” (Luke 17:20), which has also been translated as heaven being within us or in our midst. If this is true — that heaven exists currently among us, in our midst, and/or within us — then heaven exists right now, wherever we are, and whenever we are. And a zero-dimension would fit this description perfectly — existing everywhere, wherever and whenever we are. It would also be an infinite-eternal realm beyond space and time — a place of eternal consciousness or the eternal life of our souls — where all things would be unified, or would be at-one with each other. And this is how religions often describe paradise, heaven, or nirvana, etc. — which will hereafter simply be called heaven. So a zero-dimension that is infinite and eternal and exists everywhere can be seen as heaven, where our consciousness would have an infinite and eternal existence — whether or not our physical bodies are present. But because a physical existence is not possible in a non-physical realm, this would not be a physical eternal life. It would be a non-physical eternal life of our non-material consciousness or soul.





A zero-dimension would be a realm containing non-material things such as wave-functions and consciousness — and it would have given rise to all things in the material world, as well as the material world itself. So it would be the source of all material and non-material things. But upon the advent of the material world, the zero-dimension would then have remained as a co-existing non-material realm that is infinite and eternal. So a zero-dimension would be a non-material realm. It would be infinite and eternal. It would exist everywhere. It would be the source of all things. It would be the cause of our being at-one with all things, within the source of all things. It would always be with us, wherever and whenever we are. Being eternal, it would never go away. And it would always be ‘in our midst.’ So we would always be within it. And it would always be within us.

So, this infinite and eternal home of universal consciousness could provide a medium for the eternal life of our soul after we die. But it would also co-exist with and interpenetrate all points in space-time. So it could also provide a medium for reincarnation — where the individual consciousness of a dying person could transition from one life to another — from the material to the non-material, and back to a material existence again. And the inherent unifying nature of such a zero-dimension or heaven, would provide a basis for consciousness — whether in life, or after death — to be in a state of being at-one with all things. However, if this happens in life — becoming aware of being at-one with all things during our lives — this is how the state of enlightenment has often been described.

In Eastern religions and philosophies, there is an infinite and eternal basis for everything called Brahman. It is the creative principle that is the cause of all things. Within this ultimate reality, we have an essential self or soul called Atman that is eternal and exists beyond space and time. So Brahman and Atman can be realized in a zero-dimension — Brahman as the basis of all potentiality — and Atman as our expanded consciousness — both being realized in the same infinite-eternal zero-dimension, beyond space and time. When we die, this essence of ourselves could be reincarnated into a new life and body through the interaction and interpenetration of space-time and a zero-dimension. And this cycle of reincarnation would keep repeating until a state of enlightenment is reached — which is the realization of oneness. In this oneness, we are aware of ourselves as an expanded consciousness that is at-one with all things. Then upon reaching enlightenment, the cycle of Samsara with its continually repeated lives would then be broken. And this could all be realized in the medium of an infinite, eternal, and omnipresent zero-dimensions. So a zero-dimension can be seen as providing a basis for Brahman, Atman, Samsara, and reincarnation. And a zero-dimension would also be the basis of enlightenment, which would simply be the awareness of what is true — whether we are aware of it or not — that we exist in fundamental unity, and eternal oneness.

Here in the space-time realm, our awareness of the physical world occurs through our bodily senses — of sight, hearing, taste, smell, and touch, etc. Each of these senses involves a set of cells that sends signals through the various nerve pathways to our brains. Our brains interpret these signals — deduce what their meaning may be — and then present to us a coherent picture of the outside world. So in essence, this creates several layers of separation between our conscious awareness and what we experience of the outside world. And in addition to this, the dimensions of space-time result in a physical separation between ourselves and all other things. Yet — in spite of these myriad layers of separation, we manage to convince ourselves that we have first-hand knowledge about the physical world. So this is a persistent illusion we have about reality — that we can have a truly first-hand



awareness of things outside of ourselves — where in reality, our materially based consciousness has no direct contact with the outside world.

Formula 2 above shows a world that contains a dual set of space-time dimensions and non-dimensions. In the physical medium of space-time that has an ordering principle of separateness, all individual consciousness and all material things exist separately from each other. While in the non-physical medium that lacks an ordering principle of separateness, expanded consciousness and the wave-function basis of material things exist together non separately with each other. And as discussed, the non-dimensional set must be considered the fundamental set or realm — because it can exist before and after the space-time realm, as well as giving rise to the space-time realm. So the physical realm may appear to exist by itself as a stand-alone realm that consists of separate material entities. But the non-physical realm would actually exist as the basis for the material world and all of the material entities it contains. And in this fundamental non-material realm, consciousness would exist non separately with the basis of all things, which is wave-functions. It is only in this unified realm that our consciousness can know any thing as a truly first-hand experience — by existing non separately with them — by being at-one with them.

So it is, that the three main illusions about reality are revealed in the presence of a zero-dimensional realm. 1) That we think that our materially based minds can have first-hand knowledge. But we can only have first-hand knowledge through our expanded consciousness being unified with the information of all things in a zero-dimension. 2) That our temporary individual consciousness and thoughts appear to provide our existence in a material world — but our fundamental basis exists as an eternal unified consciousness in a non-material world. And 3) that while all things may appear to be independent and separate in the material world, they are actually dependent and emergent from a more fundamental unity-of-all-things in the non-material world. So the fundamental basis of reality is that things in the material world do not have a separate existence in and of themselves. They are dependent on preceding conditions and emergent from a deeper part of reality — that is an infinite and eternal realm synonymous with heaven. And in addition, this fundamental non-dimensional reality would be the basis for the eternal life of our souls, and would also be the basis for enlightenment.

The unity within non-dimensionality would provide a true knowing of non-separate oneness between the knower and the known. And when this true knowing is fully realized, it is called enlightenment — in which there is no knower or known, only the unity of all things. Enlightenment may be profoundly different than our normal state, but it is simply the final stage of personal growth and awareness. However, this is not an all-or-nothing proposition. There are various stages of personal growth that we can experience in our lives — as enumerated by various people including Hawkins [9]. And when we progress through these stages, we can experience increasing levels of true knowing. So we can have increasing levels of awareness or 'mini enlightenment' experiences in our personal journeys of growth and development, along the way to full enlightenment and the unity of oneness.

Another part of Eastern philosophy — which is perhaps less well known in the West — is the idea of Akasha and the Akashic record. Akasha is seen as an all-pervading eternal void that is a partner of the material world — that is invisible, so it cannot be perceived directly — and that is the basis of all things. In this philosophy, the universe is seen as being composed of two parts — one is the material world, and the other is the immaterial world of Akasha. These two halves are seen as alternating in a cycle of the Akashic void and a



progression of physical worlds. And the information from these cycles is believed to be retained and stored as an eternal Akashic record of all things.

As can be seen from the discussion so far, a zero-dimension is comparable to the ideals of Akasha. A zero-dimension would be infinite and invisible, and would provide a potentiality of wave functions to manifest a physical world, as well as all things within a material world. So a zero-dimension — like Akasha — can be the basis of all things. It would provide an all-pervading void as a partner to the material world — that could cycle between a series of physical universes. And it would provide a place where an Akashic record could be retained eternally, as a collection of wave functions that would encode the information of all things.

This non-physical history of all things could then also provide a basis for karma — by storing the wave-functions of all of our personal actions and intentions. And because consciousness and wave-functions would co-exist non separately, this 'karmic library' of wave-functions could then affect our lives and our future lives. As an individual in the material world, we would be unaware of this stored information from past lives that could be affecting our current life. But upon reaching total awareness of this reality in enlightenment, we would be aware of these 'karmic' interactions — which would then no longer subconsciously affect us. So this state of total awareness or personal enlightenment would place us beyond the influence of our karma or past wave-functions stored in a zero-dimension — because we would exist as-one with them.

So, a non-dimensional realm would provide a basis for Akasha, with its eternal record of all things, and its cycling between dual states of dimensionality and non-dimensionality. It would provide a basis for Brahman, Atman, Samsara, karma, reincarnation, and enlightenment. It would provide a basis for the illusion of separateness, and the illusion of having first-hand knowledge in the physical world. It would provide a fundamental / non-material basis for personal consciousness. And it would be a spiritual realm of heaven — which could provide a place for the eternal life of our consciousness or souls to be at-one with all things — and our being aware of this either after death or upon attaining enlightenment.

In addition, consciousness in a zero-dimension would be in a position to interact with wave-functions, and affect their associated material systems. And this could occur either accidentally or with purposeful intent. Consciousness of an enlightened person would be in intimate contact with wave-functions in a zero-dimension — while at the same time being consciously aware of this basis of materiality. Since wave functions embody the probability of events, such a non-separate enlightened consciousness could interact with — and therefore change the probability of — a given event at will. And this could change the probability of an event from being probable or improbable — to having a desired outcome. In short, an enlightened person being at-one with the wave-functions of all things, could enable 'miracles' to happen. But if a zero-dimension is present in the world, these would not really be miracles. They would be scientifically explainable events based in the fundamental characteristics of consciousness, wave-functions, and dimensions.

In quantum mechanics, 'collapse of the wave function' happens when a physical object or event is observed or measured. This means that when an event is observed or measured in the physical world, it goes from having various probabilities of happening in various ways at various places — to having a 100 percent certainty that it will happen in one particular way, at one particular place. Its wave function 'collapses' from having several possible outcomes, to having one particular outcome. In coexisting with and collapsing the



wave-function, an enlightened consciousness could thus change the probability of something happening several different ways — to a 100 percent certainty of a desired outcome — which could then be seen as being a 'miracle.' And this same process could be the basis of every-day / non miracle events — through the non-purposeful or inadvertent effects of consciousness residing non separately and interacting with wave-functions in a zero-dimension. Most of the time, this would be called the 'measurement problem' or 'observer effect' in quantum mechanics — where measurement or knowledge about an object or event collapses the wave-function of that object or event. And the basis of this 'observer effect' would also be the same kind of thing that happens with the process of 'karma' — that consciousness and wave-functions coexist non separately in a zero-dimension — with the ability to influence each other — but having the effects of wave-functions being manifested upon personal consciousness in the material world.

## 6. NON DERIVED PRINCIPLES OF RELIGION AND SPIRITUALITY

Although many ideas or principles of religion can be derived from a zero-dimension as discussed above, the ideas of morality and ethical guidelines — such as the ten commandments of the Judaic tradition — cannot be derived directly from a zero-dimension. These kinds of rules of conduct may be seen as decrees of moral authority — or as guidelines for a society to function smoothly. And although they may not be derived from a first principle of science, they can be derived from a 'first principle of spirituality' — that our attitude and behaviors directly affect our ability to maintain a spiritual outlook in life. And rather than being guidelines that result in a peaceful state of society — they can be seen as guidelines that result in relieving feelings of guilt, and promoting a peaceful state of mind. And this can help us to develop a personal connection with the divine or spiritual realm.

Further non derived principles of religion are the practices of meditation and prayer. We as humans do not usually perceive a spiritual or non-material realm existing here with us in the material world. Even though it may be present everywhere within us and around us — we are not usually conscious that it even exists. So we must go out of our way to consciously interact with this non-material spiritual realm. And this is usually accomplished through prayer or meditation. The acts of prayer and meditation can therefore be seen as a conscious effort to establish a connection with the source of spirituality — which can then enable us to have a spiritual experience of the divine realm, or the experience of God.

In the divine or spiritual realm that is a zero-dimension — there would be no preferred 'direction' of religion' — just as there would be no preferred direction of time. There would not even be a preferred concept about an experience with the spiritual realm — such as our 'being enlightened,' 'being in heaven,' or 'being in the presence of God.' In the spiritual realm, all such human concepts would be left behind. In a spiritual realm like the zero-dimension, consciousness would exist in a non-conceptual state of being — that of oneness or being united with all things.

## 7. PRINCIPLES OF RELIGION SUMMARIZED

A non-dimensional realm could exist before, during, and after the physical part of the universe — because it would be independent, infinite, and eternal. And since it has no dimensions and no physical matter or energies, etc., it would be the 'least energy' or ground state of the universe. In addition, a zero-dimension would provide a place where consciousness and the basis for the information of all things which is wave-functions could reside together non-separately. So all consciousness could then interact with the information



of all things beyond space and time. And this would provide the potential for us to have an experience of oneness or enlightenment — which is an experience of the divine, or an experience of God — in an infinite and eternal paradise of heaven.

In this way, a zero-dimensional realm as the ground state of existence, would cause the world to be a fundamentally spiritual place. Religion can then be seen as a natural human reaction to this 'built-in' characteristic of the natural world. And although they are not derived directly from a zero-dimension, prayer and meditation can be seen as methods we use to connect with the spiritual realm of a zero-dimension — while ethics and morals or religious guidelines, can be seen as an attempt to maintain a spiritual attitude and behavior that can enhance our connection with such a spiritual realm.

So the presence of a zero-dimension — directly or indirectly — can provide a basis for the following principles of spirituality and religion.

- 1) A ground state for the universe, which is a spiritual realm
- 2) A ground state for all potentiality, as well as all material things
- 3) A ground state for consciousness, which is universal being-ness
- 4) A source of miracles, as a purposeful interaction between consciousness, wave-functions, and dimensions
- 5–6) A realm that is infinite and eternal, which is synonymous with heaven, nirvana, and paradise
- 7-8) A source of non-conceptual unity or oneness, which is synonymous with enlightenment
- 9–13) The Eastern concepts of Brahman, Atman, Samsara, karma, and reincarnation
- 14-15) A fundamental void that is synonymous with Akasha
- 16) An Akashic cycle, where a void of emptiness alternates with the physical world, allowing an eternal Akashic record of all things
- 17) All things existing non separately, thus resolving the illusion of separateness
- 18) The source of first-hand knowledge and true knowing
- 19) Universal consciousness or being-ness as the basis of personal consciousness
- 20) A 'first principle' of spiritual attitude and behavior, as the basis for morals and ethics
- 21) A way for our individual consciousness to connect with the spiritual realm through prayer and meditation
- 22) An eternal life of soul or consciousness
- 23) An experience of the divine, or the experience of God

As listed above, a zero-dimension present in the world today, provides a spiritual realm that is infinite and eternal, beyond space and time, which is synonymous with heaven. And enlightened beings such as Jesus, Mohamed, the Buddha, Confucius, and Lao Tse, etc., have endeavored to communicate with the rest of us — the experience they have had, of being inter-connected within such a spiritual or divine realm of ultimate being-ness. Religious organizations have built on the experience and teachings of their enlightened founders. And the specifics of the various religions have depended on the previous beliefs and cultures of the people who lived where a particular religions originated and spread — the interpretation of their founder's experiences — and their emphasis on different aspects of spirituality, such as the 23 principles of religion listed above (and 20 additional attributes of the divine addressed later in the article). But whatever the practices of particular religions may be, they can ultimately lead us to discover for ourselves — the same fundamental truths that the founders of the religions had discovered. Because no matter what the various





religions may espouse — and no matter what it may be called — there can only be one thing that is infinite and eternal, that exists beyond space and time, and that embodies the oneness or unity of all things. And that one thing is a realm of the divine that exists within us and among us, causing this to be a fundamentally spiritual world.

## 8. DERIVING ATTRIBUTES OF THE DIVINE

There are many theories about how the cosmos began. One of these theories was developed by Ervin Laszlo, which proposes that there have been a succession of universes leading up to the one we live in today [10]. This could be a succession of physical universes, with each one existing right after the other. Or, in agreement with the Eastern philosophy of Akasha — it could be an alternating cycle between a void and physical dimensions. But no matter what kind of succession may occur, each universe by its very existence would affect the next universe that formed. Laszlo's theory is that information generated during one universe is stored as wave functions in 'pre-space' — or a non-dimensional void. And this wave function information would be carried forward between universes — which would then affect the formation of the next universe.

Another similar theory of cosmogenesis was developed by Stephen Hawking, which proposes that time itself is cyclical [2]. So the universe would proceed — from a condition lacking space and time at the big bang — through an expanding and then a contracting space-time universe — and then back to a condition lacking space and time again. And this could be repeated indefinitely in recurring cycles. Both theories of Laszlo and Hawking, are similar to the philosophy of Akasha, and all three can be seen as having a basis in zero-dimensions.

The scenario of a zero-dimension being present in the world would supply a basis for the philosophy of Akasha — where the presence of wave functions existing within the dimensionless part of a universe could store basic information about the universe. The information originating in a previous universe could then be carried forward as wave functions between universes within the zero-dimensions. And this information would therefore be in position to manifest the next universe in a somewhat different way. So the information of everything that has happened would never be lost. And the presence of this stored information from previous universes could define the attributes of the next universe. This could then explain why our current universe has characteristics that support life — because a series of universes have evolved into a universe that supports life.

Wave-functions are packets of information that give rise to material objects or events. And there would likewise be a wave-function for the universe itself [2]. But in a zero-dimension that has no time, wave-functions could exist only as the potential to act. So the presence of this wave-function potential existing in a zero-dimension — particularly the wave-function for the universe,  $\Psi(u)$  — could provide the potential within the primordial void or zero-dimension that could have given rise to the next universe. And in the usual manner of wave-functions, such a wave-function for the universe would contain the potentials for all possible universes. So it could manifest various universes based on the quantum probabilities that a particular universe would form.

So a zero-dimensional realm — with its inherent potential — could have caused our universe to be formed. The information from previous universes residing in the zero-dimension could have caused our universe to be formed with the particular attributes that it has. And once formed, the current universe has provided the conditions under which life has flourish — here on Earth, and possibly elsewhere.



The quantum wave functions we have been discussing always contain an inherent uncertainty about the behaviors that they manifest. So the manifestation of material behaviors is not a sure thing. And this would provide a basic amount of 'quantum free will' — starting with the formation of the universe itself, and proceeding to the events within the universe. In addition, consciousness residing non-separately with wave-functions would place consciousness in a position to influence the inherent probabilities of wave functions. This could happen inadvertently, as it would most of the time — or purposefully by enlightened persons, as it would happen with 'miracles.' So this would basically create a three-tier system of free will. All entities — including the universe itself — would have a first degree of 'free will' based on quantum uncertainty and probabilities. Conscious entities would have the usual free will, that of personal choice. And a third degree of 'free will,' would exist as the ability to influence quantum probabilities — either inadvertently or intentionally.

So to summarize the attributes discussed in this section — a zero-dimension would have the following characteristics.

- 1) Causing the formation of the universe — because the physical world came into being from its inherent potentiality
- 2) Causing the world to have the attributes that it does — based on the probabilities of wave-functions for the universe
- 3) Causing the manifestation of all things in the material world through the probabilities of wave-functions for material objects or events
- 4) Causing the formation of all life — as a result of the evolution of universes in combination with the evolution of life within a universe
- 5) Being the ground state of the universe — which does not need the physical world in order to exist — it would be self-sufficient or aseitic
- 6-7) Being non-physical— it would be both invisible and incorporate
- 8) Lacking space — it would be infinite
- 9) Lacking time — it would be eternal
- 10) Lacking time in which it could change — it would be immutable
- 11) Being present everywhere — even beyond space-time — it would be omnipresent
- 12) Being the source of the world and all things in the world — and being the basis of change — it would be omnipotent
- 13) Containing wave-functions with their inherent quantum probabilities, etc. — it would provide a varying degree of free will to sentient beings and non sentient things
- 14) Containing all consciousness and the information of all wave-functions —it could be called all-knowing or omniscient
- 15) Existing and interacting with the entire physical world — and therefore being of the world — it would be immanent
- 16) Existing beyond space and time in an independent realm — and therefore being of the non-physicalworld — it would be transcendent
- 17) Being the domain of wave functions whose potential manifests everything in the physical world, and the physical world itself — it would be the source of all potentiality
- 18) Being a spiritual realm that is omnipresent and contains a unified consciousness that exists everywhere — it would act as an all-pervading spiritual presence that



exists among and within all sentient and non-sentient things

19) Being a realm beyond space and time which causes unification or oneness — it would cause all consciousness to be at-one with all things

20) Being a realm with the unified characteristics listed above — it would be the source of the experience of the divine, or the experience of God

In short, a zero-dimension can be said to contain many of the characteristics we have attributed to the divine. The above list of characteristics — plus the previously listed principles of religion — show that a presence of non-dimensionality can cause the universe to exhibit the basic principles of spirituality, religion, and the divine. But there is a further divine characteristic which cannot be derived from a first principle — and that is love.

We normally think of love as something we feel for others — like the love we feel for our spouse, our family, and our friends. But there is another unconditional and universal kind of love. The author had an experience with this kind of love, which happened one day while driving home from work. All of a sudden, an all-pervading love existed everywhere — in the soil and trees — in the air and the sky — shining like a light from within all things. Such love is calm and still. It is not aligned with desire. It simply is. And it is probably not a coincidence that the author had been meditating for several years before this experience occurred.

Studies of experienced meditators using electroencephalograms (EEGs) have shown that during meditation there is a reduction in EEG bands of brain wave activity. Depending on the type of meditation, various levels of brain activity have been found to be reduced. But especially with the type of meditation that seeks to engender 'thoughtless emptiness,' a general down-regulation of such electro-physiological brain activities has been found. "Hinterberger, Schmidt, Kamei, and Walach have shown that "(such a) state of emptiness correlates with a decrease of brain activity in all channels and all bands (of EEGs), and across all (meditation) traditions [11]."

Magnetic Resonance Imaging (MRI) scans show similar results, with a marked decrease in activity in the parietal lobe of the brain during peak experiences such as enlightenment, as shown by Newberg and Waldman [12]. The parietal lobe regulates sensory input to the brain, so a decrease in its activity would lower our sense of self vs. 'other.' This reduction of activity in the parietal lobe is accompanied by an increase in activity in the frontal lobe, which is involved with judgment and purposeful attention [12]. So in peak or enlightenment experiences, we would identify less with ourselves and therefore tend toward experiencing a unity with other things. Through the practice of, meditation, we can attain a lower level of mental activity in key areas of the brain, while maintaining a high level of attention. And it makes sense that such a state of thoughtless emptiness and mental stillness could enable us to experience the empty stillness of a timeless non-dimensional realm. In this scenario — by removing conceptual thoughts from our minds — we can become more aware of the non-conceptual realm of non-dimensionality. During the experience of meditation and other kinds of peak experiences, as explained by Larsen and Buss, among others, people have reported that their sense of time slows down or disappears — that they have an experience of universal love — and that they have experienced a kind of spiritual connection with all things [13]. And all of these experiences — would have a common basis if they occur within a spiritual realm lacking in dimensions that is beyond space and time.

If we connect with a realm where there is no passage of time, it would be expected that we would experience a stillness of timelessness. If we connect with a realm that has no space, and therefore lacking the separation of distance and duration — it would be expected



that we would have a feeling of being at-one with all things. And if God is love — an unconditional love residing in an infinite and eternal realm — then if we connect with such a realm, it would be expected that we would experience a universal love existing all around us, and within all things.

## 9. THE INTEGRATION OF SCIENCE AND RELIGION

The relationship between science and religion has varied greatly over the history of humanity. In general, this has involved the degree to which science and religion have been thought to overlap each other. And in this respect, there is a varying range over time, where science and religion have been seen as being a part of each other. The philosophy of NOMA or 'non-overlapping magisteria' exists at one end of this spectrum, contending that there is no overlap — with neither science nor religion having legitimacy in the other's domain, as espoused by Stephen J. Gould [14]. The model developed in this article falls at the other end of the spectrum, contending that science can actually provide a basis for many religious principles — thus revealing a significant and specified overlap between the two disciplines.

The two lists of religious principles and attributes of the divine, above, have enumerated 42 characteristics derived from a zero-dimension (that is, 43 minus 'the experience of God' which was included in both lists). These items could be used by a person of science to describe 42 attributes of nature — or by a person of religion to describe 42 principles of religion and attributes of God. So there are at least 42 attributes of the universe where the two traditions can overlap. And it is the presence of a zero-dimension which provides this common ground. By incorporating a zero-dimension as a partner with space-time, the model under discussion has the ability to unite the spiritual and secular worlds — creating 'intersecting magisteria' with a common area of interest. And by revealing where science and religion may intersect or overlap, it becomes readily apparent where the realm of religion does not overlap with science — namely, in the areas of ethics and morals, prayer and meditation, a universal consciousness and divine love, that exists within all things. Although ethics and morals, and prayer and meditation, can be the subject of scientific studies — such as their societal ramifications, and their effects on bodily functions.

## CONCLUSIONS

Many principles of spirituality and religion have been taken on faith by believers — or have been taken as false by disbelievers. And those adhering to a 'god of the gaps' philosophy expect that by filling the gaps of our knowledge, the belief in religion should recede or even disappear. But if there is an infinite-eternal zero-dimension present in the world today, the principles of religion need not be taken as false, and they need not be taken on faith. And for the same reason, spirituality and religion need not disappear when we 'fill in the gaps' of our knowledge. Instead, they can take on a scientific understanding, while retaining a fundamental depth and meaning beyond the material realm.

If this scenario of zero-dimensions is true, it shows that many characteristics we have attributed to religion and the divine are simply a part of the natural world. And at the same time, it would show that many principles of religion are actually fundamental parts of nature. It could be that science is basically the study and understanding of the material realm — and religion is basically the study and experience of the non-material realm. In this way, there would be two disciplines studying two different realms. But these realms would be integrated with and overlap each other — thus integrating science and religion.



The presence of a zero-dimension allows us to derive the basic tenets of spirituality and religion from a 'first principle' of science that is the underlying structure of the universe. And these tenets — that had previously been the sole concern of religion — can now be seen as an overlapping area of concern for both science and religion. While some parts of religion still remain separate — as the mindset, philosophies, and behaviors of spiritual living, and the unconditional love of the divine. Religious and spiritual experiences can therefore be considered as being real, in the sense that they can have an enduring basis in the natural world that is the same for every observer — even though each person may interact with and experience this realm in a different way, due to cultural and personal differences.

A zero-dimension that co-exists with the physical dimensions can provide a non-physical realm that is the ground state of all things — the being-ness of all consciousness, and the potential for all materiality. It can provide a realm that is infinite and eternal, existing beyond space and time. A realm that is filled with an unconditional love of the divine — where our consciousness can exist forever — in a spiritual realm synonymous with a heaven — that exists everywhere among us and within us. Making this the spiritual world that it is. And making us the spiritual beings that we are.

#### END NOTES

The theory discussed in this article has been presented in two previously published articles by the author [15, 16]. Much about the basis of this theory — as discussed in Sections 2 through 5 — is therefore substantially the same as these earlier articles.

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