

Where Physics and Metaphysics Meld ...

By

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July 30, 2013

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Introduction

.... **sits Hinduism**; (continuation of the title).

For most, the foregoing title will be baffling. This is because Hinduism is viewed in the context in which other religions are defined.

It is religion, philosophy and spirituality all rolled into one and its underpinnings reflect modern scientific thought. There is none other like it!

As one reads on, one will have a better understanding and appreciation for why I say this.

Hinduism is one of the most profound evolutions in the human thought process that tries to explain God and His relationship to mankind in a way that is not found in any other religion.

A whole host of concepts in Hinduism are modern science expressed in Metaphysical terms. By this I do not imply that the visionaries who were the authors of these concepts and statements had modern scientific ideas on their minds when they pronounced those words. Rather, when we analyze the concepts and statements of the religion that they propounded, there is a profound correspondence and consonance with modern science.

In this work, it is my hope to shed light on some of these thoughts.

This is not a treatise on Hinduism. If one wishes to get an in-depth understanding of the religion, one needs to go to other sources, which are plentiful. Rather, it is a select rendition of concepts and statements found in the religious texts and a discussion of their metaphysical meaning and the corresponding modern scientific principles. It presents a unique perspective of the religion that has developed in my mind and focuses on its underlying scientific thought process. I have tried to present it as concisely and succinctly as possible.

This work does not include material, which is directly expressed as scientific or mathematical in the ancient texts.

This treatise is set forth in two parts.

Part I is a general discussion of the religion in very broad terms pointing out its salient features. I decided to include this material on account of the fact that there may be readers who are totally unfamiliar with the Hindu religion. I felt that it is important for them to have some idea of the religion before reading this material. Rigorous treatment of this subject is not the thrust of this work.

Part II highlights the metaphysical / scientific aspects of the religion.

Part II-A sets forth some of the broad concepts of the religion and explains how they relate to science. It will be interesting to note that some of these concepts are currently freely accepted (voluntarily) and used by followers of other faiths around the world, (who are mostly unaware of the origins of these concepts), because they appeal to the human psyche.

Part II-B is an enunciation of some of the meta-physical statements, mostly from the Upanishads, that have a co-relation to modern scientific facts. The English translations of the verses from the Upanishads (that I liked the most and found to be elegant) are mostly from the book "The Upanishads" by Eknath Easwaran.

What is discussed is by no means exhaustive. Most of us do not pause to delve into the scientific aspects of these statements, but accept them as religious statements and go on. But these statements when taken together and the religious connotation dropped from them, present a mosaic of a comprehensive scientific picture that describes how the universe itself is structured and works!

Dedicated to

BRAHMAN

Who Sees All; Who Knows All.

1. The Lord is enshrined in the hearts of all.

The Lord is the Supreme Reality.

Rejoice in him through Renunciation.

Covet nothing. All belongs to the Lord.

2. Thus working, may you live a hundred years.

Thus alone will you work in real freedom.

Isha Upanishad 1,2.

Acknowledgements

My sincere gratitude to Sri. Geetha Krishnan, retired Chief Finance Secretary, Government of India and an erudite Vedic Scholar, for giving a first reading of the manuscript and pointing out certain errors in Part I of the discourse relating to the Hindu religion. His suggestions on reading material were immensely helpful.

Part I

This part contains a brief overview of the salient facts about the Hindu religion

Form of Worship

What is most striking about the Hindu religion is its ritualistic form of worship, especially the fact that images are used in worshipping God. Other major religions specifically forbid the use of images in worship. The followers of those religions are under the injunction that doing so is “forbidden by God” and therefore will earn them a sure ticket to “Hell”! If this were to be true, Hell must be a very crowded place considering the number of Hindus who have moved on from the here to the hereafter, not to speak of those who lived before these religions came into existence.

In this regard, I am tempted to quote a few lines from the book “The World’s Religions” by Huston Smith. In the section on Hinduism, he has explained this facet of Hinduism in the most elegant way. He writes, and I quote:

“It is obtuse to confuse Hinduism’s images with idolatry and their multiplicity with polytheism. They are runways from which the sense-laden human spirit can rise for its “flight of the alone to the Alone”.

Hindu religion is confusing and confounding to most of humanity other than those who have been raised in it. Even the followers of this religion do not have a uniform understanding of the religion. The reason for this is that the writings of Hindu religion / philosophy / spirituality are not collected together into a single work and a single set of simple rules for the people to follow. Rather, it is spread across an enormous body of writings by various known, but mostly anonymous authors, many of whom were inspired.

Origins

The Hindu religion originated thousands of years ago in the North West part of un-divided India in the fertile valley of the “Sindhu” (Sindh) river. When Alexander entered the country around 327 / 326 BC he called it the Indus River. Subsequently those living outside the country started calling this land India.

Muslims who invaded India around 750 AD onwards coined the word “Hindu”. They came into the country through the north west mountain passes of the majestic Himalayan mountains and called the people inhabiting the Sindhu River basin “Hindus”. The religion that they practiced has come to be known as “Hinduism”.

The people who practiced this form of religion called their religion and the land they inhabited by other names. But the terms “India” and “Hindus” are here to stay. So for purposes of this discourse, we will accept them as such.

The details of the beginnings of the Hindu religion are shrouded in mystery. It originated long before recorded history.

Devout Hindus believe that its origins are non-human i.e. that it was imparted by God to inspired individuals in an oral form. For a millennium or more it was an oral tradition in which the religious chants were orally transmitted from one generation to the next. Finally the initial parts of it were reduced to writing about two millennia before Christ.

Scholars contend (on the basis of certain archaeological findings) that the initial portions of the Hindu religion was brought into India by the Aryan tribes who entered India from the North West, (central Asia / Afghanistan) and settled in the Sindhu river basin. At that point in time, the religion was not in its current developed form. The thrust of worship was forces of Nature such as Fire, Thunder, Lightning, Wind etc. This phase might be viewed as the “top-down” component of its transmission.

At the time of the Aryan tribes’ entry into India, there was a thriving civilization in the Indus River basin comprising hundreds of indigenous tribes who were ethnically different to the Aryans, worshipping different gods and deities. Over a thousand years or more, their practices and forms of worship were gradually folded into (assimilated by) the religion brought in by the Aryans. This might be described as the “bottom-up” consolidation of its integration.

Scholars who studied the most primitive form of this religion have found common threads between the Avesta, (the holy writings of the Zoroastrian religion of Persia propounded by Zarathushtra) and the religious practice of the Aryans who entered India.

It is also a point of interest to note that the initial practice of the Hindu religion had much in common, structurally, with the ancient Greek religious practices. Both were based on the worship of forces of Nature and involved animal sacrifices. Also there was much in common between the Hindu mythology and Greek Mythology wherein forces of nature such as thunder and lightning are depicted as gods. Gods and humans are freely interwoven in the mythological stories of both of them even though the characters in them completely differ.

When Christianity appeared on the scene in the Middle East and spread westward, the Greek form of worship completely disappeared. The reason for its demise is probably attributable to the fact that it didn’t have the underpinnings of spiritual and moral teachings woven into its mythology.

On the other hand, the Hindu form of worship continued to flourish because its mythology and writings were bolstered by a strong moral and spiritual component enunciated by the great visionary thinkers and sages referred to as 'Rishis'. Hinduism in its old ritualistic form of worship continues to be practiced to this day.

The Writings

The original hymns of the Hindu religion were written in an ancient language, referred to by scholars as "Vedic". This language is unknown to day and has been completely lost. After a few iterations the languages referred to as "Prakrit" and "Pali" were in use. Subsequently, what emerged from them has come to be known as Sanskrit. Sanskrit itself is not in common use today. The development of this language that took place thousands of years ago is one of the greatest intellectual feats of mankind. Its script is completely phonetic and can reduce any spoken word precisely to writing except for certain guttural sounds not used in India. This is one of the crown jewels of India and is a shining example of the intellectual prowess of the people who lived there in times past. For its acumen and precision, one can say that it is made of "Computer Science Stuff"!

The oldest of the writings of the religion, set in the form of hymns, are collected together in four principal volumes called the "Vedas". They are: The "Rig, Yajur, Sama and Atharva" Vedas. Even today they are recited during prayers and ceremonies such as marriages, funerals and worship services. Hindus believe in the infallibility of the Vedas; that they are the inspired utterances of the great sages whose names are mostly unknown.

Each of the four Vedas may be conceptually sub-divided into four parts.

The first part is referred to as "Samhita" and consists of hymns in the form of verse. This forms the biggest portion of a Veda. These verses are chanted during rituals.

The second part is referred to as "Brahmanas". This part is written in prose and contains extensive commentaries on the procedures to be used by the priests in the performance of their ritualistic duties in which the Vedas are recited.

These first two parts taken together are also referred to as "Sruthi" or revelations from God, originally imparted orally and which were "heard".

The third part is referred to as "Aaranyakas" and contains references to forest dwelling where the practitioners of the faith lived and deals with mysticism and symbolism.

The fourth part is referred to as “Upanishads”. This deals mostly with philosophy and spirituality.

The third and fourth parts taken together are also referred to as “Vedanta” meaning “end of the Vedas” because they occur at the end of the Vedas.

Just as important as the above writings, there are two mythologies that occupy a central role in the Hindu way of thinking. They are ‘The Ramayana’ and ‘The Maha-Bharatha’. These texts fall more in the moral and spiritual realm highlighting the concept of “Dharma”, the code of conduct that should govern our lives. Contained within the Maha-Bharatha are writings referred to as “Bhagavad Gita” which encapsulates statements in the Upanishads and holds a prominent position within the writings of the Hindu religion.

In addition to these, there are writings referred to as ‘Puranas’, which among other details, shed light on the lineage of the rulers of those times. Since there is a great dearth of recorded history relating to the Hindu religion, historians have been able to use these texts to extrapolate and try to deduce a chronology of the time frame in which much of the religious texts were recorded. The ‘Puranas’ are contemporaneous with the development of the Vedas, but are in prose form. However, they have been subject to revision from time to time and lack the integrity and the authenticity of the Vedas and therefore are not considered to be on a par with the Vedas as being “sacred”.

It should be noted that in addition to the above-mentioned writings, there is a formidable collection of other writings in this religion, which are beyond the scope of this discussion.

While the first part of the Vedas look outward to the world around us emphasizing health, wealth, happiness, family well being and fulfillment of our desires, the last part of the Vedas (referred to as Vedanta,) look inward within the human being, laying emphasis on morality and spirituality. Much of Upanishads deal with questions such as who or what is God; who are we; what constitutes life, death, consciousness, mind etc., and may be thought of as precursors of modern sciences such as cosmology, psychiatry, psychology, biology etc., to name a few.

Upanishads are one of the most spiritual of writings to be found in any known religion to mankind. Truth and Knowledge are the foundations of these writings and since science deals with truth and knowledge, it is not surprising that the underlying ideas and principles are scientific in nature and scope, even though they are expressed in meta-physical terms.

This treatise collects together many of the thought processes (though not all) enunciated in the various texts of the Hindu religion that have a bearing on the “Physics-Metaphysics” connection as it relates to modern science. Many more remain to be identified and elucidated.

For an ancient religion in which rituals play such a significant role, this co-relation is startling indeed!

The Buddha

At this point it is important to introduce the Buddha.

It is believed that most of the Upanishads predate the arrival of the Buddha on the scene by a few centuries. Some of the Upanishads were also recorded during and after Buddha's time. The Buddha lived in India, circa 500 BC. It is not surprising that much of what Buddha preached is conceptually contained in the Upanishads even though his teachings lack, by and large, the grand scientific concepts of the Upanishads.

Buddha's focus was on the individual. He concluded that desire was at the root of all our miseries and outlined steps by which we may be able to control it for a happier life and mankind's salvation.

However, the Buddha had a tremendous influence on the Hindu ritualistic form of worship.

The Buddha was born a Hindu. He was a prince by birth and was slated to succeed his father to the throne of the kingdom. Right from an early age he started questioning the Hindu ritualistic form of worship and the rationale for priests having to be intermediaries in mankind's salvation and the corruption and control the priests wielded over the people.

The Buddha's message that resonates the most with us today is the concept of compassion and love he preached for all living things, including animals. This had a sanguine effect on the practice of Hindu ritualistic worship. Animal sacrifice as offerings in worship were by and large abandoned after Buddha's appearance on the scene, even though it is still practiced by scattered sects of people in parts of India and elsewhere who practice the Hindu religion. Today, this practice is shunned by an overwhelming majority of the Hindus.

The Buddha's message also triggered another revolution. It ushered in the practice of Vegetarianism in India. The Hindu priests do not, as a rule, eat meat just as the Buddhist monks (mostly, though not all,) abstain from meat eating. India, thanks to the Buddha, may be truly called the cradle of Vegetarianism and a large percentage of Hindus, are vegetarians. It has come to be recognized throughout the world that a vegetarian diet is much more healthy, besides expressing compassion for other living beings. Every day there are new voluntary converts to vegetarianism across the globe.

Post Buddha and Hindu Saints

Even though the Hindu religion had thrived for thousands of years before the Buddha, his edicts to convert people to his teachings became a source of threat to the Hindu religion, as large numbers of people started converting to Buddhism.

For a while the Hindu religion was in danger of disappearing altogether but continued to coast along until a saint / philosopher by the name of **Shankara** appeared on the scene. He is thought to have lived during the years 788 – 820 AD. He got busy re-establishing the greatness of Hinduism in the minds of people and thereby stemmed this tide of conversions from completely overwhelming it.

Because of this, over the course of a few centuries Buddhism all but disappeared in India but spread far and wide outside India and took root in South East Asia and the Far East.

Shankara wrote extensively and preached the Hindu ideals all over India in a way that made sense to people. Based on the Vedic texts, especially the Upanishads, he propounded the “Advaita” philosophy. (More on this follows).

Shankara’s teachings were not readily accepted by everyone. There were other philosophic groups who advanced their own versions of what the Vedas and Upanishads stood for. It is beyond the scope of this work to go into those.

However, there were two other inspired saints who have played a major role in shaping how the Hindu religion is perceived and practiced to day that bears mentioning.

The first of these was a saint by the name of **Ramanuja**. He is thought to have lived sometime in the period 1017 – 1137 AD. Based on the Vedas and Upanishads he preached the “Vishita Advaita” philosophy.

The other saint / philosopher by the name of **Madhava** preached the “Dwaita” philosophy of Hinduism. Madhava lived during 1238 – 1317 AD.

At issue in each of these philosophies is the relationship of the Supreme Reality, referred to in the various religions as “God”, to life on earth.

I shall present a thumb nail sketch of each (if it is possible!) for the reader to gain a basic (but tiny) understanding of each. Each has a storehouse of writings. Obviously one has to go elsewhere to gain an in-depth knowledge and understanding of each.

The Advaita (meaning “Non-Dual” or “Unitary”) Philosophy postulates that “Brahman” (God) is the Supreme Reality or the Ultimate Consciousness. Brahman is un-manifest and beyond corruption. Brahman created the universe as seen and recognized by us through a process of illusion called “Maya”. The soul within us, referred to as the “Self” (or “Atman” in Sanskrit), has the same attributes as the un-manifest Brahman. Ultimately “Moksha” (emancipation from our physical bondage) is attained when the Atman within us merges with Brahman and becomes a part of Him.

In the Vishita Advaita philosophy, (meaning “qualified Non-Dualism”) our Atman has the same attributes as Brahman. The Universe and Life here on earth are real. Our illusions (maya) stem from not recognizing that all the Atmans are the same and are reflections of the same higher soul, Brahman. When this truth is recognized, our illusions are dispelled and Moksha is attained. Ultimately the soul’s final resting place is not Brahman Himself but “Vaikunta” (Heaven) where we are able to remain in a fulfilled state of ecstasy for eternity.

In the Dvaita (meaning “Dual”) philosophy, Reality is composed of two basic principles – the Independent and the Dependent. The Supreme Being is Brahman, who is the Independent Entity and Atman, matter, time, ‘karma’ (action) etc., are the Dependent entities and that these two are distinct from each other.

This discussion has to be left where it is at this point, for not to do so will require digression from the goal at hand.

However, I discuss the “Advaita” philosophy in greater detail. It is my view that Advaita’s correspondence to Science is by far greater than the other two, which are more religious in their make up.

Overview of the Advaita Philosophy

This section presents the core beliefs of the “Advaita” path of the Hindu religion in a little more detail.

Advaita postulates that there is ONLY ONE Supreme Reality, the God head, who is un-manifest, nameless and formless.

Though nameless, the un-manifest God Head is commonly referred to as “The Brahman”.

This Supreme Reality (God) created the manifested universe out of Himself through Maya (illusion) and entered into all living things in it. In so doing, God assumed a name and form in each one of his creations. The Sanskrit expression states this succinctly in “Tat Vam Asi”. This translates to “Thou art THAT”, meaning, all of us are manifestations of God. Even though popularly referred to as Brahman, the word “THAT” is used here for God as there is no good word to describe Him by.

In the manifested Universe, Brahman assumes three principal forms, namely “Brahma” (the Creator of Life), “Vishnu” (the Keeper of Life) and “Shiva” (the destroyer of Life).

Each of us goes through a cycle of births, deaths and re-births. At death, the body perishes, but the “soul” (i.e. the God within the living being referred to as “Atman”), does not. It is subject to re-incarnation into a new body based on whether salvation has been attained or not.

Until salvation is attained, this cycle repeats indefinitely.

When salvation is attained, the Atman, merges with the un-manifest God Head referred to as Brahman.

The goal of all life, according to Advaita, is the merger of Atman with Brahman. This occurs when the Atman is conditioned for this merger. At that time when the body dies, the Atman merges with the Brahman and the birth-death-rebirth cycle ceases. This union is referred to as “Moksha”.

There are three principal paths to breaking this cycle.

The first one, referred to as “Gnana Yoga”, is the path of knowledge that enables “self realization” i.e. realize the God within us. When this is accomplished, rebirth ceases and Moksha is attained.

The second is referred to as “Bhakti Yoga” or the path of intense love and devotion to God through prayer. This is the easiest to practice; a path followed by most people. Moksha is obtained by God’s grace, which frees the devotee from rebirth. Generally the manifested aspects of God (in particular Shiva in the Advaita sect and Vishnu in the Vishishta Advaita sect) are the forms that are commonly worshipped with the attending ritualistic practices and the use of images or idols. This is the most visible form of worship in the Hindu religion and therefore commonly identified as “Hinduism” by those outside of this religion.

The third is referred to as “Karma Yoga”. This is the path of good works and service to others, which conditions us for this merger and the end of rebirth or attainment of Moksha.

There is a fourth one, more rigorous and demanding, referred to as “Raja Yoga” which may be described simply as a path of meditation that leads to Moksha.

Salient features of Hinduism

If six Hindus are asked to explain their religion, one is liable to get twelve different answers! That is because the religion as practiced is not codified. This results in a non-uniform understanding of the religion. However, there are some unique features of this religion that are recognized by and bind together the people practicing this faith that need noting:

1. The Hindu religion does not claim exclusivity. It never says that it is the only way to reach God. Within the religion, it even specifies several paths to salvation. It does not condemn people practicing other faiths to eternal damnation. To put it more succinctly, it is inclusive, not exclusive.
2. The religion grants total freedom to question any and all aspects of its practice. (The debates that raged between practitioners of this faith are well documented in the Upanishads.) This may be one reason that its practice is so varied within the broad umbrella referred to as the Hindu religion. It goes to the extreme by even allowing atheists to remain within its fold!
3. It is extremely tolerant of other faiths. It does no proselytizing i.e., it doesn't try to convert others to its beliefs. It doesn't care what one's beliefs are. This attitude has yielded a great crop of Hindus for conversion by other religions. As a response to the loss of great numbers of people to other religions, a movement called “Arya Samaj” started performing conversions to the Hindu religion; but it never took off and its impact has been minimal.
4. It is not a dogmatic religion. Dogma is a set of rules within a religion that the followers have to adhere to. There are no commandments such as: Thou Shalt... and Thou Shalt not... In its wisdom it knows that these types of edicts will not be adhered to. Instead, it emphasizes the practice of “Dharma”, a code of conduct, which is based on Truth, morality and spirituality - and it is completely voluntary. In the Hindu religion, the devotee has a responsibility to attain his/her salvation. The concept of “Karma” (cause and effect) is in effect all the time that ties into the concept of re-incarnation.
5. Truth and Non-Violence are its corner stones. However, it exhorts its followers to stand up for what is just, even to the extent of having to fight for one's rights. This is well illustrated in the epic, Mahabaratha, where Lord Krishna exhorts Arjuna, one of the

aggrieved parties, to wage war against his own relatives that treat him and his family unjustly. On the other hand, it always advocates the path of peace and non-violence. This is best exemplified by Mahatma Gandhi's fight for India's independence through non-violent means. People across the globe now follow this form of civil disobedience, by peaceful means, to assert their rights. The Hindu religion views Truth as absolute and not relative depending on the context.

6. Though wealth is glorified in the Vedic system, the great sages emphasized the virtues of non-materialism and tried to make us realize that materialism and expectations are at the root of all human suffering and bondage. Wouldn't it be wonderful if only we can come to terms with them?

The following two points illustrate these truths:

a. It exhorts one to follow a path, which is difficult for most humans. For instance, within the epic "Mahabharata", in the set of writings referred to as the "Bhagavad Gita", it says that we are only entitled to our works, but not its rewards! This is completely contrary to human nature and is a hard pill to swallow for most of us.

However, from experience we know that often we break our backs working towards a goal only to find that someone else walks away with its benefits; or we do a good turn to someone and they never acknowledge it or help us when we need help. The attending disappointment triggers outrage and anger on our part, which doesn't bode well for us. What wisdom! If only we can bring ourselves to see its logic!

b. In another passage within one of the Upanishads (Isha Upanishad) it exhorts us to rejoice in God through renunciation; to covet nothing because everything belongs to the Lord. Well, will most of us willingly accept it? Think about it!

But, those who recognize these truths will realize that it leads us to a much happier frame of mind.

7. Group Worship is not practiced. Devotees are not asked to assemble in a place for formal worship services. Worship is mostly individual. It is normal for people to go to temples if they so choose, where priests perform the worship service by chanting hymns in praise of God. It may be for a single person or a group of people on an ad-hoc or informal basis. Most devotees worship at home where a shrine is erected for prayer and meditation.

8. There is no head of a formal organization setting the rules that people have to follow. Certain sects do contain "heads". They are spiritual in nature and do not exercise any organizational power through their edicts. The structure and its functioning are strictly informal.

9. The religion is a “living, breathing” entity. It is not cast in concrete and frozen in time. It has not been authored by any single individual and it has been constantly added to by inspired individuals throughout history. This is testimony to its greatness and its fresh perspectives.

The above list captures the spirit of the religion’s philosophy and can be easily added to.

However, this seems like a good place to stop.

Part II A

This part outlines some of the broad concepts on which the religion is based.
This is not an exhaustive list.

THE CONCEPT OF “OM”

Metaphysical Context

The word “OM” which is used synonymously with God, is central to worship in the Hindu religion.

In fact all Vedic chants (invocations) start with the utterance of this word. This word is given much prominence and treatment in the Chandogya Upanishad and is to be found in all Vedic literature.

Used interchangeably with the word “OM” is the word “AUM”. This word is so important that it has been assigned a special symbol and represents the Supreme Being (i.e. God).

Scientific Context

When one tries to pronounce the word “OM” one will note that it is a two syllable word in which the tongue does not play a role. The sound results when the mouth is open to pronounce the letter ”O” and when the mouth is closed to pronounce the letter “M”.

One will immediately recognize the “open state” and the “closed state” of the mouth while pronouncing the word. To a student of science, this immediately signals something startling. This sound represents the binary system!

A binary system is one in which only two states are possible - the presence of something or its absence. The most familiar and important of these in modern science is the binary system of numbers.

For those who are not familiar with the binary system of numbers, the following explanation may be useful.

Students of electronics know that an open state (as when a light switch is turned off) may be represented by the digit “0” and the closed state (as when a light switch is turned on) may be represented by a “1” or vice versa. This is referred to as the Binary System, which contains only two states, represented by the two numbers, 0 and 1. This incidentally is at the heart of all computers.

In fact one can go a step further and say that it is at the heart of everything in the Universe!

In contrast to this, most of us are familiar with the decimal system, which has ten numbers (0,1,2,3, ... 9).

THE CONCEPT OF “AUM”

Metaphysical Context

The sacred texts also use the word “AUM” interchangeably with the word “OM”.

Aum is given a special symbol. Even though one might contend that Om is the same, they are separated here for reasons that will become clear.

Mandukya Upanishad deals with the meaning of the symbol AUM and gives an explanation for this symbol in some detail. This symbol has four components to it. According to this Upanishad, one component represents the waking state; the second the deep sleep state; the third the dreaming state and a fourth state, (referred to as “Turiya”) in which one is wide awake in the deep sleep state. In this state the sages say that one is able to recognize God, the Supreme Being.

Scientific Context

The word AUM, though a three syllable word, still results from the open and closed states of the mouth and therefore it also represents the binary system. The question is: “How can a three syllable word represent the two state binary system?”

The following explanation might clarify the above statement.

In physical terms, students of science know that in electronics, when the voltage transitions from a high state (“1”) to a low state (“0”) or a low state (“0”) to a high state (“1”), there is a third state in between where it is neither a “0” nor a “1” thereby accounting for the three syllable interpretation.

OM or AUM both, therefore, represent the binary system.

THE CONCEPT OF KARMA

Metaphysical Context

The word “Karma” in the ancient Indian language of Sanskrit means “Work” or “Action”.

The concept of Karma is one of the basic pillars of the Hindu religion.

The religion states that life is a long string of births, deaths and re-births. This cycle repeats ad-infinitum and re-birth is referred to as re-incarnation wherein the soul exits one body and re-enters a new one. This concept is subscribed to not just by Hindus, but by people of all faiths - i.e., not all people of all faiths but some of all faiths. When this cycle is broken, then re-birth ceases and we are said to have attained salvation or “Moksha”. In the Advaita philosophy, this happens when the Atman merges with the Brahman.

Central to this belief in re-incarnation among Hindus is “Karma”.

The religion says that our Karma, work, (or more appropriately works), has a cause and effect relationship. Our life experiences are the result of our actions. It doesn't stop with this life but says that actions in this life affect our future lives as well. Our standing or wellbeing in this life depends upon not only our deeds in this life but previous lives and our actions in this life will have an effect on our future lives as well.

The relationship between cause and effect may be immediate or delayed.

We all relate to the immediate effect of our actions because we can see it played out in front of our eyes. For instance, if I cut myself with a knife (cause), I bleed (effect). This is an immediate physical manifestation that all of us relate to.

There are other instances where the cause-effect relationship is not obvious and the effect may be delayed. For instance, if I were to show kindness or mercy to someone, or I were to be cruel to someone, there may be no immediate response from the recipient of my act of kindness or my act of cruelty. However, we all have experienced their effects long after we have forgotten about them. For instance, the person that we showed kindness to comes back into our lives many years later and renders us some help we are in need of; or the one we were hateful towards returns to harm us or our families. We have all experienced such episodes in our lives, but only the Hindus believe that this cause-effect relationship carries forward to the next life.

This belief in Karma provides an explanation for what we are faced with in life. How can we explain why some of us die very young and some live to be old, other than saying

that it is “the will of God”? Why are some beset with terrible tragedies while others sail through life? Why are some afflicted with sickness while others are blessed with good health? These examples can go on and on. The Hindus attribute it to Karma from our previous births.

Karma, though spoken in metaphysical terms, is a highly scientific concept.

How?

Read on.

Scientific Context

How many science students are not familiar with the following statements?

A body at rest continues to be at rest and a body in motion continues to be so until acted on by an external force.

For every action, there is an equal and opposite reaction.

In case one does not recognize them, in physics, the above statements are Newton’s first and third laws of motion.

The thrust of this law is the cause and effect relationship on objects.

This is exactly what Karma deals with - the cause and effect phenomenon.

Karma is a general statement of the “cause-effect” relationship.

Newton’s laws are much narrower in scope and deal only with the immediate physical effects of an action on physical objects.

Karma’s significant difference with Newton’s laws is that Karma posits that the effect may be immediate or delayed and it may be equal or un-equal.

If Karma were to be stated in the context of Newton’s laws, it may read as follows:

For every action there is a reaction.

The reaction does not have to be equal. A case in point is a radar pulse. When a radar pulse is emitted, the reaction to it (the radar pulse reflected back to the radar source by an object in its path) is not only time delayed, but the returning signal itself is attenuated. The scope of Karma is therefore much broader and more general; scientific nonetheless!

THE CONCEPT OF MAYA

Metaphysical Context

The term “Maya” in the Hindu thought process, loosely translated, means “Illusion”.

In the Upanishads, there are several references to the God Head, Brahman, who creates the Universe out of Himself. According to the “Advaita Philosophy”, since Brahman is described as being un-manifest, the manner in which He created the manifest universe out of Himself, (as though by magic), was mysterious, and is described by the term “Maya”. It is believed that the universe and everything in it, created by this process of illusion that we see is therefore unreal. It seems real to us because we are also a part of that illusion, so the argument goes.

Even though not all the sages and philosophers of those times agreed with this assessment, modern men and women do not subscribe to this view, preferring instead to describing every thing that is seen and experienced as being “Real”.

We are not privy to understanding how this transition took place. Perhaps we will never be able to do so. However, since we do not possess the intuitive powers of those sages, we cannot by a sleight of hand reject what they claimed. They may very well be right.

This is where we cross the threshold between Physics and Metaphysics.

In reality, Maya is a solid scientific principle.

How?

Scientific Context

From time immemorial mankind has wondered how the earth and the life we see around us came into existence. Beyond the earth, how did the planets, stars, the sky, the moon and other celestial bodies make their appearance? In short, HOW DID THE UNIVERSE COME INTO BEING?

This vexing question still remains un-answered, but speculations abound.

The theory on the formation of the universe that is currently accepted by most scientists is referred to as the “Big Bang Theory”. This theory has gained traction due to the fact that a scientist by the name of Edwin Hubble (after whom the space telescope is named) showed that planets at the edges of galaxies were accelerating away at great speeds giving rise to the speculation that the universe is “expanding.” This led scientists

to conclude that the Universe must have come about from an explosion “at the beginning of time”.

According to this theory, at the “beginning of time”, all matter in the Universe got compressed into a very small volume. This led to an enormous explosion, which resulted in large volumes of gases being released. The gases started to condense into particles. The particles then coalesced into lumps and globs, which in turn were attracted to one another to form matter. As matter started to accrete, gravity came into play resulting in the formation of planets and stars.

This is the view widely held today by scientists.

It is somewhat tenuous to claim that this is an example of Maya. It lies more in the realm of speculation. Nevertheless, the fact that the entire universe can be compressed into such a compact volume has been shown recently. Therefore this cannot be used as an example of Maya.

The following is perhaps a better scientific example of Maya.

Recently, it has been scientifically shown that energy can undergo extreme compression (from which matter and space are derived) by a process of self-pairing and self-reference. This process occurs when a stream of energy states represented by a series of 0's and 1's (binary values) pairs with itself. In such a scenario, the same 0 and 1 states are in two different locations at the same time.

Think about this! Is this possible? If we assume what we see and observe to be reality, do we ever get to see the same object at two different places at the same time? There are other scientific facts in this theory that add to the claim of the scientific basis of Maya, but they may be too technical for most readers. If one wishes to delve further into this, one may do so by going to the Internet and searching on the title ‘Maya Theory of the Universe’.

The bottom line is, at the very microscopic levels, how matter can exist at a minimum of two locations at a time but present a macroscopic picture of ‘one object at one location at a time’ may never be able to be explained. This is perhaps the dividing line between Physics and Metaphysics.

Therein lies the mystery (and scientific basis) of Maya!

THE CONCEPT OF AVATAR

Metaphysical Context

In the meta-physical context “Avtar” means “Incarnation.”

According to Hinduism, from time to time when Evil triumphs over Good, God manifests Himself on earth in an incarnation or Avatar to re-establish righteousness.

There are supposed to be ten main Avatars (or manifestations) of which nine have already occurred, with the tenth one yet to take place. The Sanskrit names of the ten Avatars are shown below within double quotes. The Avatars taken in the order of occurrence are:

1. “Matsya” (the fish)
 2. “Koorma” (the tortoise)
 3. “Varaha” (the boar)
 4. “Narasimha” (the human-lion)
 5. “Vamana” (the dwarf)
 6. “Parasurama” (the angry man)
 7. “Rama” (the perfect man)
 8. “Krishna” (the divine statesman)
 9. “Balarama” (older brother of Krishna)
- and
10. “Kalki” (the mighty warrior)

Avatars are strictly meta-physical in scope.

But then, what does all this have to do with science?

Well, read on.

Scientific Context

There are several interesting scientific thoughts expressed in the enunciation of the Avatars; and these ideas were expressed long before modern science came into being!

The startling thing is that it has the nucleus of the concept of evolution of life enveloped in it.

According to the Theory of Evolution as propounded by Darwin, life is supposed to have originated in water in single celled organisms and then transitioned to land. Through a process of selective propagation, life forms that were the fittest survived. Life forms became more and more complex until the most evolved life form i.e. the human came about and the species that could not hold their own died out. This is of course a very cursory and rough description of the process of “Natural Selection”.

Here is what we have when we see Avatars in the scientific context.

The first Avatar takes place in water (Matsya). This is followed by an Avatar which straddles water and land (Koorma). The next Avatar is a land based animal (Varaha), The Avatar following is a hybrid between an animal and human (Narasimha). The parallel here are the great apes which are animals but exhibit some of the human qualities. This is followed by the fully evolved, but imperfect (i.e., stunted in stature) man (Vamana). The Avatar following this is a full-fledged human, imperfect in his attitudes (Parasurama), The next Avatar is the refined and perfect man given to a code of high ethics and morals (Rama). This is followed by a man exhibiting divinity (Krishna). The Avatar following is one who exhibits divinity and humanity (Balarama). The last Avatar, yet to be exhibited, is the one who will destroy life on earth by waging war on immorality (Kalki).

Is the Theory of Evolution conceptually expressed in the Avatars?

You be the judge!

Part II B

In this part some of the statements in the religion are repeated from which direct scientific inference is possible. Most of these quotations occur in the Upanishads; the elegant words used are from the book 'Upanishads' by Eknath Easwaran.

This list is by no means exhaustive. Others remain to be identified.

**This Universe comes forth from Brahman,
Exists in Brahman
And will return to Brahman.
Verily all is Brahman.**

- Chandogya Upanishad Verse 3.14.1

**From the Divine Dark to the manifest
To the Divine Dark I pass again**

- Chandogya Upanishad Verse 8.13.1

Metaphysical Context

What the Hindu sages have said in essence in the above verses of the Upanishad is that “The Brahman”, (“The Supreme Reality”), who is un-manifest, has created everything in the Universe out of Himself. They exist for a period and then they dissolve and return to Him to be recreated by Him as the cycle repeats.

In the religious context, we, as humans, are told that our soul and everything created by God inhabit the universe and ultimately return to reside in Him.

Implicit in these statements are highly scientific notions about the nature and makeup of the universe. The above statements reflect the wisdom and the deep intuition of those sages and shed light on the real nature of the Universe.

Scientific Context

Scientists have sought to describe the Universe from historical times. Many theories abounded only to be discredited and then discarded when they could not be supported by observation and empirical validation.

In the earliest concepts of the universe, it was believed that the Earth was at the center of the universe and that all celestial bodies revolved around it. In 1514 AD Copernicus suggested that the Earth revolved around the sun and this led to the “Heliocentric” theory of the universe in which the Sun was at the center of the universe and not the earth. Everyone did not accept this theory, especially the Catholic Church. Later, Galileo Galilee (1564 – 1642 AD), the Italian astronomer concurred with Copernicus and with the use of the telescope that he invented, discovered many planets. His assertions were

termed blasphemous by the church and in 1615 AD he was put under house arrest for life.

Then came Isaac Newton (1642 – 1727) who described gravity and how the celestial bodies were constrained to move in relation to each other. According to Newton, space was a fixed background and time was absolute. His theories held firm until Albert Einstein appeared on the scene.

In the late nineteenth and into the twentieth century as this quest continued, Albert Einstein put forward his Special Theory of Relativity and followed it up with the General Theory of Relativity. Einstein said that Time was relative and through his mathematical equations showed that space and time were intimately tied together and not absolute as Newton had stated them to be. He modeled the Universe on four variables – the three dimensions of space and one of time. One of Einstein's greatest accomplishments was showing the equivalence between mass and energy, which he described by the equation $E = mc^2$ in which E stands for energy, m for mass and C for the velocity of light. Einstein also postulated that the universe, though very large, followed the "Space-Time paradigm" in which space when combined with time assumed curvatures, which in turn gave rise to gravity. But Einstein's equations could not account for large amounts of matter projected to exist in the universe, but unseen, and referred to as "Dark Matter". In order to account for this discrepancy, he introduced a constant in his equations and called it the 'Cosmological Constant'.

However, some aspects of his theory did not conform to observations.

In 1929 AD, a scientist by the name of Edwin Hubble (after whom a telescope in space is named) showed through observation that the planets at the 'edge of the galaxies' were speeding away, thereby causing the universe to "expand". This gave rise to more difficulties for Einstein's equations. He finally started work on what he termed the 'Unified Field Theory' in which he wanted to come up with a set of equations that described everything in the Universe in a consistent manner. However, Einstein died before he could accomplish his task.

Hubble's observation that the universe is expanding gave rise to the current theory of the universe that is generally accepted by the scientific community and is known as the "Big Bang" theory. According to this theory, at the "beginning of time", (if such a thing were possible), all the matter in the entire universe was compressed into a very small volume. This set off an explosion, i.e., the "Big Bang" which resulted in enormous amounts of gases being released. The released gases started to condense into particles; the particles then coalesced to form matter. The chunks of matter were attracted to each other by gravity and as they grew in size, resulted in the formation of planets and stars that we currently regard as the Universe.

While Einstein's formulations worked fairly well for large bodies, his equations could not describe the workings of matter at the microscopic level such as atoms. Scientists speculated that atomic particles such as Protons, Neutrons and Electrons were themselves composed of sub-atomic particles and advanced a theory called 'Quantum Mechanics' to explain the way they functioned.

Following on the heels of these theories, scientists advanced a different theory referred to as the 'String Theory'. They contend that everything in the universe is composed of loops of energy called 'Strings'. The enhanced version of this theory is called the 'Membrane Theory'. This theory is based strictly on mathematics and logic. Their formulations result in the postulate of the existence of billions of universes in thin 'membrane-like universes' of which the universe we live on is one manifestation. So far, the string theorists have not been able to relate the theory to observed phenomena.

All theories of the Universe up to this point model the universe as an entity i.e., made up of space and planets floating in it.

A different theory based solely on energy called 'The Maya Theory of the Universe' has been advanced. One may get details of this theory from the Internet by typing the name of this theory into Google Search Engine to get to its web site.

This theory postulates that the Universe is not an entity but a process!

The following example will explain the difference between an entity and a process. An example that most of us can relate to has been chosen to explain the difference.

An entity could be any of the ingredients that go into a prepared food item; the process consists of steps gone through to take the un-cooked ingredients to turn them into a cooked dish that can be eaten.

Maya Theory states that this process is a cycle in which un-manifest energy is converted to manifest Matter and Space by extreme "compression". (Matter corresponds to stars, planets, and other celestial objects and Matter and Space are referred to as entities). After billions of years, the planets and stars are consumed by what are called 'Black Holes'. Black Holes are like enormous sink holes lurking at the centers of galaxies in space. Their gravity is so enormous that they can gobble up planets and stars and anything that falls into them to reconvert them into un-manifest energy, thereby completing the cycle.

This theory is relatively unknown at this point, but will gain traction over time.

One can readily see the correspondence between modern science and what the sages pronounced thousands of years ago, but in a meta-physical context.

***All that is full. All this is full.
From Fullness, Fullness comes.
When Fullness is taken from Fullness,
Fullness still remains.***

Metaphysical Context.

The above lines are a peace invocation at the beginning of several Upanishads and define God as being Infinite.

It describes Brahman as being the “Fullness.” The Universe we reside in is also described as being “Fullness.” (All that is full. All this is full.)

The Universe itself, everything in it including the life in it, comes from Him. (From Fullness, Fullness comes.)

After creating the Universe out of Himself, He still remains whole and it has not diminished Him in anyway. (When Fullness is taken from Fullness, Fullness still remains.)

The great sages of the past who had the transcendental vision have stated this to be a fact.

The question in the mind of the reader is - “Is this possible?”

The answer is: “Yes, it is!”

How?

Read the scientific explanation below.

Scientific context.

When viewed in the scientific context, the last two lines of this verse are significant. It is the most concise and succinct definition for **Infinity!**

Imagine for a moment a vessel that is filled with a liquid such as water. When one picks up this vessel and pours the water into another vessel and puts down the vessel, one is struck by the fact that the vessel from which water was poured out continues to be full!

It does not matter how many times this vessel is emptied into another vessel, it never runs dry and continues to be full!

It is interesting to note that no other definition for infinity is possible because no one can quantify infinity. It is amazing that the author(s) of this Upanishadic invocation have defined it so succinctly in just two lines ... and it was done thousands of years ago!

Obviously it is not possible for a human to construct such a vessel. In fact it would be an interesting project for a Ph. D. dissertation to prove it.

The converse of this statement would be a vessel, which can never be filled i.e., one can continue to fill a vessel with as much “stuff” as possible and never make it full.

Though unknown to most readers, such a conceptual “vessel” has already been constructed recently!

The “vessel” in question is a frame of computer memory of fixed size (synonymous with “vessel”) into which an unlimited amount of data (“water”) can be stored. When the frame is filled with data, a compression algorithm reduces the content of the frame to a very small fraction of the frame, leaving the frame for all practical purposes empty. The frame can then be filled with new data and compressed again. This process can be repeated ad-infinitum to pack as much data as one can put into it.

This is the best we as humans can do to demonstrate the scientific validity of the concept expressed in the verse above.

* * * * *

P.S. It is a point of interest to note that contrary to the concept of Brahman being the “Fullness” extolled in the Upanishads, the Buddha surmised that everything recedes into “Emptiness”. From a Scientific standpoint, both concepts would seem valid because “Fullness” and “Emptiness” are complements of each other i.e., one has no meaning without the other. Even though nothing can be created out of “Nothing”, if one recognizes the fact that God is portrayed as being “un-manifest” (which is synonymous with “Nothingness” because we cannot see it) in the Upanishads, this contention can be accepted. As far as we are concerned everything that we are familiar with, (i.e., manifested universe), can recede into “Nothing” because the un-manifest energy is not revealed to us.

***Those who see all creatures in themselves
And themselves in all creatures know no fear.
Those who see all creatures in themselves
And themselves in all creatures know no grief.
How can the multiplicity of life
Delude the one who sees its unity?***

- Ishopanishad Verses 6 & 7

Metaphysical Context.

This is one of the most profound statements spoken in a religious context in the sacred Hindu texts. God is supposed to have created the Universe and entered into every one of His creations including all life forms. Therefore no special status is given to humans other than the fact that humans are imbued with certain additional capabilities that we don't notice in animals. It exhorts people to see our lives reflected in other life forms so that we may have a tranquil life free from fear and grief.

Those who are enlightened will see God's reflection in all of his creations and recognize that we are all part of the same whole.

This is in contrast to other faiths, which relegate life forms other than human to a secondary status as being put here on earth for man's pleasure and use.

Scientific context.

When viewed in the scientific context, this statement has been proved to be correct beyond all doubt.

For starters, we have Darwin's Theory of Evolution. It posits that humans themselves evolved from Apes. While some would challenge this proposition, the overwhelming majority of humans do subscribe to this view.

It is a fact of science that animals have been at the forefront of breakthroughs in the development of medicines. They have borne the brunt of all the testing of new drugs to prove their efficacy. If the animals were not made like us, this approach would have been impossible.

It has been shown beyond all doubt that animals, just like humans, have DNA that share a lot of attributes in common with humans. In fact animal body parts work so similar to that of humans that the latest scientific advancements use animal body parts as substitutes for human organs that fail. The example that comes to mind is heart valves of pigs that are extensively used for replacing faulty heart valves in the human heart.

***The Deathless Self meditated upon
Himself and projected the universe
As evolutionary energy.
From this energy developed life, mind,
The elements and the world of karma,
Which is enchained by cause and effect.***

- Mundaka Upanishad 1.1.8

***O nourishing sun,
Solitary traveler, controller,
Source of life for all creatures, spread your light
And subdue your dazzling splendor
So that I may see your blessed Self,
Even that very Self am I!***

- Ishopanishad 16

Metaphysical Context

In the first quotation from the Mundaka Upanishad 1.1.8, the “Deathless Self” (Brahman) meditates upon Himself and projects the Universe as “Evolutionary Energy”. It is from this energy that matter (the elements) and life have evolved.

In the second quotation, Verse 16 of Isha Upanishad equates the soul (the Self) within us to energy by comparing it to the sun, which is the source of all life. Since the Self within us is said to be the same manifestation as the Brahman, the conclusion is that Brahman Himself is energy, which drives everything in the Universe.

It is worthy of note that the above statements characterize God and the Self that resides in us as “energy”.

Scientific context.

It may come as a startling revelation to most that the above quotation from Mundaka Upanishad talks about how everything in the Universe is derived from Energy. This immediately brings into focus the fact that mass itself is derived from Energy.

Albert Einstein showed the equivalence between energy and matter and how one can create energy out of matter through his famous formula $E = mc^2$.

The interesting question is whether Einstein had studied the Upanishads and did it influence him in his formulation of this equation? It is well known that at the time of World War II, Hitler had German scientists undertake extensive study of India's ancient Sanskrit texts with a view to discovering their hidden secrets in order to help him in the development of advanced weaponry. At that time, Einstein was in touch with other German scientists such as Schrodinger, (who was an avid follower of Upanishads), before he left Germany for the U.S.A.

Scientists are also talking about the existence of "Dark Energy" i.e., energy that cannot be detected. The scientific speculation is that mass itself comes about from un-manifest energy through a process of compaction or compression to produce mass, which in turn coalesces to form planets and stars that we see. The mass itself is thought to exist in two states, one seen and the other unseen referred to as "Dark Matter". This is not wild speculation, but based on solid scientific work.

So, there we go! Aren't these thoughts expressed in a metaphysical sense in the Upanishads?

***In the beginning was only Being,
One without a second.
Out of himself he brought forth the cosmos
And entered into everything in it.***

- Chandogya Upanishad 6.2.2, 6.2.3

Metaphysical Context

In these two stanzas from the Chandogya Upanishad, the sages say that in the beginning only Brahman existed as the sole Being. There was nothing else but Brahman.

He is said to have brought forth the Cosmos out of Himself and entered into everything in it. The implication is that God pervades everything in the Universe we see around us and that he is paired with everything in the Universe.

These two verses are loaded with scientific significance and meaning.

Read on to see how!

Scientific context

Some of the scientific ideas expressed in the following paragraphs have not found their way into scientific textbooks yet, but will be found in them at some future time.

The first is the concept of “Pairing” or more appropriately “Self Pairing”. This in turn leads to a concept that may be referred to as “Self Reference”.

The above two principles are some of the most important of all scientific principles discovered to-date!

They lead to how energy itself compresses and re-expands. When energy compresses according to these principles, it leads to infinite compression that explains what the scientists have speculated as the precursor of the ‘Big Bang’. All matter in the Universe was supposed to have been compressed into a very small volume that set off the Big Bang.

In addition to energy, these scientific principles lead to how binary data may itself be infinitely compressed. This sets the world of digital concepts on its head!

***The Self is everywhere. Bright is the Self,
Indivisible, untouched by sin, wise,
Immanent and Transcendent. He it is
Who holds the cosmos together.***

- Isha Upanishad 8

Metaphysical Context

In this verse of Isha Upanishad, the sages describe the various attributes of the Self, or the Soul of the individual beings, in whom God resides. One of the key metaphysical concepts expressed in this verse is the attribute of “indivisibility”.

Since Brahman and Atman are stated to be the same, the indivisibility applies to both. One represents the Infinite while the other represents the Infinitesimal.

And both are characterized by the word ‘OM’.

Scientific context

There are two interesting scientific ideas presented in the above verse.

The first idea presented in this verse is that the binary construct is indivisible.

It derives as follows:

The Self (synonymous with Brahman) is described by the symbol OM. We have discussed the fact as to how OM translates to the Binary system. The Binary construct cannot be further divided. We know this to be a scientific fact.

The second interesting scientific concept advanced by this verse is that the universe (cosmos) including the matter in it is held together by this 1-0 state.

***The Lord of Love is before and behind.
He extends to the right and to the left.
He extends above; he extends below.
There is no one here but the Lord of Love.
He alone is; in truth, He alone is.***

- Mundaka Upanishad 2.12

Metaphysical Context

This verse from Mundaka Upanishad extolls one of Brahman's attributes – i.e., His Omnipresence.

If the words are interpreted as written, Omnipresence is read as 'Brahman is present everywhere'. However, what it says about Omnipresence has a deeper meaning and possibly another interpretation.

Consider for example the verse in which the Upanishad states 'When Fullness is taken from Fullness, Fullness still remains'. When properly interpreted, this is really a definition for 'Infinity'. This ties into the notion that Brahman's scope cannot be fathomed and that He is inexhaustible.

Similarly, in the above quotation from the Mudaka Upanishad, aside from the interpretation that Brahman's presence is every-where i.e., His Omnipresence, the other interpretation could be that He is present in multiple locations at the same time! When stated in this manner, scientifically, it assumes a different complexion altogether.

Scientific context

The latter interpretation is loaded with scientific significance and finds a prominent place in Quantum Mechanics.

When Albert Einstein's equations couldn't explain the manner in which the microscopic world functioned, scientists started working on theories to explain the manner in which sub-atomic particles behaved.

The result was the birth of a discipline called "Quantum Mechanics".

One of the key contributors to this field was a German Scientist named Erwin Schrodinger.

Schrodinger was unique among the Western scientists. He had read Eastern Philosophies and had a great love for the Upanishads and he was greatly influenced by statements in the Upanishads.

As a takeoff on this interpretation that Brahman exists in multiple locations at the same time, Schrodinger proposed that sub-atomic particles exist at multiple locations at the same time. This has supposedly been validated through observable effects of interference of wave patters in which a single particle can be interpreted to be in multiple locations simultaneously.

This obviously runs counter to our notions of a particle being at a single location at a given instant in time.

Unrelated to Schrodinger's work, recently it has been shown that a single binary state can exist at two different locations at the same time through a process called "Self Pairing". This leads to some powerful concepts, which will completely change the way we see the world, nay, the whole Universe, in the days ahead!

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