

## Cosmology In Vedanta

By Swami Tathagatananda

To an enlightened person this universe exists and functions meticulously and purposefully in strict obedience to some laws of Nature and in full coordination with others. Everything is well organized, well integrated and well related with everything. There is unity in the midst of diversity. The cosmos is an unending song of harmony. In spite of chaos, we find harmony in the well-designed and well-planned Creative principle. Scientific researches in astrophysics and cosmological studies cannot unravel the secrets. This wondrous mystery seems to remain ever incomprehensible. Vedic mystics understood this difficulty and turned their pure mind to God from Whom this creation starts. To their enlightened mind it was revealed that the knowledge of the source, i.e., God, is more important than the understanding of the universe. Vedanta is not interested to inquire about the origination and its process, but to know the ground of existence and to experience it. Plato once declared, "The true lover of knowledge is always striving after *being*. . . . He will not rest at those multitudinous phenomena whose existence is appearance only." When we realize the truth of Divine Reality we become absolutely fulfilled. Vedanta exhorts us to know the Truth of all truths, which enables us to be free from all deficiencies and bondage, for it consummates all other knowledge. Highest Truth, which can be found in Vedanta, was revealed in the pure hearts of the mystics. These sages do acknowledge that the world is rooted in God, it emerges from God, it is sustained by It and it is ultimately dissolved in It—to rise again. By realizing God we realize the true nature of the universe, and this experience makes us free from bondage. Apart from God the universe is unimportant, as it fails to give us insight about the goal of life as well as knowledge of the world. Therefore, the universe is not the outcome of meaningless chance or accident or naturalism.

Vedanta upholds the idea that creation is timeless, having no beginning in time. Each creation is preceded by dissolution and each dissolution is followed by creation. The whole cosmos exists in two states—the unmanifested or undifferentiated state and the manifested or differentiated state. This has been going on eternally. There are many universes—all follow the same rhythm, creation and dissolution (the systole and diastole of the cosmic heart). According to the *Bhagavad Gita* this *srishiti* (creation) and *pralaya* (dissolution) recur at a period of 1,000 *Mahayugas* or 4.32 billion years or 4,320 million years:

For a thousand ages lasts  
One day of Brahma,  
And for a thousand ages one such night;  
This knowing, men will know (what is  
meant by) day and night.  
At the day's dawning all things manifest  
Spring forth from the Unmanifest;  
And then at nightfall they dissolve again,  
In (that same mystery) surnamed  
"Unmanifest."

There is another composed version:

There is day, also, and night in the universe:  
The wise know this, declaring the day of Brahma  
A thousand ages in span  
And the night a thousand ages.

Day dawns, and all those lives that lay hidden asleep  
Come forth and show themselves, mortally manifest:  
Night falls, and all are dissolved  
Into the sleeping germ of life.

Thus they are seen, O Prince, and appear unceasingly,  
Dissolving with the dark, and with day returning  
Back to the new birth, new death:  
All helpless. They do what they must.

Indian tradition differentiates between terrestrial and celestial time. We have got four *yugas*—*Krta* or *Satya* (1,728,000 years) [*Satya* means "truth"; the age is also known as *Krta*, "action," i.e., the age in which the people *did* unquestioningly what their benevolent elders told them]; *Treta* (1,296,000 years) [*Treta* means "three," the third age, counting backwards from the present: also the age in which the feelings and forces of good are as three parts, and those of evil as one; also the age in which people were specially "protected," *trayate*, by their elders]; *Dva-para* (864,000 years) [*Dva-para* means "two-sided," hence doubt also]; and *Kali* (432,000 years) which rotates in succession [*Kali* means "discord," "struggle"], and all of these come to 4,320,000 years. Now, these four *yugas*, taken together, constitute one *Mahayuga*. One thousand *Mahayugas* are one day of Brahma. Brahma's one day is one *Kalpa*. So one day of Brahma will be 432 crores or 4,320 million years or 4.32 billion years. A similar expanse of time will make His one night, and that is another *Kalpa*. Our wildest imagination staggers in conceiving Brahma's life-span. This is the expansive view of time. No other culture had this unique vision of the infinity of time as well as the infinity of space.

H. G. Wells casts ridicule in his *Outline of History*:

In the European world, until a little more than a century and a half ago, men's ideas of the time things had lasted were astonishingly brief. In the *Universal History* published by a syndicate of booksellers in London in 1799, it is stated that the world "was created in 4004 B. C. and (with a pleasant exactitude) at the autumnal equinox, and that the making of man crowned the work of creation at Eden, upon the Euphrates, exactly two days' journey above Basra." And in contrast to this, the same author admires the Indian thinkers, stating: "Among the ancient people, the Indian philosopher alone seems to have had any perception of the vast ages through which existence has passed."

The analogy of the egg and the hen or the seed and the tree may be recalled. Therefore, God, living beings and the universe have no beginning in time. They are interrelated. They are coeval or coexistent, but not of the same grade. We cannot account for any one of the three without reference to the others.

Our intellect staggers at the idea of the eternally changeless One becoming the substratum of the ever-changing variegated universe. Although it is a stupendous indubitable fact experienced by the great mystics of India. Vedanta declares that there are two distinct factors involved in starting the process of creation. Firstly, Divine Will is the supreme cause behind evolution. God willed to be many, to be born variously. Secondly, the inexorable law of karma forges the link between dissolution and creation. The karma of living beings from the previous cycle lies in the causal state during the period of involution. It is waiting to bear fruit. These two factors—Divine Will and the fruition of the karma—synchronize. God makes a well-designed plan for the creation in order to enable living beings to unfold their inner nature.

The existence of the world presupposes the existence of God Who is Omniscient, Omnipotent and Omnipresent. Being insentient and unintelligent, the world cannot be self-created and self-sustained. God alone is responsible for the origination and maintenance of the individual and the world. God pervades all entities of nature and is the Presiding Deity of everything. God creates, sustains and dissolves the universe by His divine power, maya. God is the substratum of the world of appearances. The universe is the reflection of God on the screen of maya—the triad of space, time and causality. God appears through maya as this vast, mysterious, ever-changing phenomenon. Maya veils Reality and projects this world appearance. God is the expert Magician and maya is God's magic-spell. This universe is the illusion projected by Him on Himself as the only substantial background. God is like the light of the cinema and maya is like the moving film. God is entirely unaffected by the cosmic magic show, as the magician is never deluded by his own magic. Unless the veil of maya is removed, the Reality can never be experienced.

God is both the efficient and material cause of the universe, as He is the only source of all. *Maya-Shakti* of God is the material Cause of the universe. God is the efficient Cause in view of His omniscience, His divine will to create and His act of creation. God

appears as the manifold. The change is only apparent. This is *Vivarta-Vada*, or the theory of apparent modification in Advaita Vedanta.

Vedanta gives the analogy in the *Brhadaranyaka Upanishad*, in which it is beautifully expressed as a spider and its web. The spider weaves its web out of its own will, and uses its own silk. Therefore, the spider is both the efficient and material cause of the web. Again, the *Mundaka Upanishad* also says the same thing: "Just as a spider projects its own web and then re-absorbs it into its own body, so also That One Reality projects this variegated universe and then absorbs it back into it." Cosmic creation is beautifully symbolized by this unique creature.

The universe was present in the causal form before its emergence, as something cannot come out of nothing. Vedanta does not accept the idea of creation out of nothing, or the separation of the Creator from His creation. The principle of something coming out of nothing does not explain the reason for the organic growth, sustenance and development of the world.

Creation, its perpetuation, and dissolution—these three make one complete cyclical process that repeats itself indefinitely. The beginning of the universe means the beginning of a cycle. The universe is believed to have a life cycle of its own spread over billions of years. It originates, grows and expands and ultimately dissolves into its subtle causal form. After some period, the universe surfaces again and the cosmic process continues ceaselessly. Individuals may enjoy emancipation.

One of the greatest hymns of the Rg-Veda is "Nasadiya Sukta." It is deeply mystical, poetical and wonderful. One of the advanced theories of creation and dissolution has been symbolically presented in this Hymn. The first three stanzas of the Hymn are given below from Swami Vivekananda's translation, "The Hymn of Creation":

Existence was not then, nor non-existence,  
The world was not, the sky beyond was neither.  
What covered the mist? Of whom was that?  
What was in the depths of darkness thick?

Death was not then, nor immortality,  
The night was neither separate from day,  
But motionless did That vibrate  
Alone, with Its own glory one—  
Beyond That nothing did exist.

At first in darkness hidden darkness lay,  
Undistinguished as one mass of water,  
Than That which lay in void thus covered  
A glory did put forth by Tapah!\_

The first two lines of the Hymn, "Existence was not then, nor non-existence / The world was not, the sky beyond was neither", may be explained in the following way: the Reality is beyond being and non-being—these two, like any other pair of opposites belong to maya. It may be interesting to also quote Shri Ramakrishna's opinion: "This existence and non-existence are attributes of Prakriti. The Reality is beyond both." The text of the third stanza, "But motionless did That vibrate" is translated and elucidated by Swami Vivekananda in the following way:

"It then existed without vibration." This Prâna [primal energy] existed then, but there was no motion in it ; Anidavâtam means "existed without vibration". Vibration had stopped. Then when the Kalpa begins, after an immense interval, the Anidavâtam (unvibrating atom) commences to vibrate, and blow after blow is given by Prâna to Akâsha. The atoms become condensed, and as they are condensed different elements are formed.

Swami Vivekananda explains more about the power of creation:

Everything that we see around us, feel, touch, taste, is simply a differentiated manifestation of this Akâsha. It is all pervading, fine. All that we call solids, liquids, or gases, figures, forms, or bodies, the earth, sun, moon, and stars—everything is composed of this Akâsha.

What force is it which acts upon this Akâsha and manufactures this universe out of it? Along with Akâsha exists universal power ; all that is power in the universe, manifesting as force or attraction—nay, even as thought—is but a different manifestation of that one power which the Hindus call Prâna. This Prâna, acting on Akâsha, is creating the whole of this universe. In the beginning of a cycle, this Prâna, as it were, sleeps in the infinite ocean of Akâsha. It existed motionless in the beginning. Then arises motion in this ocean of Akâsha by the action of this Prâna, and as this Prâna begins to move, to vibrate, out of this ocean come the various celestial systems, suns, moons, stars, earth, human beings, animals, plants, and the manifestation of all the various forces and phenomena. Every manifestation of power, therefore, according to them, is this Prâna. Every material manifestation is Akâsha. When this cycle will end, all that we call solid will melt away into the next form, the next finer or the liquid form ; that will melt into the gaseous, and that into finer and more uniform heat vibrations, and all will melt back into the original Akâsha, and what we now call attraction, repulsion, and motion, will slowly resolve into the original Prâna. Then this Prâna is said to sleep for a period, again to emerge and to throw out all these forms, and when this period will end, the whole thing will subside again.

Thus this process of creation is going down, and coming up, oscillating backwards and forwards. In the language of modern science, it is becoming static during one period, and during another period it is becoming dynamic. At one time it becomes potential, and at the next period it becomes active. This alteration has gone on through eternity.

According to the philosophers of India, out of two basic materials—Prâna (primal energy) and Akâsha (primal matter) the entire universe is composed. The process of creation was gradual. Swami Vivekananda explains it in this way:

Prâna and Akâsha combine and recombine and form the elements out of them. . . . The Akâsha, acted upon by the repeated blows of Prâna, produces Vâyu or vibrations. This Vâyu vibrates, and the vibrations growing more and more rapid result in friction giving rise to heat, Tejas. Then this heat ends in liquefaction, Apah. Then that liquid becomes solid. We had ether, and motion, and then came heat, then it became liquified, and then it condensed into gross matter ; and it goes back in exactly the reverse way. \_

Therefore, the order of Creation is space, air, heat, water and earth, respectively.

Vedanta posits "projection from the latent to the manifest form." The preferred Vedantic term, "projection" (or the "out-breathing of God") is commonly called creation in other scriptures. Swami Vivekananda's teaching on creation included the term "projection" as the correct translation of "creation" from the Sanskrit:

The first is the question of creation, that this nature, Prakriti, Maya, is infinite, without beginning. It is not that this world was created the other day, not that a God came and created the world and since that time has been sleeping; for that cannot be. The creative energy is still going on. God is eternally creating—is never at rest. Remember the passage in the Gita where Krishna says, "If I remain at rest for one moment, this universe will be destroyed." If that creative energy which is working all around us, day and night, stops for a second, the whole thing falls to the ground. There never was a time when that energy did not work throughout the universe, but there is the law of cycles, Pralaya. Our Sanskrit word for creation, properly translated, should be projection and not creation. For the word creation in the English language has unhappily got that fearful, that most crude idea of something coming out of nothing, creation out of non-entity, non-existence becoming existence, which, of course, I would not insult you by asking you to believe. Our word, therefore, is projection. The whole of this nature exists, it becomes finer, subsides; and then after a period of rest, as it were, the whole thing is again projected forward, and the same combination, the same evolution, the same manifestations appear and remain playing, as it were, for a certain time, only again to break into pieces, to become finer and finer, until the whole thing subsides, and again comes out. Thus it goes on backwards and forwards with a wave-like motion throughout eternity. Time, space, and causation are all within its nature. To say, therefore, that it had a beginning is utter nonsense. No question can occur as to its beginning or its end. Therefore wherever in our scriptures the words beginning and the end are used, you must remember that it means the beginning and end of one particular cycle; no more than that. \_

Creation may also be called "emission." The Neoplatonists used the word "emission" for creation: "This production is not a physical process, but an emission of force . . ." \_

Swami Vivekananda cites two Vedic theories with regard to creation, which is actually this projection of God. According to the first theory, the entire cosmos is brought forth or

projected out of an undifferentiated state, and after a certain period, the entire creation goes into dissolution at one and the same time. According to the second theory, the act of creation goes on in one portion of the cosmos, while in another part, dissolution takes place. Swami Vivekananda favored the second theory and added:

But the principle remains the same, that all we see—that is, nature herself—is progressing in successive rises and falls. The one stage, falling down, going back to balance, the perfect equilibrium, is called Pralaya, the end of a cycle. The projection and the Pralaya of the universe have been compared by theistical writers in India to the outbreathing and inbreathing of God; God, as it were, breathes out the universe, and it comes into Him again. When it quiets down, what becomes of the universe? It exists, only in finer forms, in the form of a cause, as it is called in the Sankhya philosophy. It does not get rid of causation, time, and space; they are there, only it comes to very fine and minute forms. Supposing that this whole universe begins to shrink, till every one of us becomes just a little molecule . . . "

Fritjof Capra explains it in another way:

This idea of a periodically expanding and contracting universe, which involves a scale of time and space of vast proportions, has arisen not only in modern cosmology, but also in ancient Indian mythology. Experiencing the universe as an organic and rhythmically moving cosmos, the Hindus were able to develop evolutionary cosmologies which come very close to our modern scientific models. One of these cosmologies is based on the Hindu myth of *lila*—the divine play—in which *Brahman* transforms himself into the world. *Lila* is a rhythmic play which goes on in endless cycles, the One becoming the many and the many returning into the One. In the *Bhagavad Gita* [IX:7-10], the god Krishna describes this rhythmic play of creation in the following words:

At the end of the night of time all things return to my nature; and  
when the new day of time begins I bring them again into light.

Thus through my nature I bring forth all creation.  
I am and I watch the drama of works.

I watch, and in its work of creation nature brings forth all that moves and moves not: and  
thus the revolutions of the world go round.

The Hindu sages were not afraid to identify this rhythmic divine play with the evolution of the cosmos as a whole. They pictured the universe as periodically expanding and contracting and gave the name *kalpa* to the unimaginable time span between the beginning and the end of one creation. The scale of this ancient myth is indeed staggering; it has taken the human mind more than two thousand years to come up again with a similar concept."

In this discussion of the creative process, the main idea in Vedanta has been to declare that the unifying principle behind multiplicity is God, the efficient as well as the material

cause of multiplicity. The plurality is only apparently real, the Supreme Reality being God. From God, all this originates, in God, all this rests, and into God, all this is absorbed.

Creation is accompanied by the severest austerities (tapas) of God. The word, austerity, means heat. The whole universe was in a concentrated form which, in later literature, is mentioned as a point, or *bindu*. The whole universe was in a single infinitesimal point, one single *bindu*. Out of that, explosion came.

A perceptive reader will find many striking similarities between the latest findings of astrophysics and ancient Indian cosmological ideas, of which Swamiji says: ". . . you will find how wonderfully they are in accordance with the latest discoveries of modern science; and where there is disharmony, you will find that it is modern science which lacks and not they." Einstein writes that "cosmic expansion may be simply a temporary condition which will be followed at some future epoch of cosmic time by a period of contraction. The universe in this picture is a pulsating balloon in which cycles of expansion and contraction succeed each other through eternity."

The modern astrophysicist, Stephen Hawking, writes: "At the big bang itself, the universe is thought to have had zero size, and so to have been infinitely hot . . . The whole history of science has been the gradual realization that events do not happen in an arbitrary manner, but they reflect a certain underlying order, which may or may not be divinely inspired."

The Vedas also state that creation is ongoing: what has been in the past is being repeated in the new cycle. Stephen Hawking writes, "Thus, when we see the universe, we are seeing it as it was in the past." He further writes, "But how did he [God] choose the initial state or configuration of the universe? One possible answer is to say that God chose the initial configuration of the universe for reasons that we cannot hope to know." It is perhaps enough for the modern mind to know how great is the similarity. Vedanta does not support the "big bang" theory and its mechanistic materialism. We have merely cited certain common ideas to be found in both.

Brahman is the ultimate Reality. Brahman is impersonal-personal God. Impersonal God may be called the static aspect and personal God may be called the dynamic aspect of Brahman. The static aspect Anid Avatam—as Rg-Veda puts it, "It existed without any movement." Brahman is truth, Consciousness and Infinitude. Knowledge, will and action are inherent in Brahman. God projects the universe by animating His prakriti (maya).

Astrophysics and Advaita Vedanta agree on certain points. Advaita Vedanta upholds the notion of the pulsating or oscillating universe. Creation is followed by dissolution and this process will continue ad infinitum. Science used the term "big bang" for the starting point of creation and "big crunch" for the dissolution of the universe. The "cosmic egg" of Vedanta, which is like a point, is called singularity in astrophysics. The background material of the scientist cannot be accepted as the source of creation. That is the biggest



difference between the two systems. Science is still exploring and remains inconclusive but Vedanta has given the final verdict, which is unassailable. Unless there is one changeless Reality, change cannot be perceived at all.

Lincoln Barnett, *The Universe and Dr. Einstein* (New York: Bantam Books, 2nd revised ed., 1968), 113.

*Bhagavad Gita*, VIII:17, 18.

*The Song of God: Bhagavad-Gita*, Swami Prabhavananda and Christopher Isherwood, trans. (New York: Penguin Books, 1954), 77.

Bhagavan Das, *Krishna, A Study in the Theory of Avataras* (Bombay: Bharatiya Vidya Bhavan, 1990), 34, note 20.

Op. cit.

Ibid.

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H. G. Wells, *The Outline of History* 3rd rev ed. (New York: The Macmillan Company, 1921), 953ff.

*Bṛhadaranyaka Upanishad*, II.1.20.

*Mundaka Upanishad*, 1.1.7.

*The Complete Works of Swami Vivekananda* (Calcutta: Advaita Ashrama, 1963), VI:178. [*Tapah* means "Austerity"]

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*C. W.*, II:435.

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*C. W.*, II, 433.

*The Universe and Dr. Einstein*, 102.

Stephen Hawking, *A Brief History of Time* (London: Bantam Books, 1997), 123; 129.

*Ibid.*, 30.

*Ibid.*, 129.