

Modern versus Vaidic Views on the Science of Creation of Universe

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There has always been a mystery about how the universe began, whether if and when it will end. Religions, beliefs, philosophers, and scientists all have different perspectives about it. In Vaidic texts creation of the Universe is discussed from many angles. The scientists are also trying their best to explain the creation of the Universe from scientific point of view along with experimental evidences. In some cases it is found that science and Vaidic texts are converging and in other cases it is seen that they are not.

Scientists before the 20th century could not find any experimental evidence in respect of creation of the Universe. They have put forward many theories regarding it, but basically three principles are given the most credence. They are **The Big Bang theory, the Steady State theory and the Oscillating theory**. But in cosmology out of all these theories '**Big Bang**' theory is currently the dominant theory about the early development and current shape of the Universe. The Steady State theory says that the universe never originated at any one instant, nor will it ever die. The universe has always existed in much the same form as present. The Oscillating theory suggests that the universe continues in endless cycles of expansion and contraction.

The Big Bang theory; Most of the scientists believe the Universe began with a Big Bang about 14 billion years ago. At that time, the entire Universe was contained in a single point which was hotter and denser than anything we can imagine. Then it suddenly exploded. The matter flung out from the explosion condensed into lumps called galaxies, which are still rushing outwards. As the universe grows old, the matter in it thins out. The expansion continues indefinitely. After the initial expansion, the universe cooled sufficiently to allow the formation of subatomic particles, including protons, neutrons, and electrons. After colliding and merging and cooling off these discs of gas and dust became planets all traveling and orbiting around their own suns and became known as Solar Systems. The same concept is described in **Manu Smṛti. Originally. This (universe) existed in the shape of Darkness, unperceived, destitute of distinctive marks..., That shining egg, resplendent like the aggregative effulgence of thousands of suns..., the egg was broken..., out of those broken parts He created the heaven and earths, sky, directions etc....Manu Smṛti. 1.5-22.**

Puruṣa- prakṛti; In his famous equation $E=mc^2$, Albert Einstein demonstrated that matter and energy are equivalent and interchangeable, and that neither is capable of being destroyed or created, that they only change form. The matter of which the universe is composed, shows two conditions, namely motion and cessation of motion... Within the **Vaidic view**, there is an undifferentiated form of material energy, called **pradhāna** or **Prakṛti**, that is the source of all other forms of energy. It is the primordial matter. All matter, i.e. nature, has three basic attributes/forces **satva** (lightness), **rajaḥ** (passion or activity) and **tamaḥ** (darkness or inertia). when these three qualities are in equal proportion, this primordial matter (**prakṛti**) has no motion, no effect. When there is motion, they differ in proportion and shapes are formed and consequently their effect. This stage of primordial matter (**prakṛti**) is called **Vikṛti**. The universe, we see is in its **Vikṛti** stage. **Puruṣa** as the supreme spirit is the primary efficient cause of creation, sustentation, and dissolution of the universe. The process of generation proceeds from the subtle level to the gross and that of dissolution from the gross to the subtle. Vaidic texts state that this universe is not a result of any

accidental incident. The whole process of creation, sustentation, and dissolution of this universe is governed by an eternal universal law named **Rta**.

The universe runs in a cyclic order; In Vaidic texts, the universe is called as **samsāraor Jagat** (which is in continuous flow). The universe has neither a beginning, nor an end. So creation follows dissolution and dissolution follows creation. Both precede each other. Universe is eternally in flow, following each other in alternative succession in a uniform way. **Rg Veda X-190-3**, says, ***"The sustainer created the sun, the moon, the celestial region, the earth, the electricity, and the atmosphere in this cycle, as in the previous ones."***

The universe begins from a point with a bang and ends in a point with a crunch. This duration is called one **Kalpa** (cosmos) or **Brahma Divas** (Brahma-day). It is preceded and succeeded by an equal period during which matter lies in a dormant, inert state and that is called a **Brahma Rātri** (Brahma- night).

The period of dissolution (**Pralaya**), is described as Brahma-night. At this stage darkness pervades all round, there is neither sign nor any object to be known nor to be considered. According to the famous **Nāsadiya Sūkta** of **Rg Veda**; ***There was neither non-existent nor existent; there was no realm of air, and no sky beyond it. How could there exist such unfathomable plasma? 2. There was neither death nor immortality.***

There was no indication of day and night. That one breath less thing breathed by its own nature; apart from it there was nothing whatsoever. 3. There was darkness concealed in darkness; this all was indiscriminate chaos. All that existed then was void and formless. Rg.Veda. 10.129.3. During brahma-night, all the three forces remain in a balanced state. All the souls also remain in a dormant state, a sort of hibernation, during this period. The evolution of cosmos from dormant state may be called a 'creation' or '**Sṛṣṭi**', and its involution back into inert state is called dissolution (**Pralaya**).

Hiranyagarbha (golden embryo): Prior to formation, the universe comes in a state of emptiness where all its material elements exist in form of potential as space particles. **Rg Veda 10-121** describes a cosmic egg -**Hiranyagarbha** (golden embryo) from which the whole creation shoots forth. It connotes one who is the source and support of all lights and lustrous bodies, ***Hiranyagarbhaḥ samavartatāgre bhutasya jātaḥ patireka āsīt.....***

In Vaidic texts, The period when the universe is sustained, is called '**Virāt**' meaning the multifarious universe. **Virāt** denotes the totality of all existence.

Turiya pāda / Dark energy; According to modern science, the universe is composed of **ordinary matter** (4%) including atoms, stars, and galaxies, **dark matter** (22%) which is a hypothetical entity that has not yet been detected and **dark energy** (74%), which is a kind of energy density that seemingly exists even in completely empty space. The "dark matter" and "dark energy" are commonly used as placeholder names for the unknown entities. The Vedas also state same thing in a different way; ***This Puruṣa, the "Cosmic Being", is much greater than all his greatness in what all we see. He surpasses all this. One quarter of him comprises all the creations (living and the non-living), while three quarters of him are eternally beyond all this. Rig Veda.10.90.3,4***

As we have briefly seen, the Vaidic literatures offer amazing avenues for research in this field of science. Further studies into the matter using the Vaidic view may prove fruitful not only in the attenuation of the conflict between the two fields of knowledge but in the development of a scientific understanding of the process of self-realization.