

Interpretation of the evolution of universe through the consciousness model

Dhananjay Pal

Pharmacy College, Bengal School of Technology, Sugandha-Delhi Road, Chuchura, Dist.-Hooghly, West Bengal, INDIA

Email address:

dhananjay.pal123@gmail.com, paldhananjay46@yahoo.com

To cite this article:

Dhananjay Pal. Interpretation of the Evolution of Universe through the Consciousness Model. *American Journal of Modern Physics*. Vol. 2, No. 6, 2013, pp. 303-313. doi: 10.11648/j.ajmp.20130206.16

Abstract: We showed the evolution of universe from void through our consciousness model incorporating Thought-carrying particle (TCP), Thought-retaining particle (TRP) and Thought Force (T_F) in order to develop a general theory for the unification of physics which would be freely applicable to the more general situations involving both the inanimate and animate having consciousness. Scientists have arrived at a simple but decisive conclusion that consciousness is very much a part of the universe, like other objects. Our consciousness model signifies the existence of universal consciousness that exists along with the universe. This universal consciousness is a functional state of the universal mind (UM). This UM is evolved at the Big Bang from void. The UM is constituted by these TCP and TRP in the inherent presence of thought force (T_F). Thought force (T_F) is an expression of universal consciousness. A single field emerged at the origin of the universe, already containing within itself the blueprint of the physical universe. The primordial single field triggered the onset of the universe. Most physicists believe that a single super-force dominated the first instants of creation. The Thought force (T_F) being the primordial quantum field functions as the original super-force. T_F being the original super-force functions as the origin of all the fundamental fields. TCP is the carrier of thought force (T_F) that, in turn, appears to be the origin of all the fields. The quantized energy (ϵ_T) of the TCP is responsible to cause the universal consciousness as well as the cosmic microwave background radiation temperature. The individual consciousness owes its origin to the universal consciousness created by the same ϵ_T . The same ϵ_T is the energy responsible for generating thought force (T_F). T_F being an expression of the universal consciousness is applicable to any inanimate object as well as to any biological system (having thinking ability). The T_F exerts its functions both *in vitro* and *in vivo*.

Keywords: Void, Universal Mind (UM), Thought Force (T_F), Thought-Carrying Particle (TCP), Thought Retaining Particle (TRP), Quantized Energy (ϵ_T) of TCP

1. Introduction

It is most relevant and important to indicate the names of various eminent physicists like Erwin Schrödinger, Eugene Wigner, Brian Josephson, John Wheeler, Roger Penrose, Henry P Stapp, Freeman J. Dyson, Paul Davies, David Bohm, Basil Hiley, Fritjof Capra, Fred Alan Wolf and Amit Goswami who have addressed the inclusion of consciousness in their work. Consciousness is to be taken into account for understanding many present day scientific enigmas.

1.1. In contrast to the usual linear sequence of matter, body, life, brain, mind, consciousness, here the proposed cyclic sequence is first universal consciousness (a functional state of the universal mind), and then matter,

body, life, brain, and regeneration of mind and consciousness. The evolution of life with mind and consciousness is possible purely due to the inherent existence of universal consciousness which exists along with the universe. The human nervous system is evolved to provide an appropriate material structure to individualize the universal consciousness, a characteristic of reality, pervading all manifestations.

As per Penrose [1], consciousness is a part of the universe. Van De Bogart [2] explained, "Since consciousness is a part of the universe it then follows that all consciousness, and the universe, are of the same matrix of energy fields". Consciousness model of Pal *et al* [3-5] involving TCP, TRP and thought force (T_F) signifies the existence of universal consciousness that exists along with the universe. The universal consciousness is a functional state of the

universal mind (UM). We showed the existence of thought force (T_F) that, in turn, is an expression of the universal consciousness.

Bhaumik [6] mentioned, "It would be reasonable to presume that the universe originated in a unity of all fields at or near Planck's dimension. John Wheeler strongly believes that "in defining any useful concept of reality" we have to take into account "the indispensable place of the participating observer---evidenced in quantum mechanics," the foregoing cannot be really true unless consciousness is as essential as aspect of nature as are the fields that give rise to force and matter and the primary field that gave rise to them". Consciousness is to be taken into account.

2. Evolution of Universe

The three main theories put forward to explain the origin and evolution of the universe are:

- 2.1. The Big Bang Theory
- 2.2. The Steady State Theory
- 2.3. The Pulsating Theory

2.1. The Big Bang Theory

Le Maitre and Gammow proposed this theory.

According to this theory, at the beginning of the universe, the whole matter of the universe was once concentrated in an extremely dense and hot ($\sim 10^{12}$ °K) fireball. About 11 to 15 billion years ago all of the matter and energy in the Universe was concentrated into an area the size of an atom. At this moment, matter, energy, space and time did not exist. Then about 11 to 15 billion years ago suddenly a vast explosion (Big Bang) occurred. The Universe began to expand at an incredible rate and matter, energy, space and time came into being after the Big Bang. As the Universe expanded, matter began to coalesce into gas clouds, and then stars and planets. Our solar system formed about 5 billion years ago when the Universe was about 65% of its present size. Today, the Universe continues to expand.

The Big Bang theory is the prevailing cosmological theory of the early development of the universe as it is indicated by Wollac [7]. According to the Big Bang model, the universe was originally in an extremely hot and dense state that expanded rapidly. This expansion caused the universe to cool and resulted in the present diluted state that continues to expand today. Based on the best available measurements as of 2010, the original state of the universe existed around 13.7 billion years ago as indicated by Komatsu [8] and Menegoni [9]; this is often referred to as the time when the Big Bang occurred as expressed by Origins: CERN [10] and Keohane [11]. The theory is the most comprehensive and accurate explanation supported by scientific evidence and observations indicated by Feuerbacher et al [12] and Wright [13].

2.2. Steady State Theory

Bondi, Gold and Fred Hoyle developed this theory.

According to this theory, the number of galaxies in the observable universe is constant and new galaxies are continuously being created out of empty space, which fill up the gaps caused by those galaxies, which have crossed the boundary of the observable universe. As a result of it, the overall size of mass of the observable universe remains constant. Thus a steady state of the universe is not disturbed at all.

2.3. Pulsating Theory

According to this theory, the universe is supposed to be expanding and contracting alternately i.e. pulsating. At present, the universe is expanding. According to pulsating theory, it is possible that at a certain time, the expansion of the universe may be stopped by the gravitational pull and they may contract again. After it has been contracted to a certain size, explosion again occurs and the universe will start expanding. The alternate expansion and contraction of the universe give rise to pulsating universe.

3. Why do Most Scientists Accept the Big Bang Theory?

The acceptance of this theory by the scientific community is based on a number of observations. These observations confirm specific predictions of the Big Bang theory. Pidwirny [14] expressed that scientists test their theories through deduction and falsification. Predictions associated with the Big Bang theory that have been tested by this process are:

3.1. If the Big Bang did occur, all of the objects within the Universe should be moving away from each other. In 1929, Edwin Hubble documented that the galaxies in our Universe are indeed moving away from each other.

3.2. The Big Bang should have left an "afterglow" from the explosion. In the 1960s, scientists discovered the existence of cosmic background radiation, the so-called "afterglow" after the Big Bang explosion. Our most accurate measurements of this cosmic radiation came in November 1989, by the Cosmic Background Explorer (COBE) satellite. The measurements from this satellite tested an important prediction of the Big Bang theory. This prediction suggests that the initial explosion that gave birth to the Universe should have created radiation with a spectrum that follows a blackbody curve. The COBE measurements indicated that the spectrum of the cosmic radiation varied from a blackbody curve by only 1%. This level of error is considered insignificant.

Pal *et al* [5] have shown that

$$\mathcal{E}_T = 4.384 \times 10^{-16} \text{ erg} \equiv 2.73 \times 10^{-4} \text{ eV} \equiv 2.73^0 \text{ K} \equiv \text{CMBR temperature} \equiv 2.725^0 \text{ K}$$

where \mathcal{E}_T = quantized energy of the TCP radiated from the radiant mass of universe.

3.3. If the Universe began with a Big Bang, extreme temperatures should have caused 25 percent of the mass of

the Universe to become helium. This is exactly what is observed.

3.4. Matter in the Universe should be distributed homogeneously. Astronomical observations from the Hubble Space Telescope do indicate that matter in the Universe generally has a homogeneous distribution.

4. How will the Universe End?

Cosmologists have postulated two endings to the Universe. If the Universe is infinite or has no edge, it should continue to expand forever. A Universe that is finite or closed is theorized to collapse when expansion stops because of gravity. The collapse of the Universe ends when all matter and energy is compressed into the high energy, high-density state from which it began. This scenario is of course called the Big Crunch. Some theorists have suggested that the Big Crunch will produce a new Big Bang and the process of an expanding Universe will begin again. This idea is called the oscillating Universe theory.

5. Before the Big Bang, There Was . . . What?

What was God doing before he created the world? Overbye [15] mentioned that the philosopher Augustine posed the question in his "Confessions" in the fourth century, and then came up with a strikingly modern answer: before God created the world there was no time and thus no 'before'. To paraphrase Gertrude Stein, there was no "then" then.

Overbye [15] stated: One answer to the question of what happened before the Big Bang is that it does not matter because it does not affect the state of our universe today. According to a theory known as eternal inflation, put forward by Dr. Linde in 1986, what we know as the Big Bang was only one out of many in a chain reaction of big bangs by which the universe endlessly reproduces and reinvents itself. "Any particular part of the universe may die, and probably will die," Dr. Linde [16] said, "but the universe as a whole is immortal."

Some theorists suggest that the Big Bang was not so much a birth as a transition, a "quantum leap" from some formless era of imaginary time, or from nothing at all.

According to Heisenberg's uncertainty principle, 'empty space' can never be considered really empty; subatomic particles can flit in and out of existence on energy borrowed from energy fields. The effects of these quantum fluctuations have been observed in atoms, and similar fluctuations during the inflation are thought to have produced the seeds around which today's galaxies were formed.

Could the whole Universe likewise be the result of a quantum fluctuation in some sort of primordial or eternal nothingness? Linde [16] points out, "There is a chicken-and-egg problem. Which came first: the Universe,

or the law governing it?" Or, as he asks, "If there was no law, how did the Universe appear?"

One of the earliest attempts to imagine the nothingness that is the source of everything came in 1965 when John Wheeler and Bryce DeWitt wrote down an equation that combined general relativity and quantum theory. Physicists have been arguing about it ever since. The Wheeler-DeWitt [17] equation (1967) seems to live in what physicists have dubbed 'super-space', a sort of mathematical ensemble of all possible universes.

Overbye [15] further pointed out: In ordinary quantum mechanics, an electron can be thought of as spread out over all of space until it is measured and observed to be at some specific location. Likewise, our own Universe is similarly spread out over all of super-space until it is somehow observed to have a particular set of qualities and laws. That raises another of the big questions. Since nobody can step out the Universe, who is doing the observing?

Wheeler has suggested that one answer to that question might be simply us, acting through the quantum mechanical acts of observation, a process he called "genesis by observership". "The past is theory," he once wrote. "It has no existence except in the records of the present. We are participators, at the microscopic level, in making that past, as well as the present and the future." In effect, Wheeler's answer to Augustine is that we are collectively God and that we are always creating the Universe.

Bhaumik [18] pointed out, "'I' and the universe somehow participate with one another. Mind affects matter and matter affects mind. Could the answer to the 'why' of consciousness lie in Wheeler's time-bending notion that our 'observership brings the universe into being'?"

"Observers are necessary to bring the Universe into being." Barrow and Tipler [19] believe that this is a valid conclusion from quantum mechanics, Wheeler has suggested, especially via his participatory universe and Participatory Anthropic Principle (PAP). Wheeler has speculated that reality is created by observers in the universe.

6. Eternal Universe

6.1. Cyclic Model: The Steinhardt-Turok Model

With Steinhardt, Turok [20, 21] has developed a cyclic model for the universe, in which the big bang is explained as a collision between two "brane-worlds" in M theory. The predictions of this model are in agreement with current cosmological data. In this cyclic model, two parallel orbifold planes or M-branes collide periodically in a higher dimensional space [22]. The visible four-dimensional universe lies on one of these branes. The collisions correspond to a reversal from contraction to expansion, or a big crunch followed immediately by a big bang. The matter and radiation we see today were generated during the most recent collision in a pattern dictated by quantum fluctuations created before the branes. Eventually, the

universe reached the state we observe today, before beginning to contract again many billions of years in the future. Dark energy corresponds to a force between the branes, and serves the crucial role of solving the monopole, horizon, and flatness problems. Moreover the cycles can continue indefinitely into the past and the future, so it can provide a complete history of the universe.

6.2. *Gurzadyan and Penrose Model*

Gurzadyan and Penrose [23] published a paper saying that the circular patterns seen in the WMAP (Wilkinson Microwave Background Probe's) mission data on the Cosmic Microwave Background suggest that space and time perhaps did not originate at the Big Bang but that our universe continually cycles through a series of "aeons," and we have an eternal, cyclical cosmos. Their paper also refutes the idea of inflation, a widely accepted theory of a period of very rapid expansion immediately following the Big Bang.

6.3. *View of the Vedanta*

The conclusion that our universe continually cycles through a series of "aeons," and the existence of an eternal, cyclical cosmos agree perfectly well with the KALPA (Cycle) of Vedanta philosophy as it is explained by Vivekananda [24].

The Vedanta believes in KALPA (Cycle) through the evolution and involution (the reverse of evolution) of the universe. Everything in this universe including the universe itself is following this KALPA (Cycle), periodically. The KALPA (Cycle) is an eternal cyclic process of Creation (i.e. Evolution or Projection) and Dissolution [i.e. PRALAYA, Involuton (reverse of evolution)]. Creation (i.e. Evolution or Projection) and dissolution (PRALAYA) of the universe perpetuate in a cycle. KALPA (Cycle) is coming up and going down, oscillating forwards and backwards. It is to be noted that the word 'creation' in the English is exactly the 'projection' in Sanskrit. What we mean by the creation is the projection of that which already existed. The projection (i.e. Creation) and dissolution (i.e. PRALAYA or Involution) must take place in the same order, only one means coming out (Evolution) and the other going backward [Involuton (reverse of evolution)].

When the universe quiets down, what becomes of the universe? It exists only in finer forms, in a form of cause, as it is expressed in Sāṅkhya philosophy indicated by Vivekananda [24]. It does not get rid of causation, time and space; they are there, only it comes to very fine forms.

Beginning of the KALPA (Cycle) means creation or projection or evolution of the universe from the Absolute (\cong The BRAHMAN \cong the eternal VOID) and ending of the KALPA (Cycle) means dissolution or involuton (reverse of evolution) of the universe to the same Absolute (\cong The BRAHMAN \cong the eternal VOID) in order to maintain everything in the potential or static state for the beginning of a new KALPA (Cycle) in future, thereby

maintaining the eternal, cyclical cosmos.

6.4. *Other Cyclic Model: Carr and Coley Model*

Could there be another type of black hole in our modern universe that was created before the Big Bang? Carr and Coley [25] have published a paper on arXiv, where they suggest that some so-called primordial black holes might have been created in the Big Crunch that came before the Big Bang, which supports the theory that the Big Bang was not a single event, but one that occurs over and over again as the Universe crunches down to a single point, then blows up again, over and over. This theory also indicates that we have an eternal, cyclical cosmos as expressed by Gurzadyan and Penrose [23], thus signifying the existence of eternal KALPA (Cycle) of the Vedanta indicated by Vivekananda [24].

As per Hawking [26], "The universe has either existed for an infinite time or it had a beginning at a singularity at some finite time in the past. The universe would be completely self-contained and not affected by anything outside itself. It would neither be created nor be destroyed. It would just Be."

7. Explanation of the Evolution of Universe from the Eternal Void through the Quantum Mechanical Activities of TCP, TRP and Thought Force as Expressed by Pal *et al* [3, 5]

Schrödinger [27] pointed out, "The earliest records to my knowledge date back some 2,500 years or more. From the early great Upanishads the recognition ATHMAN = BRAHMAN (the personal self equals the omnipresent, all-comprehending eternal self) was in Indian thought considered, far from being blasphemous, to represent the quintessence of the deepest insight into the happenings of the world. The striving of all the scholars of Vedanta was, after having learnt to pronounce with their lips, really to assimilate in their minds this grandest of all thoughts".

Ranganathananda [28] expressed, "In the eastern view, the reality underlying all phenomena is beyond all forms and defies all description and specification. It is, therefore, often said to be formless, empty, or void. But this emptiness is not to be taken for mere nothingness. It is, on the contrary, the essence of all forms and the source of all life."

As per the Vedanta, there is only one Infinite Existence called BRAHMAN. This BRAHMAN is more or less equivalent to the Void of the modern science. The Void is not the meaning of nothingness. This Void is the source of infinite energy. Anything and everything of this universe are its manifestations.

As per Hawking [26], the Heisenberg's uncertainty principle established that even "empty" space is filled with infinite pairs of virtual particles and antiparticles. These

pairs would have an infinite amount of energy and therefore, by Einstein's equation: $E = mc^2$, they would have an infinite amount of mass. Without the uncertainty principle to forbid nothingness, there might not even be a universe.

The BRAHMAN of Vedanta is more or less equivalent to the Void of modern science. This Void which is not the meaning of nothingness is the source of infinite energy.

Ranganathananda [28] quoted the following:

The UPANISADS say (Chândogya Upanisad, IV.10.4):

“Brahman is life. Brahman is joy.

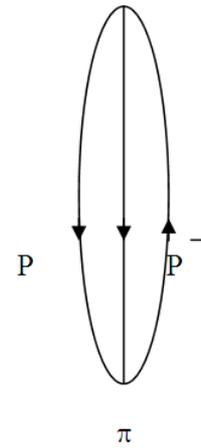
Brahman is the Void-----

Joy, verily, that is the same as the Void.

The Void, verily, that is the same as Joy”.

Pal *et al* [3, 5] explained that the eternal ‘Void’ has been covered by the mind to function as the Soul of individual being. In the universe, behind the UM, there is a Soul (\cong VOID). In the individual, behind the individual mind (which is a constituent of the UM), there is also a Soul (\cong VOID).

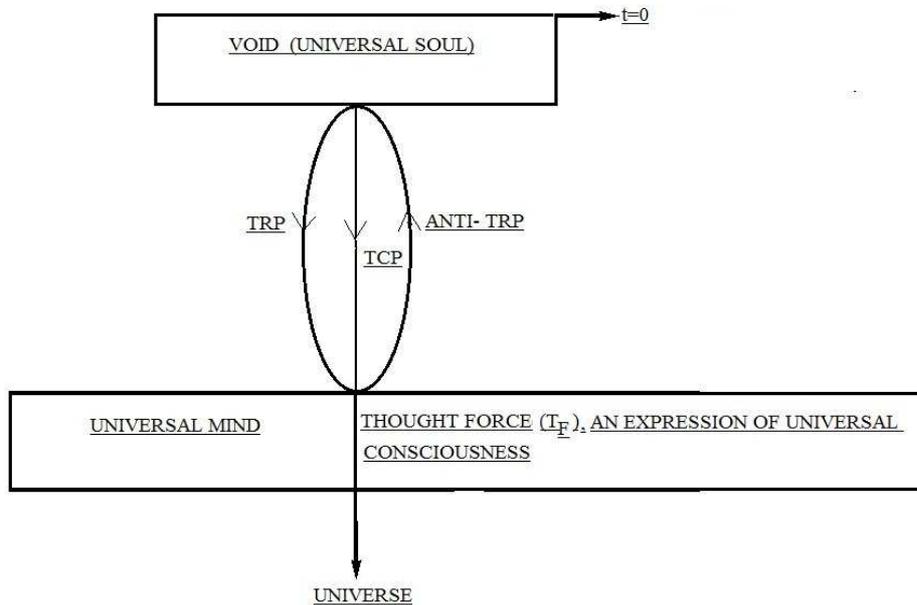
Capra [29] expressed through the ‘vacuum diagram’ that the ‘Void’ is the source of all the matters prevailing in this universe. Capra [29] explained this fact through a ‘vacuum diagram’ as shown below:



A Vacuum diagram

This Vacuum diagram explains the process: three particles---a proton (P), an antiproton (P⁻), and a pion (π) - are formed out of nothing and disappear again into the vacuum. According to the field theory, events of that kind happen all the time. The vacuum is far from empty. On the contrary, it contains an unlimited number of particles, which come into being and vanish without end.

Similar to the ‘vacuum diagram’ as explained by Capra [29], the evolution of the universe from the eternal ‘Void’ can also be lucidly explained through the generation of postulated TRP, anti-TRP and TCP as shown below:



Schematic presentation showing the evolution of Universe from the ‘Void’ (see Scheme-I).

This Scheme lucidly shows the evolution of universe from the Void incorporating the postulated TCP (Thought-carrying particle), TRP (Thought-retaining particle) and Thought Force (T_F). Laws of absolute conservation of mass, charge (and color) are to be maintained in order to develop a general theory for the unification of physics which would be freely applicable to

the more general situations involving both the inanimate and animate having consciousness.

Pal *et al* [3-5] developed a consciousness model involving TCP, TRP and Thought force (T_F) that signifies the existence of universal consciousness.

In Eastern philosophical traditions, consciousness is intrinsic to the universe, whereas in most Western views, consciousness is extrinsic, emerging from complex computation. How can these views be reconciled?

7.1. General View for the Evolution of the Universe

Big Bang \rightarrow Universe \rightarrow [Fields + Particles & Antiparticles + STC] \rightarrow [Matter and Fields + STC] \rightarrow Matter and Fields + STC + Life as well as consciousness.

Many physicists agree with the idea that consciousness is non-local and fundamental in the universe. Scientists have arrived at a simple but decisive conclusion that consciousness is very much a part of the universe, like other objects. As per Roger Penrose [1], consciousness is a part of the universe. If the universe exists along with the universal consciousness that, in turn, is a functional state of the universal mind (UM) and if this UM is evolved at the Big Bang from the eternal void, then

Our view for the evolution of the universe (see scheme-I)

VOID \rightarrow [Big Bang] \rightarrow [TCP, TRP & Anti-TRP in the inherent presence of thought force (T_F) + STC] \rightarrow [Universal Mind with universal consciousness + TCP & TRP in the inherent presence of thought force (T_F) + STC + UTF] \rightarrow [Universal Mind with universal consciousness + Matter and Fields {including thought force (T_F)} + TCP & TRP + STC + UTF] \rightarrow Universal Mind with universal consciousness + Matter and Fields {including thought force (T_F)} + Life as well as consciousness + TCP & TRP + STC + UTF [where thought force (T_F) is the origin of all the fields, TCP (Thought-carrying particle) is the origin of all the field particles, TRP (Thought retaining particle) is the origin of all the matter particles, anti-TRP is the origin of all the anti-particles, STC = Space time continuum and UTF = Universal thought frequency \equiv frequency of the TCP].

Physicists determined that underlying quantum fields give birth to elementary particles. Bhaumik [6] mentioned that Frank Wilczek pointed out, "In quantum field theory, the primary elements of reality are not individual particles, but underlying fields. Thus, for example, all electrons are but excitations of an underlying field, naturally called electric field". The same holds true for all the fundamental particles of which matter is made.

7.2. Pal [30] Explained the Existence of Thought Force (T_F)

Thought force (T_F) is an expression of the universal consciousness which exists along with the universe. Thought force (T_F), an expression of the universal consciousness, is the primordial quantum field that, in turn, functions as the primary unified field. Pal [30] explained that most physicists believe that a single super-force dominated the first instants of creation. This mysterious super-force is the Thought force (T_F) in our view. It is possible that the evolution of all the fundamental fields is originated from this super-force that is the Thought force (T_F) itself. T_F may thus be found to be the original single primary unified field that is the origin of all the four fundamental fields along with both the T_F (micro) and T_F (macro) indicated by Pal [30]. This T_F being an expression of the universal consciousness is

applicable to any inanimate object as well as to any biological system (having thinking ability). Thus the T_F exerts its functions both *in vitro* and *in vivo* (see Scheme-I and Scheme-II).

In a purpose to involve both the non-living and living systems of the world, Pal [30] has shown the existences of these TCP, TRP and thought force (T_F) *in vitro* and thought force (T_F) *in vivo*. Anyone can call this TCP by any other name, but as the highly developed living system will have to be evolved in the universe in the long run and as the thought of highly developed living system appears to be a kind of force to be called the thought force (T_F) *in vivo*, Pal [30] considered it is wise to call it as TCP. Further, as the universe exists along with the universal consciousness that, in turn, is created by the quantized energy (\mathcal{E}_T) of TCP, we had to use the term TCP.

Pal [30] expressed that the non-living system of the world is governed by the thought force (T_F) *in vitro* and this Thought force (T_F) *in vitro* gives rise to T_F (micro), SNF, EMF, WNF, GF and T_F (macro) where T_F (micro) = Thought force in microcosm, SNF = Strong nuclear force, EMF = Electromagnetic force, WNF = Weak nuclear force, GF = Gravitational force and T_F (macro) = Thought force in macrocosm. It is to be noted here that T_F (micro) is a stronger force than the SNF and T_F (macro) is a weaker force even than the GF.

Pal (30) also expressed that the living system of the world is governed by the thought force (T_F) *in vivo* and this Thought force (T_F) *in vivo* is a type of force that represents the biological 'thought' which is the action of mind. This 'thought' being a type of force controls the 'thought processes' involving the firing of neurons through the quantum mechanical activities of these TCP and TRP in the presence of consciousness. Consciousness in living organisms is a process which involves the quantum mechanical activities of these TCP and TRP, the ultimate constituents of any matter as well as any mind in the inherent presence of thought force (T_F) *in vitro* and the thought force (T_F) *in vivo* as indicated by Pal *et al* [3, 5]. These TCP and TRP govern the activities of neurons (not the other way round). Neurons are simply the equipments used to generate consciousness and awareness. This consciousness, in turn, is the quantized energy (\mathcal{E}_T) of TCP. The thought force (T_F) *in vivo* is demonstrated in numerous experiments in which thought has an effect on a physical process (often known as mind over matter). This biological 'thought' is a type of force that can cause movement. Controlling movement through thought alone is observed in several experiments conducted by many scientists as indicated by Pal (30). These experiments thus signify the existence of thought force (T_F) *in vivo*.

Pal (30) also explained that thought force (T_F) being the primordial quantum field functions as the original single primary unified field that is not only the origin of all the four fundamental fields along with both the T_F (micro) and T_F (macro) but also the origin of Thought force (T_F) *in vivo* (see Scheme-II).

7.3. The Existence of Matter Depends on the Existence of Force and Vice Versa

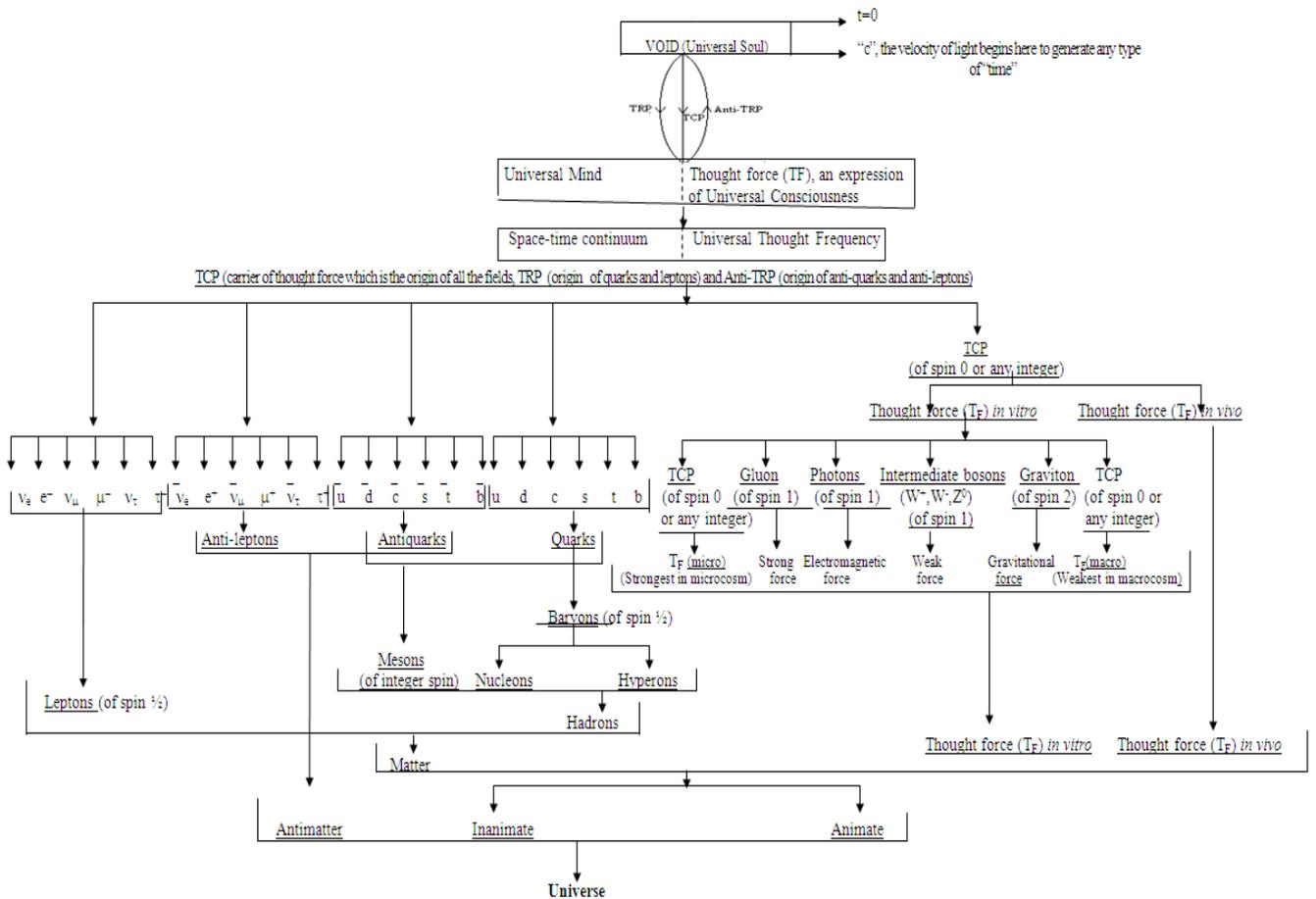
Matter particles are usually designated as “Fermions”, because they follow Fermi-Dirac Statistics; they are of spin $\frac{1}{2}$ or its multiple. Matter particles obey Pauli’s exclusion principle. Force particles are usually designated as “Bosons”, because they follow Bose-Einstein Statistics; they are of spin 0, or any integer like 1, 2, 3 etc. Force particles do not obey Pauli’s exclusion principle.

TCP cannot exist without TRP and vice versa. Many physicists believe that unifying all the forces, including gravity, into a single theory would require a phenomenon called super-symmetry. With super-symmetry, every fermion would have a boson twin, and vice-versa. TCP that behaves like boson should accompany its super-symmetrical partner TRP that functions like fermion in the generalized simpler way. Thus TCP like boson cannot have anti-particle. But TRP that functions like fermion should have its anti-particle and here it is shown as Anti-TRP (see Scheme-I).

7.4. Pal *et al* [5] showed that the functional state of

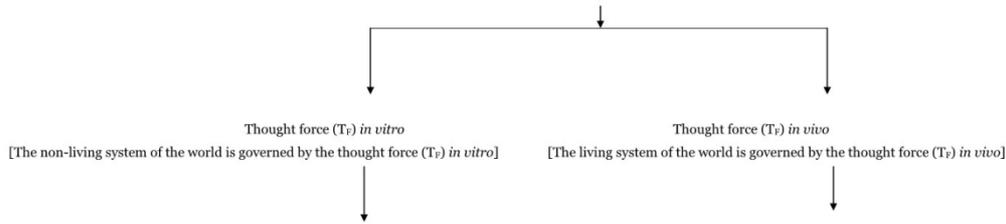
Universal Mind (UM) is the universal consciousness that exists along with the universe. Pal *et al* [5] explained that the UM is evolved at the Big Bang from the eternal Void (see Scheme-I). This Void, in turn, is the source of infinite energy. And this UM is a finer matter. The individual mind being a constituent of the UM is also a finer matter. The constituents of the UM and individual mind are the same. The ultimate constituents of matter and mind are the same as both mind and matter are aspects of one fundamental reality, which is called UM. The brain is the mediating link or interface between the individual mind and body.

Pal *et al* [5] explained that the constituents of the UM are the ultimate constituents of matter itself as everything in this universe is a manifestation of this UM. Pal *et al* [5] expressed that the UM is constituted by these TCP and TRP in the inherent presence of thought force (T_F). Pal *et al* [3, 5] further explained that the ultimate constituents of matter and mind are these TCP and TRP in the inherent presence of thought force (T_F) *in vitro* and thought force (T_F) *in vivo* [See Scheme-I and Scheme-II].



Scheme-I: Schematic presentation showing the evolution of the universe from the Void incorporating the postulated TCP (Thought-carrying particle), TRP (Thought-retaining particle) and Thought Force (T_F). Laws of absolute conservation of mass, charge (and color) are to be maintained in order to develop a general theory for the unification of physics which would be freely applicable to the more general situations involving both the non-living system and living system having consciousness. Here TCP is the carrier of thought force (T_F) that is the origin of all the fields. TRP is the origin of all the matter particles. It is to be noted that these TCP and TRP function like wavelike: wave-particle duality. Here thought force (T_F) is an expression of the universal consciousness.

Thought force (T_F) [is a single super-force that dominated the first instants of creation and it is the primordial quantum field]
[The thought force (T_F) is carried by the TCP (thought-carrying particle) in the presence of its super-symmetrical partner TRP (thought retaining particle)]



T_F (micro), SNF, EMF, WNF, GF and T_F (macro)
where T_F (micro) = Thought force in microcosm, SNF = Strong nuclear force,
EMF = Electromagnetic force, WNF= Weak nuclear force,
GF = Gravitational force and T_F (macro) = Thought force in macrocosm.
It is expressed here that T_F (micro) is a stronger force than the SNF and
 T_F (macro) is a weaker force even than the GF.

Thought force (T_F) *in vivo* is a type of force that represents the biological 'thought' which is the action of mind. This 'thought' being a type of force controls the 'thought processes' involving the firing of neurons through the quantum mechanical activities of these postulated TCP and TRP in the presence of consciousness. This consciousness, in turn, is the quantized energy (ϵ_T) of the TCP. Several experiments signify the existence of thought force (T_F) *in vivo*.

Scheme-II: Thought force and its significant roles: Most physicists believe that a single super-force dominated the first instants of creation. This mysterious super-force is the postulated Thought force (T_F). It is possible that the evolution of all the fundamental fields is originated from this super-force that is the Thought force (T_F) in our view. This thought force (T_F) is carried by the TCP (thought-carrying particle) in the presence of its super-symmetrical partner TRP (thought retaining particle). TCP is the carrier of thought force (T_F) that, in turn, is the origin of all the fields. TCP is the origin of all the field particles. TRP is the origin of all the matter particles. TCP cannot exist without TRP and vice versa. Our consciousness model involving TCP, TRP and thought force (T_F) signifies the existence of universal consciousness that exists along with the universe. We showed that the quantized energy (ϵ_T) of the TCP is responsible to cause the universal consciousness as well as the cosmic microwave background radiation temperature. The individual consciousness owes its origin to the universal consciousness created by the same ϵ_T . The same ϵ_T is the energy responsible for generating Thought force (T_F). Thus, Thought force (T_F) is an expression of the universal consciousness. Thought force (T_F) being an expression of the universal consciousness is applicable to any inanimate object as well as to any biological system (having thinking ability). The Thought force (T_F) exerts its functions both *in vitro* and *in vivo*. The non-living system of the world is governed by the thought force (T_F) *in vitro* and this Thought force (T_F) *in vitro* gives rise to T_F (micro), SNF, EMF, WNF, GF and T_F (macro) where T_F (micro) = Thought force in microcosm, SNF = Strong nuclear force, EMF = Electromagnetic force, WNF= Weak nuclear force, GF = Gravitational force and T_F (macro) = Thought force in macrocosm. It is to be noted here that T_F (micro) is a stronger force than the SNF and T_F (macro) is a weaker force even than the GF. The living system of the world is governed by the thought force (T_F) *in vivo* and this Thought force (T_F) *in vivo* is a type of force that

represents the biological 'thought' which is the action of mind. This 'thought' being a type of force controls the 'thought processes' involving the firing of neurons through the quantum mechanical activities of these postulated TCP and TRP in the presence of consciousness. This consciousness, in turn, is the quantized energy (ϵ_T) of the TCP. Thought force (T_F) being the primordial quantum field functions as the original single primary unified field that is not only the origin of all the four fundamental fields along with both the T_F (micro) and T_F (macro) but also the origin of Thought force (T_F) *in vivo*.

Note: What was previously called a force is now usually called a field or interaction. The existence of matter depends on the existence of force and vice versa. Matter particles are usually designated as "Fermions", because they follow Fermi-Dirac Statistics. Matter particles obey Pauli's exclusion principle; they are of spin $1/2$. Force particles are usually designated as "Bosons", because they follow Bose-Einstein Statistics. Force particles do not obey Pauli's exclusion principle; they are of spin 0, or any integer like 1, 2, 3 etc. TCP cannot exist without TRP and vice versa. Many physicists believe that unifying all the forces, including gravity, into a single theory would require a phenomenon called super-symmetry. With super-symmetry, every fermion would have a boson twin, and vice-versa. TCP that behaves like boson should accompany its super-symmetrical partner TRP that functions like fermion in the generalized simpler way.

As several leading scientists have commented the universe is so finely tuned to allowing the emergence of conscious entities that it looks more than mere coincidence. Davies [31] expressed,

"If the basic laws of the universe were just slightly different, life and everything we know would not exist. So why is the universe just right for life? Could the universe have fine-tuned itself in order to bring about life and consciousness? At first sight, the idea seems preposterous. How could the universe in the first split second, when its laws were still malleable, know about the emergence of life billions of years later?"

Barrow and Tipler [32] in their "*The Anthropic Cosmological Principle*" (1986) mentioned the view point of Dyson who pointed out, "*The more I examine the universe and the details of its architecture, the more evidence I find that the universe in some sense must have known we were coming*". Physical laws clamor for life: the universe knew we were coming. Our universe is perfectly tailored for life.

All these statements simply signify the existence of universal consciousness that is the primary cause for the evolution of life. Without the inherent existence of universal consciousness, the inanimate matter itself cannot generate

life and consciousness. These TCP and TRP, the constituents of the UM and the ultimate constituents of matter and mind are conceived here to be originated from the Void at the Big Bang to evolve the 'space-time continuum' and the UM along with the universal consciousness. In this way the universe could 'know about' the emergence of life billions of years later. Thought force (T_F), an expression of this universal consciousness, is thus the primordial quantum field (see Scheme-I and Scheme-II).

8. The Whole Universe Exists Only in Our Consciousness

Samanta-Laughton [33] expressed "At a quantum level particles can exist in many states at a time. What brings them out of this superposition is a matter of debate, but according to the Copenhagen interpretation, it is the act of observing a particle that determines what it is. Bohr went further and said that there is no objective reality 'out there'. Things only exist when we observe them. This implies that the whole universe exists only in our consciousness. Although controversial, the Copenhagen interpretation has

stood the test of time with its bizarre philosophical implications”.

Pal *et al* [5] Pal [34] explained that the universe exists along with the universal consciousness. This universal consciousness exists throughout the universe in the form of universe wide web (*uww*) covering fields, particles, space-time continuum, dark matter, dark energy, void and all its known and unknown parameters along with all its inhabitants (with or without consciousness). The quantized energy (\mathcal{E}_T) of TCP represents universal consciousness. This universal consciousness is to be taken into account, but usually ignored.

Pal (30) expressed that Thought force (T_F) is bridging the microcosm and macrocosm through the generation of a universal web of quantum fields of T_F (micro) and T_F (macro) due to the existence of the quantum mechanical activities of these TCP in the inherent presence of TRP.

Wilczek [35] expressed that intangible quantum fields fill everything in the universe, including the voids inside atoms and the universe, space between galaxies. Quantum electrodynamics has shown that even the vacuum of space, utterly devoid of matter or conventional forms of energy, actually seethes with activity. The possibility of the existence of a universal web of quantum fields signifies the existence of the T_F (micro) and T_F (macro) due to the existence of the quantum mechanical activities of these TCP in the inherent presence of TRP.

Pal *et al* [3, 5] explained that everything in this universe is interlinked and intertwined through the existence of the quantum mechanical activities of these TCP in the inherent presence of TRP.

9. Global Consciousness Project (Nelson, 2009) Indicates the Existence of TCP, TRP, T_F (Micro), T_F (Macro) and thought Force (T_F) *in Vitro* and thought Force (T_F) *in Vivo*

Nelson [36], Director of Global Consciousness Project, has observed through the experimentation that coherent consciousness creates order in the world; and subtle interactions link us with each other and the Earth. When human consciousness becomes coherent and synchronized, the behavior of random systems may change. Quantum event based random number generators (RNGs) produce completely unpredictable sequences of zeroes and ones. But when a great event synchronizes the feelings of millions of people, our network of RNGs becomes subtly structured. The probability is less than one in a billion that the effect is due to chance. The evidence suggests an emerging noosphere, or the unifying field of consciousness described by sages in all cultures. This evidence signifies and proves the existence of universal consciousness. Pal *et al* [3, 5] expressed that this universal consciousness functions as a universe wide web (*uww*) covering the

universe as a whole with all its parameters (including void and inhabitants (with or without consciousness). Global Consciousness Project of Nelson [36] indicates the existence of TCP, TRP, T_F (micro), T_F (macro) and thought force (T_F) *in vitro* and thought force (T_F) *in vivo*.

10. Discussion and Conclusion

10.1. Discussion

Pal *et al* [3, 5] showed mathematically that the cosmic microwave background radiation (CMBR) temperature is due to the quantized energy (\mathcal{E}_T) of TCP radiated from the radiant mass of universe. The existence of the CMBR temperature confirms the existence of TCP in the inherent presence of TRP. The existence of TCP ensures the existence of thought force (T_F). This T_F exerts its functions both *in vitro* and *in vivo*. Here \mathcal{E}_T , the quantized energy of TCP represents universal consciousness.

Many physicists agree with the idea that consciousness is non-local and fundamental in the universe. Scientists have arrived at a simple but decisive conclusion that consciousness is very much a part of the universe, like other objects, and therefore bound to obey mathematical laws. They are waiting to acquire the right kind of mathematical tools to explain the laws of consciousness.

Physicists determined that underlying quantum fields give birth to elementary particles. Pal [30] explained that thought force (T_F) is the primordial quantum field. Thought force (T_F) being the primordial quantum field gives birth to TRP that appears to be the origin of all the matter particles. TCP is the carrier of thought force (T_F) that, in turn, appears to be the origin of all the fields. TCP thus appears to be the origin of all the field particles (see Scheme-I). TCP cannot exist without TRP and vice versa. It is to be noted that these TCP and TRP function like wavelike: wave-particle duality.

The reigning tenet of quantum mechanics is the uncertainty principle. A consequence of the uncertainty principle is that the presence of an observer or experimenter determines the outcome of the observation or experiment. Simply stated, this means there is no objective reality; you ‘create’ what you see through the quantum mechanical activities of these TCP and TRP in the presence of consciousness. The quantized energy (\mathcal{E}_T) of TCP represents universal consciousness. The individual consciousness owes its origin to the universal consciousness created by the same \mathcal{E}_T . And these TCP and TRP are the ultimate constituents of any matter as well as any mind in the inherent presence of thought force (T_F) *in vitro* and the thought force (T_F) *in vivo* as it is indicated by Pal *et al* [3, 5].

John Wheeler strongly believed that “in defining any useful concept of reality” we have to take into account “the indispensable place of the participating observer---evidenced in quantum mechanics” as indicated by Bhaumik [6; 18]. Wheeler has speculated that reality is created by observers in the universe. His time-bending notion is that our

“observership brings the universe into being”.

Wheeler indicated that the process of recognizing an observable object is really a type of participation on the part of the observer for a specific object to be observed. This process of recognizing an observable object is possible through the projection of mind of the observer in the presence of his / her consciousness.

One of the central notions of human existence has been that of a Being prior to space, time, and substance. The world described by science must be a picture of mind-independent reality not as it is seen through the selective and deforming lens of our own sensory and mental structures through the inexact filter of consciousness. It seems we are forced to acknowledge that we cannot know mind-independent reality as it is.

How could an object's existence depend upon the act of observation? This is due to the fact that an object's existence as well as the act of observation through the prevailing consciousness is totally dependent on the existence of the quantum mechanical activities of these TCP and TRP in the presence of consciousness. The quantized energy (\mathcal{E}_T) of TCP represents universal consciousness. The individual consciousness owes its origin to the universal consciousness created by the same \mathcal{E}_T . And these TCP and TRP are the ultimate constituents of any matter as well as any mind in the inherent presence of thought force (T_F) *in vitro* and the thought force (T_F) *in vivo* as indicated by Pal *et al* [3, 5].

Pal [30] explained the testability for the existence of TCP and TRP along with the Thought force (T_F). Pal [30] mentioned several experimental results to signify the existence of quantum mechanical activities of these TCP and TRP, the ultimate constituents of matter and mind in the inherent presence of thought force (T_F) *in vitro* and the thought force (T_F) *in vivo*.

There is no scientific theory that can provide guidelines to form a possible gross bridge between mind and matter, present physics and cognitive science, psychology and natural sciences, classical physics and quantum physics.

10.2. Conclusion

Davies [37] in his ‘The Fifth Miracle’, concluded, “I am of the opinion that there remains a huge gulf in our understanding. It is not merely ignorance about certain technical details; it is a major conceptual lacuna----we are missing something very fundamental about the whole business---a fully satisfactory theory of the origin of life demands some radically new ideas”.

Our consciousness model involving TCP, TRP and thought force (T_F) *in vitro* and thought force (T_F) *in vivo* provides a simple and radically new idea to explain the evolution of universe along with life and consciousness where \mathcal{E}_T , the quantized energy of TCP represents universal consciousness.

References

- [1] R. Penrose, *Shadows of the Mind: A Search for the Missing Science of Consciousness*. (Oxford University Press) (1994)
- [2] W. Van De Bogart, *Earth portals: Exploring New Metaphors of Consciousness 1993* willard@earthportals.com
- [3] D. Pal and A.U. De, *Physics of consciousness and its model may provide guidelines to solve many scientific problems*. *Neuroquantology 1*: 17-28 (2004)
- [4] D. Pal, and A.U. De, *Consciousness model: Significance of thought-carrying particles and thought-retaining particles in quantum measurement as well as cognitive problem*. *NeuroQuantology 2*: 115-116 (2005)
- [5] D. Pal, and A.U. De, *The cosmic microwave background radiation temperature signifying the existence of the thought-carrying particle, thought retaining particle and thought force*. *NeuroQuantology 10*: Issue3; 428-442 (September 2012)
- [6] M. Bhaumik, *Code Name GOD*. (Penguin Books India Pvt. Ltd., 11 Community Centre, Panchsheel Park, New Delhi 110 017, India) pp. 132-133; 161-162; 167; 171; 177; 185-186; 89-190; 198 (2006)
- [7] E. J. Wollack, "Cosmology: The Study of the Universe". *Universe 101: Big Bang Theory* NASA. <http://map.gsfc.nasa.gov/universe/>. Retrieved (27 April 2011)
- [8] E. Komatsu et al, "Five-Year Wilkinson Microwave Anisotropy Probe Observations: Cosmological Interpretation". *Astrophysical Journal Supplement*. 180 (2), 330 (2009)
- [9] E. Menegoni et al, "New constraints on variations of the fine structure constant from CMB anisotropies". *Physical Review D*. 80 (8), 087302 (2009)
- [10] "Origins: CERN: Ideas: The Big Bang". *The Exploratorium*. (2000) <http://www.exploratorium.edu/origins/cern/ideas/bang.html>. Retrieved 2010-09-03
- [11] J. Keohane, "Big Bang theory". *Ask an astrophysicist*. GSF/NASA. http://imagine.gsfc.nasa.gov/docs/ask_astro/answers/971108a.html.1997. (Retrieved 2010-09- 03)
- [12] B. Feuerbacher, R. Scranton, "Evidence for the Big Bang". *TalkOrigins*. <http://www.talkorigins.org/faqs/astronomy/bigbang.html#evidence> 2006. (Retrieved 2009-10- 16)
- [13] E. L. Wright, "What is the evidence for the Big Bang?". *Frequently Asked Questions in Cosmology*. UCLA, Division of Astronomy and Astrophysics. http://www.astro.ucla.edu/~wright/cosmology_faqs.html#BB_evidence. (Retrieved 2009-10-16)
- [14] M. Pidwirny, "Evolution of the Universe". *Fundamentals of Physical Geography*, 2nd Edn. (2006)
- [15] D. Overbye, *Mysteries of the Universe*. Copyright 2002. The New York Times Company (2002)

- [16] A. Linde, "Inflation, Quantum Cosmology and the Anthropic Principle" in John Barrow, Paul C W Davies, and C L Harper, eds., *Science and Ultimate Reality: From Quantum to Cosmos* (Cambridge University Press) (2004)
- [17] B. S. DeWitt, "Quantum Theory of Gravity. I. The Canonical Theory". *Phy Rev.* 160 (5), 1113–1148 (1967)
- [18] M. Bhaumik, *Code Name GOD*. (Penguin Books India Pvt. Ltd., 11 Community Centre, Panchsheel Park, New Delhi 110 017, India) pp. 183 (2006)
- [19] J. D. Barrow and F.J. Tipler, *The Anthropic Cosmological Principle*. (Oxford university Press) (1986)
- [20] P.J. Steinhardt, N. Turok "Cosmic Evolution in a Cyclic Universe". *Phys.Rev.D.* (2001) 65:126003,2002 65 (12). arXiv:hep-th/0111098. Bibcode 2002PhRvD..65l6003S. doi:10.1103/PhysRevD.65.126003
- [21] P.J. Steinhardt, N. Turok "A Cyclic Model of the Universe". *Science* (2001) 296 (5572): 1436– 1439. arXiv:hep-th/0111030. Bibcode 2002Sci...296.1436S. doi:10.1126/science.1070462. PMID 11976408.
- [22] P.J. Steinhardt, N. Turok "The Cyclic Model Simplified". *New Astron.Rev.* (2004) 49:43-57,2005 49 (2-6): 43–57. arXiv:astro-ph/0404480. Bibcode 2005NewAR..49...43S. doi:10.1016/j.newar.2005.01.003
- [23] V. G. Gurzadyan and R. Penrose, Concentric circles in WMAP data may provide evidence of violent pre-Big-Bang activity. *astro-ph.CO* (2010). arXiv:1011.3706 [astro-ph.CO].
- [24] Vivekananda, *The Vedanta Philosophy, The complete works of Swami Vivekananda*, (Advaita Ashrama, India), Vol-1, pp. 360; *ibid*, Vol-2, *The Cosmos*, pp. 206- 211; *Cosmology*, pp. 434-436. (1989)
- [25] B. J. Carr, and A. A. Coley, Persistence of black holes through a cosmological bounce. *Astro- ph.co* (2011); arXiv:1104.3796v1 [astro-ph.CO] <http://arxiv.org/abs/1104.3796>
- [26] S. W. Hawking, *A Brief History of Time from the Big Bang to Black Holes*. (Bantam Books, 666 fifth Avenue, New York 10103) pp. 143-144 and 165 (1989)
- [27] E. Schrödinger, *What is life with Mind and Matter*. (Published by Cambridge University Press, The Edinburgh Building, Cambridge CB2 2RU, UK) pp. 87 (2000)
- [28] Ranganathananda, *Science and Religion*. (Advaita Ashrama, 5, Dehi Entally Road, Cal- 700014) pp. 130 (1988)
- [29] F. Capra, *The Tao of Physics*. (Flemingo, Fontana paperbacks, the Collins Publishing group, 8 Grafton Street, London W1X 3LA) pp. 246 (1990)
- [30] D. Pal, Existence of thought force and its characteristics. Communicated to *American Journal of Modern Physics (AJMP)* (2013)
- [31] P. Davies, How bio-friendly is the universe? *International Journal of Astrobiology*. 2: 115 (2003)
- [32] J.D.Barrow, and F .J. Tipler, *The Anthropic Cosmological Principle* 318 (1986)
- [33] M. Samanta-Laughton, *A Beginner's Guide to Consciousness. The Naked Scientists: Science Radio & Science Podcasts* 2005.
- [34] . D. Pal, Existence of universal consciousness and its characteristics. Accepted for publication in 2014 *International Conference on Advanced Education and Management (ICAEM2014)* Beijing, China (2013)
- [35] F. Wilczek, *Mass Without Mass I: Most of matter*. *Physics Today* 11 (November, 1999)
- [36] R. Nelson, Director, *Global Consciousness Project*, Princeton, New Jersey. (2009) rdnelson@princeton.edu
- [37] P. Davies, *The Fifth Miracle: The Search for the Origin and Meaning of Life*. (Simon & Schuster) (1999)