

Article

Experiential Consciousness Research on the Physics of Now (Part I)

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ABSTRACT

In the model of the universe we developed, the “mathematical universe” is the direct medium of the information between the particles. In the mathematical universe the transfer of information is instant. In the material universe, at the scale of photons, information spreads at the speed of light. Consciousness is not information. Consciousness is manifesting and acting through the mathematical universe and DNA down into the level of the material world. Within this context, the human thought process is not an “energy phenomenon” carried by the electromagnetic waves as many people imagine. Thought is rather a phenomenon that belongs in the realm of the “mathematical universe”. Therefore, thinking has tremendous power. Any thought impregnates the entire universe. With thoughts and potent visualization one can eliminate certain physical problems in the body. When the mind is linked with consciousness harmonious thoughts are created. When the mind is subject of its own egoism, destructive thoughts are created. Emotions are an actual “energy/material” phenomenon, tied to the secretion of hormones on human physiology. Telepathy takes place via a mathematical universe between two or more minds.

Part I of this two-part article contains: 1. Time we measure with clocks has only a mathematical existence; 2. A critical survey on Higgs boson and graviton; & 3. Relative velocity of material changes has its origin in the space density; 4. Mathematical universe is a medium of quantum entanglement; and 5. Unification of the “double nature” of light.

Key Words: physics of now, mathematical universe, God, experiential consciousness, information, thought, emotion, mind, Consciousness, material world, instantaneous, telepathy.

Prologue

...there is something essential about the NOW which is just outside the realm of science. People like us, who believe in physics, know that the distinction between the past, present and future is only a stubbornly persistent illusion. The most beautiful thing we can experience is the mysterious. It is the source of all true art and science.

Albert Einstein

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1. Time we measure with clocks has only a mathematical existence

Every view of the world, as well as any physical theory, offers only a limited perceptual view. This is because our view only extends to the edge of those perceptual horizons. With growing knowledge and the expansion of our own internal horizons, we can see and experience deeply than before. This is similar to how in physics every new theory extends and expands the horizons of our understanding and our experience of the universe and life in general.

Often in everyday life, we will refute old views and we replace them with newer views that better suit us; newer views that can afford us further development. In physics this is rare. Old theories are not generally refuted and simply cast off. In physics the old theories are enfolded into the new theories which are more universal in nature. This is one of the many beauties of physics.

An illustration of that point, what we think of as "Einstein's physics," explains the precession of the planets which the "Newtonian physics" failed to explain. However, "Einstein's physics" does not need to *negate* "Newtonian physics" but rather it puts "Newtonian Physics" in a larger context and simply extends and expands its horizons. Thankfully, physics has the mechanism of permanent and recurrent "self-checking". That is, every thesis is confirmed by experiments in which the phenomenon in question is measured with appropriate instruments. Physicists then check to see if the results obtained via measurement correspond to the theoretical postulation.

One defining feature you find in physical theories is that the verification of the validity of the theory will include an option that the whole thing could be wrong. In physics, there simply are no "absolute truths". It is understood that all valid theories describing phenomenon can be improved upon. A particular, given theory is only considered valid as long as some new experiment proves that it is not valid to describe a newly discovered phenomenon. Physicists will then go on to refine the new horizon-extending theory in order to include the newly discovered phenomena and back it up with advanced mathematical models.

We can find a good example of this pattern of development of theories in the history of the understanding of the speed of light. Around the end of the 19th century, physicists discovered that light has a constant speed. The speed of light was found to be unchanged regardless if you moved towards or away from the light source. Newtonian physics was not able to describe this extraordinary property of light. Physicists began to think about a new mathematical model to describe the constancy of the speed of light. German mathematician Hermann Minkowski went on to develop a four-dimensional geometry, where the fourth dimension X_4 is a product of time and the speed of light. Einstein then took the baton and applied this model to describe the speed

of light as a constant for the stationary and moving observers. In these theories, physics had won another victory.

However, a byproduct of this same victory was that an inherent misunderstanding arose. Unfortunately, physicists began to see time as a fourth dimension of space. Even though a mathematical model of Minkowski's confirms that the fourth-dimension known as X_4 is the product of time, and imaginary number i , and the speed of light: $X_4 = ict$. This formalism however, clearly reveals that time "t" is not the 4th dimension of space known as " X_4 ". Physics in the early 20th century felt that the space-time fabric was the fundamental "arena" in which the universe existed. Yet, the idea of time as a fourth-dimension of space has never been truly been verified experimentally. I don't think most physicists are ready to face this fact.

A century after Einstein, I have created a new mathematical model of time, where time is essentially and simply a numerical order, i.e. the sequence of changes in the universe. For the basic "arena" of the universe I have chosen the three-dimensional universal space, which was designed a century ago by the German physicist Max Planck. Planck believed that universal space consists of three dimensional and fundamental units of space l_p^3 :

$$l_p^3 = \sqrt{\frac{(\hbar G)^3}{c^9}},$$

In the equation above \hbar is the reduced Planck constant, G is the gravitational constant and C is the light speed. You can imagine universal space being composed out of very small bubbles, which are connected.

In a three dimensional space time t is measured with clocks. Time is only the numerical order of change, which is only a mathematical quantity. I do not deny the existence of time, I simply ascribe to "time" a new meaning: time is not the fourth dimension of space in which the changes occur, time is just a mathematical sequence of changes that are taking place within the three-dimensional space of the universe. Here below we see the fundamental unit of time which is known as Planck time t_p :

$$t_p = \sqrt{\frac{\hbar G}{c^5}}.$$

To elucidate this notion even further, a photon is moving through space only, not through space-time. The smallest distance photon can travel is the Planck distance l_p :

$$l_p = \sqrt{\frac{\hbar G}{c^3}}.$$

Each Planck distance l_p that photon is passing at light speed C corresponds to exactly one Planck time t_p :

$$c = \frac{l_{px}}{t_{px}}.$$

Measured time t is the sum of all Planck times t_p :

$$t = t_{p_1} + t_{p_2} \dots + t_{p_n} = \sum_{X=1}^n t_{px}.$$

This new conception of time widens the perceptual horizon of Relativity. It successfully describes the type of phenomena that the out-dated space-time model failed to include within its framework. Taken within this new contextual view, time becomes a mathematical quantity that exists in the universe independently of physicists and their measurements. Some physicists like American physicist Max Tegmark, postulate that mathematics exists in the universe independently of the human mind.

Ultimately, such thinking really broadens the horizons of physics, since it assumes the existence of a "mathematical universe" which is not based on matter or energy. Today, physics recognizes that matter and energy are the *only* possible forms in the universe. I developed a model in which time is not matter, nor energy, but it still very much exists as a quantity within the mathematical universe. For physicists, and also for people who are not physicists, this is a novel idea, because we were all taught Einstein's famous formula $E=mc^2$, as well as its implications, that everything that exists is a form of energy. And that furthermore, all matter can be converted to energy and vice versa. Of course, in this context when we talk about "energy", we are referring to both the entire spectrum of electromagnetic radiation and the energy that manifests the totality of universal space. Today's physics is based upon a bivalent logic: a phenomenon can be A (matter) or B (energy).

Trivalent logic, which was developed in the last century by Polish mathematician Jan Lukasiewicz, permits that a thing can be A, B or even C. A mathematical universe is a phenomenon that is part of the phenomena referred to as "C" in trivalent logic.

The outdated model of space-time where time functions as the 4th dimension of space and the fundamental arena of the universe is based on a misinterpretation of the mathematical model of space-time of Minkowski. Instead, I propose that the “basic arena” of the universe is a granular three dimensional universal space composed of fundamental units of space called “Planck volume”. This model is based on the fundamental physical constants of Planck mass, Planck length, Planck volume and Planck constant; all of which are derived from experimental data and therefore reflect the basic properties of the universe. Fundamental physical constants are the cornerstones on which we can build a new horizon within physics.

2. A critical survey on Higgs boson and graviton

To really understand how the universe functions you really need to have a clear understanding about what is mass. We know that in everyday life the mass of an object is measured with scales. In physics however, mass is a bit different. Understanding mass in physics is a bit harder to grapple with and more complex than understanding mass in everyday life. The standard model attempts to describe the four elemental forces in the universe with a variety of elementary particles. For example the graviton is a hypothetical particle which we now suppose to be the carrier of gravitational force yet is still as of now, undiscovered. The Higgs-Boson particle is another particle that we are still learning a great deal about. It is theorized that the Higgs-Boson particle is responsible for the mass of individual particles, however, as they say, the jury is still out on that and opinions vary within physics regarding this presumption. The great weak point regarding Higgs-Boson theory is “who” or should we say “what”, creates the mass of the Higgs-Boson particle itself. This question has not been fully answered yet. It is also not clear how Higgs-Boson particles interact with photons.

In physics, there are really just two concepts of mass. The first concept is “inertia mass”. This is the idea that a particular particle or material body has a quality of stability that keeps locked in at a specified location. If you want to move a mass you need to push it and to use some force. On the other hand, this same “inertia mass” will mean that when the body is moving, it has the tendency to keep moving forward. If you want to stop it, you will of course need a commensurate resistance suitable for that particular volume of mass. The second concept of mass in physics is “the gravitational mass”. This is the mass, which generates around a particular body, the gravitational force which will then attract surrounding bodies. Experiments have shown that the inertia and gravitational mass of particles or material bodies are exactly the same; however, their origins still remain unknown.

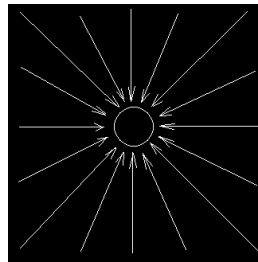
Here, in my own postulations I have gone a step further; I have developed a model where both mass and gravity are sourced within the energy density of the universal space. Far away from the celestial bodies energy density of universal space ρ is at the maximum:

$$\rho = \frac{m_p \cdot c^2}{l_p^3},$$

where mass m_p is Planck mass, l_p^3 is Planck volume and c is light speed. In the center of the celestial body, the energy density is reduced by the value, which corresponds to the size, that is to say the mass of celestial body:

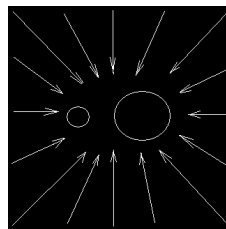
$$\rho_m = \rho - \frac{m \cdot c^2}{V},$$

where m is the mass and V is the volume of a stellar object. The surrounding denser space puts pressure on the diluted space in which lies the massive body and thus creates its “inertia.”



Inertial mass

When two or more bodies come together this creates an area of lower density space. The outer space which is of higher density then puts pressure against the space occupied by the celestial bodies. This pressure coming from outer denser space towards lower denser space is then indirectly transmitted onto the celestial bodies. They are pushed together. This creates the force we call “gravity”.



Gravitational mass

So really, the two bodies are not attracted to one another directly. Gravity is actually created indirectly by the bodies’ own masses reducing the density of space and thus drawing this

pressure towards them from outer more highly dense space. The environmental space of one body is inextricably linked with the environmental space of another body. The bodies are interacting with each other indirectly via the space medium in which they coexist.

According to my opinion antigravity spaceships are not only science fiction. Antigravity technologies increase or decrease energy density of space. With increasing energy density of space happens that spaceship is not pushed any more towards the stellar object from the side of outer space. On the contrary it is pulled up in the outer space. The “bubble” of higher energy density of space around the spaceship has tendency to move towards the area of outer space with the equal energy density. By decreasing energy density of space spaceship will move in the direction towards lower energy density of space, means towards the chosen stellar object.

2.1. A permanent dynamic equilibrium of the Universe

Universal space is structured from Planck volumes, which are the smallest unit of volume of space. Interestingly, space density is at the absolute maximum out in the empty space between galaxies. This is due to the high pressure energy of space structures in the “cosmic rays”; as they are called by the American physicist Michael W. Friedlander. Cosmic rays are then formed into elementary particles and atoms. In the center of black holes the density of universal space is minimal as matter is transforming back into the energy of space. In the universal energy circulation the space to matter ratio is constant. The universe is a system in a continuous dynamic balance.

The universe is really a self-renewing being in its own right. It does not have a beginning nor does it have an end. The universe was not created by God, the universe itself *is* God. The big bang theory, which assumes that the universe started from an infinitely small point, has some incomplete logic. The only acceptable model of the big bang theory of the universe is that it is actually a cyclic shaped universe which is expanding. The theory is that at some point it will stop expanding. It is theorized that at some point it will start to shrink into a huge black hole and then ultimately it will explode into a new big bang.

Truly, the big bang theory that models the universe as having a final diameter simply does not have a solid foundation. When you say the universe has a finite diameter, you are de facto saying that the universe itself is finite. Really, we do not know what is on or beyond the finite or known edges of the universe. Cosmologists claim that the infinite space of Euclidean geometry and the spherical space of Riemann geometry are equivalent. Yet, our own logic and intuition tell us that

universal space is infinite. In mathematics, the concept of “infinite” is not a metric concept. In geometry an infinite distance plus 100 kilometers is still an infinite distance. The model of the universe as infinite aligns more with natural human reasoning, because it clearly points to the fact that the size of the universe as can be comprehended by human faculties is for all purposes unfathomable. When we are saying “the universe is infinite”, this means that the dimensions of the universe are beyond the power of our imagination and conceptualization.

In order to understand the overall dynamic of the universe we can observe the part that is accessible to us and from those observations we can conclude that even the rest of the universe operates according to the same laws. This view is more honest than the view that assumes that the universal space is finite. As a wise East Indian friend of mine named Amin once explained: “The universe is not a melon.” (He got the picture.)

3. Relative velocity of material changes has its origin in the space density

The period between the end of the 19th century and beginning of 20th century has been a landmark period for physics. In 1887 the American physicists Michelson and Morley conducted an experiment which showed that light is not a wave of ether. In the physics landscape of the 19th century it was well accepted that universal space is filled with ether, a media which does not have mass, is in full rest and is present throughout the universe. Visible light and the entire spectrum of electromagnetic radiation were supposed to be a ripple of that ether. As a result of the Michelson-Morley experiment the ether theory was entirely and perhaps unjustly discarded. Michelson and Morley were simply attempting to prove that light is not a wave of ether. It was not proved that the ether did not exist at all. It could be that the concept of ether was simply another name for cosmic bio-energy, which is also still outside the current accepted scientific model of the world.

After the publication of the Special Theory of Relativity, the scientific community came to believe that light travels through empty space. Physicists either forgot or ignored that even the space itself is an energy medium or fabric. So light is traveling through a form of energy; space. Max Planck’s idea that universal space consists of small discrete units did not come to the fore. With Italian physicist David Fiscaletti, we have “resurrected” the ideas of Max Planck.



Amrit Srečko Šorli (left) and David Fiscaletti in Tuscany back in 2009. Founders of Space Life Institute back in 2000. Main research subjects: time, gravity, cosmology, Theory of everything (TOE) and experiential consciousness research (ECR).

We chose three-dimensional universal space as the basic natural arena of the universe. This natural view resolves many problems within physics. Some I have already described in the previous sections, other issues I will expand on here, presently.

One of the other issues that our new simplified three dimensional view clarifies is Einstein's "problem of action at a distance" which he posed in 1917, one year after the publication of the General Theory of Relativity in which Einstein has "geometrized gravity" describing it with the spherical geometry of the German mathematician Riemann. His General Theory of Relativity was to put it mildly a great triumph of physics. A geometrical description of gravitation did not completely satisfy Einstein. Despite the fact that he was a pioneer in "mathematical theories", he had a great sense of coherence between mathematical models and the de facto truth of physical reality that a model describes.

I believe Einstein had an ongoing direct experience of consciousness, which inspired him in his research. Consciousness, however, intuitively knows that the geometry of the cosmic space cannot create a gravitational force; a source of gravity must be a concrete physical phenomenon. In order to meet "gravitational functioning at a distance", Einstein started thinking about the existence of the "graviton", a particle that is similar to photon and responsible for the transfer of the gravity between material bodies. At this time, in the beginning of the 20th century, photons were already known to exist, and that matter both emits and absorbs them. It was understood that photons are bearers of light as well as the full spectrum of electromagnetic radiation. Today, the

graviton rests as a hypothetical particle which no one has yet observed. Its existence is still a question mark for physics.

In the third chapter we showed that gravity can be described via the energy density of universal space, which does not provide for the existence of graviton, i.e. the gravitational waves. Physicists today think that gravitational waves spread across the universal space with light speed. For sixty years they have tried to detect them with very sensitive instruments to no avail. Italian physicist Angelo Loinger proved that the existence of gravitational waves would contradict with the original version of the General Theory of Relativity. That said, most physicists remain unconvinced of Loinger position and they avidly look forward to the discovery of the graviton particle. So far, the graviton has been proven to some degree, but only in indirect ways which as far as physics is concerned is not sufficiently in line with empirical scientific method. The existence of the graviton particle as a physical phenomenon can be considered existent only when it is finally directly observed.

In 1974, the American physicist J. H. Taylor, along with his research group, observed a binary neutron star called PSR 19.16 +16. They noticed that the rotational speed of binary stars around their axes diminishes over time. This is a fascinating observation and result yet their interpretation of the data was questionable. They attributed the decrease of rotational speed to a reduction of the binary stars' masses. I believe this interpretation is flawed due the defect in the procedural method used in which the reduced masses were considered to be due to gravitational radiation. This was never experimentally confirmed. Fiscaletti and I have an altogether different idea: in general, the size of the binary stars is close to the size of black holes. It is possible that like in the center of black holes, in the center of a binary star, matter is being transformed into the energy of universal space. In this theory the conversion issue causes a reduction in mass of binary stars and thereby reducing their rotational speed.

The model of space-time as the basic arena of the universe certainly will never be able to describe all the discoveries in physics, because it is just a mathematical theory and not a physical theory. I think, if Einstein before his publication of the Special Theory of Relativity in 1905, could have chatted with Max Planck and discussed the relationships between the Special Theory of Relativity and Planck's own idea of the granular structure of space, they would probably have come to the conclusion that the relative speed of physical phenomena depends on the granular density of universal space.

In the universe we have three different types of energies: the energy of the space (E_s), the energy of matter (E_m) and electromagnetic energy (E_{el}). With Fiscaletti, I am building a

cosmological model of the **universe** which is in **dynamic equilibrium** (cosmological model **UDE**) whereby dark energy is the energy of space. In physics the energy of each system must have a homogeneous distribution. This means that the total amount of energy in a given volume of universal space is constant. It is always in the following proportion $E_s + E_m + E_{el} = K$. Therefore, it follows that where matter is present, the energy density of space is lessened and vice versa. Within this picture of the universe, the speed of physical phenomena will depend on the energy density of universal space and it will be reduced due to the presence of massive celestial bodies. Correspondingly, the lower the energy density of the universal space is the slower the speed of physical phenomena.

Additionally, electromagnetic radiation can reduce the energy density of universal space. Even though a photon is a particle without mass it too reduces the energy density of universal space as well due to its kinetic energy. This issue is yet another area not yet incorporated into the current framework of the Higgs-Boson theory.

4. Mathematical universe is a medium of quantum entanglement

Universal space where time is just a mathematical sequence of movement, elegantly explains the famous “Einstein-Podolski-Rozen” experiment (familarly recognized as the “the EPR experiment”). The three scientists were working together at the beginning of the 20th century. They assumed that the quantum particles are interconnected in a way that allows them to access instant information. In the previous century, the EPR experiment was often tested and proven to be valid and it was determined that was indeed the case. For example, if you take two particles, which are first together and then send them traveling in different directions. The distance between particles will increase and then when you measure the spin of the first particle it will be to the “right” and the spin of the second particle will be to the “left”. According to the Special Theory of Relativity the speed of light is the maximum speed with which information can travel. Yet in the EPR experiment the transfer of information is instantaneous, so the traditional Special Theory of Relativity cannot explain it.

In the model of the universe I developed with Fiscaletti, the “mathematical universe” itself is the direct medium of the information between the particles. The mathematical universe simply “knows” about the spin of the first particle and so it instantly informs the other particle how to rotate. Additionally, the classic EPR experiment shows that the universe has a tendency toward developing symmetry and harmony as the opposite spin of the particles is determined by the laws of symmetry.

In the mathematical universe the transfer of information is instant. In the material universe, at the scale of photons, information spreads at the speed of light. Interestingly, once we get to the scale of atoms and molecules the speed of information will always be less than the speed of light. We need to keep in mind that consciousness is not information. Consciousness is manifesting and acting through the mathematical universe and DNA down into the level of the material world.

Within this context, the human thought process is not an “energy phenomenon” carried by the electromagnetic waves as many people imagine. Thought is rather a phenomenon that belongs in the realm of the “mathematical universe”. When a thought arises in the mind, it is immediately present throughout the universe. Therefore, thinking has tremendous power. Any thought impregnates the entire universe. With thoughts and potent visualization you can eliminate certain physical problems in the body, you can “create” your life. When the mind is linked with consciousness harmonious thoughts are created. When the mind is subject of its own egoism, destructive thoughts are created. Emotions are an actual “energy/material” phenomenon, tied to the secretion of hormones on human physiology. Emotions have the power to be able to create certain thoughts, while on the other hand thoughts always generate certain feelings. For example, sadness comes from destructive thoughts and conversely, your happiness is borne of your more creative thoughts.

Telepathy takes place via a mathematical universe between two or more minds. Using the vehicle of intuition, one can travel through the mathematical universe medium and obtain information on the psycho-physical condition of another man or some situation out there in the material world. Trained people are able to see what is going on at the other end of the planet or even other planet. Some claim to even be able to perceive via telepathy what is going on in other solar systems.

While the material universe is three dimensional, the mathematical universe is multi-dimensional. In math we can also have a space with an infinite number of dimensions. When mathematicians started to discover multidimensional spaces, some physicists thought it also applied equally to the material world. They did not understand that mathematics is neither energy nor matter. It is rather a phenomenon that exists beyond the material universe. Mathematics is not a product of the neural processes in the brain which are material and three dimensional. If this were so, the mathematicians could develop only three models of a three dimensional space.

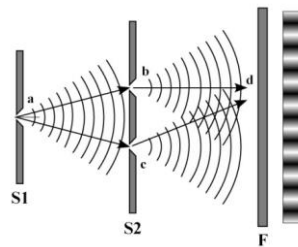
Futuristic writers have tried to postulate a reality of “parallel worlds” where worlds should and/or might be parallel to our own universe. They have imagined that there could be alongside our own universe another universe, in another dimension, that we cannot observe directly because of the dimensional schism. Such reflections are the result of a fundamental lack of

understanding about the true nature of material universe; that it is three dimensional and does not tolerate the existence of parallel universes.

5. Unification of the “double nature” of light

Our model of the universe gives a new understanding of the dual nature of light. Light is a bit of a chameleon, it sometimes behaves like a particle and sometimes it behaves like a wave. This double nature of light was originally supposed to be the result of the mode of observation, that is, specifically, when you are looking at it like a wave, it behaves like a wave, when it is observed as a particle it behaves like a particle. In our vision, the photon is at the same time both a particle and a wave. A photon is transmitted by an electron in its transition from a lower to a higher energy state. For example, when iron is heated it starts to glow which is the manifestation of the release of photons. Photons spread out in all directions and travel in space. The movement of the photon creates waves in space much like a ship does when it is traveling through the sea. However, in the case of the photon, the “ship” cannot be considered separately from the “wave of the sea”. This is the missing law of quantum mechanics: “Elementary particles and the space into which they move are one physical reality”, they are one great fabric.

The nature of this simultaneous particle/wave nature of the photon is confirmed by the double slit experiment. In the image below you can see that the photons have their origination point (marked “a” in the illustration below). From the origin, if we send photons one by one, they will travel through the left and right slit alternately (marked with “b” and “c” in the illustration below,) this creates on the screen a significant interference pattern (marked with “F” in the illustration). When the traveling photons only make it through the left slit b, we get the same interference pattern, because the waves of space created by moving the photons went also through the right slit c. Physicists have not yet definitively explained this phenomenon. The experiment teaches us that waves of space are created by the single photon’s motion and that it will always travel through both of the slits.



Double slit experiment

The frequency of light is associated with the movement of the light source and of the observer, and with energy consumption which the photon uses for movement. When a light source moves away from the observer, light reduces in frequency. This is what is called “shift to red spectrum”. In the sixties of the twentieth century this “red shift” was considered the main evidence for the expansion of the universe. Today, it is accepted in astronomy that about sixty percent of the “red shift” is due to a strong gravitational field through which light moves. So, photons which come from distant galaxies have reduced energy, because energy is spent as it “pulls out” from the strong gravitational fields of other galaxies. This latter interpretation of “red shift” has contributed to the overall reducing popularity of ideas about the expansion of the universe, which has in recent years seen fewer and fewer defenders. Of greater prevalence these days is a model of a dynamic universe without a beginning and end, in which, there is no need for a “creator”, as it is an “uncreated” system which stands in dynamic equilibrium.

(Continued on Part II which also contains the references)