

# On Fundamentals of Physics and Origin and Continuity of the Universe

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**Abstract** Fundamental physics is founded purely on **primitive notions** [2] which are the primary sources of physical science that deals with objects of physical nature. So fundamental physics gives rise to physical objects along with their mutual interactions and interfacing. In order to effect creation followed by its endurance, the origin must be *preternatural* going beyond the edifice of the nature of the material universe, however, within the realms of physical science, while a change in the form of a sustained disturbance is needed to the scenario conceived virtuously by notions only. A disturbance by feature is transcendental. It may take the form of a physical object moving along a trajectory inside space or as a wave mounted on a piece of matter being elementary or composite. In compliance with the Principle of Constituents a physical object must have a non-zero positive occurrence being a constituent quantum article, depicting its limiting existence having mass. Ensuing the Principle of Causality this quantum article must necessarily be an elementary or a fundamental particle. As a result of this, all physical objects present in the universe must essentially be comprised of fundamental particles only in one or more formation and appearance. The axiomatic principle of physics suggests that the universe is a continuum, with its origin as transcendental, leading to space that is transitional in character which contains matter along with charge and energy founding the entire universe as a whole. The transcendental origin does not violate the Principle of Causality while it might spontaneously stimulate a pair of instabilities having precisely equal and opposite characteristics thereby while staying together nullify one another but once inside space may continue to stay apart and undergo motion as physical objects obeying the Euler's Identity. In addition, the spontaneity in formation and nullification together suggest that the universe has no precise beginning while may arbitrarily prolong to an apparently infinite period of time subject to bindings that characterize its continuity as well as internal equilibrium and symmetry.

**Keywords** Transcendental, Continuum, State of Nothingness

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## 1. Contents

The origin of the universe and its endurance over time including the observed disturbances contained entirely in it are based on fundamentals of physics. The Principle of Constituents and the Principle of Causality confirm that the universe is transcendental in origin and is a continuum without needing a meticulous beginning. Moreover, the fundamental principles of physics suggest that the universe has no reason to come to an oblivion in view of its cyclic character continually ensuring its spontaneous transition from the State of Nothingness to the physical continuum and vice versa. The State of Nothingness is a transcendental entity devoid of everything even including space and is the ultimate destination of every physical object along with its assigned physical property converted into **Lethargy** [1] whereas it is from the State of Nothingness only that

fundamental quantum particles are created depending upon the tasks corresponding to interaction and interfacing they are going to perform. The quantum nature of the universe along with its associated characteristics is an integral part of creation only. Space provides separation and allows motion to take place inside it and therefore is neither transcendental nor physical in origin but is transitional in between. For the same reason space is a continuum, wholly contained within the State of Nothingness allowing motion to take place in every possible direction be that linear or rotational and with every possible orientation.

Motion takes place when a physical object, obligatorily being finite and discrete, withdraws completely from an initial position moving over to another position over a spatial transverse fully contained within Space whereas Time appears during motion only as the temporal transverse over the same span due to the perception of the relative measure of the mandatory slowness of motion, which in analytical terms is the inverse of the concept of speed during the same phenomenon. Space allows Motion which embraces Time. All three are delineated based on the Frame of reference within a System boundary termed as Orientation, Forward or

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Backward and Past or Present or Future. The concept of Direction is inconsequential within the defined boundary and with respect to the reference frame. The Entire universe or any designated Hunk of it may be comprehended accordingly with seamless entwining amid Transcendental and Physical. A matter particle inside space always bears an amount of Lethargy equivalent to its mass, which however, remains in transcendental state. When it collides with another matter particle, the supplementary amount of Lethargy may increase the kinetic energy of the particle, may emit new radiation or cause decay into more than one particle.

Every physical object has mass which is an inherent property allowing motion to take place by carrying energy and momentum from one location to another. Since the object is comprised of particulate matter, its overall mass comprises the mass of all fundamental particles which make it up. Energy is the measure of the ability to perform work and can only manifest during transition from one place to another. A physical object, being a fundamental particle or a conjugate, may interact with itself another physical object by exchanging mediating particles, thus transferring mass and energy, or may interface with space primarily affecting its motion only.

An event happens as per the sustained sequence of Possibility, Probability, Causal symmetry, Consciousness and Spontaneity. The event takes place with an underlying consciousness of the consequence at the end of the event and once it comes to this stage, it happens spontaneously only. Often, we depict the events with the help of mathematical symbols, equations, formulae and pure numbers. Mathematics is a conventional way of conveniently simulating physical principles and concepts so they may be further enumerated and at times may become immensely predictive.

The universe is born out of the State of Nothingness and is entirely contained in it. Nothingness is transcendental and free of everything that we may conceive including space. Fundamental particles are spontaneously born out of the state of nothingness obeying the concept as being stipulated by Euler's Identity and thereafter by mutual interaction and interfacing grow up to form conjugates and then sequentially into all that we find in the universe. Fundamental forces in nature and corresponding laws including variations thereof are vital components following the above-mentioned sustained sequence. The universe is three-dimensional only in every sense and is free from point particles. The luminal speed in free space has a derived maximum value and can never be attained or exceeded. The Principle of Constituents together with the Principle of Causality forbid the formation of singularity and point mass, thereby nullifying the creation of a Black hole. In view of enormous gravitational pull the converging particles lose their kinetic energy as they approach the center and transform into lethargy entering into the state of nothingness. Predictably, a large part of the designated black hole mass goes into oblivion which reduces the overall gravitational pull considerably so that the event horizon ultimately disappears and the earlier black hole reappears as a luminous star once again.

The quantum nature of the micro world has its own characteristics radically different from the macro world whereas those properties are also based on similar philosophies and wits. Quantum superposition arises out of the vector components of the same principal and quantum entanglement is the result of separation of the entangled species by the intervening state of nothingness.

Gravitation is a phenomenon of interfacing of space with matter objects wholly contained within space whereby the motion of each gravitating matter through space is subject to moderation. A quantum particle, fundamental or conjugate, having a mass value equal to or more than Planck mass, comes under gravitation only. Gravitational time dilation and exposition of gravitational waves are instigated by the outcome of supplementary lethargy prevalent in the state of nothingness on physical objects located away from the corresponding source of gravitation.

All four Fundamental Forces in nature essentially arise out of interfacing of corresponding particles with space identical of gravitation in accordance with the analytical relationship of space-time curvature with the Lethargy of the moving particles in view of the total energy possessed by them. The Strong nuclear force is the result of the apparent attraction between and among the particles in view of the space time curvature caused by the high total kinetic energy of the adjacent moving particles. Similarly, the Weak nuclear force is due to the particles moving with less kinetic energy only. On the other hand, Electromagnetic force is caused due the Frequency of Impact of the moving Photons which are generated out of the Lethargy of the adjacent particles and created inside space away from the particles, thus being independent of their state of motion. The seemingly attraction between an uncharged particle and a particle charged positive or negative, and the seemingly repulsion between two similarly charged particles, is the result of the positive or negative space-time curvature viewed from a common reference. In case of Interaction between two or more particles, at first their mutual lethargies combine together and thereafter one or more particles are generated along with the production of Photons initiating Energy streaming out of the system. For every Chemical reaction including Nuclear Fission or Fusion an identical process follows obeying five consecutive mandatory stages instinctively starting from Possibility, Probability, Causal Symmetry and ending through Consciousness and Spontaneity. For an Endothermic reaction, Photons enter into the system from external sources for energy balance. Nucleons with lighter mass value enjoy a higher share of kinetic energy resulting in higher lethargy and consequently a higher gravitational attraction among themselves thereby accounting for a higher binding energy.

The size of a physical object in respect of its dimensions does not matter or interfere with its appearance and interrelationship with other physical objects. We humans are comfortable with the dimensions considered to be of the human scale and can accord only when they appeal to our physical senses of perception. So, we use devices and implements to either enlarge through microscopical means or

focus and reduce with the help of telescopic means to bring the external dimensions to fit within our perceptible senses. Often, we implement indirect devices for simulations to detect external signals and convert them within our means of perception.

In any bound system, be that the electrons around the nucleus or the stars orbiting the galaxy, as they lose energy during motion, they gain an equal amount of energy simultaneously emanating from the state of nothingness, in view of the sustained space-time curvature. For any unbound system, be those radiating photons or elementary particles of matter, after losing their entire kinetic energy content during motion through space, they will turn into lethargy and enter into the state of nothingness, to be spontaneously transmuted later into elementary particles once again, consequently maintaining the entire universe thermodynamically an eternally open system.

Any terrestrial body including an entire galaxy embracing all telluric matter contained by it, due to interfacing with space is in perpetual motion under gravitation in view of the stimulus of other celestial bodies following patterns as per proximal conditions of their own. To any observer in space, such as one on earth, galaxies which are relatively close to each other, appear to be moving towards one another, however, they are unlikely to converge near a common zone as they appear to move with apparent distal randomness. Periodic mini-collisions might have occurred in the past, one being a misnomer as the so-called Big Bang, thus creating the observed cosmic microwave radiation, which however, will ultimately disappear into the state of nothingness with due passage of time. Galaxies which are already relatively far apart from each other, may appear to recede away from the observer also in an apparently random manner. At the end after going through all such properties we arrive at the conclusion that all physical entities follow identical rules of formation and continuance including all modes of interrelationship. Deviations and aberrations are common in nature while they are also born out of identical rules within the ambits of possibility and probability only. The overriding rule of consciousness plays the decisive role in their final implementation within the natural domain.

**An experiment may be devised and conducted by allowing a certain amount of space to become entirely free of matter and radiation and letting it continue for a while and then the space may be probed to discover hydrogen molecules created inside it spontaneously. This single experiment with its conclusive outcome may reveal that the universe has been created out of the state of nothingness and endured and will analytically continue to precisely infinite duration only.**

Hydrogen molecules thus created spontaneously inside space grew unopposed in enormous numbers and then abetted by the phenomenon of interfacing with space through gravitation as well as accretion, advanced into a number of isolated clouds all around. Subsequent stages progressed with the formation of stars through nucleosynthesis and allied processes that followed sequentially resulting into creation

of heavier elements as in the Periodic Table with the passing of time measured in ages only. Our solar system comprising the sun and other planets similarly evolved also passing over a very long time. Our observable universe, which is an insignificant part of the entire universal space as a whole thereby came into existence without the Big Bang actually happening, which in effect may have happened as a Mini Bang only in the past, affecting our observable universe alone.

In essence there must never be a Theory of Everything because creation and continuation are the consequences of infinite possibilities of countless variation however, the modality is ever universal. *Creatio ex nihilo* is the response to all speculations cum divine intervention although the untainted analytical concept that two equal and opposite beings together become equivalent to null whereas the spontaneity of unravelling them is plausibly factual. [2] [3] [4]

## 2. Inference

Nature is spontaneous and arbitrary in its character and appearance, thereby too often mystifying our human observation and inference, albeit due to this charisma only we are faced with unfathomable variance which teaches us conclusively that the entire universe is conceived, governed and endured by identical means of contrivance that we go on to reveal to our utmost satisfaction.

In addition to the above, we are persuaded that our universe does not necessitate to have a launch or a culmination nevertheless is ordained to go through an eternal sequence of recycle of every animate and inanimate entity consciously only. The state of nothingness which is transcendental, being the origin of our universe is bereft of space, time and motion, and coupled with a spontaneous appeal of creation, endurance and self-annihilation thereof allows an analytically conceivable ubiquitous scenario and every logic of physical science is ultimately based on observation and enumeration only.

Moreover, consciousness plays a decisive role in such a way that every action turns out to be spontaneous only after the anticipated consequences at the end comply with all the preceding obligations of possibility, probability and causal symmetry both for the organic and inorganic world, through seemingly closed loop feedback perceptively or ingenuously.

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