Spontaneous emerging of material by applying the Darwin's evolutionary theory to in quantum realm and its impact on simplifying the dilemmas

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Abstract: What is the boundary between the animate and inanimate world? It is obvious that the animate world is under rules of inanimate world. Is the converse true? This paper is aimed at imposing the well-known Darwin's theory of evolution to inanimate world of atomic realm where bizarre behavior of electron challenges our everyday perception of inanimate world. This paper, suggests a weird, peculiar and highly elegant speculation of existing, leads suspicious about validity of the law of conservation of mass, provides conceptual foundation for many odd explanations of quantum mechanics such wave-particle duality of elementary particles, the inherent randomness and probabilistic nature of world as quantum mechanics states, the Louis de Broglie proposition of wave-like behavior of moving particles, Schrödinger's wave function description of probability of finding electron at any location around the nucleus and even the roots of causality. It defines existence as follows: "All the elementary particles emerge spontaneously and randomly in space where the possibility of conforming the physical laws is higher and after appearing if they

not conform the laws of physics, they vanish." It proposes, the emerging from nothing, as a natural process and in other word there is an inherent urge to existence not only for animate world but also for inanimate world. Assuming the correctness of the proposed speculation, leads to dramatic development of human perception of existing, reality and interaction with world.

Keywords: Spontaneous Emerge, Quantum Mechanics, Wave-Particle Duality, Double-Slit Experiment, Elementary particle

1. Introduction

It is more than 150 years that the ingenious Charles Darwin published his remarkable and revolutionary book of "On the origin of species" where he disclosed and revealed the inherent vivid soul of nature and the manner that species evolve under the simplest undesigned procedure with ultimate goal of preserving life, called natural selection [1]. However even these fascinating features and corresponding extensive validations of this theory did not attract common to embrace it kindly. The contradiction of this theory with our conventional world-view is the obvious reason behind this resistance.

The curiosity of human never lets him to stay with present knowledge and motivate him to discover the nature and enjoy from his discoveries. However, the history of human is full of instances in which accidental or intentional occurrences alter or eliminate the conventional beliefs, thoughts, imagination,

speculation and even theories which contradict with practical observation. Then he found himself astonished and surprised and consequently attempted to find the flaws. This procedure is natural and normal, since our mind and thoughts are not under the laws of physics and obviously we are not well equipped to see the whole but let to see partial. Therefore, it is essential and fundamental to assess creatures of our minds to successfully comprehend the reality and predict the observations.

The story of quantum mechanics is however totally different story but suffers from the same incompatibility of our conventional perspective of reality and true nature of reality [2]. The usual experience of everyday life is not sufficient to describe the situation such as the circumstance occurred when an object traveling near the light speed as Einstein pointed it out in his relativity theory or in atomic scale world as quantum mechanics reveals its astonishing circumstance. Today, even after many struggles of great minds the perplexity of quantum mechanics remains unsolved. Even though, the quantum mechanics accurately predicts many observations, it suffers from its obscurity. It is similar to a person who contributes extensively to development of society but remains unknown for decades. But maybe this is our thoughts barriers that prevent us from further developments of our perception.

This paper aims at presenting the new simple approach to the realm of elementary particles. It seems peculiar and not in coincident and agreement with our centuries of perception of materialistic world. It challenges the law of

conservation of mass and claims the spontaneous emerge of elementary particles from nothing. It provides satisfactory foundation for conceptual comprehension of weird quantum mechanics and revolutionize our perception of reality and of course its vivid nature.

2. The Time for another Breakthrough Arrived

Human history and its every day experience demonstrated that existence is not spontaneous action and required endeavor and struggle [3]. In analogous he recognizes the fundamental rule of causality. From this two inferred unproven laws he contemplated the first cause which he entitled it god or gods. This is however the long journey of humanity and his minority of his knowledge that he did not find any contradiction for his constructed world-view. After the passing of middle age, human discovers that some of his fundamental thoughts may not be true since these thoughts are not in agreement with reality. Of course, when we say reality is the results obtained under consent of well-established laws of physics. Since our power was not in order of laws of physics the sole remedy was the same process exploited by species which is adaptation using evolution. The law was simple; modify yourself to remain in existence.

It was in 1859 when Charles Darwin decided to reveal the scary, elegant and ingenious idea of natural selection. The Darwin's idea was astonishingly simple and easily explains the diverge number of species surrounded around the earth [4]. No simpler idea could explain the peculiarities in animate world in such

elegant way which every years many discoveries confirm the correctness of natural selection. It explains the long journey any species traverse until a complex and intricate mechanism evolve. Even though the theory did not explain the origination, but it tells us an instrument that can make any complex entity from almost nothing. It is like a ready flammable environment that just needs a spark to be exploded. This spark or easy simple initial is sufficient to wake up this huge, powerful, simple and slow mechanism to create astonishing creature over extensive time. Maybe still Darwin's revolutionary idea is far upon his time which after more than 150 years is not embraced by common people.

Even though the idea of evolution is simple to grasp, appreciation and accepting this idea is not easy for human being. How possible that inanimate world could create such amazing animates that even appreciation of details of simple ones is still difficult for human. In addition, it is many millenniums that human though that he discovered the solution of creator which he called it god. He may not even suspect that one day this fundamental belief be broken. Therefore, it seems that human history is passing a special limit of living without god. This is not just the biggest trouble of this age which needs altering of our fundamental though and belief, other observations is quantum mechanics still challenge the biggest minds. It is many decades that physicists struggle to provide conceptual foundation for quantum mechanics which is compatible with our perception. But still many not convinced and think that there must be underling hidden theory which still need to revelation. The time for another

revolutionary thinking is years that happened.

3. Quantum Mechanics Still Waiting

It is more than a century passed from the Max Planck's quantum hypothesis which pinpoints the discrete nature of reality at heart of elementary particles realm [5]. He proposed that the energy radiated and absorbed by atom is not allowed to be continuous but must be discrete. This theory precisely predicted the observation of black hole radiation. Later in 1905, Einstein used Planck's idea to establish a theory for description of photoelectric effect. Bohr proposed a new idea that electron could reduce his orbit by emitting discrete unit of energy [6]. The electron could only make instantaneous "quantum leaps" between the fixed energy levels .Louis de Broglie, a French physics, in 1924 in his PhD thesis postulated that all moving objects especially elementary particle show wave-particle duality which earn him Noble prize of 1929 [7]. Ervin Schrödinger, an Australian physicist, developed number of fundamental results in quantum mechanics including formulating the wave function and original interpretation of quantum mechanics. The idea of wave-like behavior of particle proposed by Broglie fascinated the Schrödinger. He decided to implement this idea for movement of electron and soon he discovered that an atom could be better explained by wave rather than particle. Schrödinger's equation as a result of this implementation has been published in 1926 [8]. Afterward, Max Planck pointed out that Schrödinger's equation could be used to discover the probability

of finding electron at any location around nucleus. The particle-wave duality states that elementary particle such as photon, dependent on circumstance, could exhibits the wave and particle behavior but not at the same time. In 1927, Werner Heisenberg stated the uncertainty principle, pointed out the inherent inability of exact measurement of position and momentum of particle at same time [9]. The probabilistic underling nature of elementary world completely destroyed the old deterministic world-view. There was not any tool which ensures us accurate prediction of the outcome of measurement. The sole knowledge was the probability of outcome not exact result. It was later that Copenhagen interpretation of quantum mechanics is proposed. It states that quantum mechanics do not say anything about reality of object but just probability of observing or measurement of particle [10].

It was these many strange, weird phenomenon and observations and in additional more strange developed theories was that even Einstein began to oppose some of the bizarre explanations of quantum mechanics by claiming that “God does not play dice”. Even after 80 years passing of discovery of possibility that elementary particle such as electron or atom could be at two locations at the same time; digesting of this theory is not become easy even for physicists. For example, Steven Weinberg said, "There is now in my opinion no entirely satisfactory interpretation of quantum mechanics." Richard Feynman once said, "I think I can safely say that nobody understands quantum mechanics" [11]. The quantum mechanics was pushed forward by many great

scientists and minds in first half of 20th century but now in the first half of 21th century the struggle for recognition of this well-validated theory is not meeting of mourning.

4. This is Naught that is Strange, not Existence

What is the boundary between animate and inanimate world? Some says, there is spirit, will and gift of life for animate. But there is no will in inanimate world. This maybe is very simple explanation but it suffers inherent flaws like absence of accurate definition of life, sprit and will. Therefore, it is not satisfactory for skeptical and dubious minds.

For a while let assume that all moving object is belong to animate world and have will. Now a truly shocking idea strikes mind. Why not expand the Darwin's evolutionary theory to inanimate world? We know that natural selections is blind and not poses mind. It just works on existing accidentally creatures and helps them to survive. Why not consider all elementary particles come to existence suddenly and if they satisfy the law of physics remains stable and otherwise disappeared to nothing. Why not reverse the order of strangeness from existence to non-existence. In other word, this is nothing which is strange not existence. Why not consider the existence as a natural process and elimination as a strange process. It can speculate that all the material desire and impatient emerging to existence but if not conform the rules of physics they must vanish.

Stephen Hawking in his popular book, the grand design, proposed that the big bang do not required any initiator [12]. These are the laws like gravity that makes the world emerges out from nothing. Of course, some may ask, who first established the laws of physics. But he mentioned with laws of physics, the existence of god is unnecessary. By inspiring this idea, why not assume that even now the spontaneous emerge from nothing happening in atomic realm. Unlike, the big bang which happens billion years ago, now we have opportunity of validating the spontaneous emerges in atomic realm.

Surely this idea is more philosophical that scientific. Since, it provides a conceptual thinking which needs validation or at least encompasses some readily available observation. Therefore, before proceed let define the existence as follows: "All the elementary particle emerge spontaneously and randomly in space where the possibility of conforming the physical law is higher and after appearing if they not conform the laws of physics, they vanish. This process is blind and there is nothing to guide them". This explanation resolves the existence of electron at two locations at the same time assuming that it is not same electron but two different electrons. Indeed, it is not easy to distinguish between electrons, since they are identical; however this explanation is more logical than older one. At the same time it resolves the inherent probabilistic nature quantum realm by assuming that indeed the fundamental level of nature is random. Much more different that our ordinary scale which the causality, conservation of mass and many other deterministic rules and convention

applied.

5. The Origin of Big Bang as another Unsolved Dilemma

The Big Bang theory is an explanation of universe origins and also remedy for many questions and justification of many physical phenomena in the universe. It was first experimentally appeared by the American astronomer, Edwin Hubble in 1924. By observation of distance galaxies and by using Doppler Effect, he noticed that the distance galaxies are distanced from us and their speed is directly proportional to the distance from us. This experimental validation provides a substantial impression on Physics minds and beaked the steady state universe theory where the universe was eternally existed and there was no origin and probably no end. But, the steady state universe inherently poses the crisis. As Einstein noticed, the Gravity does not let the universe be in steady state and finally the universe must collapsed by influence of Gravity. In order to resolve the mismatch between theory and reality, Einstein proposed the Cosmological Constant to act like repulsive instead of attraction and provides the stability in universe. Later discoveries in Cosmology pointed out to existence of mysterious energy at empty space of inter galaxies, called dark energy, which act repulsive and is responsible for expansion of universe. This discovery addressed the fact that the empty space which contains no matter is not completely empty and thus the definition of nothing is altered by these

discoveries.

The origin and mechanism of formation of Big Bang is still unsolved puzzle and probably one of the biggest challenge faced with Physics. As Stephen Hawking explained in his remarkable book, a brief history of time, the laws of physics would have broken down in the singularities like black holes and Big Bang, where the concentration of mass distorts the Space-Time and laws [13]. Physics always exploited the laws of physics to describe and interpret the physical phenomena. But the understanding of challenges like Big Bang and black holes necessitated the new viewpoint and new mathematical devises.

Physicist, Lawrence Krauss, in his notable book, the universe from nothing, attempted to outline the present state of physics [14]. He addressed the nothing as unstable phenomena. He draws reader's attention to the some physics branches, where existence of something from nothing is necessary and straightforward. In this regard, he mentioned the Feynman diagram as intuitive way to conceive the weird realm of elementary and sub-elementary particles. Krauss interpreted the Feynman's drawing as it depicted in Fig. 1. He conceived that particle-antiparticle pair created out from nothing and suddenly antiparticle collides to its nearest particle and both annihilated and particle remains. This process is kind of quantum fluctuation. As another instance, where the concept of spontaneous emergence is favorable, Krauss addressed the quantum gravity theory. He mentioned: "In quantum gravity, universes can, and indeed always will, spontaneously appear from nothing. Such universes need not be empty, but

can have matter and radiation in them, as long as the total energy, including the negative energy associated with gravity, is zero".

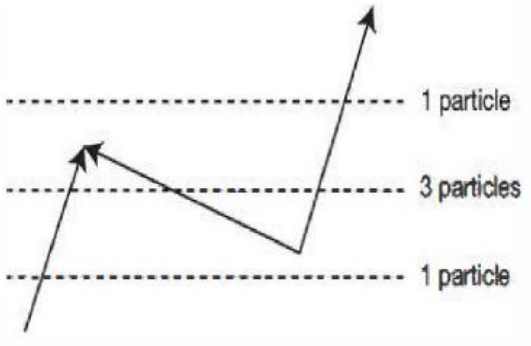

Fig. 1. The emerging of particle-antipaticle and anhiliation of one with existing particles [14].

6. The Outcomes of Proposed New World View

It seems that the assumption of spontaneous existing is challenging some of well-know laws of physics such as causality and conservation of mass. The law of conservation of mass states that in an enclosed system without transfer of mass and energy the mass of system must remain constant. In fact this statement was not the original one. Indeed, the law of conservation of mass was challenged and modified after Einstein's discovery of mass and energy equality. The ancient Greek philosophers like Empedocles claimed (approx. 490–430 BCE): "For it is impossible for anything to come to be from what is not and it cannot be brought about or heard of that what is should be utterly destroyed". Later, at 18th century once again this law is formulated by Antoine Lavoisier, a French chemist, as discovered it in chemical reactions [15]. Looking carefully

through scientific history of development of mass conservation law reveals inherent rigorous weakness and therefore deserves profound examination. However, this rule seems to be so simple that need any rigorous prove. In fact lack of super accurate instrument to measure the weight might be sole reason that does not let us to scrutiny of absolute correctness of this law.

Causality is fundamental for our understanding and it is a relationship between two events, where the second is consequence of first event. Causality is somehow depicting us the time progress. This law is so bonded to intuition of human being which the word "why" find respect among all human being. Human is always looking for the reason of everything to maybe fulfill his curiosity sense or find more security by knowing the reason and prediction of future from present condition. Therefore, probably the inherent fear of finding something without reason has evolutionary roots. Human history shows that even when people could not discover the true or materialistic cause for an event, they usually creature metaphysics roots.

Aristotle outlines four kinds of causes including material cause, formal cause, efficient cause and final cause. The deterministic world-view defines the world as a sequence of events, like chain, which connected with causality. After the middle Ages, Hume defined the causality which finds wide uses. He said that the causality is not inherent for humans but a habit developed by numerous experiments. In 1949, Max Born distinguished the causality and deterministic. In other word, even without causality law still any event is undergo the laws of

nature and satisfy them and therefore determined. This idea is profound and thoughtful. It means that the laws of nature remain secure even without causality. At least there is something to remain unaltered and unbroken. In fact this beautiful and breathtaking world is created by this laws, otherwise we do have messy and inappreciable world.

The life could be explained as possibility. When there is possibility we can expect the spontaneous existing of anything, including matter, ideas, contribution and so on. Changing the strict idea of causality and conversation of mass prevents us from the dilemma associated with modern sciences and modern life. Many of the conceptual problems in quantum physics could be removed by changing our traditional concept about world. This includes particle-wave behavior, existing of electron in two locations at the same time, the big bang, random nature of atomic realm, the source of existing and so on.

7. Conclusion

This paper attempts to introduce a new world-view and to liberate our minds from traditional thinking which stemmed from our conventional experiences. The weird realm of atomic scale is extremely deviates from our ordinary and well-known environment. Even though, we seldom witness the peculiarities and weird behavior of elementary particles but sometime we are so lucky to accidentally inform from this extraordinary atomic world such as by presentation of double slit experiment. These odd observations challenge many

of great scientists of 20th century. Sadly, still the conceptual foundation of quantum mechanics remains concealed. There is no doubt that the reality is purely showed itself to us and this is us that could not adapt our self to appreciate it. Some of the well-known laws of causality and conservation of mass need to be profoundly examined. The new approach to world and existing is attempted to alleviate the modern science dilemma. Darwin's evolutionary theory which provides answer to present of numerous species is exploited to creatures of inanimate world. It speculated that emerging of nothing is spontaneous and random, however to be stable needs conforming the laws of physics, otherwise the fate of vanishing occur. Therefore, it is easy to explain the random nature of atomic scale, existing of elementary particles in many locations at the same time, the Schrödinger explanation of probability of finding electron around the nucleus, double-slit experience and wave – particle duality. In other word, it is not necessary to look for reason for spontaneous emerge but reason for stable continuous existing.

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