An Explanation for Creation, Future and Destruction of the Universe

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ABSTRACT
According to the big bang model, the universe was created from a cosmic explosion that hurled matter and radiation in all directions. This was in extremely dense and hot state. During such a hot state, the matter in the universe must have been in a very different form what we see today. It cooled and underwent a series of transitions at specific temperatures and time. But in this article, we have presented our thoughts and imaginations regarding the creation, future and destruction of the universe briefly.

Keywords: big bang, singularity, arrow of time, black hole.

1. INTRODUCTION
The creation and evolution of the universe is one of the most evasive and fascinating enigmas in physics. According to the big bang model, the universe was created sometime between 10 billion and 20 billion years ago from a cosmic explosion that hurled matter and radiation in all directions [1]. First a bulk of energy possessing very high temperature up to infinite Kelvin emerged. After the emergence of this bulk of energy an explosion took place which we call the ‘big bang explosion’ in the recent time. It is said that universe was created from this big bang explosion. But with this statement a number of questions arise in our mind. Some of these questions may be summarized as:

i. From where did this bulk of energy emerged?
ii. How the energy started converting into mass after big bang explosion?
iii. What was the size of the particle first created?
iv. Is there only one universe or two, three, four or infinite number of universe?
v. How the universe will be destroyed?
vi. What will finally remain after the whole universe is destroyed?
vii. Where this universe will go when fully destroyed?
viii. What is the future of the universe?

In this article, we have presented our thoughts and imaginations regarding the creation, future and destruction of the universe briefly.

2. CREATION OF THE UNIVERSE
Regarding the creation of the universe several thoughts have been given by different thinkers and scientists. According to our thoughts and imaginations the creation of the universe is very similar to the creation of living organisms. Let us give an overview on the creation of living organisms. Any living organism in this world was created from vagina. If we make analogous to the creation of the universe, we can say that the creation of the universe took place from ‘universe vagina’. Figure-1. Infinite number of singular points inside the universe vagina C.

If the curve C is considered as universe vagina then it is a collection of infinite number of singular points (Figure-1). The counterclockwise direction of arrow shows that integration is to be done along path integral taken on curve C in counterclockwise direction. Now think what will happen if there is some contraction in the universe vagina? Since it is a sink of energy, a bulk of energy will come out from any singular point enclosed by the curve C. Before the big bang explosion, a bulk of energy which was delocalized as singular point emerged from the universe vagina. Then an explosion of this bulk of energy spreads in all directions and after that the creation of mass was started. The question arises, initially there was only energy and no matter but how the formation of particles took place? For this vigorous research is going on. The
major aim of the research is to find the Theory of Everything (TOE) which is actually the unification of four fundamental forces viz gravitational force, electromagnetic force, weak force and strong force. Now there is a very curious question that there was only one force which was liable for holding the whole energy and after the big bang explosion a number of forces has been created. But there is also a question from where these forces came. Either they were present in the space or the force which had hold the bulk of energy before big bang also broken into different forces along with the big bang explosion.

2.1 FORCE AND ENERGY
Let us concentrate on the definition of energy. Energy can neither be created nor be destroyed; it can only be converted from one form to another form. Singularity theorem [1] states that a singularity must exist under certain circumstances- in particular, that universe must have started with a singularity i.e., a point in space-time at which the space-time curvature becomes infinite. The above statement states that universe started from big bang (the singularity at the beginning of the universe). Also the universe will be destroyed with big crunch (the singularity at the end of the universe). This means at the end of the universe the whole energy will be present as a singular point. Let us repeat the same statement regarding force, force can neither be created nor be destroyed, it can only be transformed from one form to another form i.e., all the four major forces viz strong forces, electromagnetic forces, weak forces and gravitational forces emerged from a single force along with the creation of the universe and finally will be converged into a single force at the end of the universe. Suppose that there is a single force at the beginning of the universe. Now there is an important question, did this single force exist before the beginning of the universe or was created along with the universe! From the above discussions if we conclude that there is one and only one single force at the beginning of the universe and the various forces originated from that single force along with divergence of the universe. And all these forces will be converged to this single force at the end of the universe. Also whole energy will be converged into a singular point at the end of the universe. Now a great question arises, is there any single force which is immortal means it exists for ever i.e., there is the existence of that force before the creation of the universe from infinite time and will remain even after the whole universe is destroyed. If this statement is true that force has neither been created, it existed from infinite time and will exist for ever. It means there is no difference between force and energy at the singular point i.e., force and energy is one. Due to the divergence of energy there is divergence of force and when whole energy is converged then the forces will also be converged into a single force. From this we may conclude that after the end of the universe, there will be the existence of only one single force. Why universe created from a singular point and will be destroyed to a singular point? In order to answer the above question let us discuss the mathematical meaning of singularity. The function \( f(x) = 1/x \) on the real line has a singularity at \( x = 0 \), where it becomes \( \pm \infty \) and is not defined [2]. Hence \( x = 0 \) is a singular point. That’s why if before the creation of the universe force and energy were single i.e., no difference between force and energy, then no function can be defined at that point. Hence that point where force and energy becomes one is the singular point. Also when universe will be destroyed, force and energy will merge at one point and no function can be defined at that point. Hence that point will be a singular point. That’s why universe will be destroyed at a singular point and no function will be defined at that point and force and energy will be one at that point.

2.2 NAD: ORIGIN OF ALL THE FORCES
There was only a single force before the creation of the universe i.e., the force and energy were the same thing where no function can be defined and hence a singular point. Let us give a name to that single force as nad. Let us coin the definition of nad. Nad is the one and only one where all the forces are combined to give a single force and the whole energy coincides with that force. If the singular point is given the name nad from where universe has been created then whole universe will be converged to nad when it will be destroyed. The whole discussion can be summarized as follows: universe is the divergence of nad and universe will finally be converged to nad i.e., single force. Hence nad is the physical name of the mathematical term singular point. Physically nad is the singular point where all forces and whole energy is combined to give one i.e., there is no difference between force and energy at that point. Mathematically nad is a point where no function is defined and hence called the singular point. Let us explain how nad is produced! Suppose a strong repulsive force acts against the gravitational force between the earth and the sun. Then what will happen? The gravitational bond will be broken out suddenly and produce an oscillation which will have capability to break many stars into several parts. We can say that a nad was produced during the breaking of the gravitational bond between earth and sun and that leads to the formation of new bonds by breaking stars into several parts. We can say that a nad was produced during the breaking of the gravitational bond between earth and sun and that leads to the formation of new bonds by breaking stars into several parts. Now there is an important question. Was the temperature of that singular point absolute zero, the lowest possible temperature at which a substance contains no heat energy or was the temperature of that singular point infinite Kelvin which contains infinite heat energy. If we consider the singular point the whole as energy, then the temperature is infinite Kelvin. This is because at that point the whole mass of the universe is concentrated. Due to this infinite concentration of mass, matter can not exist and only energy can exist having temperature infinite Kelvin.

2.3 CREATION OF PARTICLES
According to classical mechanics, ‘an accelerated charged particle radiates energy in the form of electromagnetic waves.’ If we expand this statement, we can say when a charged particle is accelerated from zero velocity to the velocity of light, the whole mass is converted into energy.
by continuously radiating energy in the form of electromagnetic waves. There is a question what remains after the whole mass has been converted into energy? There remains anything or nothing! I think there remains an infinitesimal black hole when the whole mass of a particle has been converted into energy. Now what is the significance of this infinitesimal black hole? Is it an infinitesimal part of the black hole present in the universe. Let us do a simple experiment. Spread a very long thread on the floor of a room. Take any part of the thread in hand. It seems to be massless. Now take a massless roll. Tie one end of the thread with the roll. Start rotating the roll clockwise or counterclockwise. The thread will start tucking around the roll. When the roll is rotated for some time, we get a thin layer of thread over the roll. We feel some mass. Continuously go on rotating the roll. If a major portion of thread has been bound around the roll, we feel increased mass of the roll. This means the thread which was initially massless when continuously go on binding around the massless roll, is liable for providing mass.

In the similar way we can consider infinitesimal black hole in space. The energy after big bang explosion spread out in all directions in the form of electromagnetic waves just like the thread which was spread out in the room. Let an infinitesimal black hole analogous to the massless roll starts rotating in space. It will start binding the rays of energy just like the roll starts binding the spreaded thread. Then there will be production of mass from energy. The mirror reflection of the statement ‘when a charged particle is accelerated, it continuously radiates energy in the form of electromagnetic waves’ can be written as ‘continuously binding electromagnetic waves can produce charged particles’. What was the first particle when energy starts binding? This particle may be given the name Higgs particle or god particle because it was the first particle to be created from the binding of energy. The interaction between two particles of very small size about $10^{-53}$ to $10^{-54}$ m is liable for giving mass to a bigger particle. For example, the masses of proton and neutron are about 938 MeV and 940 MeV respectively, which are made up of up quarks (u) and down quarks (d). The mass of up quark is 3 MeV and that of down quark is 7 MeV. This mass is very much less about the 1 % of the total mass of neutron (udd) or proton (uud). The strong interaction between these quarks is liable for giving mass to proton and neutron. Thus mass is created without mass. Continuously go on rotating the roll. If a major portion of thread has been bound around the roll, we feel increased mass of the roll. This means the thread which was initially massless when continuously go on binding around the massless roll, is liable for providing mass.

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The relation between the cosmological arrow of time and thermodynamic arrow of time can be written as

$$c = \frac{\tau}{2} \sin \left( \frac{t}{\tau} \right),$$

where, $c =$ cosmological arrow of time $\tau =$ lifetime of the universe i.e., time from big bang to big crunch and $t =$ thermodynamic arrow of time. If disorder goes on increasing then graph between thermodynamic arrows of time verses cosmological arrow of time can be plotted as shown in Figure-2. According to above Figure the universe started at $c = 0, t = 0$; will expand up to $c = \frac{\pi}{2}, t = \frac{\tau}{2}$ will collapse to big crunch at $c = 0, t = \tau$.

After that also disorder will go on increasing and universe will move forward on thermodynamic arrow of time. This will lead to creation of an anti-universe. The anti-universe will expand up to $c = -\frac{\tau}{2}, t = \frac{3\tau}{2}$ and will collapse at $c = 0, t = 2\tau$. Again another big bang explosion would take place and universe will be created at $c = 0, t = 2\tau$ which will expand up to $c = \frac{\tau}{2}, t = \frac{5\tau}{2}$ and will collapse at $c = 0, t = 3\tau$. This phenomenon will go on continuously. From above discussion we have come to the conclusion that creation and annihilation is a periodic function. And also there is a time lag of one lifetime of universe between two alternate big bang explosions.

4. DESTRUCTION OF THE UNIVERSE

Anything which is created must be destroyed because destruction is the ultimate truth. Creation and annihilation which are liable for the creation and annihilation of the universe are actually powers. But where are these powers present? According to Hindu mythology all these powers are present in space in invisible form. There are mainly three powers. Creating power, annihilating power and surviving power. Now consider which one is active. If creating power is active then creation of universe takes place. The universe is alive or matter is existing at present means presently surviving power is active. If the annihilating power becomes active, then the whole universe will be destroyed at once.
5. CONCLUSIONS
From the above discussions we have come to the conclusion that beginning and end of the universe are two extreme positions of a simple pendulum. Just like a simple pendulum, the creation and annihilation of the universe is periodic. Like our universe there is possibility of infinite number of universe. The universe is full of mysteries. Whatever we know till now about the universe is very less.

Universe is unlimited and knowledge is also unlimited. Again the eager of the human being to know the mysteries of the universe is unlimited. So we always try to reveal the mysteries of universe to know more and more things about it. Along with all these things eager of human being to know more and more about the universe is also a mystery. There is also some natural law working behind this perhaps getting pleasure from this knowledge.

Figure-2. Different phases of universe w. r. t. cosmological and thermodynamic arrow of time.

REFERENCES