

The Fate of Living Being in the Course of Physical Time

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Abstract — Human being, as the most gifted living being in the world, has enough capability to unfold the mysteries of the Universe. Up to now, mostly for last 300 years, we unfolded many mysteries of nature as well as the Universe. It had been a very hardworking effort to lift ourselves in the paradise of knowledge that we possess now. Scientists toiled hard in a war like situation to establish scientific theories against religious belief. The reason that religions are so popular because these interpret as any uncommon situation has an easy solution, intervene of almighty. Religion puts in ordinary people's mind that God is very choosy in helping the living being. For that people need to placate the God which actually has been tracing in simple, ignorant people's mind. On the other hand, science has become so technical and equation based that to comprehend the advancement, you need a fair bit of background knowledge of basic properties which make simple people's mind tiring, tasteless and incomprehensible. The physical time is discrete and has deterministic future just like our definite history. The theory that proves the deterministic futurity is the theory of determinism.

Keywords — Physical Time, Continuous Time, discrete Time, Speed, The causality, Parallel universe, The theory of determinism, Particle and anti-particle, physical time arrow.

1. INTRODUCTION AND THEORY

Actually we never encounter what is called "Continuous Time" [1 -3]. It's an assumption to be continuous. Even in the inception of calculus it is assumed that limit x (variable) tends to zero; actually it is some different point which is very close to zero, but never zero. It itself denies the continuousness of the variable. Rather it tells the discreteness of the variable. Nothing is continuous, neither the space nor the physical time, neither mass nor energy. Rather it is man's inability to recognize the tiny little gap between two discrete points of the variable like physical time instants (A sample of discreet physical time is a physical time instant). Physical time is always a discrete variable in nature, very like the other three known spatial variables (dimensions) - length, breath and height [4]. It is already proved that all three spatial variables (dimensions) are not continuous, no matter how smooth they are; always there is a tiny gap between two successive spatial points. That is also true for the fourth variable, the temporal variable (dimension), the physical time. Presently, we are moving in positive direction (forward direction) in physical time. Positive direction in the sense that being unidirectional physical time, the

direction is more like psychological recognition or perception of physical time as experienced in real time. Example, Our life is unidirectional [5-7]; we never encounter the reverse of the unidirectional physical time [8]. On daily basis, we accustomed to some expected outcome of happenings which we term as practical [9 - 11]. But whatever we term, all are psychological recognition only. We find psychological recognition based logics behind all happenings around us. If we say, we are moving in psychological recognition based positive direction of physical time, it means we are jumping from present physical time instant to next future physical time instant. This can be resembled as collapsing staircases where the collapse of the previous physical time instant is the cause of formation of next physical time instant. So, we do not have other options because only two physical time instants are given to us, one is collapsing, and the other is forming due to the very cause of collapse of the previous one. We cannot get back into the previous one as we have next physical time instant already formed and the collapsed previous physical time instant is no more in temporal form of destiny. It means we have a whole new address at every time instant formed; we have a whole new identity with the every physical time instant formed. Because our brain can anticipate past, we can retain all past addresses or identities, to recall them the events have to overcome a threshold value of psychological recognition; otherwise the event will be obscure to us. Then the question can be asked, what is "Death"? Rightly, it seems to us complete failure of any body's system or systems. How to define it in physical time? It can be defined as no more the body can carry forward from present physical time instant to next successive future physical time instant in the same manner as the living being does. So, life is all about a fixed tenure or a collection of some physical time instants only. A death is getting a new address in the next physical time which for living being, cannot be psychologically recognizable or observable to us. That is why; human beings are extremely dependent on their perceptions if not in the right track, may conclude many illusions. And science deals with psychologically perception dependent facts only. At every present physical time instant living being perceive something. They have the ability to discriminate the perceptions at every psychologically recognizable event (Any psychologically recognizable event is nothing but a huge collection of physical time instant). Some perceptions they can retain for a long time what they call special moments. Their future decision is purely based on a collection of perceptions they gathered up to present. Present physical time instant can be analogy to collapsing

staircase. Once the present physical time instant becomes past, it collapses. During the jump, the leaving physical time instant collapses and next successive future physical time instant forms. The collapsing of the leaving physical time instants starts before the forming of next physical time instant that means there is some delay between two successive physical time instants. Without any influence of any force, the rate of collapse and formation of physical time instants must be the normal rate. It slows down under any intervene of force like gravitation. The collapsing is the very cause of formation of the next. The psychological recognition by human being to two successive physical time instants obeys a cause and effect relationship, we call it the causality. The gist of causality is to create a new physical time instant, the other has to be abolished and that is the proper definition of causality. So, we do not have a path to return due to causality, actually the return is impossible, we can only move forward only (the positive direction relative to human perception). It means that we cannot penetrate past, we cannot manipulate history. It means that there is one and only one way of past. At the present physical time instant, it may seem to us that we have several options, the fact is that because history can be made only one way, what we choose at the present physical time instant out of many options, is the only way we can choose from. If the backward physical time arrow is option less, it must be true for forward physical time arrow, because after some physical time instants, future time instants will be past time instants. It implies that there is only one way we can go to future. It proves that all living beings and non-living beings have predefined tenure in physical time scale. So, why we scare about death? Why we scare about our existence? Why we scare about collapse? Why we scare about negative things? We can be more positive for the sake of ourselves, more organized, more ordered. We can try for good things to soothe our mind. But we need not be relentless to achieve fly high; rather we can be a bit careless, as we need to learn to accept things regardless positive or negative with equal importance that comes in our way. After all, the physical time governs our past, present and future. Because we cannot recognize future, it elude us having many options, it keeps us guessing, it keeps us interesting, in other words it provides purpose of life and that's where it keeps us in the romance of sports.

2. DETERMINISTIC FUTURE WITH PARALLEL UNIVERSE

The conception of parallel universe came with the invention of the fact that every particle has an anti-particle [12 -14], every self has an anti-self. So, there exists an anti-universe for our universe. When the particle and the anti-particle annihilate each other, it leaves with pure energy [15 -17]. A black hole must have an anti-black hole [18, 19]. When a black hole shallows a matter, the anti-black hole releases the same. The gist is

all happenings of our universe are just reversed for the anti-universe. What is most likely to happen for us is just most unlikely for our anti-self. It is not irrational to think that our probabilistic future is deterministic past of our anti-self. And our deterministic past is the probabilistic future of anti-self. So, the parallel universe supports the theory of determinism.

2. ANALOGY OF SPEED OR VELOCITY OF A PARTICLE OND THE DISCRETE PHYSICAL TIME

Speed or velocity of an object or matter is only movement from one spatial point to another spatial point (because the spatial points are also discrete, no matter how smooth they are, resemblance to discrete physical time) relative to movement of one discrete physical time instant to another physical time instant [20].

$$V = \frac{P_2 - P_1}{T_2 - T_1} \quad \dots [1]$$

Where V is the speed or velocity, P₂ and P₁ are two successive discrete spatial points; T₂ and T₁ are two successive discrete physical time instants. The discrete physical time gets slow down under the influence of gravitational force, thus T₂ - T₁ becomes larger which makes speed or velocity to decrease. So, it can be concluded that speed or velocity of a particle or matter is relative as the temporal movement is relative. If we can somehow stop temporal movement, T₂ - T₁ = 0, we can attain infinite speed or velocity (V approaches to infinity) of a particle or matter. If a particle is stationary in space, P₂ - P₁ = 0; it is still the particle or matter travelling in physical time i.e. the particle or matter jumps from one discrete physical time instant to another discrete physical time instant.

$$V = \frac{-(P_2 - P_1)}{-(T_2 - T_1)} \quad \dots [2]$$

If somehow the physical time reverses, i.e. T₂ - T₁ is negative, and then the particle must have a change of positions from P₁ to P₂, i.e. the spatial movement also reverses. It means speed V is independent of discrete physical time arrow. For a constant rate of discrete physical time, the basic properties of speed or velocity are absolute like the change of spatial positions, reverse of movement of spatial points. Similarly, the discrete physical time has basic properties which are also absolute. The rate at which the discrete physical time is moving may vary or dependent on observer perception, but the basic properties of it are absolute that all particles have a fixed tenure in discrete physical time domain; it is discrete, unidirectional and moving forward only for our Universe.

3. CONCLUSION

The physical time is discrete, it may seem to us like calculus that limit tends to zero approximates the variable to be continuous, in other words, as it is our inability to

discriminate two successive discrete points in space domain, similarly it is our inability to discriminate in physical time domain. The rate at which physical time moves forward may vary or rather observer dependent, but the basic properties of physical time are absolute. The human beings do not need to worry about the futurity as there is only one way to make history, there is only one way to go to future. We can try utmost for things that seems to us in our control, but have to accept the fact that the physical time governs our past-ness, present-ness and futurity and that is the fate of the living being of the universe we live in, and the same is true for every non-living being too. A body always passes a fixed tenure in discrete physical time domain.

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REFERENCE

- [1] Stephen Hawking, "A stubbornly persistent illusion-The essential scientific works of Albert Einstein", Running Press Book Publishers, Philadelphia, London 2011.
- [2] Stephen Hawking and Leonard Mlodinow, "The Grand Design", Bantam Books, London 2011.
- [3] Stephen Hawking, "The Universe in a nutshell", Bantam Press, London 2011
- [4] Smart Stephen Hawking, "The Universe in a nutshell", Bantam Press, London 2011
- [5] J. J. C. "Problems of Space and Time". London: Macmillan, 1964
- [6] Sklar, Lawrence, "Space, Time, and Space-time". CA: University of California Press, 1974.
- [7] Reichenbach, Hans. "The Philosophy of Space and Time". NY: Dover, 1957.
- [8] David Albert, "Time and Chance", Cambridge, MA: Harvard University Press, 2000
- [9] Craig Callender, "Time, Reality and Experience", Cambridge, UK: Cambridge University Press.
- [10] "Time Travel", Available: <http://plato.stanford.edu/entries/time-travel/>
- [11] Rietdijk, C. "A Rigorous Proof of Determinism Derived from the Special Theory of Relativity," Philosophy of Science, 33: 341-4, 1966.
- [12] Savitt, Steven (ed.), Time's Arrows Today: Recent Physical and Philosophical Work on the Direction of Time. Cambridge: Cambridge University Press, 1995.
- [13] Storrs McCall, "A Model of the Universe", Oxford: Clarendon Press, 1994
- [14] Benovsky, Jiri, "Endurance and time travel", Kriterion, 2011, 24: pp. 65– 72

- [15] Barry Dainton, "Time and Space", Ithaca: McGill-Queen's University Press, 2001
- [16] MacMillian, "The Encyclopedia of Philosophy", Second Edition, 2014.
- [17] Savitt, Steven, "Being and Becoming in Modern Physics", The Stanford Encyclopedia of Philosophy (Spring 2002 Edition), Edward N. Zalta (ed.), <http://plato.stanford.edu/>
- [18] Newton-Smith, W.H., "The Structure of Time". London: Routledge & Kegan Paul, 1980.
- [19] Nerlich, Graham, "What Spacetime Explains". Cambridge: Cambridge University Press, 1994.
- [20] Stephen Hawking, "A Brief history of time", Bantam Book, London 2011



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