Time : the Dynamic Dimension

by

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This is a philosophical pondering about the Dimension of Time [1].

The general thinking is that there are 0D, 1D, 2D, 3D spatial dimensions and Time is described as the 4th dimension. I am of the opinion that Time is fundamentally the **dynamic dimension** without nothing can work. Time cannot be called the zero-dimension, because it creates confusion with the spatial dimension for a point. A line is in 1D-space and is made up of at least two 0D points. Similar from 1D to 2D and then further to 3D. The expansion from 0D to 1D means 0D at Time 0 → 1 and then 1D at Time 1→ 2. This means that you cannot have any change in dimension if time is not involved.

In physics the theory states that all atoms, molecules, etc are held together by particles and forces. Some theories say that particles and forces are waveforms, then there is a need for time.   Waves can only exist if there is a movement, that means there need to be a progression of time.   Could it be that black-holes are places where time approaches zero? Time could start, and stop.   But, there can be no change if time stops, which means that everything actually collapses.   In this theory time can be *+ve* or *-ve*.   It could be possible that there is *-ve* time but not clear how it manifest itself. However, there are practical problems with *-ve* time. Time cannot go backwards, because all space dimensions have a dimensional and a vectoral component and attributes for each particle or wave or thought in the universe at any point in time. A "Universal Memory" needed to record this would be infinite times larger than the universe itself. This "Universal Memory" is needed for playback of everything. So that seems unlikely to have both *+ve* and *-ve* time at this stage.

Other questions about time. Is time just on or off? So is time binary? Is it that simple? Or, could time be non binary? Is it linear, non-linear or even fractal? What happens if time slows down or speed up? Could it be that for every 1/∞ is a ∞ speed of time? If time is slowing down to zero everything is still working albeit in a very slow way. There maybe ways to speed up or slow down time, but it is still running.

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[1]   First version of this document was in 2011; current version is 2023; continues to be work in progress.

Let say from a human (earthling) perspective time runs at speed 1. In normal life we probably do not notice if in absolute framework time sped up or slowed down. From each point in universe time runs at speed 1 (relativity theory). But if time is switched off all stops and nothing will be re-membered. Therefore **Time = Dynamic Dimension** of our existence. When the BigBang created the universe, time has been running.

Some theories say there is still matter activity in black-holes. Could it be that black-holes are places where time approaches zero? This activity is possible because time is not zero.

For example chemical reactions or a discussion or a thought (which actually have spatial components in the process) can only progress when time progresses. The spatial components are moving atoms or moving electrons etc. in the brain to have and store the thoughts during a discussion

Some theories say that the universe exists of 8 dimensions, the Space-Phase. This merges the 4D space-time and the 4D world called momentum-space. It is stated that our brain reconstructs move-ment-space (MS) into space-time (ST). In that case MS is just a morph of ST. Some theorists say MS is curved, that means ST is curved.

It could well be that time , the dynamic dimension (DD) is curved since it goes from 00 → infinity. A flat case both in MS and ST is just an instance where the parameters are such that there is no curvature. Could it be that for each observer (time = 1) both ST and MS are flat but when looking way from the observer's space becomes curved. Is this a function that time is not linear.

In the black hole (BH) theory mass radiates away, evaporating and disappearing eventually all to-gether. So what happens to the material that fell int h BH in the first place? Energy is generated by the movement of particles however large or small. If time slows down will less movement mean less energy? If that is the case everything that goes in a blackhole reduces in intensity.

Could there be multiple times, ie could time be zero in one part of the universe and time-infinity in another part? Because in the BH time is 1/infinite the appear will be small while the rest of the uni-verse have time infinite therefore appears infinite? Some theorists say that we find our selves in a place where ST and MS meet namely 8D space- phase. If two 4D's meet then there is a 4^2 combina-tions. Are ST and MS perhaps two sides of a Moebius band where they always meet but never cross?