

Time : the Dynamic Dimension

by

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This is a philosophical pondering about the Dimension of Time in space by a non-physicist¹. This pondering raised many questions.

The general notion is that there are 0D, 1D, 2D, 3D spatial dimensions and Time which is often described as the 4th dimension. We are of the opinion that Time is fundamentally the **dynamic dimension** (tDD) without nothing can work.

It is still interesting that when connecting two points with 0D we create a 1D object. So when connecting those two points of zero size we create a line which has no thickness. The next step from 1D to 2D and then 2D to 3D. So we can conclude that 3D is the physical space we operate in. Any other dimension is a modifier of 3D space. For example when an object is moved in 3D space it is still in 3D space however it has shifted along their coordinate system. In this case time is the modifying dimension. Unless one accepts that movement is not necessarily related to time it just happens.

In physics it is accepted 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. But even if electrons moving around a core they have a time component. 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? 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. To travel backwards in time there needs to be an “Universal Memory”

¹ First version of this document was in 2011; then one in 2023; current one 2026; continues to be work in progress.
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(UM) to record all movements of particles and waves over the time of the existence of the universe. Otherwise how is it really able to go back in time? This “Universal Memory” will be larger than the universe. So that seems unlikely to have both *+ve* and *-ve* time at this stage, unless *+ve* and *-ve* time are defined differently.

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 $1/\infty$ is a ∞ speed of time, so the resultant is 0 (zero)? 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. How would it start again?

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 remembered. Therefore **Time = Dynamic Dimension** of our existence. When the BigBang created the universe, time was running or been created.

Some theories say there is still matter activity in black-holes. Could it be that black-holes are places where time approaches zero but not zero? When there is no movement of the waves within atoms, then they should collapse because there are no forces to prop it up. So we cannot have Time - zero.

How can time move from *+ve* to *-ve*? There has to be an instance in that transition when time = 0. That is the point that everything collapses. Does this mean that there can only be *+ve*. It may slow down to nearly 0 or speedup to ∞ .

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

Is it possible that the amount of energy reduces when time slows down and increases when time speeds up? Is an expanding universe a sign of changes in speed of time? In the blackhole (BH) theory mass radiates away, evaporating and disappearing eventually all together. So what happens to the material that fell into the 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, i.e. could time be near zero in one part of the universe and time-infinity in another part? Because in the BH time is $1/\infty$ the appearance will be small while the rest of the universe has time infinite therefore appears infinite? Does time behave like a Möbius strip with no start or end?

Concluding that if the physical reality is not taken into account about time travel calculations about it is just an esoteric exercise of mathematicians.

Examples that make time travel unlikely or even impossible.

Unless there is a different definition of the past one assumes that it is as it was at that time. That means that when one just has eaten a grilled steak it will have to be ungrilled, put back on the larger piece of meat, undo the slaughter of the cow and make the animal alive again, etc. How can it be assured that all this is carried out correctly? Where is that data stored, i.e. is there a Universal Memory?

Even an H₂O molecule that survived a period of time has an internal history. The atom has electrons that spin around the core in a certain direction and pattern. To go back in time the atom has to be rewound, i.e. the electrons have to spin in the opposite direction till they reach to the time point selected.

Declaration

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