

TIME DILATION

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Quoted - "Moving clocks are found to run slower than clocks at rest in a given frame. Time dilation is an observed phenomenon that from the viewpoint of two observers is a mathematical reality."

Let two light particles travel towards one another. Let their distance be two light years apart.

Quoted - "Using the Lorentz transformation formula, shows us that relative to one another, they are only approaching at the speed of light and not at twice the speed of light."

Mathematically deduced from the reference point of either particle, this is true, but what if we choose as a reference frame, the point at which they first make contact?

We know that exactly one year before contact that the particles were a total of two light years away from each other. We also know that in one year these two particles will make contact. We can therefore state that in a one year period the two particles have traveled a distance of two light years.

Relativity in effect, uses mathematics which define one of the two observer positions as the center of the universe; the fixed point that does not move.

Looking at time dilation from another reference frame other than one of the two particle locations, directs us towards the fact that time itself is not slowed down but merely that the measurability of visible clock time from the mathematics of one observer locations will differ from another observer location.

It is not the measurement of time that somehow shows us that time is in any way alterable. A distinction must be made between an event and the light sphere generated from that event, these are not the same. The event is always first in absolute time. The light sphere from the event, travels away from the event location in forward moving absolute time. The event itself is now forever in the past. Its light sphere marches on forward through the distance of the universe, perceivable at locations equidistant from the event location itself at simultaneous moments in time. Conversely, it is not perceivable at any other additional locations interior to or exterior from the light sphere being generated from that event. This differentiation between the event itself and the light sphere from the event is critical in a discussion involving sequencing of events and not the sequencing of observed light spheres from events. In this manner, an absolute sequencing of events can be determined mathematically with three or more observer positions which share a common time frame and can be inter coordinated also through a common coordinated system.

Quoted - "Moving clocks are found to run slower than clocks at rest in a given reference frame. A muon at rest decays into an electron with a half-life of 2.2 microseconds. When moving through the laboratory at 99 percent of the speed of light, the lifetime has been measured to be 15.6 +/- 5.8 microseconds. The observed time dilation is by a factor of 7;1, the prediction is 7.0888."

This is the effect of motion upon the muon decay. This does not mean that time has changed. Muon decay at rest occurs under rest conditions in one way. Muon decay under different conditions, (accelerated to 99 percent speed of light) occurs in a different way due to the physical changes caused by the increased motion. The fact that a change occurs is understandable. However, whatever decay occurs, happens due to the physical dynamics of the system. If you then turn around and say that same mechanism (in this case, the decay of a muon) is also the thing being used as the standard of time, then you would believe that time itself was altered. Just because a difference of measurement is registered at separate locations or differences in conditions, has nothing to do with the on-going passage of time. It is always a comparison of results from

some experiment that uses some difference of conditions. Since you must always use a comparison of clock times, it is in fact the mechanism that literally makes that clock tick, that will have been changed under one condition to another. Whatever you are counting that regulates your synchronization is the physical attribute being changed.

Quoted - "Beginning in October 1971, Hafele and Keating flew four cesium atomic clocks around the world in commercial airliners in both the eastward and westward directions. the clocks were expected to experience both special and general relativistic effects totaling -40 ± 23 nano seconds and $+275 \pm 21$. The average observed differences were -59 ± 10 and $+273 \pm 7$ ns., in good agreement with theory."

Under normal circumstances, cesium atoms maintain a very regular rate of rotation. This rotation occurs almost exactly, but not absolutely exactly as would other cesium atoms under the same conditions. What occurs from a physical sense when these airliners flew, was that since mass attracts mass, the rotation rate of the cesium atom was effected, not time. Clock time was effected, not time, I believe that Einstein statement "clocks are what we measure time with and distance is what we measure with a measuring rod", is true in what it says.

However, the inference that if two clocks differ in time is that time has been altered should not be over-looked. This difference between the concept of clock time and time need be pointed out. Clock time is always the results of the calibration of some physical phenomena. Time is a concept. Regardless of how you keep track of it, time continues forward, always existing in the present. The present in my location is also the same present at all other locations. Time is independent of light. Just as some physical change under differing conditions does not change time, neither does the presence, absence, or bending of light change this "outside" view and understanding of time. This outside view , could be visualized by imagining yourself, looking through your own eyes, and being able to see the entire experiment take place within your range of sight. For example, imagine yourself outside of the earth watching airliners flying clocks around the world. Imagine the cesium clocks registering different clocks times and you with your own cesium clock wristwatch.

So what if due to the flying experiment the two clocks differ? Is the inference from this experiment that one clock is now older then another? There is only one rate of time regardless of our attempts to measure it.

When you use a stationary reference point and let time continue, still using that fixed point, in reality you are letting your entire mathematical grid move in reference to that point. Since there is no mass that remains at a fixed point over time, For mathematical purposes, if you elect to fix one point, then at that instant, all other mass in its present location, is also at a fixed position. You cannot expect to roll part of the universe forward and leave another part of it behind.

Our choice of a reference system for location definition (space), as well as our choice for demarcation of the passing of the universal present (time), are arbitrary in the manner in which we elect to measure them. Regardless of our procedures to define them mathematically, or measure them mechanically, they exist.

The universal present continues in the vastness in space without any need of light or clocks or systems of tallying.

Time dilation is really only clock dilation. Clock dilation is the comparison of two mathematical measurements of a two different physical devices...two observer mechanics: insufficient observer positions to be able to correlate a common time frame.