Consciousness and its effect on the modification of space-time

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Abstract

This paper will show through several experiments that time dilation, or modification of space-time, occurs only when there is a consciousness field or link (CFL) involved, along with velocity and/or acceleration, which proves that the general theory of relativity (GTR), as well as of the special theory of relativity (STR) cannot be used as is. It also shows that consciousness can be applied remotely at great distance, can be connected directly or indirectly with an event, and that it is only when such a link exists that the relativity theories can be used. It also reformulates one of the postulates of the special theory of relativity that the frame of reference is not regardless of position and velocity, but it is from the position where the consciousness link is made between all the elements regardless of the velocity.

1 Introduction

This paper is an introduction to my philosophical thoughts and theory pertaining to what is the new principal factor required for time dilation. This paper is not intended to adjust existing theories currently in use, but to outline the steps for conducting straightforward experiments to prove this theory of how consciousness, when added along with velocity and/or acceleration affects, space-time.

In 2009, I first questioned what would happen if one traveled to the edge of the universe; would we hit a wall? My instinct suggested that the universe will expand to create room for our sight, sending a chain reaction throughout the universe following the basic laws of thermodynamics in which the universe is not infinite but expanding. That same year I was inspired after watching the speech by Dr. Jill Bolte Taylor[1] about defining what consciousness is, based on her knowledge and experiences after having a stroke. I was additionally motivated by speeches and programs involving scientists such as Carl Sagan, Stephen Hawking, Michio Kaku and many others to work on this paper.

Stephen Hawking created an important theory[2][3] about the entropy of black holes that can be applied to the universe as a whole. The theory contains an

important paradox: that information is lost, which indicates that a missing piece therefore must be discovered. Secondly, the universe is expanding, caused mostly by dark energy, although dark energy has never been found. This paper will present the missing piece and will describe several experiments that can be done using existing technologies.

2   Experiments and Theorems

In the next paragraphs, a list of experiments are described that can be conducted that can prove that only when a consciousness field or link (CFL) is linked to an event that STR and GTR work. Without CFL, those theories don't work. These experiments also show that the percentage of CFL applied is important to the results. In order to proceed, first, we are going to need two atomic clocks with nanosecond precision, and an aircraft which can fly both with or without someone on board, and that can also fly programmatically without any human intervention.

2.1   Experiment 1

This experiment proves that travelling at a certain speed creates a time dilation[5]. Let's stipulate that we have an aircraft and that the aircraft contains an atomic clock on board, and that we have the same atomic clock at the base, and both clocks are synchronized (at the base) before takeoff. Let's say that there are people on board of the aircraft. There are a few assumptions noted here designed to help keep the experiment simpler. First, we assume that the trajectory of the plane is on the same longitude as the clock on the base, so that we can ignore the effect of the rotation of the earth. The Sagnac effect[6] can also be ignored because the clocks are not synchronized during the flight but only at the base. We also assume that the plane is not rotating around the earth but returns on the same path, thus applying minimal centrifuge forces that can be ignored. In this example, the aircraft will travel for 5 hours at a constant speed of 1,000 km/hr at an altitude of 7,000 meters. After the aircraft returns, we compare the two atomic clocks to see if they are still identical. According to STR, the clock will slow down by approximately 7.7 nanoseconds compared to the atomic clock on base. According to GTR, because of the gravity field, the clock will speed up by approximately 13.8 nanoseconds compared to the atomic clock on base. Therefore, the net result is that the clock on the plane is faster by about 6.1 nanoseconds compared to the clock on base. We can also ignore the time dilation cause by the acceleration/deceleration of the plane during takeoff and landing since it will be <0.1 nanosecond, which is negligible. We need to notice that this experiment has been done with living beings on board the aircraft, and that the observers know when the aircraft took off and when it came back.

There is nothing new here from this experiment, but the next experiment will be based on this and allow us to understand the effect of CFL.

2.2 Experiment 2

In the second experiment, we are going to replicate the first experiment almost identically. We will have the aircraft travel for 5 hours at a constant speed of 1,000 km/hr at the same altitude and path. The only difference between this experiment and the previous experiment is that we will have nobody on board the aircraft. Today, this new experiment is possible due to the existence of drones. To have this experiment succeed, no beings (that have consciousness) may be present on board, but also no beings should observe the aircraft traveling at any time. The expected time of the clock on the aircraft and on base when the aircraft comes back will be identical, meaning no time dilation will occur.

2.3 Experiment 3

In the third experiment, we are going to replicate experiment #2 except that this time an observer is going to observe the airplane traveling during the trip for 100% of the travel time from the base (which remains static). The expected variation of time of the clock on the aircraft compared to the one on base will be the same as the experiment #1, which is approximately 6.1 nanoseconds.

2.4 Theorem from Experiment 1,2,3

Since we can prove that CFL is directly related to time dilation, then we can ask the question: what if we observe the plane only partially and not for the entire duration of the experiment? We can formulate an equation based on this and the previous 3 experiments. Let's say that we use the variables $\varkappa$ to represent the percentage of consciousness applied and Δ_{NET} to represent the time difference between the 2 clocks as shown in 4, assuming that the duration of the experiment (5 hours) is controlled by computer without human intervention at the base.

$$\Delta_{GR} = \sqrt{1 - \frac{2GM}{r_{earth}c^2}} - \sqrt{1 - \frac{2GM}{r_{aircraft}c^2}} \tag{1}$$

$$\Delta_{CGR} = \varkappa \Delta_{GR} \tag{2}$$

$$\Delta_{CS} = \frac{d}{v}((1 - \varkappa) + \varkappa\sqrt{1 - \frac{v^2}{c^2}}) \tag{3}$$

$$\Delta_{NET} = \Delta_{CGR} + \Delta_{CS} \tag{4}$$

From those equations shown in 1,2,3,4, and by conducting more experiments based on experiment #3, if we then conduct many other experiments (experiment #4) by varying the percentage of consciousness effect applied during the travel time to 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90% and 100%, we will get the variation of time difference between the 2 clocks as shown in Table

1. In this table, you will find the Δ_{NET} value which represents the overall time dilation occurring by taking account STR as well as GTR. A negative value means that the clock on the plane is faster than the base's clock.

$\varkappa$ percentage of consciousness applied	Δ_{CS}(variation of time difference between the 2 clocks in nanoseconds using STR)	Δ_{CGR}(variation of time difference between the 2 clocks in nanoseconds using GTR)	Δ_{NET}(variation of time difference between the 2 clocks in nanoseconds)
10%	0.7713	-1.3813	-0.6100
20%	1.5461	-2.7626	-1.2164
30%	2.3174	-4.1439	-1.8265
40%	3.0923	-5.5252	-2.4329
50%	3.8635	-6.9065	-3.0429
60%	4.6348	-8.2878	-3.6530
70%	5.4060	-9.6691	-4.2630
80%	6.1809	-11.0504	-4.8694
90%	6.9558	-12.4317	-5.4758
100%	7.7271	-13.8130	-6.0859

Table 1: Table Variation of time difference between clocks using different percentage of consciousness effect

We should note in those experiments that GTR has the opposite effect on the clock compared to STR. That means the altitude that the plane flies at is important to the results. It's noteworthy that the plane should not travel at the altitude of approximately 3,910 meters because the values obtained from STR and GTR calculations will nullify each other, and you won't be able to compare the on/off switch of CFL.

By comparing experiments #1, #2, #3 and #4, we can conclude that only when a being with consciousness is observing or is on board of the aircraft that there is time dilation that occurs; otherwise there is no time dilation. We can also see from experiment #3, that the effect of consciousness can be remote.

We can also do experiment #3 again by having the observer at a position significantly further from the aircraft and the base, and the results will be the same.

We can also do experiment #3 by having the observer observing the aircraft from a video monitor instead of using his/her naked eye and the results will be the same.

We can also say that the effect of consciousness from one observer or many observers have the same effect in regards to time dilation. So the time dilation in experiment #2 or #3 will be the same if many beings participate, versus only 1 person participating. We will also notice that this is an on/off switch effect. When there is an observation, the effect is on, otherwise it's off. The

effect is not cumulative, but having more than 1 observer increases the chance of applying consciousness effect.

2.5 General Theorem

From those experiments and since we know that the consciousness effect on space-time can be remote and that the variation of distance between the observer and the object observed does not diminish the effect, we can also say that the level of consciousness is increasing since the population of entities having consciousness is increasing.

Since the level of consciousness is increasing, its effect on the modification of space-time towards the universe is increasing as well. We also know that the entropy of the universe is increasing, therefore the level of consciousness of the universe is directly proportional to its entropy. We see this in formula 5.

$$\text{�} = S \tag{5}$$

The formula representing the entropy of the universe as a whole from Stephen Hawking's work is shown in formula 6[2].

$$S = \frac{c^3 kA}{4\hbar G} \tag{6}$$

By combining formula 5 with formula 6, we obtain formula 7 below.

$$\text{☐} = \frac{c^3 kA}{4\hbar G} \tag{7}$$

3 Reviews of some existing Experiments to test STR and GTR

3.1 Hafele–Keating experiment

In 1971, Joseph C. Hafele, a physicist, and Richard E. Keating, an astronomer, took several cesium atomic clocks aboard commercial airliners[7]. They flew around earth, eastward and westward, and compared the clocks against each other. In their results they took into account the effect of GTR as well as the effect of STR.

In this experiment, it's imperative to notice that they were people on board of the airliners and the results are in accordance with the experiment #1 in this paper.

3.2 Clocks on GPS satellites

There is a network of satellites orbiting at an altitude of about 20,000 km with an orbital speed of about 14,000 km/hr. Each satellite carries an atomic clock precise to the nanosecond. A GPS receiver determines its current position by

comparing the time signals it receives from the GPS satellites. To achieve this level of precision, the clock from the GPS satellites must be known to an accuracy of about 30 nanoseconds. However, because the satellites are constantly moving relative to observers on the Earth, effects predicted by STR and GTR must be taken into account to achieve the desired 30 nanosecond accuracy. [8]

This is very similar to experiment #3 in this paper, except that the Sagnac effect[6] is taking account for in the GPS time dilation calculation since the values are transmitted and not compared at the same location. We can also say that there is a CFL crossing or associated to those GPS satellites since we use GPS receivers and that those receivers are linked to those GPS satellites. The question is mostly about the percentage of CFL that is applied and this value is unknown. But we also know that more people are involved, more chance that CFL will be present and we know the GPS network is widely used therefore we can say the percentage will be most likely be high.

3.3   Muon decay

Muons are sub-atomic particles generated when cosmic rays strike the upper levels of our atmosphere. They have a half-life of about 2.2 microseconds which mean that every 2.2 microseconds, their population will be reduced by half. By observing the concentration of muons at both the top and bottom of a mountain, we can see how many have decayed and compare this result with the predictions of STR. According to the experiment, the muons found match the number calculated by using STR. [9]

The CFL is crossing the upper atmosphere from the numerous observation done by people on the ground and therefore time dilation will occur. While the muons are passing through the thickness of the mountain, we will think that CFL will be null and therefore no time dilation should occurred inside the mountain's crust but again, muons interacts with matter and all those cause and effects are linked back to CFL set initially.

3.4   Twin Paradox

The Twin Paradox[10] is a thought experiment in STR involving twins (A and B). One of them is on earth (A) while the other one takeoff to travel through deep space to return many years later on earth (B). In STR, the laws of physics are the same in any inertial frame of reference, regardless of position or velocity. That means that for the travelling twin (B), his brother (A) will age slower because he's moving. Same thing for the twin (A), relative to him, he should find his brother (B) to age slowly as well. But as you know, they cannot be both age slowly, one has to be older and that's why there is a paradox.

In this example, the frame of reference is on earth because there was a consciousness link created there initially. So the frame of reference is not regardless of position and velocity, but it is from the position where the consciousness link is made between all the elements regardless of the velocity and if no such link exist it's regardless of position and velocity. This resolves the paradox.

4   Conclusion

Consciousness has a direct effect on the modification of space-time and this has many implications. We show that the catalyst of the effect is done through someone having consciousness or being a living being. We could also prove whether dogs, cats, or any type of living beings have consciousness or not by conducting the experiments described in this paper. We could also answer questions such as, "when does the human fetus start having consciousness?" It could help us reshape our morality.

I believe that Consciousness is a catalyst for the expansion of the universe and it's the link that was missing to resolve Stephen Hawkins's paradox. The information is not lost; it's simply transforming.

We can suspect that the missing dark energy that has never been found - one of the keys causing the expansion of the universe- is actually the effect of consciousness. As I mentioned in my introduction, the universe is not infinite and if we are at the edge of the universe and looking towards the edge boundaries, the universe must expand to create room for our sight. Because new space is being created at the absolute coldest temperature (0 Kelvin) and as that pressure is completely null, heat has to move where it's cold, and where pressure is high it must go to where it's low, following the basic laws of thermodynamics. Therefore matter is moving towards that new space sending a chain reaction.

In quantum physics, there is phenomenon called quantum entanglement which is where 2 particles' states are linked together no matter the distance. I also believe that this link can only be created when there is a CFL that has been established initially to link them together. That's the reason why I mention the consciousness link and not necessarily just the consciousness field.

There are many more experiments that should be conducted using our senses. For example, someone blind or in a coma might not have consciousness effect on things of which they are not aware. If you hear the noise, you are certainly applying a CFL. Many variations of those experiments should be done.

Also, on a more philosophical note, I want to explain my view on why nature provides such rules. Using Table B in appendix A, you will see calculations based on an object travelling far away from us in deep space. In those calculations, we can ignore the time dilation caused by the gravitational fields (GTR) since we assume that the object is traveling in deep space far away from any significant mass.

What would be the implication of a civilization that is coming towards us located 1 million light years away if this civilization is 500,000 years more advanced than we are? Having them travel here will be a complete disadvantage for us. They are 500,000 years more advanced than we are at the moment they leave, and when they arrive here, they would probably rule our world. But the laws of nature may provide a counter effect. Assuming that this civilization travels close to the speed of light, relative to them, they would reach us almost instantly (about 44.7 years at 0.999999999 the speed of light) giving them NO chance (no time) to evolve further. But relative to us, it will take them 1 million years to reach us. That means that when they will arrive, we will be 500,000

years more advanced than they are, assuming that we progress at the same rate. In that sense, perhaps, nature has provided a tool to balance evolution in the universe.

5 Acknowledgements

6 References

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7 Appendix A

In Table 2, the first column is the travel speed which is based on the percentage of the speed of light. The second column shows the time the travelers (foreign civilization) will take to travel in perspective to us (observers). The third column displays the time the travelers will take relative to themselves but with the expectation that the travelers have consciousness. The fourth column shows the time the travelers will take relative to themselves but with the expectation that the travelers have no consciousness.

Following Table 2, if the travelers with consciousness are traveling at 10% the speed of light, we are going to wait 10 million years before they arrive. For the travelers, their clocks will show that it will take 9,949,874.371 years before they arrive. In the fourth column, since the travelers are traveling without any consciousness, their clocks will show the exact same time as the targets' clocks (observers) which is 10 million years. We expect that there is no consciousness effect occurring in the fourth column. That means that no beings with consciousness are observing the aircraft traveling, and we already know that there are no beings on board.

v	t perceived by the observer (8)	t' perceived by the travelers with con-sciousness (9)	t" perceived by the travelers without con-sciousness (10)
0.1	10000000	9949874.371	10000000
0.2	5000000	4898979.486	5000000
0.3	3333333.333	3179797.338	3333333.333
0.4	2500000	2291287.847	2500000
0.5	2000000	1732050.808	2000000
0.6	1666666.667	1333333.333	1666666.667
0.7	1428571.429	1020204.061	1428571.429
0.8	1250000	750000	1250000
0.9	1111111.111	484322.1048	1111111.111
0.99	1010101.01	142492.2826	1010101.01
0.999	1001001.001	44754.93274	1001001.001
0.9999	1000100.01	14143.19639	1000100.01
0.99999	1000010	4472.169496	1000010
0.999999	1000001	1414.214623	1000001
0.9999999	1000000.1	447.2136289	1000000.1
0.99999999	1000000.01	141.4213576	1000000.01
0.999999999	1000000.001	44.72135896	1000000.001

Table 2: Relative times for beings and non-beings traveling from 1,000,000 light years away

$$t = \frac{d}{v} \tag{8}$$

$$t' = \frac{d}{v}\sqrt{1 - \frac{v^2}{c^2}} \tag{9}$$

$$t'' = \frac{d}{v} \tag{10}$$