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Validity of Special Relativity Theory

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This article discusses the upper limit imposed on the speed of traveling of any mass as being the speed of light in vacuum. The article shows, based on the results of Special Relativity, that such a limit does not really exist. We shall prove that Special Relativity is theoretically valid under the constraints and assumptions made by Einstein and has no practical applications.

1. Introduction

By the advent of the space age in the 20th century, scientists started thinking about the existence of extraterrestrial life and travel into space. Billions of dollars were spent on such programs and is still going on.

When NASA spends all that money and time on such projects as Search for Extraterrestrial Intelligence (SETI), it means that they are expecting to detect coherent signals from other possible civilizations in outer space.

Another NASA project is its program for discovering habitable planets that are similar to earth outside the solar system (exo-planets). This of course is an indication that somebody is thinking of going there. Humans must not be bound to earth only.

Cosmos is there to be discovered and exploited, not just to look at beautiful galaxies from earth. Deep space exploration cannot be achieved by the use of today's technology of space travel.

Two factors hinder real cosmic travel, namely:

1. The impossibility of communicating at speeds beyond the speed of light using electromagnetic waves.
2. The wrong belief of a limit of light speed on speed of mass put up by a misunderstanding of special relativity (SR).

In the present article, we shall be dealing with the second factor, i.e. speed limit.

Pushing physics to its limits has always been and will always be a source of advance for science in general [1], and one can actually consider that there are no limits to science unless proved otherwise.

As mentioned in [2], the exploration of the universe has enlarged its size further and further to inconceivable proportions. Given the current way in which we humans understand this exploration, that is remaining on Earth while sending round trip expeditions outside, it is almost unavoidable not to feel that the speed of light barrier restrains our probing capacities to unbearable limits. Imagine a mission to the nearest star cluster Alpha Centauri at 4.22 light years which will take a return trip an unacceptable amount of time at present-day available speeds of about 10^5 km/hour.

The universe is huge. By most estimates it is about 14 billion light years in expanse depending on measurements of the cosmic microwave background radiation (CMBR).

The universe is also expanding.

With the on-going search for habitable planets outside the solar system and ultimately outside our galaxy, the speed of light barrier does not really mean much, it forms some kind of fissure in the structure of the theory.

As Einstein declared, [3]: “the special relativity is a theory of principle and not a constructive theory”. This should tell us a lot of what can be done to extend the special relativity. We should be open-minded in accepting an unconventional reading of the theory. Here by the term “unconventional” I mean not fully compliant with what many physicists understood from SR.

Hill and Cox [2] tried to override this apparent contradiction. However, they made a few mistakes namely: they relaxed the requirements of invariance of the energy-momentum relations. They did not say what that relaxation was. On what basis did they do that? They invented new transformations while Einstein’s Lorentz transformations are quite adequate as we shall show.

Dai and Li [3] state that superluminal particles should have imaginary rest mass. This is not correct, as we shall prove working within the framework of Einstein's special relativity.

The deductions of [5] about an imaginary rest mass for BSOL cases, is not correct as we shall see. In [6] the authors try to say that the Lorentz transformations are inadequate for BSOL movement, which we shall show to be untrue. [7] Tries to come up with inertial frames without relativity principle, when we should really stick to relativity. [9] tries to restrict BSOL movement to special-type theoretical cases. In contrast with [10], we shall stick to the Lorentz transformations.

Another question might come to mind. Why did Einstein choose the speed of light as the reference speed in all Lorentz transformation equations? In his words: 'an outside observer perceives the light of the moving body". And we must not forget the true meaning of "the **outside independent observer** of the moving object".

Light is there. It could be seen by the human eye, and it could be measured. Anything beyond that would have to be guess work or measured. Any thing moving at BSOL could not and cannot be seen.

Einstein writes about what would happen when $v = c$. But he does not elaborate for the case when $v > c$, and just says that it is impossible.

However, all these restrictions should have led to thinking of BSOL movement.

This is a challenge for more research in that direction, although what will be shown in this article of the possibility of BSOL within Einstein's theory is still very much valid.

The discussion in this manuscript is about real travel of a real mass when $v > c$. A hypothetical particle like the tachyon is not relevant here. It is supposed to be a sub-atomic, hypothetical particle and we here treat bodies with real mass.

As will be seen later, no violation of causality and no break in the Lorentz invariance, are committed.

The following is based on the principle of **frames of reference**, which is exploited to the full and which is used extensively in the Special Relativity (SR) Theory.

The Special Relativity Theory (SR) is not denied. We try to understand it much better and put the basis for some changes in results. We adopt the rule of Special Relativity being fully based only on an **outside independent observer** looking at a moving object.

Before going into the subject matter, I would like to emphasize some of the progressive ideas of Einstein, to which most of our physicists today do not adhere, taking only what they understand of special relativity in their own minds. This way of thinking of nowadays does not match with what Einstein understood about science in general, and maybe looking to the future, when most physicists stick obstinately to what they understood and are not open-minded to accept other views.

Here are some excerpts from “Einstein’s Philosophy of Science” published by Stanford University.

2. Some misconceptions about special relativity (SR)

a) Einstein in his thought experiment about time dilation, started with the assumption of full velocity $\boldsymbol{v}$ immediately upon departure. He came up with the formula for time dilation at that speed. He did not start the journey at $\boldsymbol{v} = 0$ and

did not see what is happening while climbing to full speed. Nor did he end the journey by slowing down until the relative velocity $\boldsymbol{v} = 0$. Actually time dilation starts as $\boldsymbol{v}$ increases with respect to the fixed independent of outside observer. Time dilation increases with the increase of relative speed. On the other hand when $\boldsymbol{v}$ starts decreasing, the moving clock starts speeding up with respect of outside observer until the two clocks synchronize with each other at $\boldsymbol{v} = 0$ and time dilation vanishes.

Therefore, not taking the starting and finishing periods into consideration led to wrong conclusions, in both the twin paradox theoretical problem and in the results of the Hafele-Keeting experiment. The declaration made in the case of the twin effect that the returning space traveler was younger than his earth-bound brother is wrong. This declaration has two missing facts:

- The spaceship is still moving and did not land, meaning that its relative speed with respect to the fixed independent outside observer is still above zero. Had the spaceship landed, time dilation would have disappeared.
- Time slowing of the moving ship is only apparent to the earth-bound outside observer, while inside the spaceship time is running at the same original speed.

Taking these two facts into consideration, it is clear that the interpretation of the experiments of Hafele-Keeting and others as confirmation of time dilation is, as we shall see later, wrong.

In the Hafele-Keeting experiment results, a big oversight happens. Similar to the mistake committed in the twin effect, no analysis was carried on about the beginning and the end of the journeys of the two crafts. At the beginning of their journeys, the clocks in the two airplanes were synchronized. Figure (1) shows a sketch of the routes followed.

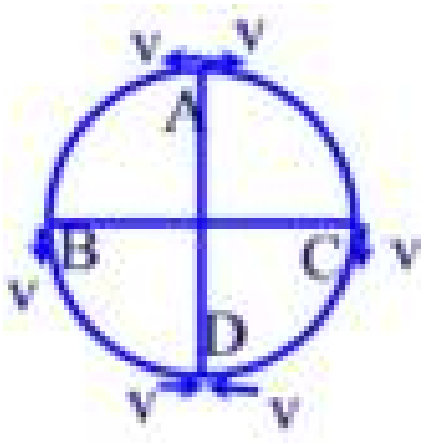

Fig. (1)

Irrespective of the periods of acceleration and deceleration, we shall look at the routes followed. Assuming that the speed of every aircraft with respect to earth is ***v***, at the start at point (A) the relative velocity of any of the two aircraft with respect to the other is ***2v***. And according to SR there is some time dilation.

As the two aircraft go around the globe, their relative velocity decreases until when they reach points (B) and (C), their relative velocity becomes zero and time dilation disappears.

Continuing their journeys around the globe, the relative velocity starts to increase and maximum time dilation appears at point (D).

At the end of the journey, as the crafts decelerate and land down, the two clocks will synchronize.

Time dilation appears lonely when there is a relative movement and disappears when that stops. Therefore, all the deductions made based on this experiment are false. Any discrepancies in the synchronization of the two clocks should be attributed to something quite different than time dilation.

If we analyze all the experiments done to prove time dilation, we shall come to the same result:

TIME DILATION AND LENGTH SHORTENING ARE APPARENT PHENOMENA ONLY TO AN OUTSIDE OBBSERVER, RELATIVELY MOVING WITH RESPECT TO US, THEY ARE APPARENT TO HIM ONLY, THEY ARE NOT REAL.

b) Almost all physicists studied special relativity, without paying attention to every word Einstein wrote and how he formulated every sentence and chose every word to mean something specific. As an example let us take the following

sentence from his section VII of his 1905 thesis: "*In short, let us assume that the simple law of the constancy of the velocity of light* ***c*** *(in vacuum) is justifiably believed by the child at school.*" Einstein takes this as an assumption in his own words and builds on this assumption his theory. In an another sentence he writes: "*Now let us suppose that our railway carriage is again traveling along the railway lines with the velocity* ***v****, and that its direction is the same as that of the ray of light, but its velocity of course* <u>*much*</u> *less.*" Here Einstein presumes that $\boldsymbol{v} \ll \boldsymbol{c}$. He does not want to discuss the case of ***v*** approaching ***c***, because other factors will appear.

As we see, the special relativity was based on an assumption and a supposition about which Einstein later in the section says: *"For, like every other general law of nature, the law of transmission in vacuo must, according to the principle of relativity, be the same for the railway carriage as reference-body as when the rails are the body of reference.*" transforming an assumption into a law. At the end of page 20, Einstein tries to prove by saying that: "*no empirical data had been found which are contradictory to his principle.*"

Yes, this could be a way of proof, but does not cancel the probability of proving the inverse.

At the end of that section, Einstein says: "*it became evident* that *in reality there is not the least incompatibility between the principle of relativity and the law of propagation of light, and that by systematically holding fast to both these laws a logically rigid theory could be arrived at.*"

My opinion is that yes, based on the assumptions which Einstein made and I quoted above. However all of this is a logical theory, meaning: mental exercise: if I do one thing, something will result.

In order to be sure that I am not doing any mistakes, I read the original German text of Einstein and found that the English translation was correct.
This is what led me to say that we should pay more attention to every word or phrase used by Einstein. German language is an analytical language which Einstein used to express his very important ideas on the subject, a wording to which enough attention was not paid.

3. Einstein's ideas about seeking scientific truth

a) Not well known, though of comparable importance, are Einstein's contributions to twentieth-century philosophy of science. Of special note is the manner in which Einstein's philosophical thinking was driven by and contributed to the solution of problems first encountered in his work in physics. [11]. He wants the physicist to be provided with an "**independence of judgment**" through a philosophical habit of mind. How? He explains: "*Concepts that have proven useful in ordering things easily achieve such an authority over us that we forget their earthly origins and accept them as unalterable givens. Thus they come to be stamped as "necessities of thought," "a priori givens," etc. The*

path of scientific advance is often made impassable for a long time through such errors. For that reason, it is by no means an idle game if we become practiced in analyzing the long commonplace concepts and exhibiting those circumstances upon which their justification and usefulness depend, how they have grown up, individually, out of the givens of experience. By this means, their all-too-great authority will be broken. They will be removed if they cannot be properly legitimated, corrected if their correlation with given things be far too superfluous, replaced by others if a new system can be established that we prefer for whatever reason." (Einstein 1916, 102).

Einstein's phrase "*achieve such an authority over us that we forget their earthly origins and accept them as unalterable givens.*" , is a very clear direction given to other physicists (and scientists) not to become prisoners of their science *"a priori givens"* and to stay open-minded.

b) That Einstein meant what he said about the relevance of philosophy to physics is evidenced by the fact that he had been saying more or less the same thing for decades. Thus, in a 1916 memorial note for Ernst Mach, a physicist and philosopher to whom Einstein owed a special debt, he wrote: "*How does it happen that a properly endowed natural scientist comes to concern himself with epistemology? Is there no more valuable work in his specialty? I hear many of my colleagues saying, and I sense it from*

many more, that they feel this way. I cannot share this sentiment. When I think about the ablest students whom I have encountered in my teaching, that is, those who distinguish themselves by their independence of judgment and not merely their quick-wittedness, I can affirm that they had a vigorous interest in epistemology. They happily began discussions about the goals and methods of science, and they showed unequivocally, through their tenacity in defending their views, that the subject seemed important to them. Indeed, one should not be surprised at this." (Einstein 1916, 101)

Here again Einstein stresses that *independence of judgment* should prevail.

c) The place of philosophy in physics was a theme to which Einstein returned time and again, it being clearly an issue of deep importance to him. Sometimes he adopts a modest pose, as in this oft-quoted remark from his 1933 Spencer Lecture: *"If you wish to learn from the theoretical physicist anything about the methods which he uses, I would give you the following piece of advice: Don't listen to his words, examine his achievements. For to the discoverer in that field, the constructions of his imagination appear so necessary and so natural that he is apt to treat them not as the creations of his thoughts but as given realities."* (Einstein 1933, 5–6).

Einstein here wants to show how important thought is.

d) More typical, however, is the confident pose he struck three years later in "Physics and Reality": "*It has often been said, and certainly not without justification, that the man of science is a poor philosopher. Why then should it not be the right thing for the physicist to let the philosopher do the philosophizing? Such might indeed be the right thing at a time when the physicist believes he has at his disposal a rigid system of fundamental concepts and fundamental laws which are so well established that waves of doubt can not reach them; but it can not be right at a time when the very foundations of physics itself have become problematic as they are now. At a time like the present, when experience forces us to seek a newer and more solid foundation, the physicist cannot simply surrender to the philosopher the critical contemplation of the theoretical foundations; for, he himself knows best, and feels more surely where the shoe pinches. <u>In looking for a new foundation, he must try to make clear in his own mind just how far the concepts which he uses are justified, and are necessities</u>*." (Einstein 1936, 349)

The physicist according to Einstein should "*<u>try to make clear in his own mind just how far the concepts which he uses are justified, and are necessities</u>*."

e) Late in 1944, Albert Einstein received a letter from Robert Thornton, a young African-American philosopher of science who

had just finished his Ph.D. under Herbert Feigl at Minnesota and was beginning a new job teaching physics at the University of Puerto Rico, Mayaguez. He had written to solicit from Einstein a few supportive words on behalf of his efforts to introduce "as much of the philosophy of science as possible" into the modern physics course that he was to teach the following spring (Thornton to Einstein, 28 November 1944, EA 61–573).[1] Here is what Einstein offered in reply: "*I fully agree with you about the significance and educational value of methodology as well as history and philosophy of science. So many people today—and even professional scientists—seem to me like somebody who has seen thousands of trees but has never seen a forest. A knowledge of the historic and philosophical background gives that kind of independence from prejudices of his generation from which most scientists are suffering. This independence created by philosophical insight is—in my opinion—the mark of distinction between a mere artisan or specialist and a real seeker after truth.*" (Einstein to Thornton, 7 December 1944, EA 61-574)

Einstein here complains about the way scientists (and he means physicists) have become dogmatic and prejudiced with their own beliefs not wanting to see alternatives.

All the above shows the concerns of Einstein regarding the future of science. Unfortunately, the majority of physicists dealing with relativity are suffering from

all the illnesses that were described above. They have actually forbidden deep space travel and made humanity earth-bound or bound to the solar system. What I shall do in the following is to liberate human-kind from earth into deep space.

4. Facts

Here are a few facts:

Fact 1: Light travels at a constant speed of $3x10^8$ m/s in vacuum **relative to the outside observer.**

Fact 2: Special Relativity is theoretically true for the **outside observer,** taking the limitations put up by Einstein into consideration especially $\boldsymbol{v} <<< \boldsymbol{c}$. This includes all its parameters such as time dilation and length shortening with velocity, **relative to the outside observer**.

Fact 3: The universe is there to be explored, not just remotely, but by going there.

Fact 4: The limit on speed, put by Einstein as the speed of light as seen by **an outside observer**, and called the cosmic speed, was deduced by a mistaken

interpretation of the basic equations of the special relativity (SR) and did lead to a halt in more serious studies of beyond-speed-of-light (BSOL) transport which is necessary if mankind has to explore the universe physically.

Let us see what Einstein himself says in [1] in his own words: " *From this we conclude that in the theory of relativity the velocity* ***c*** *plays the part of a limiting velocity, which can never be reached nor exceeded by any real body. Of course this feature of the velocity* ***c*** *also clearly follows from the equations of the Lorentz transformation, for these become* ***meaningless*** *if we choose values of* ***v*** *greater than* ***c****."*

Here the word "*meaningless*" is actually not adequate as shown below. Thus Einstein contradicts his own basic assumption of $\boldsymbol{v} <<< \boldsymbol{c}$.

The deduction that "*c can never be reached nor exceeded by any real body*" is not explained.

Also when Einstein talks about "*the kinetic energy of a material point of mass m being equal to* $\frac{mc^2}{\sqrt{1-\frac{v^2}{c^2}}}$. *This expression approaches infinity as the velocity v approaches the velocity of light c. The velocity must therefore always remain less than c."*

Again Einstein contradicts his own assumption of $\boldsymbol{v} <<< \boldsymbol{c}$.

Here again the deduction is not correct. He is talking exactly about apparent (relativistic kinetic) mass seen by the **outside observer**, which has nothing to do with the (rest) mass seen by the traveler inside the vehicle.

All these conclusions are physically wrong even according to the principle of Special Relativity (SR).

In the first instance, Einstein took the velocity of light ***c*** as a reference speed to relate all speeds to it. Consequently all Special Relativity phenomena had to relate to it. The constancy of the speed of light irrespective of the speed of the source was an assumption by Einstein. It was never proven. This assumption resulted from the then prevalent idea that, human speeds will always be much less the speed of light. Einstein stressed that $\boldsymbol{v} <<< \boldsymbol{c}$ always.

But why take ***c*** as a reference? Simple was using the human eye to watch events and the eye only detects light.

Now let us suggest that, Einstein could have taken any arbitrary speed $\boldsymbol{S} >>> \boldsymbol{c}$ as a reference. Then he would have said: "*that in the theory of relativity the velocity* ***S*** *plays the part of a limiting velocity, which can never be reached nor exceeded by any real body.*"

But again as will be shown, no matter what the reference speed is, nothing forbids us from traveling above that.

The expressions for time elongation, shortening of length and increase in mass are for what an outside observer sees looking at a moving body. These phenomena are apparent only to the outside observer. As for the person riding in the moving vehicle, none of the quantities of time, length nor mass will change.

Special Relativity (SR) considered, that as the quantity $\sqrt{1-\frac{v^2}{c^2}}$ **goes imaginary mathematically, when** $v > c$**, then that is an indication that it is physically impossible and the velocity** c **hence shall play the role of a limiting universal velocity. While in actual fact the imaginary number can be physically explained as going into another aspect or realm of matter; invisibility by the earth-bound outside observer, time warping (TW), where the laws of special relativity (SR) are applicable in a speed vector normal (or orthogonal) to the below- speed-of-light (BSOL) speed vector.**

Fact 5: Special relativity dictates that as an object moves faster, its relativistic (kinetic) mass increases, but faster here, is measured relative to an observer who is also measuring the mass. If the person measuring the mass is moving along with the object, this observer will not observe any change of mass. Therefore, the increase of mass is an only **apparent increase to the observer from outside,** not a real increase.

Fact 6: From the equation of time elongation:

$$t_1^{'} = \frac{t}{\sqrt{1-\frac{v^2}{c^2}}}, \qquad (1)$$

It is clear that as *v* approaches *c*, $t^{'}_1$ tends to infinity. At $v = c$, for the **outside observer** the clock inside the vehicle will seem to have stopped, while it is still working normally inside the vehicle. The length of the vehicle will seem to be zero for the **outside observer**, which makes the vehicle invisible relative to the outside observer. At the same moment the relativistic mass and its energy will seem to be infinite relative **to the outside observer**.

When ***v*** > ***c***, $t_1^{'}$ becomes an imaginary number to the **outside observer**. Physically that does not mean that *v* cannot exceed the value of *c*, but that the outside observer cannot measure $t_1^{'}$ anymore. Imaginary numbers and complex numbers are extensively used not to show impossibility, but to indicate a different physical aspect. Applying this to our case it can be readily seen that crossing the speed of light barrier can be possible and cannot be denied just because the **outside observer** does not see the object traveling at *v* > *c*.

The same logic can be applied to the law of shortening the length:

$$L^{'} = L\sqrt{1-\frac{v^2}{c^2}} \qquad (2)$$

Here, at $v = c$, the vehicle length will seem to be zero to the **outside observer** which makes the vehicle invisible to the **outside observer**, but inside the vehicle

all is as usual. At $v > c$, L' will seem to be imaginary to the **outside observer** and he cannot see the vehicle.

Again the same logic can be applied to the change of relativistic (kinetic) mass with respect to the **outside observer** for $v = c$ and $v > c$.

Fact 7: That being the case, and taking as an example this last relationship (2), we can write for $v > c$:

$$L' = L\sqrt{-(\frac{v^2}{c^2} - 1)} = jL\sqrt{\frac{v^2}{c^2} - 1} \qquad (3)$$

Here we see that as v increases, L' also increases. This is the reverse of the case for when $v < c$. This reversal in results applies to time elongation t'

$$t' = -j\frac{t}{\sqrt{v^2/c^2 - 1}} \qquad (4)$$

and to the relativistic mass.

5. Results from facts

The above facts lead us to the following results:

Conclusion 1: An object, per se (i.e. irrespective of what an **outside observer** will see), can move at any speed it can attain without any changes to its physical properties in mass, size….etc.

Conclusion 2: There is nothing in special relativity (SR) that forbids traveling at speeds faster than the speed of light (BSOL), except that as the object approaches the speed of light, an **outside observer** will observe that its relativistic (kinetic) mass is increasing and approaching infinity and its length is decreasing and approaching zero. All that is only **apparent** to the **outside observer**. But the object, per se, is the same and nothing will have happened to it.

As the object trespasses the speed of light, for **the outside observer** in his frame of reference, the object will disappear from his vision.

Fact 8: Increasing the speed of an object needs energy and the amount of *apparent relativistic* energy required to reach the speed of light is infinite. This is only true if we neglect the basis on which SR was built and that is, $\boldsymbol{v}$ is always much less than $\boldsymbol{c}$ ($\boldsymbol{v} <<< \boldsymbol{c}$). But if we consider a reference speed for the Lorentz transforms much higher than $\boldsymbol{c}$, then fact 8 is not true.

Conclusion 3: In order to travel at speeds above the speed of light (BSOL) in cosmos, scientist and engineers should look for:

a) Low cost very high energy sources.

b) Ways to counteract the effects of gravity. Physicists must concentrate on discovering the nature and secrets of gravity, other than those stated in the General Relativity Theory (GRT) to lead to ideas to counter gravity. BSOL does need materials with gravitational repulsive properties.

Final Conclusion

The above proves that mass can move at a speed higher than the speed of light (BSOL) with respect to an outside observer's frame of reference. This is a big step forward for the future real travel in cosmos. Very interesting results are obtained for when $v > c$ when looking at the basic equations of special relativity (SR), or when changing the reference speed to an arbitrary value $S >>> c$.

A final question comes to mind after proving the feasibility of BSOL travel, and I address it to physicists, cosmologists and astronomers; as matter can move BSOL, couldn't there be cosmic bodies in the universe moving BSOL relative to us (the outside observers) but we do not see them? Shouldn't we try to hypothesize their existence and find ways of detecting them.

7. Extreme Conclusion

From the above discussion we can very easily start a new way of thinking, which comes as a natural result.

Special relativity is based on what Einstein himself calls a "theory".

A theory by definition is "*an idea or set of ideas that is intended to explain facts or events.*" Or "*an idea that is suggested or presented as possibly true but that is not known or proven to be true.*" And that is what Einstein meant in his own words.

Consequently SR was a mental mathematical exercise based on several assumptions done by Einstein namely: the constancy of the speed of light with respect to any observer irrespective of the velocity of the carrier of the light source. He called this assumption a postulate which by definition is: "*a thing suggested or assumed to be true as the basis of reasoning, discussion or belief*." Which I understand is as a tool for further thinking. The second assumption of Einstein for writing his theory was that $\boldsymbol{v} <<<< \boldsymbol{c}$. That means that he never intended it for speeds near or above the speed of light.

That result gives the option of superluminal speeds some credibility.

The result of SR about time dilation has never been proven experimentally and can never be proven. As mentioned above the Hafele-Keating results were wrongly interpreted. The same applies to all other experiments.

As for the GPS being a proof of SR, the people who built the GPS did not do that based on SR. It was a pure engineering project for measuring the time difference between two signals following two different trajectories and has nothing to do with SR. The big delusion of the TWIN PARADOX indicates an unnatural way of

thinking where everybody forgot to say that the space ship returning to earth stopped and there was no time dilation.

Time dilation with respect to the outside observer can exist only when there is a relative movement. This has never been experimentally proven. The same result applies to length contraction and to the increase of inertial mass.

Am I saying that SR is wrong? No, not if we take the assumptions and postulates made by Einstein. And yes, if we want a generalized true Special Relativity. We should also, take into consideration all his remarks about scientific thinking. Otherwise we shall be doing a grave injustice which will and is affecting many branches of science and engineering. An example is what was written by an astronomer that we are bound in our space exploration to the solar system. This is a result of badly understanding of the SR and Einstein's thoughts about science.

Richard Feynman has a correct statement: "The test of all knowledge is experiment. Experiment is the sole judge of scientific "truth"." Einstein arrived at his theory of special relativity by guessing that the speed of light is constant in all inertial frames. Actually it was not a guess but an assumption. He did not prove it with mathematics. It would be impossible.

As a final result of this study, we can easily write that the Special Theory of Relativity of Einstein cannot contend to any influence on pushing science and technology forward or on a better understanding of nature.

This result is true and final and cannot be proven otherwise.

Fans of SR unfortunately, with their misunderstanding of the theory, slowed down the progress of science by declaring the sanctity of that understanding. They refuse to allow serious research into the subject. They are able to do all that harm by taking control over universities, research centers and scientific publications such as the Royal Society.

By their actions, they declare that SR is sacrosanct and discussing it is the biggest scientific sin and is a taboo.

In science nothing must be distanced from scientific scrutiny and criticism. Had there been such a censorship at Newton's time, the Royal Society would not have published for him.

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Biography

Omar A. H. Shabsigh received the BSEE in telecommunications engineering in 1958 from Alexandria University, Egypt and the PhD from the Academy of Telecommunications in St. Petersburg, Russia in 1977. He is professor of telecommunication at the University of Damascus since 1965 and a telecommunications and computing consultant since 1985. He is a member of the Arab Scientific Academy in Damascus. He is a life member in the IEEE. He has 41 books and tens of articles published.