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Everything About Einstein's Relativity Theory

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This research paper discusses the validity of Einstein's relativity theory. It took four years of intensive work to reach the final conclusions. All assumptions of Einstein and his mathematics (where it exists) will be reviewed. Experiments done to show the validity will be restudied then we shall show their correctness under the constraints and conditions made by Einstein and show their practical and scientific value. We shall also show how much is the truthfulness of general relativity.

Part I. Special Relativity Theory (SR)

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 deep space. Billions of dollars were spent on such programs and are 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, and by that I mean beyond the solar system which should lead to contacts with them.

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:

- **The impossibility of communicating at speeds beyond the speed of light using electromagnetic waves.**
- **The wrong belief of a limit of light speed on mass movement.**

2. General considerations:

a) References: This paper discusses many viewpoints about SR. We start discussing some pertinent to us references as follows:

- **Pushing physics to its limits has always been and will always be a source of advance for science in general [1], and one must 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 the exploration of the universe, i.e. through all kinds of telescopes and space sensors or through sending manned or unmanned space missions, 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 quote should tell us a lot of what can be done to extend the special relativity.

- Hill and Cox [6] 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 nor on what basis did they do that. They invented new transformations while the Lorentz transformations used by Einstein are quite adequate for the purpose he used them for, as we shall show.
- Dai and Li [5] state that superluminal particles should have imaginary rest mass. This is not correct, as we shall prove later.
- In [6] the authors try to say that the Lorentz transformations are inadequate for Beyond Speed Of Light (BSOL) movement, which we shall show to be untrue. [8] Tries to restrict BSOL movement to special-type theoretical cases. In contrast with [9], we shall stick to the Lorentz transformations.

b) The problem of the speed of light:

Looking at this problem, a 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”. That term means exactly what it says: it is about an independent observer outside the moving object frame of reference. No more, no less.

Light is there which means it could be *perceived* as Einstein said. It could be seen by the human eye, and it could be measured.

Einstein writes about what would happen when $v = c$, in spite of the fact that his theory is built on the assumption that $v \ll c$; look at what he says: “*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 much less.*” 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.

In this research, the possibility of BSOL within Einstein’s theory will be shown to be valid. And on the other hand, if SR is not valid, then there will be no question of restrictions on BSOL.

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.

c) Scrutiny of SR.

Here the Special Relativity Theory (SR) is scrutinized. We try to understand it much better. 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 today's physicists do not adhere but taking only what they understand in their own minds of special relativity. Most of these ideas are part of Einstein's philosophy of science. Unfortunately, he was iterating such ideas but he was not applying them himself to what he called relativity theory. The way of thinking of nowadays followers of Einstein does not match with what Einstein understood about science in general. 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.

- 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 and which 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. At the same time he wants to say that all his thought experiments both in (SR) and (GR) are not just that but are given realities. Meaning: nobody contradict my SR and GR. That is where sacrosancting Einstein began: from his own self estimation.
- 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. 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." (Einstein 1936, 349), contradicting himself in point c) (Einstein 1933, 5–6) before.

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

- 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. He forgets himself and his advocates of relativity theory.

All the above shows what the concerns of Einstein regarding the future of science were. Unfortunately, the majority of physicists, including himself, 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.

3. Some misconceptions about special relativity (SR)

a) Einstein in his thought experiment about time dilation, started with the assumption of a velocity v immediately upon departure. He came up with the formula for time dilation at that speed. He did not start the journey at $v = 0$ and did not say what is happening while climbing to full speed. Nor did he end the journey by slowing down until the relative velocity $v = 0$. Actually time dilation starts as v increases with respect to the fixed independent outside observer. Time dilation increases with the increase of relative speed. On the other hand when v starts decreasing, the moving clock starts speeding up with respect to the outside observer until the two clocks synchronize with each other at $v = 0$ 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-Keating experiment. The declaration made in the case of the twin paradox 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 as shown above.

- 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.

In the Hafele-Keating experiment results, a big oversight happens. Similar to the mistake committed in the twin paradox, 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.

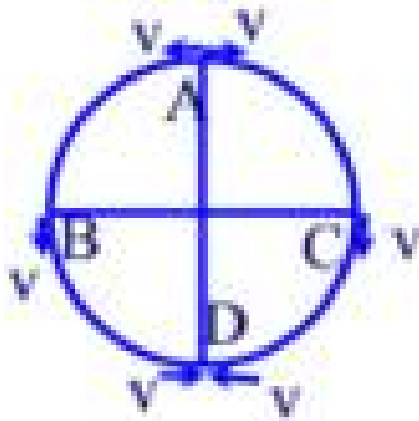


Fig. (1)

Irrespective of the periods of acceleration and deceleration, we shall look at the routes followed. Assuming that the speed of both 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 only when there is a relative movement and disappears when that stops. Therefore, all the deductions made based on this experiment are false. Any discrepancies noticed 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 THEORETICAL 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.

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 his theory by saying that: *“no empirical data had been found which are contradictory to this principle.”*

Yes, this missing empirical data could be a way of proof, but does not cancel the probability of proving the inverse when such data becomes available.

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.”*

Here Einstein jumps to a wrong conclusion by turning his assumptions of relativity to a law and his assumption of the propagation of light to a law.

That is not logically true.

All of this is a logical theory, meaning: mental exercise: if I do one thing, something will result but the first supposition could be wrong, leading to a wrong result. This is logical induction and could be wrong.

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!

4. Discussing SR

- **Special Relativity seems to be theoretically true for the outside observer, taking the limitations put up by Einstein into consideration especially $v \lll c$. This includes all its parameters such as time dilation and length shortening with velocity, relative to the outside observer.**

- The limit on speed of a moving body, 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 in person.

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 $v \lll c$.

The deduction that “ *c can never be reached nor exceeded by any real body*” is not explained except in a non-direct way 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 $v \lll c$, when talking about v approaching 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 moving vehicle.

All these conclusions of Einstein and his followers 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 also 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 $v \lll c$ always. But why take c as a reference? Simple Einstein 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 $S \ggg c$ 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. Irrespective of the contradiction with his assumptions, 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 still applicable in a speed vector normal (or orthogonal) to the below- speed-of-light (BSOL) speed vector.

- 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 alongside 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.

- From the equation of time elongation:

$$t'_1 = \frac{t}{\sqrt{1 - \frac{v^2}{c^2}}}, \quad (1)$$

It is clear that as v approaches c , then (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:

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

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 $v > c$.

Of course as we indicated all these phenomena are theoretical and vanish when the relative speed tends to zero.

5. 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. SR was not known or proven to be true

Consequently SR is a set of ideas i.e. mental mathematical exercise based on several assumptions made 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 as a tool for further thinking and discussion. The second assumption of Einstein for writing his theory was that $v \llll c$. 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 at that moment.

Time dilation with respect to the outside observer can theoretically 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, what I have proven here is that SR is not a scientific theory. Nevertheless and unfortunately it affected and is still affecting scientific thinking in many branches of science and engineering, negatively because it was not taken for what it is: A *SCEINCE FICTION*, and a good one at that. An example is what was written by Sten Odenwald who suggested that we are bound in our space exploration to the solar system.

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 mathematically or experimentally. It would be impossible.

One must also note that Einstein's manuscript of relativity does not contain any references.

As a final result of this study, we can easily write the following: Einstein's Special Theory of Relativity cannot contend to any influence on pushing science and technology forward or on a better understanding of nature. It is based on thought experiments which are extensively used in science fiction. In that sense Einstein is no better than H. G. Wells or Isaac Asimov.

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

Fans of SR unfortunately, slowed down the progress of science by declaring the sanctity of Einstein's good science fiction. 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. THIS IS THE BIGGEST SCIENTIFIC SCANDAL COMMITTED EVER.

Sorry state of affairs in science for over 100 years.

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.

Part II: General Relativity Theory

1. Introduction

Studying SR was easy because of the mathematics that Einstein used even if his deductions were false. The general theory of relativity (GTR) was a totally different problem as we show in the following.

2. General Theory of Relativity (GR) from Einstein

I started with Einstein's text published 1920 [1].

I used the same methodology as I did with SR before, that is to follow the logic of Einstein's text and to try to decipher it through the mathematics he used, i.e. the tools employed by himself to prove what he wanted.

Reading the GR, I was struck with an only text thesis. No mathematics.

Einstein, in his writing uses a sarcastic humorous style, which has nothing to do with science. An example is what he writes on page 19 where he says: "*Every child at school knows or believed he knows that this propagation takes place in straight lines with a velocity equal to 300,000 km/s.*" He uses the same style in GR.

The following are examples of Einstein's un-explained, un-proven statements:

- On page 56 we can find the following phrase: *“The mechanical behavior is different from that of the case previously considered, and for this reason it would appear to be impossible that the same mechanical laws hold relatively to the non-uniformly moving carriage, as hold with reference to the carriage when at rest or in uniform motion.”* How did he come to the conclusion that *“it would appear to be impossible”*? And is that a way of scientific writing?
- The next sentence on the same page states: *“At all events it is clear that the Galilean law does not hold with respect to the non-uniformly moving carriage.”* How did he reach the conclusion of *“ ... the Galilean law does not hold ... ”*?
- On page 57 in the statement: *“The body (e.g. the earth) produces a field in its immediate neighborhood directly; the intensity and direction of the field at points farther removed from the body are thence determined by the law which governs the properties in space of the gravitational fields themselves.”* All of a sudden, without any proof he textually jumps to law of gravitational fields without saying what it is.
- On page 61, Einstein again jumps sarcastically to logical conclusions without proof: *“Ought we to smile at the man and say that he errs in his conclusion? I do not believe we ought to if we wish to remain consistent; we must rather admit that his mode of grasping the situation violates neither reason nor known mechanical laws. Even though it is being accelerated with respect to the (Galilean space) first considered, we can nevertheless regard the chest as being at rest. We have thus good grounds for extending the principle of relativity to include bodies of reference which are accelerated with respect to each other, and as a result we have gained a powerful argument for a generalized postulate of relativity. We must note carefully that the possibility of this mode of interpretation rests on the fundamental property of the gravitational field of giving all bodies the same acceleration, or, what comes to the same thing, on the law of the equality of inertial and gravitational mass. If this natural law did not exist, the man in the accelerated chest would not be able to interpret the behavior of the bodies around him on the supposition of a gravitational field, and he would not be justified on the grounds of experience in supposing his reference-body to be “at rest.””* Here he starts making funny psychological remarks: *Ought we to smile at the man and say that he errs in his conclusion?* Is this science or logic or what? Such language is not used even in modern philosophy texts.
- On page 63 we note: *“But no person whose mode of thought is logical can rest satisfied with this condition of things. He asks: “How does it come that certain reference-bodies (or their states of motion) are given priority over other reference-bodies (or their states of motion)? What is the reason for this*

Preference?” Here Einstein reverts to a psychological method he started in his SR, that is belittling others who might not agree with him “*But no person whose mode of thought is logical ...*” which to me means, that he who does not agree with what Einstein says is not logical, logic is only with him. Has anybody seen a science, based on calling names? What is the mathematical basis for what he claims? We shall come to that later in the context.

- In the second half of page 65, Einstein wants to prove the path of a body with respect to an accelerated reference body K^1 to be curvilinear, and even tries to prove that the path of light is the same. He does not prove anything. He just writes a composition. What Einstein is claiming is only apparent from K^1 but for K it is still rectilinear, i.e. not really curvilinear.
- On page 66, Einstein gives a figure of 1.7 seconds of arc for the curvature of light grazing the sun. He does not deign to give a reference. Besides, I would like to know how such a small amount of curvature of light was measured at Einstein’s time. His expression: “*The examination of the correctness or otherwise of this deduction is a problem of the greatest importance, the early solution of which is to be expected of astronomers.*” cannot be understood as he says that it is a problem, why?
- Again on page 66, Einstein retracts from his SR about the constancy of speed of light and starts claiming that SR has limitations of validity. “*We can only conclude that the special theory of relativity cannot claim an unlimited domain of validity.*”
- Einstein again uses personal humor and self aggrandizement improving science as he does on page 69 “*I would mention at the outset, that this matter lays no small claims on the patience and on the power of abstraction of the reader.*”
- At the end of page 69 and on page 70, he writes: “*Nevertheless, the space-distribution of this gravitational field is of a kind that would not be possible on Newton's theory of gravitation. But since the observer believes in the general theory of relativity, this does not disturb him; he is quite in the right when he believes that a general law of gravitation can be formulated- a law which not only explains the motion of the stars correctly, but also the field of force experienced by himself.*” All of a sudden, Einstein here is jumping to the motion of stars without any announcement of what he wants to prove and he does not prove anything.
- On page 70, he writes about the circular disk and analyzes the time dilation, committing a grave error: “*According to a result obtained in Section 12, it follows that the latter clock goes at a rate permanently slower than that of the clock at the centre of the circular disc, i.e. as observed from K.*” As explained in

fig (1) the clock in the perimeter of the disk will not always be slower than the clock at the centre of the disk with respect to an outside observer. The first clock will have zero relative velocity with respect to the outside observer in two positions of the rotating disk namely when it is moving in a perpendicular direction to the outside observer, hence no slowing in clock then.

- On page 71, Einstein deducts that there is no straight line without any proof: *"Hence the idea of a straight line also loses its meaning."*
- On page 72, Einstein refers again to qualitative description that we cannot understand: *"It is a veritable wonder that we can carry out this business without getting into the greatest difficulties."* Why the difficulty? What difficulties?
- Einstein goes on giving results without proof as in: *"These clocks satisfy only the one condition, that the "readings" which are observed simultaneously on adjacent clocks (in space) differ from each other by an indefinitely small amount."* and in: *"The general principle of relativity requires that all these mollusks can be used as reference-bodies with equal right and equal success in the formulation of the general laws of nature; the laws themselves must be quite independent of the choice of mollusk."* on page 84.
- On page 86, he does not write the simple mathematical transformation he mentions: *"We learn the behavior of measuring-rods and clocks and also of freely-moving material points with reference to K^1 simply by mathematical transformation."*
- On page 87, he talks about the theory of gravity without stating what it is, and in the same paragraph he states that: *"The theory of gravitation derived in this way from the general postulate of relativity excels not only in its beauty ; nor in removing the defect attaching to classical mechanics which was brought to light in Section 21; nor in interpreting the empirical law of the equality of inertial and gravitational mass ; but it has also already explained a result of observation in astronomy, against which classical mechanics is powerless."* but never mentions what it is.
- It would have been useful looking at page 88 to tell the reader how this: *"The value obtained for this rotary movement of the orbital ellipse was 43 seconds of arc per century, an amount ensured to be correct to within a few seconds of arc."* was measured at Einstein's time.

Finally, GR wants us to understand that the diffraction of light when passing at the edge of the sun is a proof that light is bent due to the attraction of the gravity of the sun. Diffraction of light and electromagnetic waves in general is well known since before the GTR and is not due to gravity. The same applies to Fresnel zones.

3. Search for Truth

Having gone through both SR and GR in [1] and not finding any mathematical tools for the GR as was done by Einstein for the SR, I had to find some mathematical foundations for the GR that Einstein himself used.

After a long search, nothing satisfactory came out. I discovered a web site where supposedly physicists exchange ideas. I wrote to them the following message: “I need a person who can show me where to find the Relativity Theorem of Einstein not as a descriptive text as he wrote it for us but as a full-fledged scientific text with all the pertinent mathematics. PLEASE. I have been looking for that on the web for sometime to no avail.” A few minutes later, I was in shock. The first answer was: “Good question. I believe you will never find one for the simple reason that it does not exist.” !!!

Other message followed telling me about the suffering of Einstein and advising me to read documents not written by Einstein but his disciples such as: *“Einstein's road to General Relativity was a long and tortuous one, The starting point would have to be the book “Subtle is the Lord”, by Abraham Pais Next, I would recommend “The Genesis of General Relativity” and “If you have the mathematical background, try the first three chapters of Hawking and Ellis, _”The large scale structure of space-time”_, or the first four chapters of Wald, _”General Relativity”_. I like Carroll, _”Spacetime and Geometry”_, but if that's too advanced, try Hartle, _ “Gravity: An Introduction to Einstein's General Relativity”. Also and most importantly “I recommend: Misner, Thorne, and Wheeler, _”Gravitation”.*

To justify the absence of proof by Einstein, another wrote: *“For ancient manuscripts such as the writings of Einstein, this is KNOWN to be a rather bad idea. That's because such manuscripts were written in a different cultural context, and the meanings of many important words have changed since then. It requires a MAJOR effort to understand their context before Einstein's original papers become understandable. It's also true that he made some mistakes, and we NOW know why. It is MUCH better to get a good, modern textbook on the subject. Its author(s) will have handled the cultural context for you.”* What a silly answer! Does he mean that Einstein wrote in German a text that people cannot understand now? Or that text was translated to an English that cannot be understood now? Does this person think people are fools? Here I have the two texts in front of me and they are very clear.

4. Discussion of the Search for Truth

1. The first impression is that Einstein just put his thoughts and imagination about gravity and warping of space-time in text form. He did not give any

mathematical justification for his fantasies. I have to call the GR a fantasy because it has no mathematical support and, as we saw from the so-called experimental results, that they were wrongly explained.

2. A big question arises, a question that we should all ask ourselves. Why did scientists since 1916 try to find mathematical justification for thoughts that had no such background in Einstein's mind? I would like this phenomenon to be discussed by sociologists and psychologists. Was what I shall call an infatuation with the work of a bright young scientist in 1905 and later in 1916 a result of the Berlin years at the time and what prevailed there? Or was all that because of some sinister reason that we do not know? Can't we try to find the truth about the whole thing from his unproductive years at Princeton University which resulted in nothing, not even teaching.
3. As a result of this infatuation, the physics institution turned into an authoritarian dictatorship that uses Middle Ages Inquisition Court tactics to forbid the dissemination of any science and knowledge that does not agree with their understanding of Einstein's work, thus hindering, as much as they can scientific and technological progress for the past 100 years. Why?? We must thank NASA and other similar institution for not being taken prisoners by the pro-relativity institution.
4. Nothing in science can be excluded from criticism. In our case, all scientific institutions dealing with physics forbid any questioning of the principles and results of SR and GR. This includes all universities, research centers and prestigious societies such as the American Physical Society, the Royal Society and others. This is a sorry state of affairs and should end. I call for an international conference of pro and against the theory of relativity (TR) to discuss and decide to lift the ban on free publication about it. In this conference the pro-Einstein scientists should accept a real, open and scientific dialog. Professors of relativity, when teaching it to freshman classes frighten their students by telling them how difficult it is and how genius was Einstein. So accept it without discussion. You have to take good grades in physics.

5. Conclusion

1. As mentioned in Part I in which we proved that SR was a thought and mathematical exercise valid within the impractical restrictions Einstein himself put. The result was that super-luminal movement of matter is possible.
2. In the case of the GR, we have proved that it is based on fantasies by Einstein without any proof. His disciples reach the point of believing his fantasies and trying to justify his ideas by adapting some mathematics to his ideas. They failed. The result is that GR has nothing to do with real science and should be taken out from the curricula of physics in universities and research institutions and for the scientific media to stop supporting it. It can remain in the curriculum of philosophy courses as an example of failed philosophy. Or it can be part of science fiction studies in departments of arts at universities.

3. **Had the theory of relativity (TR) been a really scientific achievement that has the extremely great importance attributed to it and to the great genius of all time Einstein, he would have been awarded the Nobel Prize for each of the SR and GR. So how come then that these two achievements became sacrosanct, untouchable?**
4. **The grand total result of this current research is that Einstein and others laughed at the whole world. See his unproductive Princeton years of preceptorial classes.**

Keywords:

- **Special Relativity: SR**
- **Beyond Speed of Light: BSOL**
- **Independent Outside Observer**
- **Assumption**
- **Postulate**
- **Thought Experiment**
- **General Relativity: GR**
- **Science Fiction**

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Biography

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