Research Article

The Necessity for Fair Evaluation of Objective Criticism of Physical Theories

Robert J. Buenker*

Fachbereich C-Mathematik und Naturwissenschaften, Bergische Universität Wuppertal, Gaussstr, Germany

*****Corresponding Author**
Robert J. Buenker, Fachbereich C-Mathematik und Naturwissenschaften, Bergische Universität Wuppertal, Gaussstr, Germany.

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Abstract
There are many ways to prove that Einstein's Special Theory of Relativity (SR) is not valid. For example, the mixing of space and time coordinates predicted by the Lorentz Transformation (LT) is not consistent with the Law of Causality. Moreover, the combination of the FitzGerald-Lorentz length contraction of objects in motion and the corresponding time dilation of moving clocks derived from the LT is not compatible with Einstein's equal light-speed postulate of SR. The way in which different journals have reacted when presented with manuscripts that deal with these problems with SR is the subject of the present discussion. Some journals simply have promptly forwarded such manuscripts to referees and thereupon published them, but one of them has rejected the same papers without the benefit of outside advice. The possible reason for this distinctive behavior is analyzed and attributed to the reluctance of some mainstream journals to admit that their previously unqualified support for Einstein's theory is not justified by the facts.

Keywords: Lorentz Transformation (LT), Law of Causality, Newton-Voigt Transformation (NVT), Time Dilation (TD), Lorentz-FitzGerald Length Contraction (FLC), Uniform Scaling Method.

1. Introduction
Physics is a very conservative enterprise. Once a theory is widely accepted by the physics community, there is an understandable tendency on the part of its journals to resist publishing claims against the theory which have no objective basis. There is a serious potential consequence for this attitude of the journals when the theory is actually in need of serious revision, however. It might ultimately preclude the publication of the necessary information which not only proves that the present version of the theory is invalid, but also provides a suitable alternative in which the problems that have been uncovered are removed in a thoroughly objective manner.

A prime example of a physical theory which has attained wide acceptance by the physics community is Einstein's Special Theory of Relativity (SR) which he introduced in his landmark paper of 1905 [1]. Its predictions are treated with the same level of confidence as the results of actual experiments. There have been numerous applications of SR over the past century which have been found to be in agreement with experiment. This includes applications of the mass-energy equivalence ($E=mc^2$) relation, for example. One can also point to the results of the collisions of elementary particles as another such example [2].

It needs to be pointed out, however, that confirmations of a theory do not constitute proof of its validity. On the other hand, when a premise leads to a contradiction, there is no question that the theory is not completely valid and is need of substantial revision. Such a case is provided by the "Clock Riddle. [3,4]." It demonstrates that the SR predictions of FitzGerald-Lorentz length contraction and time dilation are incompatible with its equality-of-light-speed postulate [1,5]. The problems with SR in general can be traced to the fact that the Lorentz Transformation (LT), on which many of its predictions are based, is invalid [6,7].

This state of affairs has not filtered down to the physics departments of colleges and universities world-wide, however, despite the fact that numerous peer-reviewed journals also have publications supporting this view [8-14]. Why this is so and how it can be corrected is discussed below.

2. The Law of Causality and Physical Review Letters
It is a remarkable fact of history that Einstein ignored the Law of Causality in his deliberations to lay the theoretical groundwork for SR [1]. By contrast, it was instrumental in Newton's thought process that he used to arrive at his First Law of Motionb. Accordingly, an object must travel along a straight line at the same speed indefinitely as long as it is not influenced by an unbalanced external force. The same theoretical approach can also be used to make predictions regarding the properties of the object.

This consideration has an important consequence for the rate of a clock which is not subject to an external force, namely it should also remain constant indefinitely under this circumstance. The rates of two such "inertial" clocks must necessarily have a constant ratio, which in turn means that when they are used to measure the elapsed time for the same event, the two values must always occur in the same ratio. The relationship between the two values can thus be expressed by means of the following proportionality: $\Delta t'=\Delta t/Q$, where Q is the rate ratio.

The LT [1] by contrast is characterized by "space-time mixing," specifically through the equation:
$\Delta t' = \gamma(\Delta t - vc^{-2}\Delta x)$ [v is the relative speed of the two rest frames, Δx is the distance separating the two objects, $c = 299792458$ ms^{-1} is the speed of light in free space, $\gamma(v) = (1-v^2c^{-2})^{-0.5}$ and $\eta = (1-vc^{-2}\Delta x/\Delta t)^{-1}$]. As a consequence, it is evident that the LT does not obey the Law of Causality.

It is possible to obtain a space-time transformation which obeys the Law of Causality by multiplying each of the LT equations on the right-hand side by $(\eta/\gamma Q)$, with the result shown below:

$\Delta t' = (\eta/\gamma Q) \gamma \eta^{-1} \Delta t = \Delta t/Q$
$\Delta x' = (\eta/\gamma Q) \gamma (\Delta x - v\Delta t)= \eta (\Delta x - v\Delta t)/Q$
$\Delta y' = (\eta/\gamma Q) \Delta y$
$\Delta z' = (\eta/\gamma Q) \Delta z$.

It is referred to as the Newton-Voigt Transformation [15]. It is consistent with both of the SR postulates (Galileo's Relativity Principle and the equality of light speed condition) but, unlike the LT, it also obeys the Law of Causality. Its first equation is the proportionality between measured times mentioned above. The latter is referred to as Newtonian Simultaneity to emphasize that it requires that events which occur simultaneously for one observer ($\Delta t'=0$) are also simultaneous in the other rest frame ($\Delta t=0$). This is consistent with the view of Newton and contemporaries that all events throughout the universe occur at the same time for every observer. The LT predicts on the contrary that two events which are simultaneous in one rest frame ($\Delta t'=0$) may not be so in another ($\Delta t'\neq0$).

The methodology of the Global Positioning System requires that an atomic clock located in the rest frame of a satellite must run at the same rate as its counterpart on the ground [16-18]. This condition would clearly make no sense if events did not occur simultaneously for both rest frames, so the successful operation of the GPS navigation serves as everyday confirmation for Newtonian Simultaneity.

The above results were described in a manuscript which was then submitted for publication to Physics Review Letters. The following reply from the editors was received less than 48 hours later:

"We have examined your manuscript. From our understanding of the paper's context, motivation, presentation, level of argumentation, and degree of importance and interest to physics research, we conclude that your paper is not suited for Physical Review Letters. In view of our assessment, we are not sending your manuscript out for review."

The identical manuscript was then submitted to the East African Scholars Journal of Engineering and Computing Science. A reply was received a day later in which the editors agreed to submit the manuscript for review. After a short time, the editors replied that the manuscript had received a positive assessment and was recommended for publication in its present form; the reference has already been given in the Introduction as Ref. 5.

The contrast between the ways in which the manuscript was treated by the two journals is truly striking. In the one case it was promptly decided to have the manuscript sent to referees for their evaluation. It was then reported a short time later that the response of the referees was positive and the manuscript was eventually published without change. In the other case (PRL) it was just as promptly decided not to send the manuscript out for review. In the accompanying message shown above, it was claimed that the editors had examined it, but there is no indication that details of the manuscript mentioned in its keywords were actually considered. The message reads like a "form letter" that could be applied to any manuscript regardless of its content. It is probably reserved for any text that the editors choose not to deal with. They talk about their "understanding" of the manuscript, which implies that they were none too sure about what it was all about. The claim that it is not important is not backed up with any details, also that it would not be interesting to its readership. Their readers would very much be interested to hear that the LT is not valid if the claim was supported by logical argumentation, and for this purpose the evaluation of referees would prove most valuable. The context of the manuscript is clearly that the LT and SR are not valid components of relativity theory, again something which would be of great interest to the readers if true. The experience with the EASJ referees speaks clearly to the fact that there is no error in presentation, and similar evaluations were obtained for related papers mentioned in the Introduction [8-14].

3. Problems with the Lorentz Transformation
There are many ways to prove that the LT is not a valid component of relativity. Two of them have already been mentioned, namely the Clock Riddle and the fact that the LT violates the Law of Causality [3-5, 19]. A summary of these results was prepared and the manuscript was again submitted to PRL. The reply from the editors came just s swiftly as before and is quoted below:

"Re: LH18210

Many flaws of the Lorentz transformation by Robert J. Buenker

Dear Dr. Buenker, Your manuscript has been considered. We regret to inform you that we have concluded that it is not suitable for publication in Physical Review Letters.

Yours sincerely,
Stojan Rebic, Ph.D.
Senior Associate Editor
Physical Review Letters"
This time it is only said that the manuscript is not suited for

publication in PRL.

No indication is given as to why this is the case. Normally a journal will deny consideration of a manuscript if it falls out of the range of its interest. That can hardly be used as a justification in this case since SR and the LT clearly are subjects of general interest to the physic community to which PRL is dedicated to serve. Another reason is if the manuscript deals with a subject that is not of interest to the journal's readers. That is clearly not the case here as well since the claim that Einstein's SR is not a valid theory is undoubtedly not a trivial matter.

As before, the identical manuscript was then submitted to the East African Scholars Journal of Engineering and Computing Science. Again their editors quickly agreed to send the manuscript out for review. A short time thereafter, it was accepted and published without change as Ref. 20.

4. Discussion and Outlook

It might appear that the foregoing discussion is simply a disagreement between different journals over what they want to publish, but the stakes are much higher than this. The question at issue is whether the LT, and Einstein's SR more broadly, are viable physical theories. Logically credible proofs have been presented which speak to the conclusion that a revision to SR is absolutely necessary. Physical Review Letters does not claim that anything is wrong with these proofs. It simply refuses to consider them. This is a situation which needs to be resolved.

It needs to be clearly recognized why PRL and other "establishment" journals are unwilling to engage in any such discussion. For more than a century they have taken the position that SR is dogma and can be assumed to have the same level of credibility as the confirmed results of experimental investigations. It is therefore completely understandable that they are reluctant to be a party to what amounts to the overturning of a considerable portion of Einstein's theory. Such a development would be unquestionably damaging to their reputation as a reliable guide that can be counted on to always provide correct information to the physics community.

Students need to be given the opportunity to see that many of the SR predictions are unphysical, for example, that two identical clocks can both be running slower than one another at the same time; or that two lightning strikes on a train that are simultaneous for an observer on the station platform without also being simultaneous for someone riding on the train. Alternative predictions are provided when the NVT replaces the LT and the objectivity of the Uniform Scaling method is implemented on a general basis. They will probably never be given this chance so long as the establishment physics journals continue to abide by their unswerving reluctance to truly "examine" criticism of Einstein's theory.

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