

General Relativity For Teletubbies

[Sir Kevin Aylward B.Sc., Warden of the Kings Ale](#)

Axioms, Clocks & Relativity

“A clock always reads the correct time, and time is what a clock reads”

Ahhmmmm.....

[Back to the Contents section](#)

Overview

Does QFT give a qualitative account of the failure of the MMX to detect motion through an alleged Aether generated reference frame, and thus account for the results of SR, notwithstanding the two fundamental postulates of SR?

Can SR be regarded as as a theory in a conventional sense, in the knowledge that the two postulates of SR cannot be verified independently of each other, thus forming a circular system.

Introduction

Special Relativity has its fair share of distractors, although by few in the established environment. However, it is clear that the fundamental *results* of SR, that is, the Lorentz Transformation (LT) agree with observations extremely well, with no known disagreements. Thus, there is no reasonable doubt that the LT is an accurate description of observations.

The question posed here is, if one examines the facts *as known today*, is the *theory* of SR correct, that is, *are the axioms of SR correct*, notwithstanding that the results agree with all the empirical evidence? That is, was it justified in rejecting the *essence* of The Lorentz Ether Theory (LET), which has identical predictions, in light of today's knowledge, specifically QFT.

This point is addressed in this paper [Fields&Aether](#), however, the following expands on that view.

A further fundamental point also arises that, as "time" in special relativity, is defined as "what a clock reads", and that SR *requires* that a "clock always reads the correct time", a circular argument is formed, with the logical conclusion that SR cannot be a theory in a conventional sense at all.

Axioms & Reality

SR makes definitions that are mathematically consistent. However, SR is *fundamentally* based on the *axiom* that clocks *always* read the correct *same* time, *independent of velocity profile*. SR does this, *whilst being completely ignorant of what time physically means or is*, other than simply *defining* time, as what a clock reads. This is, clearly, entirely circular.

A clock always reads the correct time, and time is what a clock reads.

This is clearly meaningless, and cannot rationally lead to an explanation of anything.

One should appreciate exactly what a circular argument system actually means. It says that one can have an entirely consistent system, yet it can still be false.

That is, anything at all may be "proved" in a circular system.

https://en.wikipedia.org/wiki/Circular_reasoning

If the clock axiom is false, SR falls apart as a realistic model. That is, one that has a one to one correspondence with the observables that it claims to be modeling. This is true, even if the final results just happens to be correct.

The issue here though, is that when one takes clocks on round trips *they read different from its reference clock that stays put*. This is a physical real result, and the actual "Theory of Special Relativity" is irrelevant to these observations.

Thus, the immediate, direct implication of that real, physical result is that *something happened to the clock due to that motion*. It's what engineers would take as the simplest solution. The physical evidence clearly casts at, first instance, doubt of the stability of clocks undergoing motion, *unless there are stronger arguments to indicate otherwise*.

However, SR takes a somewhat strange alternative; SR simply denies this by fiat, and simply claims that this magical mathematical object "space-time" exists such that the clock "takes a longer path in it" to account for the different readings, even though, SR has no understanding of what time actually is.

SR just claims that everything you thought you knew, was wrong. The issue is that there is no method, even in principle, to verify that clocks in SR do measure time independently of velocity, independently of SR, notwithstanding that, measurements show that they don't, unless one accepts SR... Oh dear...it's a ho hummm.....

Relativity Postulate & Clocks

The route of the circularity in the definition of time, is the Relativity postulate.

The relativity postulate, essentially, states that physical processes should not depend on a relative velocity with respect to some observer, although in the [literature](#) it is worded in many different ways, some of which are incorrect.

Thus, the assumption that clocks should always tick the same, independent of velocity. However, as stated, clock ticks themselves are required for the verification of the speed of light postulate, thus the system is intrinsically circular, its two postulates depend on each other and thus can not therefore constitute a theory in any conventionally accepted manner.

The additional issue is that the relativity postulate does not imply that which is communally attributed to it.

This postulate is taken to also mean that, it is impossible for someone inside a box, to detect the motion of the box, without looking outside the box.

This is false. It is very conceivable, in principle, that physical processes depend on velocity, yet those in the box would still be unable to detect such motion.

For example, if one has a person that is doubled in size, with his house doubled in size, and his chairs all doubled in size, his fridge doubled in size, he wouldn't know, until he compared himself with someone outside his house.

That is, if the size doubling was due to a failure of the Relativity postulate of independence of physical processes on velocity, those in the box would not know that their "laws of physics" had been changed

This is exactly the effect known to be the case according to the LT.

The person traveling with a clock has no awareness that he is "covering a longer path in space time" with respect to another observer. Everything looks the same to him...Except it don't when he reaches his destination. What was 1000 light years away when he started, has shrunk to 1 light year, which is the only way SR can account for the fact that he reached his destination whilst traveling less than the velocity of light, in his own lifetime.

Thus in order to preserve the claim of the Relativity postulate, essentially, disproven by the fact that reunited clocks read different, SR takes the extraordinary measures of declaring the magical object time itself is a function of velocity, and not the clocks.

The simplest solution, is that the process that make clocks tick, change as a function of velocity, as explained below.

What Time Is

Time is not magic.

What time and space is, is quite obvious

Space is accounting for the fact that individual objects don't all sit on top of each other.

Time is accounting for the fact that objects change their position and momentum.

Space is created by objects existing. Time is created by objects moving. It's truly that simple.

If all objects stopped moving, time would stop. This is trivially obvious.

“Time” is the result of a real physical process. Aging means that the positions and momentums of internal objects of an object, change. This is trivially obvious.

Clocks cannot age less, unless their physical processes change less. This is trivially obvious.

If clocks change less, their physical processes must have been altered. This is trivially obvious, notwithstanding the circular claims of SR.

A truly empty universe, cannot have any properties whatsoever, unless of course, one believes in magic.

Thus, the idea that there is some magical characteristic named “Time” that “exists” *independently* of physical objects and their physical properties, and that clocks just measure this magic characteristic, is simply not logically sustainable.

LT, MMX & Quantum Fields

It is a mathematical fact that any result of the LT, may be used as the basis of a construction of the LT.

One can thus just take *the experimental result of clock readings*, and deduce that measurements of the speed of light will always appear to be the same value, *because the clock is reading differently due to its motion*.

As Lorentz discovered with his particular own view of a “Quantum Field”, such a LT may be constructed that accounts for observations in a frame independent way.

Lorentz’s, misunderstanding was that he took the view that an Aether was an entity with a separate existence from the objects interacting with it, such that one could therefore detect motion through it. Such a view was mistaken but does not invalidate the principle of a Quantum Field interacting with measuring instruments.

With today’s knowledge of (alleged) quantum fields (QFT), there is a position held by some, that all physical objects are, essentially, constructed from a real physical field, that is an Aether in all but name. The only relevant distinction from the Lorentz Aether, is that the fields are dynamic not static, and that *all objects are local concentrations of those fields*.

Thus, as all the instruments in the MMX would be constructed out of the Quantum Field that is being measured, its relative velocity to such a field would remain constant. Thus the MMX would be bound to produce a null result.

It is therefore not unreasonable to suggest that such processes and fields may indeed affect clock readings as required by the LT. It’s the simplest solution. Physical objects such as fields, interact with objects in that field. To be

contrasted with the “time” is what it is and changes, which is, essentially, magic.

The Reality

It is a known fact that any physical theory can be written covariantly, that is independent of coordinate systems. It's just an exercise in mathematics.

Thus, what appears to be the case with SR, is that a physical theory has taken advantage of this mathematical principle, and been reformulated in a manner that allows systems to be analysed "as if" they are equivalent, when they are not. That this is feasible is because SR is constructed based on a circularity, which allows for pretty much any theory to be developed that agrees with experiment.

[Kevin Aylward's Webs](#)

© Kevin Aylward 2000 - 2020

All rights reserved

The information on the page may be reproduced
providing that this source is acknowledged.

Website last modified 17th May 2020

<http://www.kevinaylward.co.uk/gr/index.html>

www.kevinaylward.co.uk

kevinEXTRACTextract@kevinaylward.co.uk

Remove EXTRACT from the email address
