THE EINSTEIN-LORENTZ TRANSFORMATION
THE GREATEST MATHEMATICAL FRAUD OF HUMAN HISTORY

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At the present time there are many notable physicists who have raised important objections to the Lorentz transformation. Among them are Kurt Pagels, Mladen Hegedušic, Gothard Barth, Carl A. Zapffe, N. Rudakov and some others we regret not recalling by name at this moment. More recently we have seen an important work by Milnes with the same purpose but from a new viewpoint: the symmetry of distances accepted by the theory of relativity, which has been used to make a severe criticism of the Einstein-Lorentz transformation. In confirmation of all these critics, this last work has incited the present author to make an algebraic analysis of the Lorentz transformation, which he hopes will be an important assist to the physicist interested in the subject. It is felt that the best way to destroy the myth of the Lorentz transformation - a set of algebraic equations - is by demonstrating that they are in error from the point of view of simple algebra. This is just what has been done here, as will be explained below.

1. The Galilean Transformation.

For simplicity, we confine attention to the x-axis as the motion is only along this axis.

According to the Galilean transformation, in a system O' moving along the x-axis with velocity v, there is a fixed rod O'A = x'; figure 1. The Galilean transformation for this case is expressed by

$$x' = x - vt \tag{1}$$

2. The Lorentz Transformation.

We shall, to begin with, demonstrate that the Lorentz transformation was simply deduced from the Galilean transformation by the introduction of the concept of the contraction of moving bodies. If in figure 1, we assume the rod x' to be contracted, its dimension would be Kx', where

$$K = \sqrt{(1 - v^2/c^2)} \tag{2}$$

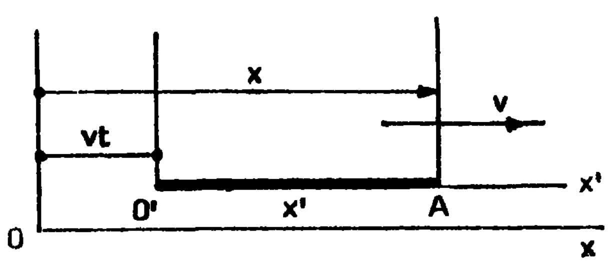

Figure 1.

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is the coefficient of Fitzgerald contraction. Suppose we substitute x' in (1) with Kx'; then we get:

$$Kx' = x - vt \qquad (3)$$

which is nothing other than the first equation of the Lorentz transformation.

In this equation, however, x represents the path of a ray of light moving from the origin of the system at rest, O, to the end A. It is assumed that x' has the value ct'; as a matter of fact, the starting point of Lorentz and Einstein was indeed:

$$x = ct, \qquad x' = ct' \qquad (4)$$

We now proceed to substitute (4) into (3). We obtain:

$$Kct' = ct - vt, \qquad Kt' = t - vt/c.$$

But t = x/c so that if we introduce this value in the last term above, the result is:

$$Kt' = t - vx/c^2 \qquad (5)$$

which is nothing else than the second equation of Lorentz.

Let us now solve (5) for t:

$$t = Kt' + vx/c^2 \qquad (6)$$

If now we insert this value for t into (3), we have:

$$Kx' = x - v(Kt' + vx/c^2)$$

Reducing this equality, we get the result:

$$Kx = x' + vt' \qquad (7)$$

which is the so-called inverse equation to (3).

We can make still another operation: by inserting into (7) the values x' = ct' and x = ct,

$$Kct = ct' + vt, \qquad Kt = t' + vt'/c.$$

Since t' = x'/c, on inserting this value in the last term above, we finally get.

$$Kt = t' + vx'/c^2 \qquad (8)$$

which is the inverse of (5).

Thus, the complete Lorentz transformation group is given by (3, 5, 7, 8). We see that there are four unknowns x, x', t and t'. But really we have only one equation, (3) since the others are repetitions of it. §

3. The True Relations Between t and t'.

From (3) we may obtain by inserting the values of (4):

$$t' = \frac{t(1 - v/c)}{K} \qquad (9)$$

The so-called time dilation formula is then given by:

$$t' = \frac{t}{K} \qquad (10)$$

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§. Comment by a Mathematician: Not quite! Two equations, (4), have been introduced in the derivation.

§. Author's Response: With regard to equations (4) we can see that they are entirely consistent with the group of equations. This is so because (1) are fundamental to the Lorentz transformation.

We immediately see that from (9) we can get this formula only by making $v = 0$. But in this case, from (2), we deduce $K = 1$; that is, there cannot be any contraction and therefore any time dilation either.

From this simple operation we can deduce that the formula for the time dilation involves a fallacy, since it can only be obtained by making $v = 0$. We can also give some simple proofs of this assertion: make in (10) the substitutions $t' = x'/c$ and $t = x/c$; then

$$Kx' = x \tag{11}$$

Comparing this with (3), the result (11) is only possible when $v = 0$.

In addition, from (9) we can obtain:

$$t' = t.\frac{\sqrt{(1 - v/c)}}{\sqrt{(1 - v/c)}}.\frac{\sqrt{(1 - v/c)}}{\sqrt{(1 + v/c)}} = t\frac{\sqrt{(c - v)}}{\sqrt{(c + v)}} \tag{12}$$

We also deduced the above formula (12) in 1975 in [2], in a simpler way: making the substitutions $x = ct$, $x' = ct'$ in (3, 7) and dividing the first by the second:

$$\frac{Kct'}{K} = \frac{t(c - v)}{t'(c + v)} \quad ; \qquad t' = t\frac{\sqrt{(c - v)}}{\sqrt{(c + v)}} \tag{13}$$

Observe that in (10), $t' > t$ which gives time dilation, but in (13) $t' < t$ which is time contraction. Since (12) has been derived directly from the first equation of Lorentz (3) and it relates the times t' and t, (10) cannot be correct. It also relates the times t' and t but for the special case $v = 0$.

4. The Contracted Rod Does Not Obey the Principle of Relativity.

The main purpose of the Lorentz transformation was to make good the validity of the principle of relativity along all the rods of Michelson's interferometer, in spite of the existence of the relative velocities $c - v$ and $c + v$; but this objective was never achieved: in the direction of motion, light moves along Kx' with velocity $c - v$ and when this rod moves against the ray, the velocity is $c + v$, as assumed in the experiment. Hence, in the direction of the motion, the principle of relativity does not hold good. If there is one direction of the moving system in which the relativity principle is not present, the whole system is good for nothing.

5. Final Conclusion.

The Lorentz transformation is bosh. ¶

References

[1] Milnes, H. W.: **The Death of the Lorentz Transformation,** The Toth-Maatian Review, V. 5, pp. 2378-89, 1986.

[2] La **Relatividad,** by **Morales,** Juan **Alberto:** Incongruencies y Falacies en la Transformación de Lorentz, pp. 44-51, Malaga, 1975.

[3] Morales, Juan Alberto: **Fallos Matemàticos en la Transformación Einstein-Lorentz,** pp. 1-8 & 20-2. Malaga, 1985.

¶. Editorial Comment: Einstein has been frequently referred to as "the greatest mathematician who ever existed". Quite to the contrary, he was mathematically inept and that at the elementary level of introductory high school algebra, as our author has just demonstrated for us.