# Relativity's Collapse: From §10's Apex to the Inchoate Violation of *the Principle of Conservation of Truth*

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**Abstract**

Exposing Lorentz transformations (LT) alone, as past critiques did, is correct but inefficient—ridiculous as it is, apologists thoughtlessly claim that LT's counterintuitive, even outright false, nature drives the theory of relativity [1] and its alleged experimentally confirmed phenomena.

Yet, targeting relativity holistically, that is, not isolating LT while forgetting the Principle of Relativity (PoR), reveals flagrant inconsistencies with its own foundational truths, flaws inherent in LT's root, barring any conclusions whatsoever, let alone experimentally testable ones, toppling any hope for relativity and offspring to recover as a sensible scientific narrative and method to "understand the true nature of the universe" [2]. The apex of Einstein's 1905 paper's flawed nature is seen in black and white in §10, where $\frac{\epsilon}{m}X = \frac{\epsilon}{m\beta^3}X$—a velocity $v$ free acceleration equated to a velocity $v$ laden one—holds only at $v = 0$, defying uniform translatory motion (UTM), thus causing relativity to outright invalidate itself in its own pages.

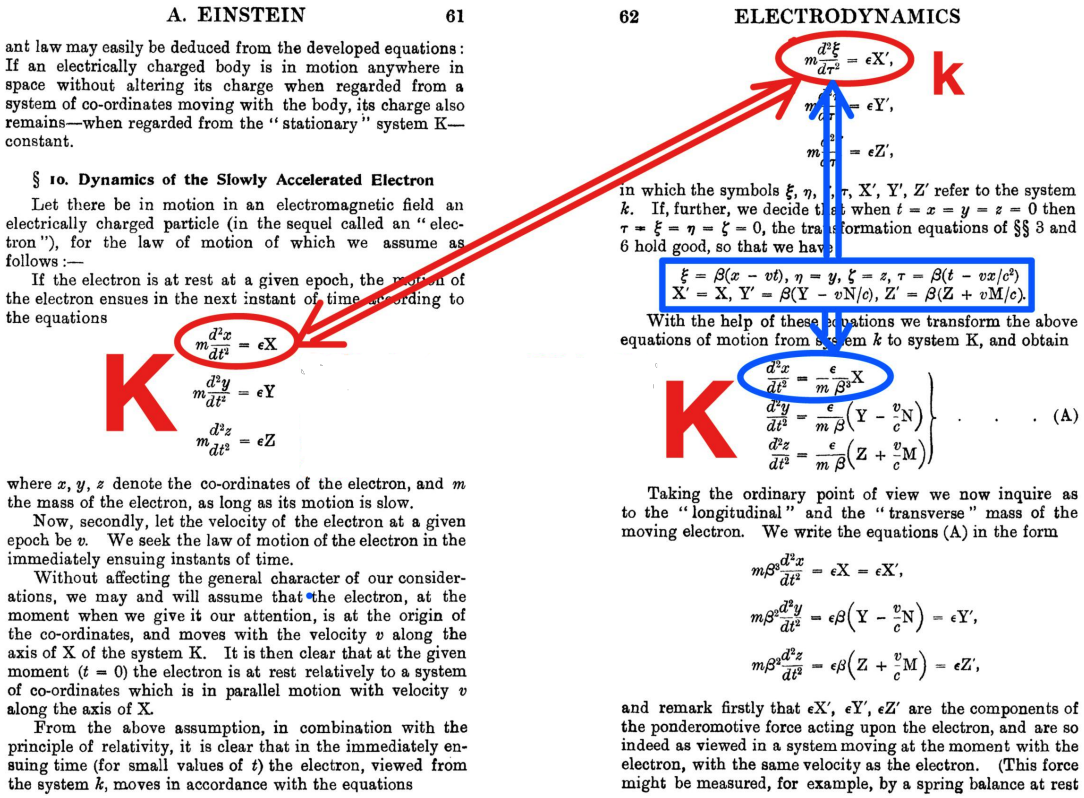
§6's $Y' = \beta\left(Y - \frac{v}{c}N\right)$ is an earlier manifestation of this fatal flaw, its antecedent, introducing the unphysical velocity $v$-dependence, that wrong equality, itself a victim of the unphysical velocity $v$-laden Lorentz transformations, a symptom of LT's flaws. LT violate *the principle of conservation of truth*—laws must remain $v$-free across frames, as PoR requires. More specifically, LT dissolve the very notion of length and claim length contraction and time dilation, which are nothing other than impossible artifices of monumental confusion. Relativity undermined, an artifice unsalvageable.

# Introduction

Coherent physics never gives special attention to transformation of coordinates across inertial frames because should such necessity arise, it is trivial—*the principle of conservation of coordinates* holds (values of frame coordinates do not change due to external influences such as the velocity $v$ of another frame relative to it). Truthful physics demands laws invariant under uniform translatory motion (UTM)—a given, which relativity unduly denies. In §10 [1], this denial peaks irresolvably: a $v$-free term cannot match a $v$-dependent term, ending relativity outright. §6 manifests this flaw; §2 reveals its origin in LT's violation of *the principle of conservation of truth*—two inviolable truths: uniform velocity, let alone destruction of the very concept of length, forbids length contraction; locked clocks forbid time dilation. This descends from §10's flawedness apex to relativity's flaw nascent in LT's birth.

# Apex of the Flaw: §10's Fatal Contradiction

Consider Fig. 1, from §10 [1]:



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ant law may easily be deduced from the developed equations: If an electrically charged body is in motion anywhere in space without altering its charge when regarded from a system of co-ordinates moving with the body, its charge also remains—when regarded from the "stationary" system K—constant.

§ 10. Dynamics of the Slowly Accelerated Electron

Let there be in motion in an electromagnetic field an electrically charged particle (in the sequel called an "electron"), for the law of motion of which we assume as follows:—

If the electron is at rest at a given epoch, the motion of the electron ensues in the next instant of time according to the equations

$$m\frac{d^2x}{dt^2} = \epsilon X$$
$$m\frac{d^2y}{dt^2} = \epsilon Y$$
$$m\frac{d^2z}{dt^2} = \epsilon Z$$

where $x$, $y$, $z$ denote the co-ordinates of the electron, and $m$ the mass of the electron, as long as its motion is slow.

Now, secondly, let the velocity of the electron at a given epoch be $v$. We seek the law of motion of the electron in the immediately ensuing instants of time.

Without affecting the general character of our considerations, we may and will assume that the electron, at the moment when we give it our attention, is at the origin of the co-ordinates, and moves with the velocity $v$ along the axis of X of the system K. It is then clear that at the given moment ($t = 0$) the electron is at rest relatively to a system of co-ordinates which is in parallel motion with velocity $v$ along the axis of X.

From the above assumption, in combination with the principle of relativity, it is clear that in the immediately ensuing time (for small values of $t$) the electron, viewed from the system $k$, moves in accordance with the equations

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$$m\frac{d^2\xi}{d\tau^2} = \epsilon X', \quad m\frac{d^2\eta}{d\tau^2} = \epsilon Y', \quad m\frac{d^2\zeta}{d\tau^2} = \epsilon Z',$$

in which the symbols $\xi$, $\eta$, $\zeta$, $\tau$, X', Y', Z' refer to the system $k$. If, further, we decide that when $t = x = y = z = 0$ then $\tau = \xi = \eta = \zeta = 0$, the transformation equations of §§ 3 and 6 hold good, so that we have

$$\xi = \beta(x - vt), \quad \eta = y, \quad \zeta = z, \quad \tau = \beta(t - vx/c^2)$$
$$X' = X, \quad Y' = \beta(Y - vN/c), \quad Z' = \beta(Z + vM/c).$$

With the help of these equations we transform the above equations of motion from system $k$ to system K, and obtain

$$\left.\begin{aligned} \frac{d^2x}{dt^2} &= \frac{\epsilon}{m\beta^3}X \\ \frac{d^2y}{dt^2} &= \frac{\epsilon}{m\beta}\left(Y - \frac{v}{c}N\right) \\ \frac{d^2z}{dt^2} &= \frac{\epsilon}{m\beta}\left(Z + \frac{v}{c}M\right) \end{aligned}\right\} \quad . \quad . \quad . \quad (A)$$

Taking the ordinary point of view we now inquire as to the "longitudinal" and the "transverse" mass of the moving electron. We write the equations (A) in the form

$$m\beta^3\frac{d^2x}{dt^2} = \epsilon X = \epsilon X',$$
$$m\beta^2\frac{d^2y}{dt^2} = \epsilon\beta\left(Y - \frac{v}{c}N\right) = \epsilon Y',$$
$$m\beta^2\frac{d^2z}{dt^2} = \epsilon\beta\left(Z + \frac{v}{c}M\right) = \epsilon Z',$$

and remark firstly that $\epsilon X'$, $\epsilon Y'$, $\epsilon Z'$ are the components of the ponderomotive force acting upon the electron, and are so indeed as viewed in a system moving at the moment with the electron, with the same velocity as the electron. (This force might be measured, for example, by a spring balance at rest

Fig. 1. From §10 [1], PoR's form invariance, sans LT. The inclusion of $v$ by LT via $\beta$—a fatal flaw latent till §10

As seen in Fig. 1, Einstein derives:

$$\frac{d^2x}{dt^2} = \frac{\epsilon}{m}X \tag{1}$$

—$v$-free, as relativity's foundational Principle of Relativity (PoR) mandates. Yet, LT applied to $\frac{d^2\xi}{d\tau^2} = \frac{\epsilon}{m}X'$ in frame k yield in frame K:

$$\frac{d^2x}{dt^2} = \frac{\epsilon}{m\beta^3}X, \tag{2}$$

where $\beta = \frac{1}{\sqrt{1-\frac{v^2}{c^2}}}$. It cannot be stressed strongly enough that equating Eq.(1) and Eq.(2) yields the impossible equality, invalidating relativity:

$$\frac{\epsilon}{m}X = \frac{\epsilon}{m\beta^3}X, \tag{3}$$

because it fails unless $v = 0$, $\beta = 1$, i.e., unless there is no relativity—a $v$-free left cannot equal a $v$-laden right. This ends relativity for UTM in one stroke, a discovery from [3] superseding critiques [4–6] that seek debunking of LT's validity based on LT's own framework, not on their collision with the foundational truth such as PoR. Analysis stops here—relativity is finished.

# Flaw Manifested: §6's Unphysical Velocity

Now, consider Fig. 2 in [1]:

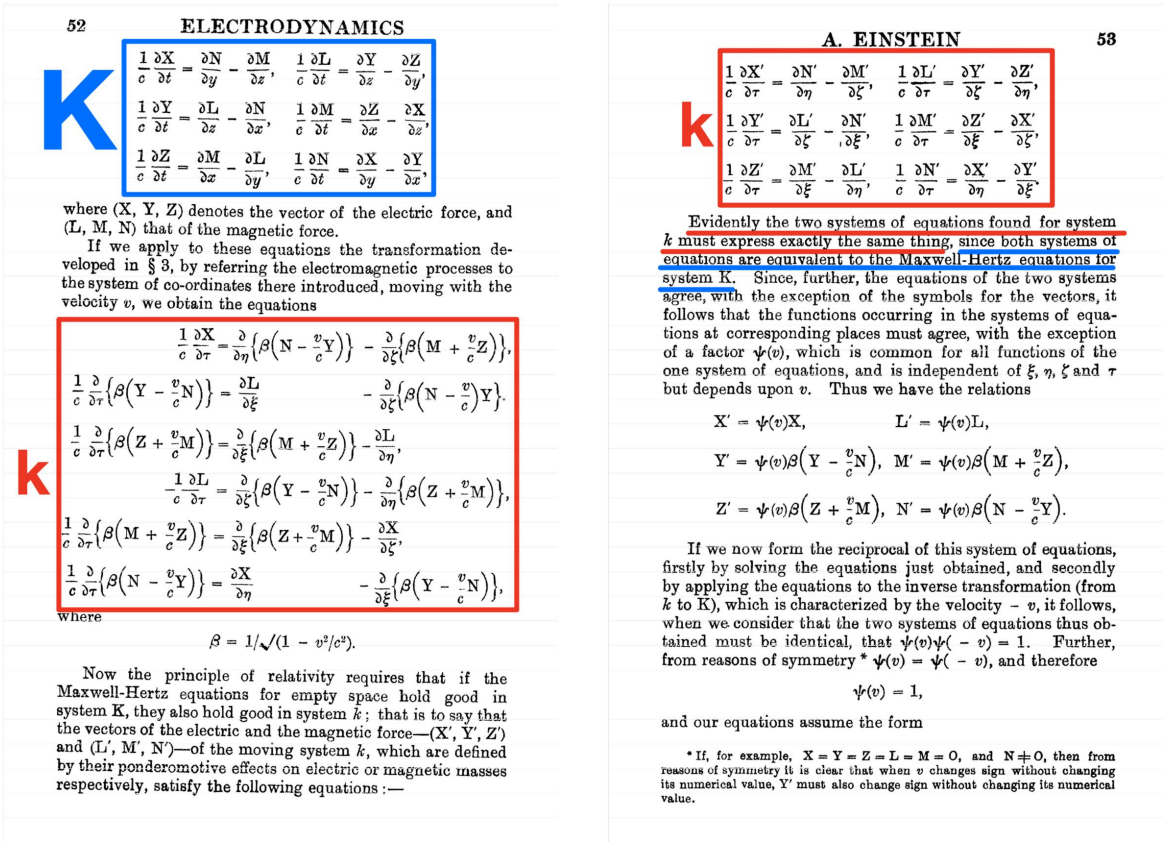


Fig. 2. From §6 [1], PoR's form invariance, sans LT.

§6 precedes §10 in applying this $v$-induced flaw:

$$Y' = \beta\left(Y - \frac{v}{c}N\right). \tag{4}$$

$Y'$ ($\eta$-axis component of electric field vector in $k$) should match $Y$ (y-axis component of electric field vector in $K$)—$v$-free under PoR. Yet, LT's $\beta$ and $\frac{v}{c}N$ inject $v$. This is a contrdiction: a $v$-free term cannot depend on $v$. You can see in Eq. (3) to what irresolvable inconsistency such an injection of $v$ (through $\beta$) led.

### Dimensional Mismatch

Eq. (4) expressed in SI units, $[Y] = \left[\frac{\text{kg·m}}{\text{s}^3\text{·A}}\right] \neq \left[\frac{v}{c}N\right] = \left[\frac{\text{kg}}{\text{s}^2\text{·A}}\right]$, reveals LT's inconsistency—$Y' \neq \beta\left(Y - \frac{v}{c}N\right)$ mainly because of the shown $v$-inconsistency, but also because of the dimensional mismatch$[Y'] \neq \left[\beta\left(Y - \frac{v}{c}N\right)\right]$, isn't a flaw to fix but a lens on LT's illegitimacy. Gaussian units ($[E] = [B]$) conceal this; SI reflects physical distinctions—$\mathbf{E}$ ($\frac{\text{force}}{\text{charge}}$) and $\mathbf{B}$ ($\frac{\text{force}}{\text{velocity·charge}}$) remain distinct. In SI, Faraday's law is $\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t}$, Ampère's law $\nabla \times \mathbf{B} = \mu_0\mathbf{J} + \mu_0\epsilon_0\frac{\partial \mathbf{E}}{\partial t}$; in Gaussian, $\nabla \times \mathbf{E} = -\frac{1}{c}\frac{\partial \mathbf{B}}{\partial t}$, $\nabla \times \mathbf{B} = \frac{1}{c}\frac{\partial \mathbf{E}}{\partial t} + \frac{4\pi}{c}\mathbf{J}$. SI's $\mu_0$ and $\epsilon_0$ preserve $\mathbf{E}$ and $\mathbf{B}$'s roles; Gaussian's $c$-scaling equates them, masking LT's error.

Yet, SI rewrites—e.g., $E'_y = \beta(E_y - vB_z)$, $B'_y = \beta\left(B_y + \frac{v}{c^2}E_z\right)$—acknowledging the discrepancy by outright *ad hoc* adjustment. Why adjust a "fundamental" transformation to fit units? If LT were valid, rewriting wouldn't be needed—Gaussian's alignment doesn't justify SI's mismatch. It's a contrivance, suggesting LT's $v$-dependence lacks physical grounding. SI's mismatch signals LT's failure—**E** and **B** shouldn't mix this way if PoR holds—while Gaussian's artificial unity bends physics to fit relativity, equating **E** and **B** despite their distinct roles. Units shouldn't dictate physics—laws must be invariant across systems. LT's reliance on Gaussian alignment or SI's "$c$-normalization" (scaling with $c$ or $c^2$) exposes a flaw beyond dimensions, rooted in *the principle of conservation of coordinates*—ultimately, *the principle of conservation of truth*, the tenor of this work.

This disastrous $v$ infusion and dimensional problem, along with the LT's non-physicality itself, propagates into §10 and manifests itself in the collapse of §10, determining the collapse of the all relativity.

# Origin of the Flaw: Violation of the Principle of Conservation of Truth

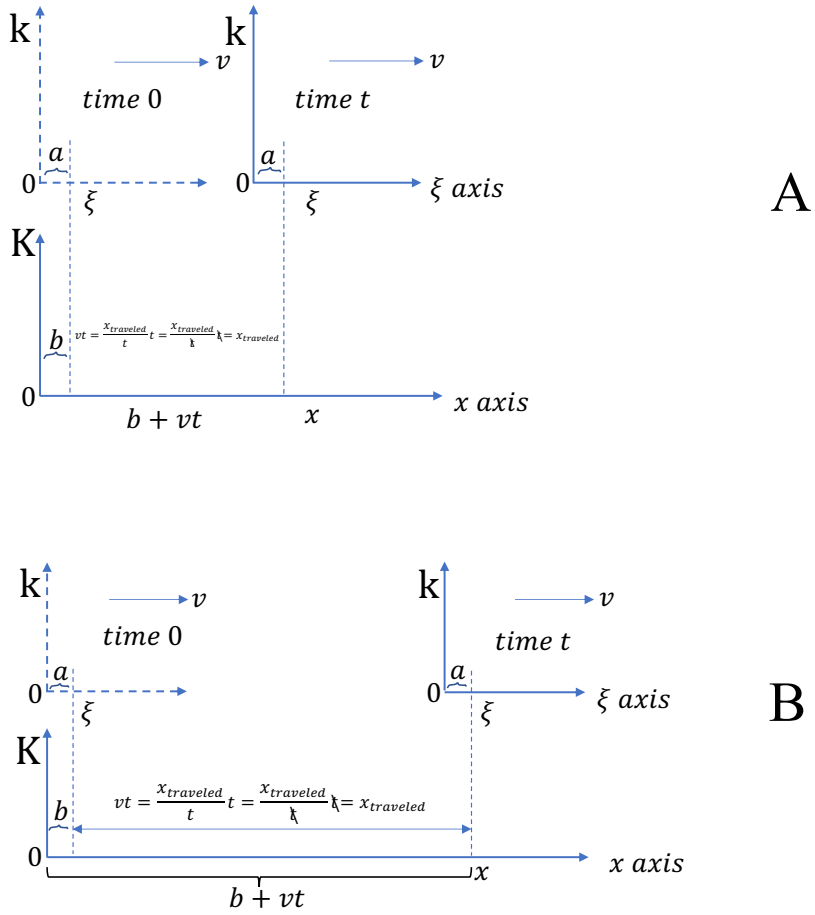


Fig. 3. Frame k displaced at two $v$ ($x = vt$), A (lower $v$) and B (higher $v$), preserving $a = b$, a truth illustrating *the Principle of Conservation of Coordinates*—a triviality LT destroy. Unlike LT's length dissolution, rod at $t'_2 = -0.75$, this illustration shows reality.

Relativity's flaw originates in LT's violation of *the principle of conservation of truth* and its progeny *the principle of conservation of coordinates*, both elevated here as axioms: laws remain $v$-free across inertial frames under UTM, preserving physical reality (Fig. 3). For time $t$, frame $k$ moves to $x = vt$ in $K$; at a different $v$ but same $t$, $k$ reaches a different $x$, yet, segments $a = b$ (in $K$ and $k$) retain their value at any $v$—a triviality LT defy.

Two inviolable truths define this:

1. When $v$ is imparted to a rigid rod (§2 [1]), all points enjoy the same $v$—length contraction is impossible—LT's variance ($v(x) \neq v$) defies uniform $v$, while truth demands $x' = x - vt$, $l' = l$, as Fig. 3 shows. Over and above, as true as it is, this argument against LT's length contraction would be viable if there were any length to talk about at all; things are worse—LT destroy the very notion of length itself. LT's:
$$x' = \beta(x - vt), \quad t' = \beta\left(t - \frac{vx}{c^2}\right) \tag{5}$$
shatter rigidity: for a rod at $x_1 = 0$, $x_2 = 1$, $t = 0$ in $K$, with $v = 0.6c$, $c = 1$, $\beta = 1.25$, endpoints become $x'_1 = 0$, $t'_1 = 0$, $x'_2 = 1.25$, $t'_2 = -0.75$ in $k$—a mirage, not a rod, its ends non-coexistent (one present, one past) to define length. After LT are applied, no length exists to ponder length contraction. This may seem as undermining said holistic approach—the LT's need of the external PoR yardstick. However, again, revealing LT's inconsistency within its framework is not enough, proponents delusionaly will continue claiming such an untenable outcome as a feature, not a flaw, never mind that experimentally proving the reality of a mirage for length would require even more spinning; misalignment with an outside truth (PoR), a must—such misalignment renders the theory internally contradictory, i.e., capable of reaching no conclusions whatsoever, let alone experimentally testable ones.

2. Einstein himself locks clocks at A and B on the moving rod to K's world time (cf. §2's "We imagine further that at the two ends A and B of the rod, clocks are placed which synchronize with the clocks of the stationary system ...", although he later forgets this absolute truth)—time dilation is impossible. LT's:
$$t' = \beta\left(t - \frac{vx}{c^2}\right) \tag{6}$$
desynchronize these spatially coincident clocks, defying Einstein's locking of these clocks, respectively, absolute simultaneity (Fig. 3).

§6's $v$-laden fields and §10's $\beta^3$ flow from these flawed transformations—LT shatter truth's invariance. Although it may be perceived otherwise, that would be wrong. PoR is about constancy, not variation with the point of view.

# Conclusion

Relativity falls from §10's apex—$\frac{\epsilon}{m}X \neq \frac{\epsilon}{m\beta^3}X$—through §6's manifest flaw, to the origin: LT's violation of *the principle of conservation of truth.* Uniform $v$ and locked clocks—physical truths—render length contraction and time dilation impossible. To say nothing of the fact that LT go as far as to shatter the very concept of length. SI unmasks

this; Gaussian cloaks it—neither saves it. Physics must reject this fiction on favor of $v$-free laws.

Indeed, relativity's 100 years pale beside Aristotle's nearly 2000-year reign of confusion, yet it's time for a renewal—again built on the same premises of uniform motion defined by Galileo—to free physics and the world from a deeper flaw. Far from merely misunderstanding the universe (per Elon Musk [2]), relativity embeds internal contradictions as truth, mischaracterizing its experimental support as unassailable when its own equations betray it.

# References


[1] A. Einstein, Zur Elektrodynamik bewegter Körper, *Ann. Phys.* **17**, 891 (1905). Translated in *The Principle of Relativity*, Dover, 1952, pp. 37-65.

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[6] H. Dingle, *Science at the Crossroads*, Martin Brian & O'Keeffe, London, 1972, p. 112.