

The Greatest Standing Errors of Mathematics and Physics

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It is no longer common for mathematicians or scientists to publish entire books full of new information or theories. Due to specialization, the normal procedure is to publish experimental findings augmented by very limited theoretical suggestions. By and large, theory is left to a select and limited number of specialists. Those in the center of the field would claim that this is a sign of their maturity, humility, or other positive quality, suggesting that those on the margin who are rash enough to have their own ideas must be immature, immodest, or otherwise deluded. In doing this they neglect to notice that the entire history of science has proceeded along other lines, and that the contemporary hierarchy would be seen as abnormal, inefficient, and ridiculously regimented by anyone from the past, even by those from the recent past like Einstein and Planck and Maxwell.

This is as much as to admit that I know that my book must seem an anomaly as well as an anachronism. Both its form and its content must seem strange to a modern reader. To counteract this I have found it necessary to write this general overview. In it I will briefly describe the highlights of my research, hopefully whetting the reader's appetite for the longer papers. None of my papers contain difficult math or esoteric ideas, but here I will simplify even further, offering the sort of critical gloss a publisher or editor might make a hundred years from now, assuming my ideas are correct. Most of these papers are now several years old, and already I have a bit of hindsight regarding them. This makes it possible for me to rank my findings in order of importance, and to contextualize them for you as I list them. This may give you a place to start in your readings, or it may supply you with a clearer understanding of what I think I have achieved. Either way, given that the book has now gone past 500 pages, I think it has become a PR necessity, if nothing else.

I am probably most widely known online for my algebraic analysis of special relativity. Many readers, if they were writing this, would probably begin there. But I am going to start with other things here. I do this for two reasons. One is that many readers coming to a new website will be prejudiced against relativity naysayers. I am not a normal relativity naysayer since I accept time dilation and the basic claims of SR. All I do is fine-tune the transforms, so that they match the latest experiments. But once people peg you as a naysayer of SR of any kind or in any amount they have great difficulty taking anything else you say seriously. This is a fact I have been forced to accept, whether I agree with it or not. It is a sign of the times and cannot be ignored. The second reason is that I believe a number of other findings of mine will be considered to have more lasting importance than the relativity corrections. These findings are both more fundamental and more inventive. To add yet another level of tidiness, I will begin with the oldest problem I

have solved: meaning the problem that had persisted for the most amount of time before I solved it.

That oldest mistake is one that Euclid made. It concerns the definition of the point. Entire library shelves have been filled commenting on Euclid's definitions, but neither he nor anyone since has appeared to notice the gaping hole in that definition. Euclid declined to inform us whether his point was a real point or a diagrammed point. Most will say that it is a geometric point, and that a geometric point is either both real and diagrammed or it is neither. But all the arguments in that line have been philosophical misdirection. The problem that has to be solved mathematically concerns the dimensions created by the definition. That is, Euclid's hole is not a philosophical or metaphysical one, it is a mechanical and mathematical one. Geometry is mathematics, and mathematics concerns numbers. So the operational question is, can you assign a number to a point, and if you do, what mathematical outcome must there be to that assignment? I have exhaustively shown that you cannot assign a counting number to a real point. A real point is dimensionless; it therefore has no extension in any direction. You can apply an ordinal number to it, but you cannot assign a cardinal number to it. Since mathematics and physics concern cardinal or counting numbers, the point cannot enter their equations.

This is of fundamental contemporary importance, since it means that the point cannot enter calculus equations. It also cannot exit calculus equations. Meaning that you cannot find points as the solutions to any differential or integral problems. There is simply no such thing as a solution at an instant or a point, including a solution that claims to be a velocity, a time, a distance, or an acceleration. Whenever mathematics is applied to physics, the point is not a possible solution or a possible question or axiom. It is not part of the math.

Now, it is true that diagrammed points may be used in mathematics and physics. You can easily assign a number to a diagrammed point. Descartes gave us a very useful graph to use when diagramming them. But these diagrammed points are not physical points and cannot stand for physical points. A physical point has no dimensions, by definition. A diagrammed point must have at least one dimension. In a Cartesian graph, a diagrammed point has two dimensions: it has an x-dimension and a y-dimension. What people have not remembered is that if you enter a series of equations with a certain number of dimensions, you must exit that series of equations with the same number of dimensions. If you assign a variable to a parameter, then that variable must have at least one dimension. It must have at least one dimension because you intend to assign a number to it. That is what a variable is—a potential number. This means that all your variables and all your solutions must have at least one dimension at all times. If they didn't, you couldn't assign numbers to them.

This critical finding of mine has thousands of implications in physics, but I will mention only a couple. It has huge implications in QED, since the entire problem of renormalization is caused by this hole in Euclid's definition. Because neither Descartes nor Newton nor Schrodinger nor Feynman saw this hole for what it was, QED has inherited the entire false foundation of the calculus. Many of the problems of QED,

including all the problems of renormalization, come about from infinities and zeroes appearing in equations in strange ways. All these problems are caused by mis-defining variables. The variables in QED start acting strangely when they have one or more dimensions, but the scientists mistakenly assign them zero dimensions. In short, the scientists and mathematicians have insisted on inserting physical points into their equations, and these equations are rebelling. Mathematical equations of all kinds cannot absorb physical points. They can express intervals only. The calculus is at root a differential calculus, and zero is not a differential. The reason for all of this is not mystical or esoteric; it is simply the one I have stated above—you cannot assign a number to a point. It is logical and definitional.

This finding also intersects my first discoveries in special relativity, which I will discuss in greater detail below. The first mistake I uncovered in special relativity concerned Einstein's and Lorentz' early refusals to define their variables. They did not and would not say whether the time variable was an instant or a period. Was it t or Δt ? Solving this simple problem was the key to unlocking the central algebraic errors in the math. Once it was clear that the time variable must be an interval or period, at least two of Einstein's first equations fell and could not be made to stand up again.

Another very old problem I have solved goes all the way back to Archimedes. It is closely tied to the one concerning the point. The pre-calculus was invented by the Greeks and perfected by Archimedes. Archimedes solved what we would call calculus equations by using infinite series and exhaustion. We don't use exhaustion anymore, but, via Leibniz and Newton and Cauchy, we have inherited the basic method of Archimedes. That is, we use an infinite series. This method was so difficult to put a foundation under because Newton and all the others kept trying to introduce the point into their equations. Not only did they try to introduce it into their axioms, they tried to force it to exits the proofs as well, so that they could claim to find solutions at a point and instant. The equations and proofs kept rebelling and continue to rebel to this day. The proofs do not work, but we moderns have decided to ignore that. After a century or more of worrying and arguing about it, with little to show for it, we decided to let Cauchy put a lid on it, and we have refused to open the pot since.

To solve this problem, I re-invented what is now called the calculus of finite differences. Although I did not know it at the time, this form of the calculus has been around for centuries. It solves all the same problems as the infinite calculus, but it is quite easy to prove and to use. This form of the calculus falls like an apple out of an elementary number table, and students can follow this table and see for themselves how and why the calculus works, without any mystification. I have strongly recommended the replacement of the infinite calculus with the calculus of finite differences, not just for educational reasons, but because it solves many of the problems of QED and General Relativity. I have already shown how it impacts renormalization, and it does the same sort of housecleaning on GR. Most of the foundational inconsistencies in Einstein's expression of GR immediately evaporate once we jettison the point and define all space and time on intervals or non-zero differentials.

The next important problem I have solved is another one made famous by Newton, although this time he invented it without much help from the Greeks. By analyzing a diminishing differential applied to the arc of a circle, Newton claimed to prove that as the arc length approached zero, the arc, the chord, and the tangent all approached equality. I have shown that Newton's analysis is false. Newton monitored the wrong angle in the triangle created, which skewed his analysis. He did not notice that another angle in the triangle went to its limit before his angle, assuring that the tangent remained longer than the arc and chord all the way to the limit. This solves, all at once, many of the mysteries of trigonometry. Newton's ultimate interval, which became the infinitesimal and then the limit, is proved by me to be a real interval, where the variables do not go to zero and they do not go to equality. This is the reason we find real values for them. Even at the limit, the tangent is not zero and it is not equal to the arc or chord. The tangent and the arc are expressed by two different (perhaps infinite) series of differentials, and these series do not approach zero in the same way. In fact, one reaches zero after the other one, which makes it a lot easier to understand why the equations work like they do.

Because Newton misunderstood circular motion in this way, he also misunderstood the dynamics of circular motion itself, and the equation that expressed it. His basic equation $a = v^2/r$, which is still the bedrock of circular motion, is wrong. If you express the orbital velocity as $v = 2\pi r/t$, then the equation must be correct, of course. We know that from millions of experiments. The problem concerns the fact that that variable cannot be a velocity. A velocity cannot curve. The circumference of a circle cannot be expressed by a simple velocity, even though the apparent dimensions of the variable (m/s) would imply that it could. Velocity is a vector, and there is no such thing, mathematically or physically, as a curved vector. By definition, a velocity can have only one spatial dimension. Any curve must have two spatial dimensions. Of course a velocity has a time in the denominator, which gives it two total dimensions. A circumference or orbit must have at least three dimensions (x,y,t).

Flying in the face of this very simple fact, for some reason Newton assigned $2\pi r/t$ to his velocity. To add to this error, he conflated the tangential velocity with the orbital velocity. Going into the series of equations that proved $a = v^2/r$, he defined v as the tangential velocity. That is, it was the velocity in a straight line, a vector with its tail touching the circle at a 90° angle to the radius. But at the end, he assigned v to the orbital velocity, which curved. Any elementary analysis must show that the orbital velocity is a compound made up of the tangential velocity and the centripetal acceleration. In fact, Newton said so himself. It is a fact we still accept to this day, and it is taught in every high school physics class. If so, it cannot be the tangential velocity and it should not be labeled v .

This is of paramount importance for any number of reasons, but I will mention only a couple. Since contemporary physics has inherited this confusion of Newton and utterly failed to correct it or notice it, all our circular fields are compromised. I have shown that Bohr's analysis of the electron orbit is affected by this mis-labelling, and that the equations used to calculate the velocity of quanta emitted by electrons must be falsified.

Huge problems have also been caused by the ubiquitous equation $ma = mv^2/r$. The form of that equation has led many to think that the numerator on the right side is a sort of kinetic energy, but the mv^2 comes from Newton's equation, and the velocity is not really a velocity. It is not a linear velocity, but it is also not an orbital velocity. It is simply a mis-defined variable. It is not a velocity of any kind. By correcting Newton's proof, I discovered that

$$v_t^2 = a^2 + 2ar$$

$$v_o^2 = 2ar$$

Where v_t is the tangential velocity and v_o is the orbital velocity. Notice that the orbital velocity is actually less than the tangential velocity, and this is logical since the centripetal acceleration must always have some acute angle to the tangential velocity. Therefore, the x-component of the acceleration must be negative to the x-component of v_t .

$$4\pi^2 r^2 / t^2 = 2ar$$

$$2\pi^2 r / t^2 = a$$

$$a = 2\pi^2 r / t^2$$

$$a = \pi v_o / t$$

So you see that we keep the experimentally verified equation $v_o = 2\pi r/t$, but have to ditch the rest. We also have to redefine the orbital velocity as the velocity over any single differential—the smaller the differential the better our number will be. But it is not an instantaneous velocity and it is not equal to the tangential velocity.

Summed over the whole orbit, it is also not strictly a velocity. As I said, the orbital “velocity” is a compound of two motions. By definition, any two velocities happening or being calculated simultaneously must yield an acceleration. We should label the orbital velocity as an orbital acceleration (a_o) unless we are specifically speaking of the velocity over one tiny arc interval.

By cleaning up our variables and definitions, we can avoid many problems. Just as a starter, the equation $ma = mv^2/r$ must become $ma = ma_o^2/r$. That keeps us from thinking about kinetic energy when we look at the right side, and solves many many errors, including several of Bohr, Schrodinger and Feynman.

Another interesting find that intersects my book at this place is the fact that π is itself an acceleration. That is, I have shown that $C = 2\pi r$ is a distillation of $v_o^2 = 2ar$, where π stands for the acceleration and C stands for the summed orbital velocity or orbital acceleration. They are the same equation; the C equation is just the orbital equation without its full time components. Plane geometry ignores all time components, so that it allows for this simplification. Divide both sides of the C equation by t^2 and you will begin to see what I mean. It is fascinating.

Now we can look at my corrections to relativity. The first major correction comes from my discoveries on the point. As I said above, the time variable in SR must be a period. Einstein even admitted this in later math, when he began writing it as Δt .^{*} But once the time variable is admitted to be a period, that variable must grow larger as the time dilates. Einstein admits this also.^{**} Dilation means “to grow larger” and Einstein admits that as length contracts, the numerical value of t grows larger. That is why he called it time dilation, in fact. But of course this puts the two variables x and t in inverse proportion. This is important since Lorentz and Einstein both use two light equations as axioms.

$$x = ct$$
$$x' = ct'$$

The problem is, you see, that the variables in these two equations are directly proportional, not inversely proportional. One of them must be wrong. One must be wrong because the two equations are not analogous. In the second equation, the variables are defined as measurements within the system S' . But in the first equation, the variables are defined as those same variables as seen from S . Let me put it another way: the variables in the first equation are not defined as measurements within S . This would be the analogous definition, one that was equivalent in all ways to the first one. But that is not what we have. One equation describes how a system looks to itself. The other equation describes how one system sees another system. So they don't balance, definitionally. And this makes the first equation false, given the second.

You can make the first equation true, if you define it as the way S sees itself. But then you can't solve the problem of Relativity, since you have no link between the systems. The long and short of it is that Lorentz and Einstein have used a false equation.

This is not the only smashing error of SR. The other axiomatic equation of SR, used by everyone from Einstein to Russell to Feynman and beyond, is

$$x' = x - vt$$

That equation is also false. We are told that it is the Galilean or Newtonian expression of relativity, and that the Lorentz transform resolves to that equation if you make the speed of light infinite. But that is false. This may be the greatest error in the whole history of science, since it is both spectacularly wrong and transparently obvious, and yet it has survived in full view for more than a century. It is not so stunning that Einstein made the mistake, since everyone knows he was a poor mathematician. What is stunning is that it has not been discovered by any of the towering geniuses of the 20th century. What the Lorentz transform really resolves to if the speed of light is infinite is

$$x = x'$$

All you have to do is think about it for a moment. If x' is not equal to x , then you have a difference in length. A difference in length is defined as length contraction. But you can't have a length contraction according to Galileo or Newton. It is impossible. That is the

whole reason that relativity was invented, to formalize length contraction. And yet Einstein and everyone else has accepted that $x' = x - vt$ is not relativistic. It is relativistic, by definition, since x is not equal to x' . There is no way around it. And if it is relativistic, then Einstein's proof must be circular. He is deriving a relative transform from an equation that is already a relative transform.

If light's speed is infinite, that must mean that you see everything that I do at the same time I do, no matter how far away we are from each other and no matter how fast we are traveling relative to each other. Galileo and Newton didn't need a transform of any kind precisely because they thought that light had an infinite speed. The whole universe was a single system. Everyone knows that, or should. Therefore, you can't have two x 's or two t 's in a Galilean system. Velocity just doesn't have anything to do with it. Prime variables are disallowed in a Galilean equation, because here the prime variable applies to a second system. A velocity in Galileo's time didn't create a second system.

Fortunately, special relativity is easily solvable even without these three equations. Once I corrected these errors, and several others, I found new transforms that were close in form and output to the ones we have, which explains why SR has been confirmed despite being wrong mathematically. My corrections also allowed me to discover what I call First-degree Relativity. Einstein skips an entire co-ordinate system, jumping directly into Second-degree Relativity. That is, he finds transforms for his man moving on the train, but neglects to find transforms for the train itself. We know that all motion causes contraction and dilation, and his train is moving; but with current transforms we cannot go from numbers on the platform to numbers on the train. Interestingly, the first-degree transform is equivalent to the simple frequency transform in optics. But the second-degree transform is not *gamma* and does not include *gamma*.

I showed that relative motion toward an observer must cause time contraction, rather than dilation. Relativity is the Doppler Effect applied to clocks, and clocks moving toward us will be blue-shifted, not red-shifted. This was already known experimentally from observing binary pulsars, though no one has made the connection until now. This fact explodes the Twin Paradox. My new solution to SR also solves the Pioneer Anomaly and other anomalies.

Next I took my finding into a review of mass increase, where I discovered that once again all the equations were wrong. The basic theory was correct, the equations were nearly correct, but they were compromised by many errors in many places. By making several fairly subtle tweaks, I found that Newton's equation for kinetic energy was not only an approximation, it was a precise equation. That is, if you defined the mass correctly, and used the correct transform, Newton's equation would resolve out of the mass transform equation in perfect form.

What is more, I discovered that *gamma* didn't apply to mass increase either—although here the form of the equation was a near match. We don't have the square root of *gamma*, and we have an additional term in the numerator. But you can see that we have that familiar differential in the denominator.

$$E_T = m_r c^2 \frac{[1 + (v/2c)]}{[1 - (v^2/c^2)]}$$

This correction to the mass transform also allowed me to propose a cause for the 108 limit to the mass increase of the proton in the accelerator, a limit that has always remained a mystery.

Next I jump to General Relativity, where I use Einstein's theory of equivalence to solve field equations without the tensor calculus. Simply by reversing the central field vector (gravity), I am able to create a rectilinear field that may be expressed with high school algebra. I use this method to solve Einstein's bending of starlight by the sun problem. In five lines of math I solve a problem that took him 44 pages, and I get the same answer.

$$s = at^2/2$$

t = time for light to travel from the tangent of the sun to the earth
 = light distance from sun to earth + light distance of the radius of the sun
 $s = (9.8 \text{ m/s}^2)(501.32\text{s})^2/2 = 1,231,477\text{m}$
 $\tan\theta = \text{opposite/adjacent} = 1,231,477\text{m}/1.50696 \times 10^{11}\text{m}$
 $\theta = 1.686 \text{ seconds of arc}$

I also show that his analysis of the spinning disk is false, as well as his analysis of the bending of light. Perhaps most importantly, I show that even Einstein's four-vector field is homogenous and rectilinear at the limit. He gives us this equation,

$$\sqrt{-g} = 1, \text{ so that } d\tau' = d\tau.$$

And he says, "The invariant $\sqrt{-g}(d\tau)$ is equal to the magnitude of the four-dimensional element of volume in the 'local' system of reference". This is extraordinary, because if the volume of every infinitesimal is equal at the limit, then that means that *everything* is equal at the limit. Time and distance must be equal at the limit, which means that space is homogenous at the limit. No one has yet realized what this means. It means that the 'local' system does exist, even according to Einstein. What is more, all local measurements are equal—not just as metaphysics, but as math. The standard model likes to treat relativity as if there is no way to assert or prove that all local measurements are equal. But Einstein admits right here that it is one of the assumptions of the entire theory. It is a mathematical axiom. An axiom belongs to logic, not to metaphysics.

This brings us to my paper on Minkowski. Since he relied on the basic assumptions of Einstein—which I have shown are false—his math must fall as well. Minkowski's numbers, like Einstein's, are not correct. Which means that his math is useless no matter how elegant it is perceived to be. It would be useless even if Einstein's equations had been true, since his axioms are false. Minkowski allows the time variable to travel at a right angle to the other variables, but this is false. It does not do so, in fact, and cannot do so. Therefore his method must be false at the axiomatic level. If your assumptions are

incorrect, then your logic is incorrect, even in the case that your deductions are true. A true physical theory requires that both the assumptions and deductions are unfalsifiable. Minkowski's assumption is not just an unknown, and therefore a possible assumption. I show that it is known to be false.

Another important part of my work in relativity has been the analysis of the Michelson/Morley interferometer, and with it the Light Clock. Both ideas rely on the same basic diagram, and I show that this diagram is false. Everyone from Poincare and Lorentz to Dirac and Feynman have used an analysis of the right triangles created in these diagrams to explain time dilation, relative motion, and the speed of light. Like Newton, they have used a trigonometric diagram to prop up their theory. But also like Newton, they have failed to draw or imagine the correct diagram. In particular, the creators and viewers of the interferometer diagram seem to believe that the scientist collecting data from the machine is connected to the ether, instead of connected to the interferometer. Mostly, they leave the observer out of the diagram altogether, but when his presence is implied by the equations and the motions, it always turns out that the observer is imagined to have no velocity. In other words, the interferometer is in the ether stream, but the observer is on the shore.

But this is not how the real interferometer worked, in operation. In order to collect data from the interferometer, Michelson and Morley had to sit very near it, and move as it moved. They did not let the interferometer move with the earth while they got off the earth and sat still relative to the imagined ether. Because they had the same velocity as their machine, Michelson and Morley should not have expected any fringe effect. Their expectation of such data was simply a false expectation, based on a false diagram. The interferometer could only provide a null set.

The same analysis destroys the Light Clock, since the position and velocity of the clock's observer is never defined. Exactly the same triangle is created in the diagram, and it is analyzed in precisely the same faulty ways. The Light Clock does not explain time dilation, and it leads the viewer into false equations like the ones Einstein used.

Of course, since time dilation is true, my attacks on the Light Clock and interferometer are not fatal to Einstein or relativity. My cleaner, more transparent analysis, combined with my better illustrations, allow me to show that relativity is actually much simpler and much more reasonable than we have been led to believe. It contains no paradoxes, requires no leaps of faith, and may be expressed with simple equations that anyone can comprehend.

My next major contribution to physics concerns the unseen hole in orbital mechanics. This hole is a direct outcome of Newton's mistake above. To explain the orbit, Newton created a balance between the centripetal acceleration and the tangential velocity. But because he later failed to differentiate between the tangential velocity and the orbital velocity, both his and Kepler's analyses of orbits have come down to us hiding magnificent messes. Physicists now commonly sum the motions in the circuit to show that the orbit is closed, but the problem is with the differentials. In any problem with

three or more bodies, Newton's balance between the two motions cannot be maintained. An analysis of the differentials must show a variation in the tangential velocity of all orbiters, in order to correct for forces outside the main two. But orbiters cannot vary this velocity. They are not self-propelled. Newton told us that this tangential velocity was innate; an innate motion cannot vary. We have not shown any mechanism or cause of this variance, therefore we cannot let it vary. To put it another way, the variance is totally unexplained and unsupported. It has been covered up, possibly on purpose.

What this means is that orbital mechanics is just magic. The mechanics we have doesn't work and we haven't even tried to replace it with one that does. General Relativity has nothing to say about this problem, doesn't solve it, and doesn't address it. GR supplies us with an orbital math that includes the finite speed of light, but it doesn't even try to correct the mechanical foundation of the orbit. Courtesy of the tensor calculus, the problem is just buried deeper, under a heavy mathematical blanket.

Kepler's ellipse has the same hidden problem, a problem caused by the general ignorance of the difference between orbital and tangential velocity. Kepler's ellipse doesn't work mechanically, since his second focus is uninhabited. The orbiter is forced to vary its tangential velocity to suit the math of the summed circuit, but no explanation of how it could do this is offered.

I solve this problem by using the E/M field as a third component. Orbits are not caused only by gravity and innate motion. They require a third motion, and this motion is caused by the combined E/M fields of all bodies involved. With this third motion, it is possible to fully explain all the motions we see.

Tides also enter this revolution in theory, since tides are not simply gravitational either. In a long paper I show that current tidal theory has huge fatal holes in it, holes that can only be filled by the E/M field. Saltwater is a very good conductor, and you will have to let that fact lead you into the longer paper, since I will not address the full theory here. Suffice it to say that the idea of the barycenter is a critical part of my analysis, and that I diagram and analyze that idea even more fully than Feynman was able to do.

Finally, I think I must mention my critique of String Theory, if only as a nod to current physics. I do not think my critique of String Theory will actually have any long lasting effect, since String Theory will have no long lasting effect. However, my critique is as sharp and amusing as anything I have written, and many readers have recommended it as one of their favorites. If you need something a bit lighter to break up your more serious reading, this might be one place to go.

To recap:

- 1) I showed that you can't assign a cardinal number to a point, which begins the revolution in both physics and mathematics. The point and the instant are jettisoned from physics, and all math and science since Euclid must be redefined.
- 2) Calculus is redefined on the finite differential, which will revolutionize the teaching of calculus as well as QED and Relativity. In fact, the fields of all higher

- math must be redefined. This discovery ultimately bypasses renormalization, making it unnecessary.
- 3) I showed that many of Newton's important lemmatae are false, including his basic trig lemmatae. His proof of $a = v^2/r$ is compromised by this, which forces us to re-analyze circular motion. The mechanics of his orbit also falls, which requires us to hypothesize a third motion to stabilize the orbit in real time. I have shown that this motion must be caused by the E/M field. This also applies to Kepler's ellipse. And it explains the mechanics of tides.
 - 4) I also redrew the line between tangential velocity and orbital velocity, showing that the orbital velocity must be an acceleration. This requires a rewriting of many basic equations and cleans up many errors and mysteries, including a few of those in renormalization.
 - 5) I solved the problem of relativity, finding the simple and basic algebraic errors at their inception. I offered corrected transforms for time, length, velocity, mass, and momentum. I exploded the twin paradox, and did so by showing incontrovertibly that relative motion toward causes time contraction, not dilation. I solved the Pioneer Anomaly. I also proved that Newton's kinetic energy equation is not an approximation; it is an exact equation. I explain the cause of the mass limit for the proton in accelerator.
 - 6) I show the error in the interferometer and light clock diagrams, proving that no fringe effect should have been expected. The light clock creates the same mathematical triangle and falls to the same argument.
 - 7) Minkowski's four-vector field is shown to be false, not only because it uses Einstein's false postulates and axioms, but because its own new axiom—that time may travel orthogonally to x,y,z —is also false.
 - 8) I prove that General Relativity is falsely grounded on the same misunderstandings as the calculus, which is one reason it can't be joined to QED. I prove that curved space is an unnecessary abstraction and that the tensor calculus is a mathematical diversion, a hiding in esoterica. I prove this by expressing the field with simple algebra, taking five equations to do what Einstein did in 44 pages.
 - 9) I prove that String Theory is an historical embarrassment.

*See *The Meaning of Relativity*, eq. 22.

**See *Relativity*, XII, last paragraph.