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MAXWELL'S *LINES OF FORCE*

part 2

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[In part 1](#), I showed that Maxwell's equations are unified field equations, like [Newton's equation](#), [Coulomb's equation](#), and the [Lagrangian/Hamiltonian](#). The indication of this was the inclusion of ϵ_0 , which I have shown really [stands for gravity at the quantum level](#). Although it has been assigned to the permittivity of free space, the number actually stands for the strength of gravity of a baryon. If gravity is in Maxwell's equations, they are unified.

In part 2, we will continue to study Maxwell's exposition of his displacement field, which I showed was equivalent in most ways to my charge field.

In part 2 of his paper of 1861 entitled *On Physical Lines of Force*, Maxwell returns to the vortices he proposed in part 1. We will find he quickly makes a mess of the whole problem, which is why he very soon had to dump the whole idea. His failure has been a 15-decade tragedy, since the failure of a top theorist and mathematician like Maxwell convinced everyone the problem was either insoluble, or at least insoluble with any sort of spin mechanics. No one after Maxwell tried to finetune his solution, to make it actually work, although I will show it isn't that hard to do. This may be why physicists following Maxwell in the late 19th and 20th centuries were so afraid of being wrong. Feynman was still deathly afraid of publishing something that wasn't right in the 1980's (although I have shown he did so anyway). Maxwell's failure to explain electromagnetism mechanically in the 1860's basically scared physicists for seven generations, including Maxwell himself. Chastened by his failure, Maxwell all but swore off mechanical proposals and, like his colleagues, hid more and more in the math. And so he set a precedent that has stood to our own time. As a subfield of physics, mechanics took a steep fall in the 1860's, then took another steep fall in the 1920's, with the Copenhagen interpretation. Physics has never been the same since. Not only has it not recovered, but its fall has accelerated with each passing decade.

Before we look at how Maxwell failed, I would like to briefly revisit a point I made in the first part of this series. I touched on the fact that string theory is an obvious extension of Maxwell's proposal here, minus the failed spin mechanics. I don't know that anyone else has made that connection, so I want to circle it again. It seems to me that what the early string theorists did was borrow Maxwell's lines of force in this paper, rename the lines "strings," and then jettison the vortices. But they kept the tension along the line, which became the tension on the string. String tension is the fundamental force in the string theory universe. This is important for at least two reasons: one, it shows that the string theorists were not as revolutionary as is claimed. They stole the idea straight from Maxwell. Two, it shows what poor readers they were, since they didn't have the intelligence to steal a good idea. I myself have borrowed an idea (dimensions of mass) from Maxwell, but I had the perspicacity to borrow a good idea, and to give him credit for it. String theorists have borrowed one of Maxwell's worst ideas, making it even worse in the translation. As I showed in part 1, Maxwell is proposing stress or tension on a line, which is impossible. You cannot create tension or stress in one-dimension. The line cannot

respond to hydrostatic pressure around it, which makes any tension or stress along the line impossible to propose. But because their master Maxwell implied it could be done here, they just ran with it, never bothering to ask if it contained any logic. It doesn't. The string theorists' failure to question Maxwell has doomed all of string theory, since all of string theory balances on this false first postulate. If the string theorists are wrong about their strings and tensions, they are wrong about everything. *They are wrong about everything.*

We see Maxwell's first crash-and-burn on page 283 [just before eq. 27]. He sees that he needs all his vortices spinning the same way, so he is forced to propose a row of idle wheels in between each row of vortices. This is what I meant in part 1, when I said he was falling into the paradox of the plenum. He not only has vortices, he has them existing cog to cog. He is trying to create a pinwheel universe, and we see why he was later mocked for it. In this section, we see him proposing a universe not far different than the Aristotelian orrery universe, and I have to admit it does look a bit ridiculous. He spends dozens of pages of equations calculating the motions of these idle wheels, which is sad. I admire Maxwell for attempting a mechanical explanation, but I could wish he had done it better. Still, we all make mistakes, and the real tragedy is not Maxwell's error here, it is that the error hasn't been corrected in 150 years. Maxwell's greatest error here wasn't this limited mistake, it was giving up and letting others convince him to abandon mechanics.

Of course, the same sort of people that gave Maxwell a hard time for his attempt at mechanics are still around today, giving me a hard time. But they don't even bother to read my papers closely, to see what I am up to. They skim a few pages, just enough to discover I am trying to apply spin mechanics to the charge field, which is enough for a knee-jerk dismissal. Maxwell failed, so I must surely fail, too. Everyone from Kelvin to Bohr to Feynman has assured them of that, so they don't even need to study my solution. They have been taught that all mechanical solutions at the quantum level *must* fail. This is RULE 1 of the Copenhagen interpretation. All top physicists have been mocking mechanics for decades. Mocking mechanics is the go-to pose of contemporary physicists, and it is taught day-one in graduate school. Big math is cool, mechanics is uncool.

But although Maxwell made a mess of spin mechanics here, his mess can be cleaned up very quickly and easily, which makes it very difficult to explain why no one has done that cleaning in 150 years. Maxwell doesn't seem to realize that he doesn't need his vortices spinning one another. He can take the spin as given, and what he really needs to explain is why the jostling doesn't totally de-spin them. Even that isn't difficult. The jostling *does* de-spin them, which is why a magnetic field dissipates over very long distances (in some circumstances). But these are photons traveling c , and any field we are studying on Earth is fairly short. In crossing the field, there isn't enough jostling to de-spin the field to any measurable extent. Whatever spin the photons had at one end of the field, they will still have at the other end. So there is nothing to explain.

The same goes for the original spin. Maxwell doesn't understand why he can be given the spin, because he doesn't understand his field mechanics. He doesn't understand that any magnetic field he could be studying or proposing must have been created by charge passing through matter. It is the matter that sorts the spins, or makes them coherent. It is the coherence that explains the strength of the magnetic field. The matter doesn't have to spin the photons, since they are already spinning. It only has to sort the spins. Some matter does this well and some doesn't, but if Maxwell is giving himself a magnetic field, he is also giving himself some amount of matter capable of sorting the charge. So he is *given* the spin coherence. He doesn't need to have the photons spinning one another all along the path.

The same goes for the original spin. Matter doesn't spin photons, it only coheres the spin by

channeling it. So where does the original spin come from? Simply from collisions. If you have no baryonic matter in an area, you would have no spin coherence and no magnetism, but you would have spin. Why? Edge hits. Any edge hit will cause spin. So we don't really have to explain spin, either. Notice that, given a lot of tiny spheres flying around randomly, it is much harder to explain lack of spin than spin. Say you were given a universe of spheres colliding randomly. Then you were told they were all not spinning. That would be the mystery, would it not? Spin is no mystery. *Lack* of spin would be the mystery to be explained. The only way you could explain lack of spin is if the spheres never collided. But the probability of that is zero. Therefore, spin is the default state. And the amount of spin we find is simply a function of the density of our spheres.

You will say, "No, in a random collision of spheres, the spins would sum to zero. There should be no spin." No, that is only true globally. If we start with spheres not spinning, then let time pass, after any time the total spin is zero. That is true. But the total spin applies to the entire set, not to any subset. Therefore, in any space smaller than the entire space, the spins would not sum to zero. Therefore, spin is given.

This only leaves us with c . Why are photons going c ? Doesn't that break the conservation of energy law? No, it doesn't, since energy is conserved in *a system*. A fundamental field isn't a system. To conserve energy, we only have to have the same total speed in our field at time x as we have at time y . We do not have to have zero speed. Again, the easy way to see this is to follow the previous logic. All photons at speed zero would actually be harder to explain than all photons at speed x . The only way to explain all photons at speed zero is to propose no motion and no collisions. Any motion in the field will eventually translate through the entire field via collisions, so velocity is the default state. Statistics tells us the same thing. There is only one way to have all photons at speed zero, and an infinite number of ways to have them not at speed zero. Therefore, the probability of speed zero approaches zero and the probability of speed x approaches 1. The actual speed is then determined by the density of the photons and the initial relative motion.

Now let us return to Maxwell's displacement field equation:

$$D = \epsilon_0 E + P$$

First, let us write that in terms of the Electrical Field E :

$$E = (D - P)/\epsilon_0$$

I have said many times before that the electromagnetic field depends on the charge field. The charge field is primary and fundamental, and the E/M field is only a result of it. I might have been asked how the two fields relate mathematically, and now we see how they do. Since I showed you that D is really my charge field and that ϵ_0 is really the gravity field at the quantum level, we can rewrite the equation this way:

$$E = (C - P)/g$$

To really make sense of this, we also have to re-define the variable P , which current theory gives to polarization density. What are they really trying to represent with that, as a matter of mechanics? To

understand it, we should ask what the equation would lack without it, given my mechanics. What if we only had this equation:

$$E = C/g$$

That would represent for me that the Electrical field was equal to the Charge field divided by the local gravity field. What is missing there? The matter field. Given just those three variables, we don't know how much matter is present, or in what form. Since it is the matter that is making the charge field coherent as a matter of spin or focused as a matter of charge strength, we need to know that. Since we have no magnetic component here, we can ditch the spin coherence consideration in this particular equation, but we still need to know what matter is present to know how charge is coming out of the nucleus. [In my nuclear papers](#), we have seen how different elements channel charge in different ways—at different densities. This is what the variable P is really telling us. They claim it is telling us the amount of charge separation, but that is wrong. We don't need charge separation, and they actually know that. They know that in quantum experiments, we can get high values for P without charge separation. Near the nucleus, we get channels of high charge densities without having free electrons nearby to create this naïve charge separation. They try to fudge this charge separation by telling us that the atom's own electrons create this charge separation, but since the measured charge channels extend beyond the proposed electron orbitals, this explanation doesn't wash. It especially doesn't wash now that I have shown there are no electron orbitals. The electrons are orbiting only in eddies around the proton poles, not around the nucleus as a whole, so the charge separation idea is blown. Polarization density is simply a density, and it has nothing to do with polarization in this way. We need the variable P in the above equation simply because we need to know what elements are present, and how they are channeling charge. This variable tells us that.

Therefore, we need to tweak the equation a bit more. Given my variable re-assignments, the minus sign no longer makes sense. In this equation, we now see that C must be the ambient charge field density, and P is the charge field density as it is emitted from the matter present. We then add them together to get the total charge density at a given point outside the nucleus. So the equation should be,

$$E = (C_A + C_N)/g$$

That is, ambient charge and nuclear charge. However, since you would have to leave the atmosphere of the Earth to get a good measurement of the ambient field, this equation is not of much use in that form. In Maxwell's time there would be no way to get a value for it. Now, we could get a value for it, but we don't. We don't choose to write the equation in that way or in that direction, because we haven't understood there IS an ambient field. Therefore, we would have to solve in the other direction, measuring E and then solving down for the two C terms.

However, I would like to point out that this equation now gives us a way to calculate the charge emitted by various elements and molecules. Up to now we could only measure the electrical field E, not the charge field C. We still can't measure the charge field directly, but with this new equation we can *calculate* it. Like this:

$$E\epsilon_0 - C_A = C_N$$

We can measure E directly, we know ϵ_0 , and we can measure C_A from satellites. You will say, “Won't we always be measuring E, even with satellites out in space?” Yes, strictly, that is true. To measure C_A , we would have to measure the field with no ions in it, and if there are no ions, we have no way to

measure. Our machines can only track ions, not photons. However, we can get around this by extrapolating. All you have to do is measure E near the surface of the Earth, then in the upper atmosphere, then in space near the Earth. You will find falling values of E , of course. You then calculate the limit of those values, which should be a value above zero. That value should be a good estimate of C_A . Using the equation above, that will give you a value for C_N . Just a suggestion. It may or may not be feasible, but I thought it was worth mentioning. I have no fear of making mistakes, I only fear giving up.

This new equation proves by itself that the charge field is not virtual and that charge is not mediated by virtual or messenger photons. Since we will obtain a real value above zero for both charges, the charge field must be real. Virtual fields do not give us real field values. We only needed virtual fields because we could not calculate real fields, but now we can.

Of course, it is not my new equation that proves this. Maxwell's displacement field was proof enough that the charge field was not virtual. His equation—without my updates—is a real field equation that yields real values, so it is hard to understand why physicists now think they can mediate the charge field with virtual photons. How can they bury the charge field under virtual gymnastics when their own master Maxwell has given them a real equation for the field? The only answer to that is that they have never recognized what this displacement field really is. Because Maxwell's vortex theory failed and was dumped, they have also dumped the mechanics of the displacement field. Since Maxwell couldn't provide a mechanics for it, they have kept it but made it non-mechanical.

You should find that very curious. Their reasoning apparently goes something like this: *Maxwell showed us a field that works in the equations. It is clearly necessary. But he failed to show us the mechanics of this field. Therefore the field is non-mechanical.* I hope you can see the illogic there. Maxwell's failure to show the mechanics was no indication that the field was non-mechanical. It was only indication that he couldn't figure it out. The logical thing to do would have been to continue to seek the correct mechanics. The reaction to Maxwell's failure was unscientific in itself. That unscientific reaction has persisted for 150 years now, to disastrous effects.

More than anything else I have uncovered, this explains the current confusion about the charge field. If we seek just one main reason that contemporary physics is so gloriously ignorant of the charge field, it is this. Maxwell's failure to explain the mechanics of the displacement field in 1861 buried field at that time, and it has been buried since. It was immediately pushed into the background, and has existed in the dark all these generations. Now, physicists don't even understand that the displacement field is linked to charge. For modern physicists, the displacement field is just a mathematical nicety, a minor feature of the Maxwell equations, one hardly worth talking about or teaching. In fact, because it is not understood, they have preferred to hide it. It is often not taught at all, and when it is taught it is taught in cloaking terms. If you ask any questions about it, you are “wayward.” As for the charge field, modern physicists don't believe in a charge *field*. They see no link between the displacement field and the charge field, so they have to bring in virtual photons to explain charge interaction at the quantum level.

And so my digging out of the displacement field is of paramount importance. I have proved that it is not only equivalent to the charge field, it is primary. The charge field sets the E/M field, by the equation above, so charge is the foundational field. The unified field is not composed of gravity and E/M. E/M is only result of charge, so the unified field is properly expressed as a composition of gravity and *charge*. This is why I have written my unified field equations as a unification of charge, not E/M. As we now see, *the E/M field is already unified*. Just consult the equation above:

$$E = C/g$$

That is already a unified field equation, and we can see the unification in the equation. The Electrical Field is Charge over Gravity. The ratio indicates the unification, you see.