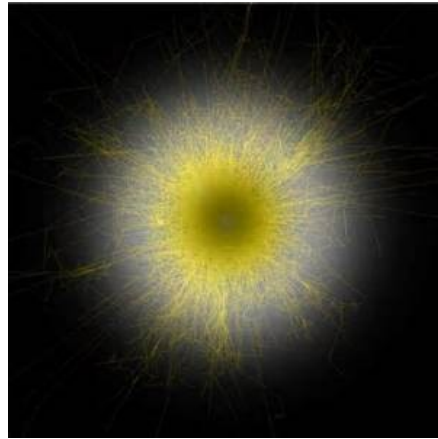


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# AN ARGUMENT FOR PHOTONS



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I occasionally get emails from readers telling me there are no photons (or no electrons). They tell me that recent experiments have contradicted old experiments and mainstream interpretations. Some of these emails come from Electrical Universe people; others come from readers of Eric Reiter. In this short paper we will look briefly at the experiments and interpretations of Reiter.

Eric Reiter runs a website called [Unquantum.net](#), which argues there are no photons. Reiter claims that light is only emitted in a particle-like manner, but that it spreads not as a particle but as a wave. But while I like Reiter's writing style—which is relatively clear and honest—and while I like his arguments against the mainstream—which are for the most part true—I do not like his conclusions. Even accepting his experimental outcomes, we can explain his data without jettisoning the photon. His results are quite easy for me to explain, and I believe strongly in photons. I am not a believer in mainstream photon theory, or even in mainstream quantum theory, but I do believe in the photon. I have used the photon to explain many things, so you can understand why I would not want to give it up too hastily.

In short, Reiter has rerun the old beam splitter experiments with gamma rays. He shows that the results are opposite of the results of smaller photons, and that these results have been buried to protect mainstream theory. He is of course quite correct in this. It is not just these results that the mainstream has buried. I have shown hundreds of other examples, so I am very easy for him to convince in that regard. But do his results contradict photon theory as a whole, or only the muddled mainstream theory? Let us look more closely.

Reiter sets up an experiment where a single gamma ray is emitted. It is focused on a mirror, which can either divert it or let it pass. Detectors are set up in both paths. According to photon theory, the gamma ray should either be diverted or pass; but not both. The results of Reiter's experiments show two separate hits beyond the mirrors (in separate detectors), which Reiter takes as indication the initial photon has split. He tells us this refutes mainstream theory, forcing us to ditch both the photon and the

quantum. I will show you very quickly why it does neither.

Like the mainstream, Reiter assumes the only players in this experiment are the mirrors, the detectors, and the emitted photon. Therefore, if we emit only one photon and discover two hits in the detectors, the initial photon must have split, which would indicate it wasn't indivisible. If it wasn't indivisible, it couldn't have been a quantum of energy. And since this quantum of energy is what we define as a photon, the emitted thing couldn't have been a photon. It had to have been a divisible packet of some sort.

If you have followed Reiter so far, you may be prepared to follow him on his next step, which is digging up the old loading theory of Planck. In a long PDF, Reiter dredges up the mainstream historical theory he shows has failed and tries to tweak it at its foundations by jettisoning what he calls its “particle bias.” He takes us back to the wave guide theory of the early part of the 20<sup>th</sup> century, and tells us we simply have to drop the “guide” idea. The wave isn't guiding the particle. There is no particle. The wave is all there is. Here is how he puts it:

Quantum mechanical models of light and charge have great problems. If a wave guides a particle, what generates this wave? If the particle generates the wave, the field must have a center. There has never been devised a causal model whereby such a field can guide particles to create an interference pattern.

That's true as far as it goes, but I have shown there are other ways around this problem than dropping the particle from it. Reiter is trying to simplify old theory, but he is actually forced into an incredible amount of complexity due to his acceptance of the greater part of old theory. Specifically, while he is correct to say that there has never been a model where a field can guide particles to create an interference pattern, he is *incorrect* to say that there is no way for the particle to generate the wave—and thereby the interference pattern. I know because I have published that model.

The trick here is that Reiter says, “no field can guide particles to create an interference pattern.” That's true. But it does not follow from his previous sentence, which implies that the particle cannot generate the wave. He has skipped over the right answer in between the two sentences. You don't need any field or guidance if the particle is creating the wave *by its own spin*. I have shown that if every particle is composed of some number of stacked spins, these spins can create a wave pattern at our level without any field or guidance at all. In which case a single photon can carry a wave via its spin. The wave nature of light isn't caused by groups or fields or fronts or packets of photons. It is caused by the spin of each individual photon. I have shown [in dozens of papers](#) how this solves many of the most difficult embedded problems of quantum mechanics, and it also solves Reiter's problem here.

So it isn't by jettisoning the photon that this problem is solved most efficiently. It is by keeping the photon and studying what it must be doing in great detail.

Curiously, the old loading theory that Reiter is dredging up does point to the right answer, if you know how to follow the pointer. Planck and now Reiter treat the field as composed of partially filled vessels, vessels that can become fully filled. That is all he means by loading. If they become fully filled, they then click on a detector. Reiter tortures equations and logic to show how one emitted energy packet can split, causing two separate containers to fill, but all that is unnecessary once you figure out how the field is really composed. That is to say, the field that is being “loaded” is the charge field, and it is being loaded by real spin collisions.

To see that requires understanding that charge is present, and what charge is. Reiter treats it as ambient

waves, but doesn't tell us what causes those waves. Remember above, where I said that like the mainstream, Reiter assumes that only the gamma ray, the mirrors, and the detectors are present? Well, he knows charge is also there, but as with light, he never gets around to telling us exactly what charge is. Again, he mostly accepts mainstream and historical theory, which treats charge mathematically and theoretically, rather than physically and mechanically. He hasn't figured out that charge and light are the same thing.

He treats charge and light both as waves, but it is far easier to think of them both as spinning particles. Because if we do that, his experiment falls to the same explanation I have used for all other quantum mysteries. Like this:

Let us go into the mirror. What is the mirror? Is it just atoms in a lattice? No. It is atoms in lattice *filled with charge*. Not all material is magnetic or electrical (to an obvious degree), but all material is charged. All material is made up of protons and electrons, and all are charged. I have shown that all substance is recycling charge. What this means is that all nuclei are recycling charge *photons* through their bodies. Electrons are also recycling charge, to a lesser degree. All this recycling is a result of spin mechanics. The photons are spinning and so are the larger bodies. These spins set up potentials that drive charge in defined paths through these spherical bodies. You will have to consult my previous papers for more on this, since I can't gloss my entire theory for each new paper. If you think this theory is nebulous, I recommend you to [my nuclear diagramming papers](#), which show the actual charge recycling paths for most of the elements, and the mechanical reasons for those paths.

Once we know the mirror is filled with this charge, we understand better why gamma rays would not act like smaller photons in experiments like those of Reiter. According to my theory of stacked spins, gamma rays are very large photons with many stacked spins. In fact, gamma rays inhabit the level in my spin mechanics just below the electron. They are the largest particles that can travel at  $c$ . If they take on another spin they become too large to dodge the ambient charge wind, and they can no longer travel at  $c$ . Their velocity drops and they become what we call electrons.

This explains immediately why the gamma rays interact with the mirror in a different way than smaller photons. The mirror is more dense with charge than the ambient field the gamma was previously moving through (in the air). So while smaller photons are turned by the mirror by hitting part of the molecular lattice, gamma rays can also interact with the charge in the mirror. They can also interact strongly with free electrons.

This means that the field is not one of partially filled vessels. The field is one of spinning particles that can accept or release stacked spins. The correct model is not a filled vessel model, it is a stacked spin model. Stacking spins can be thought of as a sort of "loading", which is why I said Planck's old theory was not totally wrong. It was pointing at the right model, if only darkly.

You may be interested to know that both Newton [and Maxwell toyed](#) with this spin model, and at times came close to cracking it. Actually, both did more than toy with it. They worked hard on it, but weren't able to make it work in the end. I have shown why in my papers. Neither fully comprehended the gyroscope, or the rules of spin stacking. Feynman also worked hard on his own spin model, although this isn't widely known. See his clock models of the photon, and the [shrink-and-turn method](#).

For this reason, I propose that Reiter's experiment is all just one more tempest in a teapot. Nothing is being split, so the outcome is not mysterious from the start. We see two detections because the gamma ray is *knocking something out of the mirror*. Spin energy is being transferred in the collision, which

explains both the energy conservation and the frequency conservation Reiter demonstrates.

However, I predict it will be found that the energy transfer is quantized, which will destroy Reiter's un-quantum conclusions. For while he is correct that historical quantum theory has been a disaster, he is wrong to think that means there is no quantum. There are actually many quanta, by many definitions. Every particle is a quantum simply because it is discrete. And most energy transfers are quantized because the spin levels are quantized. In the problem at hand, the energy transfer must be quantized not because we have photons involved. No, the energy is quantized because we have spin levels involved, and those spin levels are quantized. As I show in my superposition papers, each stacked spin must be double the size of the spin beneath it, due to simple gyroscopic rules. The outer spin must be double to get beyond the influence of the spin beneath it. This creates the series 1, 2, 4, 8... which is quantized.

So when our gamma ray collides with a free electron, say, the collision is between outer spin levels of both particles. It is an *edge* hit. One particle loses a spin and one gains. The energy transfer is not only quantized, it is in some sense *equivalent*. Which means that all energy levels are equal, they just inhabit greater or lesser volumes.

But we don't need to get into that here. It is enough to show that, as usual, the problem is simpler than anyone makes it. The mainstream has made all problems exponentially more difficult, but even Reiter's simplification isn't much of a simplification, as you see. His idea of removing the particle from the wave/particle duality isn't so much a simplification as it is a further mystification. Notice, for instance, that he calls the particle idea a "bias." But ask yourself whether the particle idea is really a bias. Isn't it simply a logical inference? As every verb requires a noun (what is "running" without someone running?), every wave requires a particle. By definition, a wave is pattern, but patterns are like verbs: they require nouns or things to create them. Or, a wave is not a thing, it is a *characteristic* of a thing. By definition, it is always secondary, never primary. If a particle begs one question, a wave begs two. So the last thing you want to do to correct a wave/particle duality is ditch the particle.

Curiously, we see Reiter getting caught up in this contradiction himself, in rather amusing ways. As just one example, we see him trying to explain loading by using the partially filled vessels. But of course vessels are particles. You can hardly ditch the idea of particle as a bias and then turn around and propose a loading model. "To load" is a verb which requires a noun. Something has to be loaded, and that something is always going to be a particle. You cannot load waves upon waves, since waves are characteristics. Characteristics are always going to demand things that have those characteristics.

I made quick work of this contradiction because I have seen it many times, not only in science but in art. In art it has created untold confusion, especially in the past two centuries, where we have seen it muddle up the question of aesthetics. I refer you to [my 2004 paper](#) called *Beauty as a Property*, and specifically to the great critic John Ruskin's argument in "The Pathetic Fallacy," which I explain in that paper. There, we find the same basic inability to understand what words mean, when commentators of the recent past assume that qualities like "blueness" can exist without things that are blue.

In art it is the whole subjective/objective question: is beauty objective or subjective, for example. Does beauty exist in the object, or is it in the eye of the beholder? Most would now say the latter, since that is what we are taught, but Ruskin argued the opposite. Beauty is a quality of a thing, and for it to be seen it first has to exist in that thing. The *recognition* of beauty may be in the eye of the beholder, but the beholder cannot be the cause of a real characteristic. The object is what it is, and the beholder cannot influence that reality in any way.

I hope you can already see that this conundrum has infiltrated physics, and that it did so long ago via the same sort of confused people. It is at the root of all current subjectivism in physics, including the Copenhagen interpretation, the observer effect, and countless other absurdities. And while Reiter usually argues against these absurdities, he is, in fact, falling to the same misunderstanding here. You see how he is proposing the existence of secondary qualities (waves) without their immediate and primary cause by a thing (particle). He appears to think he is improving on the previous models of Planck, Schrodinger, Bohm, Bell, and others, but he is just continuing the muddle.

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Along with understanding the stacked spin model, you also have to understand that all physical theory is ultimately smaller and larger particles moving through more or less dense fields of other particles. It is this motion of particles that explains all “field” potentials. For example, photons move at maximum speed simply because they are small enough to do so. They dodge cross traffic most efficiently and suffer the fewest collisions. Larger particles are larger because they have suffered more collisions and taken on more spins. The spins make them larger, in effect. Being larger in the field, they cannot move through it as efficiently, hence they are slower. They *can* be accelerated, but this takes more energy because they have to be pushed through more collisions. This is the cause of inertia.

But of course to talk of greater or denser fields of particles, you have to have free space. You cannot have motion or increased density in a field that is already filled edge-to-edge, so you cannot start with a plenum. This was the mistake of many in the past, and many now. Like Aristotle, Maxwell tried to fill space with spinning photons, spinning edge-to-edge like cogs. That has always failed and always will. The photons have to move through free space, and you go from there. Edge hits on photons cause spins, and spun-up photons comprise all larger particles. These larger particles then interact in defined and mechanical ways. That is physics. We have been told that Nature cannot be explained that way, but I have shown She can be explained better that way than any other way. So-called pool ball mechanics can't explain everything, but—used rigorously and honestly—it can explain far more than the maunderings of Modern pseudo-mathematical pseudo-physics.