

A Destruction of Quantum Field Theory

part one

by Miles Mathis

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As promised, in this series of papers I will go page by page through a current textbook, showing how I have destroyed Quantum Field Theory, replacing it with something much better. My readers already know exactly how I have done that, and I assume the mainstream already knows it, but—as with my now confirmed [Solar Cycle theory](#) and prediction—it may help the revolution move faster if I keep hammering on it. The walls of entrenched theory, propaganda, and propagandists are far from being cleared, mostly because these people are zombies who don't realize when they have been killed and keep yapping regardless. But real physics moved on at least two decades ago, leaving all these people in their leveled, smoking ruins—which should be highly embarrassing for them . . . but somehow isn't. Big money keeps pouring in from somewhere to keep them slouching in their rotting chairs, where they keep mouthing the old failed theories and the old failed warnings not to question them, as a chorus of paid agents and bots cheers mechanically from the burned-out bleachers.

[In the current fracas, we find leading the press the usual minor Youtube agent](#) so vile he doesn't need a last name (Professor Dave) or bio, which just gives me the opportunity to ignore him as the nobody he clearly is. As is my normal method, I refuse to be diverted by lackeys, seeking out the ranking person to attack directly. If you take out the queen you don't need to deal with pawns. The queen here is Michael Peskin, and many commenters have been planted to say that “he wrote the book” on Quantum Field Theory. In a limited sense this is true, since he did co-author a widely used overview of the subject, but more generally it is false, since he invented *precisely none of it*. Normally when you say someone wrote the book on something, you mean he invented it or otherwise took part in creating its foundations. For instance, you could say [I wrote the book on Nuclear Diagramming](#), since I invented it all by myself. You could say I wrote the book on [Solar Cycles](#), or on [Unification](#), or on the [Bode series](#), or on [Superposition](#), or on [particle hierarchy](#), or a hundred other things. Peskin and Schroeder admit on the first page of their introduction that they just updated Bjorken and Drell's overview of Quantum Mechanics from the 1960s, bringing it up to the 1990s, and even Bjorken and Drell were just promoters as well, selling this mess to graduate students. And although they tell us a lot had happened in those thirty years, the truth is almost nothing had, except thousands more experiments *proving it was all wrong*. But of course Peskin can't admit that. He ignores almost all those experiments, mentioning only a few that have been massively twisted after the fact to look like confirmation.

Peskin is now 74, so you would expect his fifty years in the field to have generated an impressive *curriculum vitae* of big discoveries and a long list of major problems solved. Instead, his Wiki page is short and devoid of any and all problem solving. Google Scholar lists 100 papers, but since he has been active for more than 50 years, that is less than two a year, and many of them are fluffy magazine articles where he is just acting the cheerleader. The rest are on manufactured topics like the Higgs Boson. As a comparison, I publish about 150 papers every year on both my sites, and have done for more than two decades, and precisely none of them gloss, extend, or promote mainstream theories. All of them are dense and content-heavy, going places no one has gone before.

We are told Peskin is most known for the Peskin-Takeuchi parameters, which—like all other new physics—is made up from nothing. It was to address four-fermion scattering and to help predict the Higgs, which tells us all we need to know. There is no vacuum polarization, no four-fermion scattering, [and no Higgs](#). These parameters are based on gauge bosons allegedly causing or mediating the electroweak force . . . except that that *also does not happen*. [There are no gauge bosons](#), or [bosons at all](#), everything being mediated by real charge photons in nuclear charge channels, so I have killed all this bombast from the foundations, showing it was always just pillow stuffing. No experiment ever showed the least indication of any of this, including gauge bosons, electroweak force, strong force, vertex corrections, loop diagrams, or any of the rest of it.

Because mainstream physicists never understood what charge was or how it is mediated by the particles and the nucleus, they had to manufacture from whole cloth several major subfields, including quark theory/QCD, strong force, and electroweak force. Since all these old guys back to the beginning were terrible theorists with horrible visualization skills and no respect for logic or continuity, these theories were just as naive and contradictory as the molecular bonding theories—like electron sharing—they claimed to support and underlie. In that way this series supports and restates my previous and ongoing series on physical chemistry, which I have also utterly destroyed and overwritten. That textbook also needs to be pulped, starting over from scratch, and I am doing that as well.

The final section on Peskin's Wiki page ends with this:

Peskin uses high energy colliders [SLAC Stanford] to search for new physical interactions on the basis of high-precision observations and measurements of elementary particles, including the W and Z bosons, the top quark, and the Higgs boson.[\[21\]\[22\]\[23\]\[24\]](#) **He is interested in modelling dark matter**[\[25\]](#) **and is an advocate of building a future linear collider,[\[26\]\[24\]](#) **a "Higgs factory".**[\[1\]](#)**

Which tells us what he is all about: continuing to manufacture all this electroweak and Higgs garbage in order to bill the treasuries to fund these hugely expensive colliders, which he thinks we still don't have enough of. [My destruction of all the Higgs promotion back in 2012](#) should have killed Peskin and all like him, and did, but since the mainstream never reported it, the news has not reached most people, including apparently Peskin, who is under the misapprehension he is still alive. Like James Carville, he mistakenly believes he is still functioning and valid. This paper should disabuse him of that notion.

But honestly, Peskin's validity is neither here nor there, and never was, since as I said this was never about him. His arrival at Youtube is the usual modern non-event, astroturfed to make it appear almost real. His textbook is mainly about continuing to promote Richard Feynman and the other larger frauds of the 20th century [whose ghosts I have also killed](#), and their falls are of much greater import to the mainstream than any fall of Peskin. For of course the bigger picture is that all of mainstream physics has crashed and burned in the past two decades, which is precisely why Peskin was trotted out on Youtube last week, on the channel of this loudmouth agent who thinks he is a great debater. The CIA is trying desperately to salvage what it can of the prestige of physics, which just thirty years ago was still believably sold as the queen of the sciences. Now it is known as just another fraud, more fake news. So much so its funding is quickly drying up, [the stolen money being transferred over to the newer fraud AI](#). That is what the new brouhaha is about: a squabble for government funding from a bunch of pretend scientists.

Although it goes no deeper than that, it is again great for me regardless, since I love seeing all these

people tear each other up. I could just stand back and enjoy the spectacle, but that they are doing even that very poorly. They have been instructed to stay on the surface, as usual, so as not to damage the history of physics itself, but as you see I have no such limitations.

That having to be said, and now being said, let us move on to the textbook, *An Introduction to Quantum Field Theory*, Peskin and Schroeder, 1995. My copy is apparently the 2016 edition. 800 pages of fiction.

Part 1 is entitled “Feynman Diagrams and Quantum Electrodynamics”, which is already a red flag. You would not logically expect such a book to start with Feynman diagrams, since they should be a minor aspect of Field Theory. But this was what I was expecting, honestly, since Feynman himself [liked to teach QED in reverse](#), smothering his graduate students in difficult math and complex details before even defining the problem. This was to soften them up and remove all defenses: if they were confused enough they would just gulp it all down as scripture, treating Feynman as the guru he wanted to be. It is textbook brainwashing, right out of Bernays and Langley, and mainstream physics has relied on this trick for decades, all the way back to Bohr. They would have to, since I have proven it is all they ever had. Taught in a straightforward manner, no student would ever accept any of it.

We see proof of this immediately in the opening sentences:

The main purpose of Part I of this book is to develop the basic calculational method of quantum field theory, the formalism of Feynman diagrams. We will then apply this formalism to computations in Quantum Electrodynamics, the quantum theory of electrons and photons. Quantum Electrodynamics is perhaps the best fundamental physical theory we have.

Do you see a problem there? No? The third sentence sort of comes out of nowhere, doesn't it? He starts with heavy misdirection, then goes straight into promotion in the third sentence? Not a good start, is it? No real book would start this way.

If you don't see what I mean, consider that the book must be misnamed, since he admits its main purpose *isn't* to teach you the **theory**—because there isn't any sensible theory—but to teach you calculational methods, diagramming tricks, and other “formalisms”. Also notice that he very advisedly calls this “calculational methods” instead of what you would expect: MATH. Isn't a calculational method just math? So why use this clunky term? I will tell you why: because just a few years earlier, in 1985 to be exact, Feynman himself had admitted in his book *QED* that all this math, including all of renormalization, *wasn't really math at all*. It wasn't even legitimate calculational methods, since he called it “hocus-pocus”, “not legitimate”, “bad math”, and a “shell game”.

To get you into it, here is how Ron Schmitt glossed the method of renormalization in his well-known book:

To cancel the infinite term of the electromagnetic mass [the infinite mass of the electron, according to Maxwell's equations], the bare mass is defined to include a term that is equal but opposite in value to the electromagnetic mass. In other words, the bare mass contains a term that is infinite and negative. The positive infinity from the electromagnetic mass and the negative infinity from the bare mass cancel and the result is the finite mass that is observed in experiments. The technique, called renormalization, is not necessarily elegant, but it works to incredible precision. **QED is the most accurate physical theory that mankind has produced.**

Not necessarily elegant? You have to laugh. How about a massive fudge, right out in the open? And notice he has used the same feint Peskin just used. After blowing a gob of goo right in your face, he hypnotizes you immediately with that bit of shiny salesmanship about QED being the most accurate, etc., like he is selling you a new car.

Another problem is that term “formalism”. Why is Peskin talking about formalisms in the first paragraph? Isn't this book supposed to be about field theory? Formalism here means the opposite of mechanism, since Quantum Field Theory claims to solve problems by bypassing mechanics and any old notions of physicality, cause and effect, and the rest, relying instead on free-floating operational “math” and other unsightly tricks. Basically, by the modern notion of formalism, all the old rules are flushed and physicists are allowed any method that gets them from point A to B in a solution. So just as Peskin advisedly used the term computational method to skirt any mention of math, he is using the term formalism to skirt any mention of mechanics, and as you see he does it in his first sentences. So this will be a field “theory” without any math, without any mechanics, without any field, and therefore, strictly, without any physics. And without any theory. All real physicality will be bypassed by operators, unassigned variables or functions, and free-floating diagrams of things that don't and can't exist. Those things will now “stand for” the physics, the field, the math, and therefore the theory. As you now see, it is all a pretend physics. Pretend science by pretend scientists. The usual Modern vaudeville we have come to expect from these people in all fields.

So Peskin has utterly given himself away in the first paragraph, but no one any longer reads closely enough to see something like that. Physics students certainly don't, since this stuff just bounces off their eyeballs: they are sleep-walking through these opening sections, waiting to get to “equations” they can memorize for their grade. They have already read too much contemporary science in high school to expect it to make any sense, and so have no delusions in that regard. As grad students they were hit hard in orientation with the “shut up and calculate” requirements, which no longer wait for day one in class. But the die was cast even before that. No one would be foolish enough to apply to graduate school in physics or astronomy or chemistry expecting anything to make sense. That would be like applying to graduate school in art expecting to make art.

Regarding scientific formalism, we find this at Wiki:

A physicist who took the issues involved seriously was [Pierre Duhem](#), writing at the beginning of the twentieth century. He wrote an extended analysis of the approach he saw as characteristically British, in requiring [field theories](#) of theoretical physics to have a mechanical-physical interpretation. That was an accurate characterisation of what Dirac (himself British) would later argue against.

And why did Dirac, the British, and all the rest change their minds on that? Well, because in the early part of the 20th century they got in over their heads in EM, having no luck in getting beyond Maxwell, but having an ever-increasing pile of experiments to explain. As I have shown, they couldn't possibly get anywhere without a firm understanding of charge and of the photon, but they didn't have it. All they had was the electron, so they tried to attach all theory to it. That quickly blew up in their faces, though they were too tightly stuffed to admit it, and still are. [A big part of the answer was in Maxwell's D field](#), but that had gotten buried in Maxwell's time, due mainly to his inability to come to terms with it himself, and Bohr and his minions like Pauli and Dirac buried it even deeper, first by [conflating the photon with the electron in early equations](#), and then by forbidding anyone from asking questions. So by 1920 all hope of real physics was already gone. They had come up against a wall they couldn't get

over. But rather than admit that and keep working on it, Bohr convinced everyone to import a bag of tricks he had learned from the philosophy department, dismissing mechanics as old-school and selling the world instead a new and improved “physics” of novelty, magic, and authority.

Once that happened, physics and the physicist were already dead, having been replaced by the con artist and the government stooge. And that is where we have been ever since.

So if you were wondering how an outsider like me could waltz into the field in 2000 and immediately begin solving huge problems, it is because thousands of them had been sitting there for almost a century, some for much longer. Mechanics—ie real problem solving—had become like barrel making or cobbling, and no one had done it for at least 80 years. One because they couldn't: the old wall was still there and no one had figured out how to get over it; and two because they had been *forbidden* from trying. All those toys had been locked away by the Grinch kings, who didn't want anyone solving problems they hadn't been able to solve in their long sad lives. You may think I am joking or exaggerating, but I am completely serious. For decades—even up to the present time—the major journals wouldn't and won't publish ANY papers on a huge variety of topics, including all the subjects I have written about and all the problems I have solved. That includes Relativity, Bode, the calculus, Maxwell's equations, Bohr's equations, Newton, Euler, Laplace, Lagrange, Solar Cycles, Core Theory, and any paper that questions any “settled” mainstream theory in any field or subfield. Questioning anything you are taught is strictly off-limits. It is protectionism, pure and simple.

But let's back up. We find clues even before we get to chapter 1, since a section of the Preface begins like this:

What This Book is Not

First of all, this is a book about theoretical methods, not a review of observed phenomena, we do not review the crucial experiments that led to the standard model of elementary particle physics or discuss in detail the more recent experiments that have confirmed its predictions.

Strange they would feel the need to say that, right? Why mention any experiments when you can just baldly state every fourth sentence that QED is the greatest thing ever, with no proof of that. But the real reason they don't review major experiments, old or new, is that precisely none of them have actually confirmed anything regarding QFT or QED, especially any predictions. Since 2000 the mainstream has begun to admit that, and [we have seen it in hundreds of my papers](#) on recent press releases. But it was always true, [since we have seen over and over that experiments can be said to](#) confirm only by pushing them mightily, both as they happen and by spinning them later. That is to say, the experiments are designed specifically to confirm some mainstream theory, everything is defined beforehand in mainstream terms to be sure they do, negative results are ignored or jettisoned, and then the report is put in the hands of propaganda specialists, who then rewrite the whole thing after the fact to turn a miss into a make.

I also point out that Peskin has already contradicted himself, from Preface to Chapter 1. In the Preface he tells us the book is about theoretical methods, but in the first sentences of Chapter 1 he walks that back: it isn't about theoretical methods, it is about calculational methods and formalisms, *which are not the same as theoretical methods*. Math and theory are not the same thing, even supposing you have math and not just calculational methods. Theory is supposed to come first, providing the necessary physical foundation for any math. But in Modern Physics, the math always comes first, and we will see that as we get further into this book, as electroweak “theory” is built upon SU, rather than the

reverse. Having no real world mechanics to base any of this on, since that would require an understanding of charge and the photon, QFT was manufactured instead upon group theory and other operators, since those operators gave them a pre-existing structure they could build on, you see. The same can be said for real particles, which were also jettisoned long ago. These people gave up on modeling the photon by 1920, and they have since given up on the electron and everything else, replacing them all with pretend quasiparticles like the phonon, magneton, qubit, orbiton, electron hole, and so on. Being pretend particles, they have no limitations. They require no consistency across theories or experiments, and can't be non-proved. This helps immensely when you are fudging an experiment after the fact, claiming it confirms the standard model. A standard model of pretend particles hopping on SU can hardly be non-confirmed, can it? The beauty of the standard model is that it can be fit to anything, which is why it was chosen in the first place. It is unfalsifiable, the perfect zombie physics.

At the top of page 4 (page 2 of the book proper), Peskin dives right into the scattering process, diagramming a positron and electron annihilating and the creation of two muons. Already he is proving my main points in several ways, since he immediately begins calculating the probability amplitude of annihilation before he has told us anything about the event. Math first, everything else later, if ever. He assumes the positron and electron have annihilated, and are somehow gone to the void, though it is far from clear how that could happen, or that it has. Wouldn't it be more logical to assume the first particles just changed in some way, becoming the second particles? Why assume annihilation and creation here, when it is wildly counterintuitive? Well, there is of course a reason. This postulate of annihilation that is never addressed wasn't chosen by the old guys by accident. It was chosen because it makes a clean sweep of those first particles. You ask no more questions about them, especially a question about how they are composed, or how that composition might change to make them into what we call muons. You will say it is beside the point, but it isn't beside the point. It is fundamental and crucial, determining all subsequent math and theory, so it shouldn't be rushed by like this.

In fact, I have proven that the only difference between the first particles and the second is an added spin. The positron and electron are spinning opposite, so that when they collide they spin one another up. A muon is just an electron with a extra spin. A y-spin in this case. A z-spin would take the muon up to a baryon. You will say that opposing spins should cancel, but that is only in the case the positron and electron are moving in the same direction. They are moving in opposite directions, so they are opposite twice, which adds or stacks.

That one fact trumps the entire 800-page book by itself, I would say, since it changes absolutely everything, and explains thousands of things. It also vastly simplifies the math, since we no longer need to tie these particles to gauge groups or other operators in order to put them in a field. All we need is simple spin equations, which can be fit to old wave equations in one step, and those spin equations fit naturally into the real world, with no tinkering. This is because we can use the same spin equations on photons, creating a real charge field that works the same way. You then have photons and antiphotons, giving us another degree of freedom in all quantum events, and sometimes more than one. That gives us anticharge and anticolor, and a thousand other things the mainstream has so far missed.

So you already see what I mean when I say they made huge errors right out of the gate. They were doomed from the start because for some reason I can't fathom they jetted right past this more logical explanation, missing the spin mechanics that would have opened a thousand doors for them. They assumed annihilation for no reason here, or only to hide their ineptitude, and then avoided spin mechanics again I suppose because they couldn't follow it. They didn't have the visualization skills to

see it, diagram it, or follow it in their minds. As you see, they assumed annihilation, or spins canceling, when the energies should have told them spins were stacking. And why were they so interested in probability amplitudes for annihilation, when far more important things were at hand to learn from this? God only knows. As you see, the math and numbers should have been left to later, but in their rush to calculate they missed everything of importance here, and have continued to miss it for a full century.

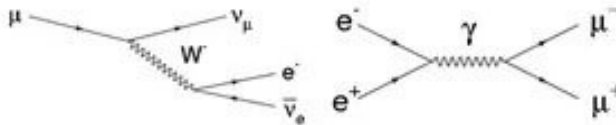
We see more proof of that immediately, since by p. 3 of the text of this “introduction” to QFT, Peskin is already jamming his students with some undefined dimensionless quantity M (the amplitude for the process to occur) which he wants to express as a perturbation series. What! A perturbation series for a probability amplitude on p. 3? Why? So that Peskin can dive right into the Feynman diagram, which is a visualization of this perturbation series.

Which brings us to the next major problem. In the Feynman diagram, the center wavy line is a **virtual** photon. What is a virtual photon? A pretend photon. If it were real it wouldn't have to be called a virtual photon, would it? So we are already in an undefined fantasyland by page 3 of this “introduction” to QFT. Nothing about the history of the field, nothing about the problem to be solved here, nothing about the actual field here—since there isn't one—a Feynman diagram is not a field and isn't diagrammed on the real world. There are no virtual photons in the real world, it goes without saying. So if you expect the next 797 pages of this book to be more solid, you are not paying attention. This is a perfect example of a castle in the air.

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Feynman Diagrams

Feynman diagrams are pictorial representations of AMPLITUDES of particle reactions, i.e scatterings or decays. Use of Feynman diagrams can greatly reduce the amount of computation involved in calculating a rate or cross section of a physical process, e.g. muon decay: $\mu^- \rightarrow e^- \bar{\nu}_e \nu_\mu$ or $e^+ e^- \rightarrow \mu^+ \mu^-$ scattering.



Richard Kass

Feynman and his diagrams



Like electrical circuit diagrams, every line in the diagram has a strict mathematical interpretation. Unfortunately the mathematical overhead necessary to do complete calculations with this technique is large and there is not enough time in this course to go through all the details. The details of Feynman diagrams are addressed in Advanced Quantum and/or 880.02. For a taste and summary of the rules look at Griffiths (e.g. sections 6.3, 6.6, and 7.5) or Relativistic Quantum Mechanics by Bjorken & Drell.

That was just the first thing that came up in my search for Feynman diagrams, since it was easier than photographing the book. But notice that the year is 2003, and the university author Kass is still recommending Bjorken and Drell instead of Peskin and Schroeder.

And again, it is like beating a dead horse already, but tinkertoy diagrams on no assigned axes of pretend particles **is not a field theory**. The electrons and muons already exist in the real world—the machines firing them being in a lab somewhere which exists in the real world—so why not diagram them there, mediated by particles that are known to exist? Because neither Feynman nor anyone else

could make that work, because as I say they couldn't follow real spins on real particles. Feynman was already constrained by previous famous theory he couldn't question, specifically that of Dirac and Pauli, according to which the photon had to be a massless and dimensionless particle to fit into SU and the matrices. So this is the best they could do—pretend diagrams of pretend particles expressed by all the slippery math they could get their hands on.

You can already see why Feynman himself later disavowed most of this garbage. Erwin Schrodinger did the same thing forty years earlier, saying he wished he had never been involved with it.

However, now that we are here, let us ask why Feynman felt he needed to insert a virtual photon in the middle there, and why he **defined the arrows as negative charge flow** instead of something else. He needed the photon obviously because the muons out were a lot bigger than the leptons going in, and he wasn't filling that gap by spin stacking, so he needed to borrow energy somehow, either from the vacuum or from virtual particles arriving fortuitously from nowhere with just the right energy. Negative charge flow just means the charge was matched to the electron, not the positron, so it is just what we call normal charge. I find it surprising Feynman is using charge here at all, or spin, since he doesn't really need it. Once he decides to solve without spin stacking or spin transfer, all talk of spin is just mathematical, which is why they don't assign it to real spin about an axis. They don't want you thinking in those terms. And once spin has become virtual or heuristic like that, the real charge field is thereby redundant, and it could also be replaced by some vacuum fudge, and basically is. It is no more necessary here than it is in electron sharing. That is why he used Dirac spinors instead of real spin, of course. The spinors, being formalisms not really tied to the real field or particles, could be fudged in any and all ways without contradiction.

To see again what a muck all this is, let us skip ahead to page 7, where, amazingly, they are assigning real spins to these particles, or at least “handedness”. At first they give the electron and positron opposite spins, so they are so close to getting somewhere here. But since they aren't calculating energies or even angles, but **a probability for annihilation to occur**, the math is fantastically complex for no reason. I remind you the angles of deflection, even if calculated correctly, won't be telling them anything about the genesis of the field. They will only be telling them how off-center the hit was, which is trivial as a matter of field theory. The probability for annihilation is even more trivial, telling us absolutely nothing about the field or the particles.

As Peskin shows in chapter one, you can calculate it within 10% without even knowing a mass for the particles, which should tell you what a fudge it all is. And that isn't the weirdest part: it is not that the mass of the particles is not important, it is that the mass of the particles is assumed to be . . . zero. What! Yes, on p. 10, Peskin is talking about making the math *more* difficult, and the first thing you can do in that regard is “relax the restriction that the muon be massless”. I didn't remember that restriction, so I went back to p. 4 and reread. Nowhere does Peskin say the muon is assumed to be massless. He only says that “the beam energy is much greater than either the electron or muon mass.”

Oho, another hidden fudge! What beam? I thought we were diagramming an electron meeting a positron. But on closer inspection it turns out that the energy E in the first equation in the book is the energy of a powerful beam, relative to which all particle masses can be taken as zero. Well, that's convenient, isn't it? I guess you see that means any question of mass differentials before and after the collision has just been buried. And I guess you now see *why* that had to happen: they can't have students looking at that mass change, asking if it might be coming right out of the collision, as spin or anything else. That might bring the real field into focus for a moment, dooming all the manufactured formalisms Peskin is trying to sell.

Again, why write the first equation as a function of the energy of the beam? They know the mass of the electron and positron, and have for decades, so you would expect them to write this equation using that mass, right? Why bury it? I just told you.

Peskin claims he has limited the math in the first section, but you would expect him to limit far more. Given that he should be trying to represent the actual quantum field, he should limit the collision at first to some very special case, especially on page 3, to simplify the math, for instance to a straight-on collision, 45 degrees off-center of a spherical particle, with the angle of scattering given from experiment. You would then back-calculate the energy or momentum difference of incoming and outgoing particles. But of course they don't want that, because that would lead students directly to me. Students would then need to assign the source of that energy difference, and they couldn't assign it all to speed, since part of it must be going in to y-spins. That is why the particles are bigger coming out than going in. Plus, they can't simplify anything here, because then the fog in their students head might dissipate for a moment. They have to complicate the math as much as humanly possible from the first moments, to divert you from all the things I am reminding you.

The best way for Feynman to do that is to calculate this nebulous probability of annihilation, rather than momenta, energies, or angles of deflection, and to do it as indirectly and as noisily as possible, staying far far away from any solidity like mass or momentum differentials.

To see how confused they are—or how confused they want you to be—we find this:

Next consider the case in which both the electron and positron are both right-handed (spinning clockwise). Now their total spin angular momentum is zero, and the argument is more subtle. We might expect to obtain a longitudinally polarized photon with a Clebsch-Gordon coefficient of $1/\sqrt{2}$.

No we wouldn't, since if the leptons are both CW, *they are both electrons by definition*. A positron cannot be either CW or CCW in this sense, precisely because Feynman has defined his arrows as negative charge flow. If the arrows represent charge flow, then the positron *must* align itself opposite to the electron in that field. And why would we expect to obtain *any* photon at all? Peskin and Feynman forgot to tell us that, didn't they? Why would these particles annihilate, but transfer their raw spins or other quantization to a photon, since no photon was involved in the collision? Obviously Feynman just needed a carrier for the quantum numbers across the event, so he invented a photon to carry them. Disappearing once it had done so. But that is an unnecessary complication, since you can let spins transfer by direct contact, in real poolball interactions, the spin levels trapping and channeling more charge, which we then read as increased mass. A huge simplification of both theory and math.

But there is an even greater simplification of math and theory, since I can tell them beforehand the probability of annihilation in any given scattering, with no math at all. That probability is always zero, since particles never annihilate. No particle has ever annihilated in the history of the universe. Particles can only spin up or down. Energy is never lost, it only transfers.

That will do for part 1. More to come.