

Incomplete Theories and Other Intellectual Dishonesties

Daniel Joseph Dady

FAA A&P PP, FCC GROL, BSEE

October 15, 2010

Revision 4, September 11, 2014

dandady@photodady.com

©Copyright 2010-2014 Daniel Joseph Dady All Rights Reserved

“Today’s scientists have substituted mathematics for experiments, and they wander off through equation after equation, and eventually build a structure which has no relation to reality.”

Nikola Tesla

“The Truth is far more powerful than any weapon of mass destruction.”

Mahatma Gandhi

“In a time of nearly universal deceit telling the truth is a revolutionary act.”

George Orwell

Abstract

There has been, for nearly a century, an intellectually dishonest academical argument perpetuating in the annals of universities worldwide that we must accept, as fact, that there are two incomplete and incompatible theories that govern the physical laws of nature and that we must accept both theories as indisputable facts. The two theories are Albert Einstein’s Theories of Relativity and the collective theories of Quantum Mechanics which relies heavily on statistical determination as its formal basis. Both of these theories provide accurate predictions for their respective domains, relativistic theories bode well with very large scales, at the stellar level, while quantum theories are favored for the very small, at the atomic level.

There are very clear and obvious philosophical reasons to reject either one, or possibly even both theories, thus abandoning any future efforts to unify these

two incompatible and incomplete physical theories. An alternative perspective of Young’s double slit experiment, which exposes the fallacies of the quantum theorists explanation, will also be presented. This can be allegorically described as not just the elephant in the room, but entire herds of stampeding elephants that have been ignored by scientists and physicists for nearly a century. Why this has gone on for so long and what needs to be done about it is the topic of this article.

1 Introduction

Sir Isaac Newton is credited for several advances in our collective knowledge, first in physics by his three laws of motion, and second in mathematics where he quantifies the three laws of motion by the use of his new mathematical methods, called the calculus. The effects of Newton’s theories resulted in what is re-

ferred to as classical physics or mechanics. Newton's theories and methods are widely accepted and still currently used in their original forms since they still provide very accurate predictions of countless physical systems and phenomena. There are, however, areas where classical Newtonian physics either breaks down or does not completely explain the results of some experiments or newly discovered physical phenomenon. The attempts to explain these new discoveries were the motivations of Albert Einstein and later collectively by many others who provided the reasoning for the content of what is now described as modern physics.

There is a major problem with modern physics in that there are two independent and incompatible theories called relativistic and quantum theories. Einstein never accepted quantum theories and unsuccessfully spent much of his later career trying to form his own theories of relativity into a complete physical theory and/or attempting to argue against the quantum theorists. Einstein was quoted "God does not play dice" displaying his contempt for the statistical nature of quantum mechanics.

What separates these two opposing theories is that in Einstein's universe everything is continuous, especially time-space. Although the ancient Greeks postulated a discrete universe, ironically, it was Einstein who discovered the basis of modern quantum theories in his experimentation on light sensitive materials. In quantum theory, as its name suggests, everything can be broken down to its minimum discrete or quantized level. Any object can be broken down to its most basic parts consisting of discrete or quantized numbers of electrons, protons, and neutrons. And since electric charge is due to the charge of electrons and protons, then the electric charge is also quantized. Furthermore then energy is also quantized since electromagnetic, kinetic, or potential energy is a physical result of the discrete particles of mass or charge.

What is common to these two modern theories of physics is that they did not need a medium by which they needed to function, which at the time was called the luminiferous aether. Einstein's theory had the fabric of time-space and gravitational fields as the integral method by which information, electromagnetic or gravitational waves, can travel. While quan-

tum theories rely on its constituent particles traveling through the vacuum of space so the waves can then be effectively ignored. This has led to the so called duality of the nature of light, that is in some circumstances light can be regarded as a continuous electromagnetic wave traveling through space-time while in others light must be regarded as discrete quantized packets of energy called photons. According to Einstein photons have no mass and hence no energy, at least they have none when at rest, remember that $E = mc^2$. In most situations one side of the duality necessitates the exclusivity of the other.

We now have a quandary in that we are expected to accept, on faith mind you, that light is both continuous and discrete at the same time, depending on which way better describes the particular phenomenon at hand. This is one of the largest leaps of faith one can ever be expected to swallow. Thousands, if not millions, of students have passed through the annals of universities worldwide fully accepting that *leap of faith* as scientific fact, disturbing to say the least.

Lets follow a very basic philosophical principle of logic:

$$if A \neq B \text{ then } if \tag{1}$$

$$A + C = R \text{ and} \tag{2}$$

$$B + C = R \text{ then} \tag{3}$$

$$A + C = B + C \text{ then} \tag{4}$$

$$A = B \text{ (false) } Q.E.D. \tag{5}$$

Where A and B represent either Relativity or Quantum theories, C represents the missing aspects of the modern theories needed to unify them, and R represents reality. One must conclude that either Equation 2 or Equation 3 is false, unless, of course, one is willing to accept that $R \neq R$, in which case one should consider themselves firmly planted in the philosophical realm of idealistic pseudoscience.

Another possibility is that Equation 2 and Equation 3 are both false thus reversing any perceived

progress in the area of physics that have been made over the past century. There is a very notable and reputable scientist that was on the level of either Newton or Einstein. He indeed claimed that he had valid arguments, his name was Nikola Tesla, the inventor of polyphase AC electricity as well as the first patented radio design and was responsible for the prolific transmission of them. The very thing that the computer used to read or print this document is powered from as well as the wireless data transmission of it. He was openly very critical of both of these theories but he unfortunately never fully publicly presented his arguments since, in addition to being eccentrically brilliant, he was also a very secretive scientist. Unfortunately much of his work was confiscated, pilfered, locked up, or forever lost after his death.[5, pp 328]

2 Arguments

The arguments for or against the validity of either modern physical theories lies squarely in the realm of philosophy and not in the subordinate level of science itself. The reason is that the perspective of one theory is entirely antithetical to the other and thus the arguments for or against either side cannot originate from within themselves, one must retain absolute objectivity in reasoning. The major dispute between relativity is that physical laws are deterministic while quantum theorists insist that only the statistics of observation is deterministic. What this means is that one side of the debate employ idealisms while the other side is bent towards realism.

Lets take the one tenet of quantum theory that exploits a chink in the armor of physical determinism. This is, of course, Heisenberg's uncertainty principle. It states that one cannot precisely measure both the velocity and position of an atomic particle. Basically what Heisenberg is alluding to is that measuring the velocity or position of an atomic particle is something akin to measuring the position and velocity of a billiard ball by shooting another billiard ball at the first and then measuring, or observing, how the second ball reacts to the collision of the two balls. If we use a ball with less energy, i.e. a lighter ball say ping

pong balls, then we can accurately detect its position, however, in order to accurately measure its velocity we must use a heavy ball, i.e another billiard ball, which will then cause the original ball to change its direction. In other words the simple act of observation has significant influences on the trajectories and positions of whatever we are trying to observe.

Quantum theorists still cling to this disingenuous argument by assuming that this methodology, which at the time of Heisenberg, was the only available method that could be used to observe the atomic particles, other methods could also be used. James Clerk Maxwell showed how, but, of course, this would contradict the tenets of quantum mechanics since Maxwell's equations are continuous rather than existing in the preferred discrete way to look at the world in quantum theory. If we want to measure the velocity, momentum, and position of a particle we can passively measure the signature electric and magnetic fields of the particles in motion, at least we can measure electrons, protons, or any other charged particles without disturbing them in a statistically significant way. In other words statistics can be valuable in the sense it be used to measure the deterministic accuracy and precision of the measurement without becoming the deterministic basis of the theory itself, as is the case in quantum theory.

I am well aware that no causality exists in relation to the observable; I consider this realization to be conclusive. But in my opinion one should not conclude from this that the theory, too, has to be based on fundamental laws of statistics. It is, after all, possible that the (molecular) structure of the means of observation involves the statistical character of the observable, but that it is expedient in the end to keep the basis of the theory free from statistical concepts.¹

-Albert Einstein

An analogy that can be used is in the usage of maritime SONAR in ships and submarines. By actively pinging or sending out a sound wave the location

¹Albert Einstein to Max Born, 1948, 'The Born-Einstein Letters' Max Born, translated by Irene Born, Macmillan 1971

of the observer ship or submarine is broadcasted to anyone else being observed within listening range. Whereas when passive listening techniques are utilized one does not reveal themselves, the observer does not effect, or at least has minimalistic effects on the observed. Alternatively we could use passive cameras or lesser energy radar to observe the billiard ball while minimally effecting the trajectory of the observed ball in the example given above. We could also design sensitive passive electric and magnetic field sensors to measure the trajectories of atomic particles. Just because the current technologies do not offer a lesser energetic method of observation does not preclude different possible future methodologies as does the *leap of faith* acceptance of Heisenberg's uncertainty principle.

The second point here, and a very common one with quantum theories, is that perhaps the expectation of what the observation should be, may not indeed be what reality reveals to us, there is a definite probability that the experiment is flawed. In other words if we know enough about what we are observing, and we know enough about how we are observing it we should be able to determine the atomic particles trajectory vector after we observed it, even if we use high energy methods in doing so. For instance the trajectory of the ping-pong ball would indeed be affected by the velocity vector of the billiard ball. The measurable difference is only limited by the precision and accuracy in which one hurls the balls at each other, the precision and accuracy by which we measure them, and the knowledge one has of the initial conditions or trajectory of the observed ball to begin with. If there is sufficient precision in the experimental observation and the observation does not respond as anticipated then something needs to be altered, either the experiment is flawed and needs to be redesigned or the expectation of what we should be observing needs to be altered by improving our initial assumptions in the theory, which leads into the next tenet of quantum theory.

In quantum theory the current state of an observed phenomenon has nothing to do with prior states of what is observed, in other words prior knowledge of what is being observed is not necessary and no memory is needed in the observational system. This is

exactly the tell-tale assertion that smacks in the face of many popular idealistic philosophical arguments. A reminder is in order here, the basic commonality of all idealisms are that they reject truths and reality, lest they would become realisms. At least they selectively reject those truths and realities that deflate their own arguments. It must also be noted that the realist can recognize the existence of separate realities but all of these realities must eventually coincide, not simply coexist, into a larger absolute reality, this is known as physical determinism and was philosophically pioneered by Marquis de Laplace.

I think that matter must have a separate reality independent of the measurements. That is an electron has spin, location and so forth even when it is not being measured. I like to think that the moon is there even if I am not looking at it.

-Albert Einstein

Quantum mechanics, on the other hand, requires that there be no absolute reality, but insists that numerous realities exist separately and independently of each other, another tell-tale signature of an idealism.

Denying realism amounts to megalomania (the most widespread occupational disease of the professional philosopher).

-Karl Popper, 1975

In fact if one were to accept on faith all of the tenets of quantum theory then one would also have to accept the prophecies of the typical psychic who predicts the future. Even though they express themselves in utter generalities that can be interpreted by anyone as being valid they do possess some incontrovertible quality of being sufficiently precise to present sufficiently accurate results. In fact there is NO difference between the psychics predictions from those presented by the quantum theorist. They are equally and deceptively seductive to those who have accepted the *leap of faith* and believe in their respective domains.

A poll on a physics forum reveals that only two out of ten surveyed accept completely the tenets of quantum theories. Four out of ten are still waiting for causal explanations, someone should inform

these people that statistics is, for the most part, not a causal methodology. This is exemplified in the fact that there has not been a slew of statisticians who have visited a local casino or stock broker and then went on to buy their own pacific island paradises. Actually there have been a few who have done well but they were exploiting flaws in the randomness of the games or by exploiting advantages in execution timing, not by out predicting them. The remaining four out of ten either *only* accept the predictive aspects of quantum theories or simply reject outright the theories as being incomplete.[1]

The interesting thing here is that very few, I've personally never met any, who are openly critical of quantum theories, at least within existing academic circles. In fact nearly every time that I read anything about quantum theories by anyone they usually insert a caveat that they don't fully understand the underlying theories but are amazed at the incredible predictions they make. They are, in fact, universally discrediting themselves and their predecessors from having any ability to criticize anything related to quantum mechanical theories, the exact signature of an idealism. In fact I've never been acquainted with anyone who calls themselves an expert in the field, how convenient. Again, this smacks directly in the face of irrational idealistic reasoning such as : The debate is over, There is a consensus, Stay away from negative people (realists who deflate their idealisms), but it gives such accurate results, No one has been able to prove it wrong, Get with the program, We should form a committee, etc.

For example in a commonly used text the author, in comparing old vs. new quantum theory, says: " We shall see that, though this theory is much more satisfying from a philosophical point of view, it is somewhat abstract and difficult to apply to [real life] problems." Meaning that the new quantum theory, using statistical methods, is much more satisfying philosophically because now experimental results can be considered valid if they lay within much broader statistical ranges rather than the results falling within statistical limits of of the accuracy and precision of the measurement or observational system. In other words normally invalid results can become valid in the "new" statistically based quantum theories. A

new idealistic formal statistical methodology that allows manipulation of the data to fit the equations, or vice versa, in the new quantum theories.[3, pp. 194]

In fact in the quantum mathematical models used in the design of semiconductors, model manipulation is indeed the norm. Every general process has a model that is completely unique and noninterchangeable for each step of the process and fine tuned by trial and error, measurement, and model readjustments. At any step the unique models can only be used for very small incremental changes in semiconductor design properties, that are unique to that particular process, without extensive retesting and readjustment of the particular model used for the specific process at hand.

The author of a commonly used introductory course in semiconductor design says: "Because semiconductor problems are replete with exceptions, special cases, and non-ideal situations, it is imperative that the formula user be aware of derivational assumptions and the validity limits of any and all expressions used in an analysis or computation." [4, pp. 67] Meaning all bets are off for any particular design situation, the statistical boundaries exceed that of the accuracies or precision of any particular statistical quantum model used in semiconductor design. This is the reason why the clean rooms used in semiconductor manufacturing are some of the most pristine environments that exist in the entire world, even the minutest of contamination or manufacturing variation can destroy the validity of the quantum models used in the design process.

This then leads into the questions of the value of the predictive qualities of any theory and then to an age old argument of the theories of Ptolemy vs. those of Copernicus. Ptolemy, and most others at the time, believed that the Earth as being the center of the universe with everything revolving around it, while Copernicus postulated that the Earth was rather unique-less and that it was simply rotating giving the illusion that everything is revolving around it. Actually technically speaking they were both right, they simply had frames of reference that were incompatibly different. Incidentally Copernicus had no way of experimentally testing his theories directly, it wasn't until much later that Galileo used the new

invention of the telescope and was able to visually observe Jupiter's moons which became the first direct experimentally measurable proof supporting the theory presented by Copernicus.

Accurate mathematical models for either system still exist and can be successfully utilized within acceptable limits of accuracy and precision. Ptolemy had an actual physical working model, complete with the clockwork precision of the time, that could accurately predict the motion of the stars, the known planets, as well as that of the Earth's Moon. The problem was not in accuracy but in the complexity of both the mathematics and those of the resulting models. On the other hand Copernicus gave us a relatively and extraordinary simple model that can be found in nearly every elementary school science fair, Occam's Razor extraordinaire.

No modern scientist would willingly choose to use Ptolemy's mathematics simply because of the incredible complex difficulties in its usage and the necessary corrections to reconcile its inaccuracies. The Copernicus theory, on the other hand, was modified by Galileo, Kepler, and finally Newton, which resulted in an extremely simple and accurate model of the motion of the planets and stars. Einstein made further improvements in that he predicted and presented a more accurate relativistic description, but still not perfect, of the perihelion of the orbit of Mercury.

The same air, or error, can be said to surround those of both quantum mechanics and relativity, they are both extraordinarily complicated. In fact, it took over ten years for Einstein to grapple with the tensor mathematics required for his general theory. Actually, only a handful of people have ever had a mastery of the math required to fully understand or fully utilize his theories. This leads to the fact that we have not yet had the necessary Copernican simplification of modern physics that is necessary for its universal understanding. It may be as simple as including another dimension of space or time, changing the frame of reference, or something we have not yet postulated. I am convinced that when it comes it will not be from within academia, for such a theory could never be accepted from within. History has shown us that the established norms, however ridiculous, are exceptionally difficult to overcome.

Lets take a look at another example commonly used to bolster the quantum theory, the double slit experiment. It goes something like this: Coherent light is shined onto a partition with two slits and the light passes through the slits and onto a screen behind the partition. The light pattern that is displayed on the screen will have a fringe pattern, that is there will be areas where the light waves add constructively and other areas where the light waves add destructively due to their different phases. When the light is replaced with a single electron one might expect that the electron will travel through one of the slits and strike the target. The amazing thing, however, even when single electrons are all accounted for there still exists a fringe pattern suggesting that the single electrons passed through both slits simultaneously and creates a fringe pattern on the screen. This is proof, so say the quantum theorists, of the particle/wave duality predicted by quantum theories as well as proof for the existence of separate realities that *coexist* simultaneously.

Good grief, Maxwell showed us that any moving charged particle creates its own electromagnetic fields and waves. The electromagnetic wave created by the moving charged electron travels through both slits, provided that nothing that might shield the electromagnetic waves, or upset their coherence, from passing through the second slit are used in order to measure them. In the experiments using single photons, remember that light *is* an electromagnetic wave, this is consistent with quantum theories' duality. This is the basis for cell phones, radio, light, x-rays, microwaves, blackbody radiation, and all other electromagnetic phenomenon. More proof of the power of suggestion that is so fundamental to any idealism. Suggest to all suggestively vulnerable students the lie before they ever have a chance to critically think about it, which then effectively creates an army of those who believe that they have a superior understanding of the world around them. Further proof that quantum mechanics is merely a goose that lays golden eggs for those who wish to practice snake oil salesmanship, bid for positions, political power, and government research grant taxpayer money. When the truth is supplanted with wishful thinking it is undeniable proof of an idealism. See Section 4 for a

new explanation for double slit probabilities.

There, you now have it, the answer to 99% of all questions - money! The root of the basis for quantum mechanics is the perpetual presentation of the reasons for additional research grant money in order to further the theories of something that is fictitious and completely unprovable. Just keep shifting the statistical models and... Shazam! New promising results and we now have a bottomless supply for the reasons to grab more of the taxpayers money, more dissertations, more Ph.D candidates, more tenures, more subatomic particles, and more government subsidies. And there is no one that can possibly have more knowledge than themselves. Who could then possibly question their own flawed reasoning? And since no one, even themselves, have the most fullest understandings of the underlying quantum theories, in order to question the mechanics of their own theories, how could any lesser knowledgeable person possibly be able to question them in the least! Intellectual dishonesty at its finest.

To add insult to injury is to look at those who sit on the boards that make the decisions about who gets the taxpayer funded research grant money? No leaps of faith here, you guessed it, the very academics themselves who were taught to believe in the idealisms! What is disturbing is that they actually believe in the idealisms wholeheartedly as if they were realisms. Even more disturbing is the quieting effect on anyone who might choose to question the established or projected politically correct norms. The penalty for such a transgression is being excluded or expelled from the very system that supports them.

The one thing that should be remembered about Albert Einstein, to an even greater degree than his theories of relativity, was his ability to smell bullshit a mile away and for having the gonads to call them out on it, and in the end to be willingly enthusiastic about excluding himself from them. Unfortunately idealists are extremely proficient at ignoring truths and finding justifications for discrediting their objectors by personally attacking them for the purposes of avoiding or debating the merit of their arguments. The same can be said of Copernicus, Galileo, and Nikola Tesla.

A perfect more recent example of this is in the

revelations of the absolute junk science surrounding assertions of human caused global warming. I have never met anyone with a scientific background, or otherwise, who didn't acknowledge the incredible hyperbole and outright fallacies of the global warming arguments. In fact it has never been shown that in any period of our history when the average global temperatures were not in fluctuation, often at even greater rates than current ones. Nor has it ever been shown that carbon dioxide levels have ever lead the global temperatures, in fact they are the exact opposite clearly indicating that carbon dioxide does NOT *cause* global temperature fluctuations but instead it is the global temperatures that *cause* carbon dioxide levels to fluctuate in the Earths climatic system. The experimental models used simply do not account for all of the possible variables that influence the Earths climatic system. Abstractionist quantum theorists tell us that causality is not a prerequisite for physical systems or natural phenomenon when in fact causality is an absolute requirement in all physical systems.

For a simple example to explain the overwhelming importance of causality in the physical universe can be in which we may want to boil a pot of water. Intuitively we all know that turning on a stove element will *cause* the burner to heat up, which will then *cause* the pot and its contents to heat up. If you believe the human caused global warming alarmists then by placing a hot pot on the stove it will cause the stove to turn on. wrong! *Causes* have *effects* but the *effects* cannot be considered as *causes*! This is true even in functional feedback systems. Ridiculous isn't it? Well that is just how ridiculous the global warming alarmist arguments are, mix just a little bit of reality, truth, and critical thinking and one has the antidote for a crude, but cleverly presented, popular *idealistic* and politically power driven pseudoscience.

This is not to say that a person who understands the necessity for achieving higher efficiencies while minimizing the impacts of our presence can't be opposed to the *if you're not with me you're against me* mentality and the dehumanization and personal attack tactics that taints and surrounds any and all idealisms and is nearly always projected by every idealist.

But then why were there so few credible scientists

who openly stood up to defend the sanctity of the scientific method? Why did so many scientists stand by the wayside and allow the laymen to perpetuate or witness the atrocity, to allow them to lose faith in science, to allow their very own discrediting, to allow the ends to justify the means mentality of radical idealists who are hell bent on exercising absolute control over all others?

They know instinctively to act in a politically correct manor, that they must not buck the established norms, whatever they may be, lest they will be viciously attacked and expelled from the very system that supplies the resources for their own ambitions and research projects, or worse, shine a light upon the flaws of their own research. Accepting this and remaining silent makes those very scientists just as culpable as those who openly perpetuated the utterly intentional lies of the global warming pseudoscience alarmists. This has had the effect of discrediting science as a whole and is further proof that academia is more about intellectual dishonesties and the aristocratic politics of power than it is about the pursuit of scientific truths or realities, let alone the pursuit of a complete physical theory.

3 Alternative Possibilities

No discussion would be complete or intellectually honest without exploring some of the theories that may lead to the Copernican simplification necessary to actually move forward in our collective understanding of the physical universe. Even Stephen Hawking concedes to the necessity that a complete theory be much simpler than what we now have:

“...if we do discover a complete theory, it should in time be understandable in broad principle by everyone, not just a few scientists. Then we shall all, philosophers, scientists, and just ordinary people, be able to take part in the discussion of the question of why it is that we and the universe exist...”[2, pp 191]

Ironically Hawking himself has presented the foundation for exploiting the chinks in the armor of modern

physical theories, this chink is called Hawking radiation. The explanation of Hawking radiation is identical to the explanation for another phenomenon that idealistic *quantism* and *relativism* (isms intentional here) fails miserably at explaining, this is called the Casimir effect. What the explanation essentially does is extract directly from what has conveniently been ignored by both modern theories, that is the denial of the existence of the luminiferous aether. Remember that one of the defining qualities of any idealism is the explicit denial of truths and realities. The aether is the medium by which electromagnetic waves may travel in or through the so called emptiness of space. The aether is necessary in much the same way that for a surfer water is the necessary medium for exploiting the adrenalin rush experienced in *hanging ten* or *catching the wave*.

Relativity denies the aether because the fabric of the universe is space-time itself and in quantum theories the wave/particle duality conveniently allows for particles to travel through the emptiness of the vacuum of space without a medium. The failure of the Michelson-Morley experiment is what both of the modern physics theories cling to when they claim that the aether is not necessary or does not exist. In fact, the only thing that the Michelson-Morley experiment does succeed at is proving is that our understanding of what the aether is was wrong, it does nothing to disprove the aether theory itself, actually it is philosophically and intellectually dishonest to accept the proof of the negative.²

So why do the quantum explanations bolster the aether theory? Hawking postulated that there was a specific distance from the center of a black hole from which nothing could escape its gravitational attraction, even massless particles of light called photons. This distance forms the boundary of the black hole and is called the event horizon. Hawking said: “Black holes ain’t so black”[2, pp 103] because the

²It should also be pointed out that the author is not attempting to disprove either modern physics theories but rather is merely pointing out the philosophical and intellectual dishonesties surrounding the nearly universal academic acceptance of the incompleteness of these theories to the point of intentional and nearly complete exclusion of any or all other competing theories that do not originate from within themselves.

black hole emits measurable electromagnetic radiation. This is because, even in empty space, there are always particles of matter and antimatter spontaneously appearing and subsequently annihilating each other. There is corresponding radiation emitted by the matter and antimatter that also annihilates each other due to their opposing phases. When these particles spontaneously appear one of the pair may be outside while the other may be inside the event horizon and so never get a chance to annihilate each other, which prevents the annihilation of the corresponding emission of the now detectable radiation. This is called Hawking radiation and should be detectable surrounding black holes that are known to exist, if we can ever get close enough to one of them.

The Casimir effect is another very interesting phenomenon and may be the foundation for the actual sensor that could be used to measure or observe electromagnetic fields and waves of minute charged atomic particles. The Casimir effect is simply the force that exists between two closely spaced conductors in a vacuum that have an equal electric potential and zero current flowing in them. Theoretically there should be no force between them, except gravitational forces which do not account for the magnitudes of the experimental forces observed. The quantum explanation is the same as for Hawking radiation, the pressure of the particle-antiparticle pairs causes virtual photons, or radiation, to strike the surfaces of the conductors and is the source of the observed forces also called vacuum fluctuations, or zero point energy.

So where then, where do the particle-antiparticle pairs originate from? This is the million dollar question, the large ornery elephant in the room that seems to have been conveniently ignored and danced around thus far. For acknowledging likely possibilities means acknowledging the flaws in the foundations of both modern physical theories, namely that assertions that the existence of the luminiferous aether is not necessary for either of their modern physical theories.

Another flaw in the quantum theory is from the insistence that only a particle can transit the vacuum of space. Lets assume this is true then one could calculate the density, or photons per unit area, of such quantum particles emanating from the surface of a

light source. This number would be irreconcilably enormous and very nearly infinite, however, we know that the energy or quantized numbers of photons released at the surface of any star is very much finite in nature. In order for the photons that emanate from hundreds, millions, or even billions of light years away they would have to eventually diverge to the point that they would be separated by measurable distances and thus appear to disappear and reappear in a discrete fashion when the observer moves perpendicularly to the path of the photons, that is what quantum theories tell us they must.

Well they don't behave like this, in fact they behave quite continuously indeed. Twinkle twinkle little star is observed only because of atmospheric effects. This should provide the basis for a proof that light indeed travels across the galaxy in continuous electromagnetic waves rather than in discrete photonic quanta as is asserted to by quantum theories. If, in fact, photons actually really do exist then they must be a localized phenomenal *effect* that is *caused* by the passing of the electromagnetic light waves through the aether. But of course causality is one of the tenets of classical physics that can be manipulated if not effectively ignored in modern *idealistic* physical theories, intellectually dishonest to say the least. But then, of course, in quantum mechanics one has the convenient, and highly irrational, choice of which side of the wave/particle duality one choses to use for any given situation, how convenient.

Another more recent and very interesting theory posed by Geoff Haselhurst is that all solid matter is merely an illusion. That discrete particles are not actually substantive in nature at all, rather the particles actually consist of nothing more than standing spherical waves. These standing waves have the quality of possessing mass and thus momentum when in motion. This new theory is not string theory, which emanates from within quantum theory, although I think that it may be very similar mathematically speaking. However, this theory still includes or allows for statistical smearing in portions of its basis, so could in no way be considered to be fully valid in of itself. But it may be promising since it requires new fresh ways of thinking, new fresh frames of reference.[6]

Quantum theory requires, on the other hand, the allowance for massless particles to have momentum, in fact the belief in ghosts and spirits. The incredible thing is that since photons have no resting mass, they cannot exist without being in motion, in addition they accelerate instantaneously to the speed of light without passing through intermediate speeds. Remember $E = mc^2$ where E is energy, m is mass and c is the speed of light. A massless particle then has zero energy no matter how fast it moves. In quantum mechanics we must make adjustments to Einstein's theory so $E^2 = (pc)^2 + (mc^2)^2$ where p is the allowable momentum of a massless particle. This indeed does violate classical Newtonian mechanics since momentum is defined as the product of mass and its velocity. But in Einstein's general theory of relativity the faster an object, that possesses the quality of resting mass, moves the more massive it becomes. That is its mass increases the closer it travels to the speed of light. At the speed of light the particle would possess unobtainable infinite mass therefore the speed of light is considered to be the limiting factor for the speed of anything in the physical world.

There is NO empirical physical evidence or proof of this limitation other than anecdotal seductive expediency, it is merely an indication of the breakdown of the mathematical formula. Nikola Tesla, however, claimed that he measured electric current (moving electrons that possess rest mass) in one of his experiments to have traveled more than twice the supposed limited speed of light predicted by Einstein.

Again Tesla's unpublished papers were confiscated and much of his work that was known to have existed never resurfaced, even after they were subsequently released. Since he never published his opposing theory we may never know by how or even if he actually did it. It should be noted that although Tesla was somewhat of a showman he was never known to have made any claims that he wasn't able to brilliantly prove or demonstrate, often to the complete astonishment of those who were lucky enough to have observed them. In fact many of his demonstrations showed-up numerous academics to their own self aggrandizing embarrassment, he was therefore despised by many academics and especially by his rivals, including his biggest rival Thomas Edison.

Another assertion posed by quantum theorists is that the interaction of waves always occurs at integer multiples of the wave frequencies, the so called quantization of wave harmonics also called wave packets.[3, pp 215] This assertion was proven false by my own research.[7] Instead when waves interact, even with themselves, the results are that of sums and differences of the wave frequencies, sums and differences of the sums and differences, and sums and differences of multiples of individual of sums and differences and so on. This results in numerous available possible frequencies both above and below those of the fundamental frequencies as well as subharmonic sidebands that surround various harmonic frequency patterns.

It is only a result of single waves or sums of integer multiples of the fundamental single wave that results in integer multiple harmonics thus refuting the generalized quantized nature of wave harmonics. This is actually nothing new and have long been called combinational tones in musical theory and have been thoroughly explored by both musicians and physicists such as Herman Von Helmholtz, but has been conveniently ignored or passed off as psycho-acoustical by scientists for centuries.[7]

So then one might ask why does then quantum mechanics provide so many results that are so well correlated to experimental evidence and why do they all seem to involve discrete quantized results? Simply put it is a matter of perspective or more correctly, the chosen frame of reference. There is absolutely no reason why a continuous phenomenon can't provide discrete quantized results. For instance any continuous sensing device utilized by any modern computer or microcontroller must sample the continuous stream of data at discrete intervals that depend entirely on the clock frequency of the device. Therefore the discrete mathematics involved naturally transfer into discrete quantum modeling and the utilization of statistical analysis and vise-versa.

Another explanation is simply the methodology devised in quantum theories naturally give rise to discrete quantized results, for instance take a continuous wave in a medium such as water. Since quantum levels are very small it is unlikely that one would be able to have two discrete methods or sensors to be able to

take measurements at such a very small atomic scale so as to conform with the Nyquist criteria of two sampling points per cycle, so let there be a single degree of freedom bobber allowed to float in the water and allowed to be able to determine its height or departure from the average value at any given time. We would be able to determine the height above or below the average as well as how long it takes for the bobber to achieve its maximum or minimum heights.

Do we know then how fast the wave is traveling across the bobber? Do we know the actual frequency of the wave in the reference frame of the wave? Do we know anything about the direction the wave is traveling? Simply put NO we do not! Just like the dilemma Heisenberg dealt with, we know information only in the reference frame of the observer, we know nothing about the reference frame of the wave or particles being observed. This is why Einstein's light speed limit is so idealistically seductive, with it we now have pinned one of the variables as a constant and our equations now become much more easily solvable. Similarly Ptolemy made the assumption that the frame of reference was the Earth and assumed it was at rest. Copernicus, on the other hand, made no such assumption, instead he made a more general reference frame of the Sun and essentially allowed it to be at rest. By simply changing our reference frame it is possible that we can make more generalized models that in addition to being simpler they can be made to be much more accurate.

Back to our waves of water, let us now make our reference frame as a muscle on the shoreline, or that of an insect making its living on a pilaster of a pier. Either of these frames of reference would lead to a conclusion that the waves in the water occurred at discrete quantized intervals. On the shoreline we would count the discrete waves lapping or crashing discretely on the shore or the discrete lower frequency action of the tides while the insect would be interested only in maintaining itself above the discontinuous actions of the wave peaks and would also come to the same conclusion that waves are discrete and thus quantifiable. The frame of reference of the surfer, or even data from the bobber, would lead to a completely different conclusion simply based on its frame reference which observes the continuous action of the

waves. The surfer would, however, be at an advantage over the bobber because their perspective allows them to actually visualize the wave speed and direction relative to itself, a superior observational frame of reference. The surfer would also have additional degrees of freedom and the ability to choose an appropriate continuous water *field gradient* analogously to the usage of Maxwell's continuous equations.

Similarly photons may simply be the minimum energy level or amplitude and duration integral over time of the continuous electromagnetic wave peaks that might trigger a photon, or packet of energy, to be released from the aether at discrete quantized energy levels. In a similar fashion that the particle-antiparticle pairs are released in discrete quantized energy levels. On the other side it still allows the electrons in the Bohr atom model to change in discrete orbital levels that cause continuous electromagnetic waves to trigger light photons to be emitted or absorbed at discrete quantized intervals. There then is no need for the so-called electron cloud created by statistical smearing.

Furthermore who is to say that there actually aren't particle-antiparticle pairs continuously and spontaneously being created and annihilated and that the photons aren't a result of one electron at a certain level from being annihilated or replaced entirely by another electron at a completely different position in the same energy orbit or, when prudent or necessary, another energy orbit. And the medium by which they travel or appear isn't the aether, exactly the same phenomenon that causes Hawking radiation or the Casimir effect. By simply accepting and using statistical smearing techniques one may never know. Heisenberg may have actually surrendered and unwittingly discovered the cause of Hawking radiation and then could have predicted the Casimir effect even before Hawking was out of diapers, if he only didn't descend into the seductiveness of a statistically smeared out abstractionists experimental ideology.

To take this idea even further one might also use the theoretical particle-antiparticle pair concept and ask the question: Why limit the possibilities strictly to only the particle-antiparticle pairs? Perhaps there is much more going on here and one must also ask the question: What happens to all of those particles and

antiparticles after they have been separated by the event horizon of the black hole? In astronomy there has been postulated the necessity for what is called dark matter, or dark energy, in order to account for the lack of observed stars and interstellar matter necessary to reconcile the mathematical models that describe the orbital behaviors observed in our galaxy.[8] Perhaps this phenomenon can help to account for this discrepancy, or possibly the aether concept may simply be the doorway to additional dimensions that may be necessary to account for where all of this dark matter may actually be found. After all a complete physical theory must be able to include all known realities observed into a single absolute reality and that they must all coincide, and not simply coexist, with each other. It is very interesting that after nearly a century of denial of the luminiferous aether numerous scientific disciplines are converging towards the concept that something must exist where scientific measurements can detect nothing, exactly what the foundations of modern physics denied - the luminiferous aether. Perhaps this new required frame of reference demands that we acknowledge additional dimensions in our universe in order to reconcile the irrationalities found in the existing idealized, incomplete, and incompatible theories. Not to move beyond those of the modern physical theories would be intellectually dishonest, we must advance ourselves into the realm of a new contemporary *realistic* physics.

4 Double Slit Probabilities

Young's double slit experiment involving waves is well understood, widely accepted, quite intuitive, and easily applied. The acceptance of the wave-like properties of particles, on the other hand, is not quite so intuitive or easily applied. For example if electrons are hurled at a slit barrier, as in the double slit experiment, the distribution of where in the slit the electrons pass can actually be represented as statistical probability distributions. These simple distribution functions resemble well known Gaussian distributions, also called Bell curves, that can also be thought of as impulse functions since they must meet the same criteria of integrating to a value of one. The

action of the slit barrier transforms the original time or spacial domain signal into the frequency domain as displayed on the target projection screen. This obvious explanation can easily be modeled by the detection of a frequency domain Fourier transformation that is called the sine cardinal or simply the sinc function which is simply a sine function scaled by its own independent variable $\frac{\sin(x)}{x}$ and whose graph is shown in Figure 1.

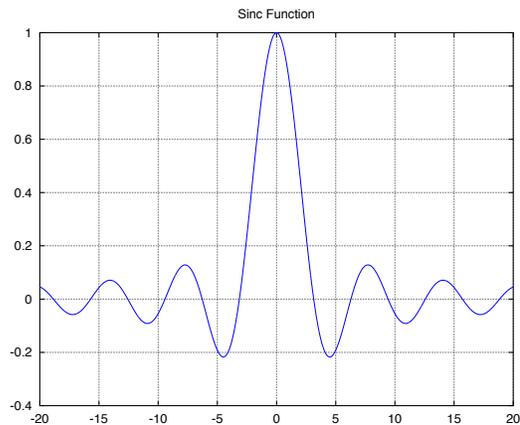


Figure 1

The astute will notice that this is a very *continuous* distribution function that shows the distributions in discretely, or quantized, bounded intervals whose peaks are separated by the sine waves period, for the example shown in Figure 1 this period is 2π in length. The frequency scaled normalized sinc function $\frac{\sin(\pi x)}{\pi x}$ is actually used here since it integrates to a value of one over the entire domain as is required for any probability distribution function.

The rectified or detected sinc function actually represents the interference pattern that shows for waves or individual particles passing through a single slit. The slit barrier functions as a physical system that performs a frequency domain transformation of the original coherent time or spacial domain signal. The actual cause of the patterns that show on the target screen is simply the frequency domain probability distribution, determined by the slit width. The fringe pattern seen by the double slit experiment is caused

by modulating a carrier signal, determined by the distance between the slits. This is true for both general waves as well as for particle statistical distribution waves, The ONLY duality that exists between particles and waves is that the frequency domain probability distribution function is itself a wave function so there is NO paradox or question as to why they display identical characteristics. The only remarkable thing is that the action of physical waves correlates precisely to the statistical distribution wave functions of particles, this is a very positive result since it supports the validity of these particular statistical theories, however, it does NOT provide any basis whatsoever for any quantum theories that are derived from these particular statistical theories.

$$interference\ width = \frac{\lambda \cdot L}{d_1} \quad (6)$$

$$fringe\ width = \frac{\lambda \cdot L}{d_1 + d_2} \quad (7)$$

$$\psi_1 = sinc\left(\frac{x \cdot \pi}{interference\ width}\right) \quad (8)$$

$$\psi_2 = cos\left(\frac{x \cdot \pi}{interference + fringe}\right) \quad (9)$$

Where lambda is the wavelength of the light source or the wavelength of the probability distribution function, L is the distance between the slit barrier and the target projection screen, d_1 is the average slit or pinhole width, d_2 is the average width of the barrier between the two slits or pinholes, ψ_1 is the carrier wave, and ψ_2 is the modulator wave. These models utilize the small angle approximation where $L \gg d_1$ or d_2 and $d_1 \approx d_2$. These are the *only* variables needed to calculate the fringe pattern, notice there is no n representing any integer multiples of anything since this is indeed a continuous function and is NOT a discrete quantized phenomenon. The only past discrepancy involves the question of how the two separate probability distributions formed by the two independent slits are combined. Since the slits are independent from each other but the signals passing through both are related due to their coherence the answer is not by simple addition but it is very similar to the modulation of simple AM radio

signals. The two distribution waves are identical but are spatially phase separated so are modulated at a level of infinity by the direct result of multiplying the modulator wave by the carrier wave which is equivalent to time domain convolution, the very same way that any two simple sinusoids are combined which has been thoroughly investigated in a previous article.[7]

$$sin(A) + sin(B) = \quad (10)$$

$$= 2 \cdot sin\left(\frac{A+B}{2}\right) \cdot cos\left(\frac{A-B}{2}\right)$$

$$fringe\ pattern = |\psi_1 \cdot \psi_2| \quad (11)$$

The peaks in the of the resultant detected modulated signal, shown in Figure 2, represent the bright portions while the valleys represent the dark segments. The interesting thing that occurs is when there is a second slit opened the particles must pass through either one but NOT both slits. There is NO paradox or need to propose that an individual particle passes simultaneously through both slits as is asserted to in quantum theories, the quantum idealists independent dual reality fallacy in this experiment is hereby exposed.

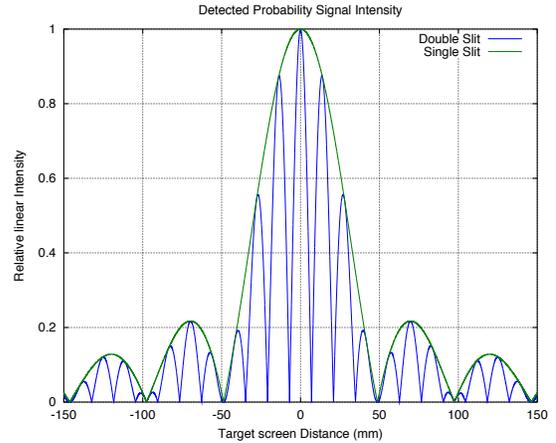


Figure 2,

$$\lambda = 650nm, L = 3m, d_1 = 40\mu m, d_2 = 100\mu m$$

Figure 3 shows a plot of a two pinhole interference-fringe pattern while Figure 4 shows a picture of the

actual pattern as projected from a 650nm red laser. In order to compensate the pinhole diameter must be converted to an average slit width by multiplying the hole diameter by 0.7768 and the barrier must be compensated by adding $2 \cdot \text{hole diameter} \cdot (1 - 0.7768)$ to the actual minimum distance between the pinholes.

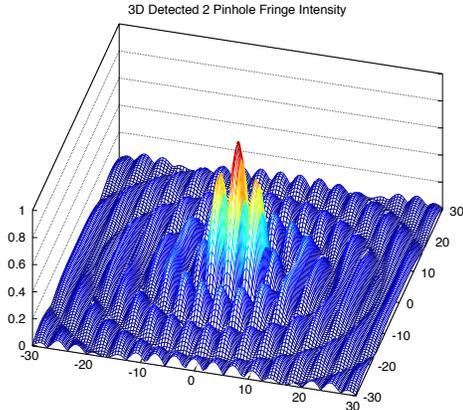


Figure 3

Detected pinhole modulated sinc signal

$$\lambda = 650nm, L = 149'', d_1 = 0.0145'', d_2 = 0.009''$$

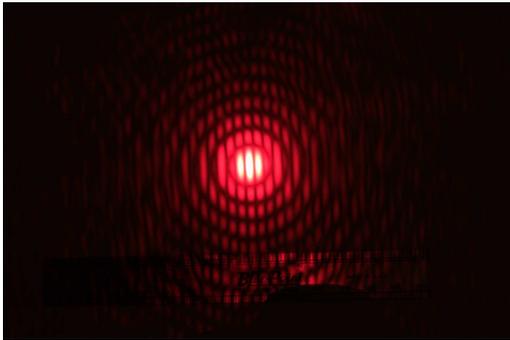


Figure 4

Detected pinhole modulated sinc red laser signal

3

³Photo: Sinc interference waves and fringes from a 650 nm red laser passed through two 0.0145" pinholes separated by 0.009". Object in view is a six inch rule.

5 Conclusion

The intellectual dishonesties simply reside in the basic facts surrounding the nearly universal acceptance of the incompleteness as well as the incompatibilities of the physical theories which then precludes any logical possibilities of ever unifying those existing theories that we now have at our disposal. The sooner this fact is accepted as truth the sooner we may return to the actual work of expanding our collective understanding of why it is that we and the universe exist rather than simply placating to personal ambitions and to the perpetuation of the aristocratic politics of power that academia seems to have descended into. Contrary to popular modern belief greed is a vice, it is not a virtue.

The risk of forever losing such valuable knowledge for the selfish purposes of controlling such knowledge for profit or power or for reasons only known by those who confiscate, possess, or suppress such knowledge, in the case of Tesla it was the US federal government or possibly even Tesla himself, is no reason for permanently supporting such self defeating and degenerative practices. Where would we be today, technologically speaking, if Plato, Aristotle, Newton, or Copernicus had decided not to publicly publish their works or if they, or anyone else, were to have confiscated and possibly have destroyed such materials? Worse yet how many times throughout history has this atrocity been repeated before and how many more times will we be condemned to replicate those very reenactments and errors of reinvention?

6 Code Listing

```
% Octave script for Double Slit Experiment
% Copyright Daniel Joseph Dady November 4, 2010

clear all; close all; clc
x=-150:0.01:150; %projection screen width (mm)
L = 3000 %projection distance (mm)
d1 = 0.04 %slit width (mm)
d2 = 0.1 %barrier width between slits (mm)
lambda = 650e-6 %laser wavelength (mm)
%Red=650nm, green=532nm

fringe = lambda*L/(d1+d2) %fringe width (mm)
interf = lambda*L/d1 %interference width (mm)

%probability distribution carrier wave
y1 = sin(x.*pi./interf)./(x.*pi./interf);

%modulator wave
y2 = cos(x.*pi./fringe);

y3=y1.*y2; %resulting modulated signal
y4=abs(y3); %full wave detected signal

plot(x,y4,x,abs(y1))
title('Detected Probability Signal Intensity')
legend('Double Slit','Single Slit')
ylabel('Relative linear Intensity')
xlabel('Target screen Distance (mm)')
grid minor

%3D plot of modulated double pinhole sinc signal
%Copyright 2010 Daniel Joseph Dady November 17, 2010
clear all; close all;
tx = ty = linspace (-30, 30, 111);
[xx, yy] = meshgrid (tx, ty);
L=149*25.4 %distance between pinhole and screen
d1=0.0145*25.4; %pinhole dia (mm)
d1a=0.7768*d1 %average pinhole width
d2=0.009*25.4; %distance between holes
d2a=2*d1*(1-0.7768)+d2 %average barrier width
lambda=650e-6 %laser wavelength
%Red=650nm, green=532nm

fringe = lambda*L/(d1a+d2a) %fringe width (mm)
interf = lambda*L/(d1a) %interference width (mm)

r = sqrt (xx.^ 2 + yy.^ 2) + eps;
tz = abs((sin (pi.*r./interf) ./ (pi.*r./interf)).*cos(pi.*xx./fringe));
mesh (tx, ty, tz);
title('3D Detected 2 Pinhole Fringe Intensity')
grid on
```

References

- [1] <http://www.physicsforums.com/showthread.php?t=267214>
- [2] Hawking, Stephen. A Brief History of Time. 1998. Bantam, New York.
- [3] Tipler, Paul A. and Ralph Llewellyn. Modern Physics. Fourth Edition 2003. W.H. Freeman and Company. New York.
- [4] Pierret, Robert F. Semiconductor Device Fundamentals. 1996. Addison Wesley Longman. Reading, MA.
- [5] Cheney, Margaret. Tesla Man Out of Time. 2001. Touchstone, New York.
- [6] Haselhurst, Geoff. <http://www.spaceandmotion.com>
- [7] Dady, Daniel Joseph. Harmonic and Subharmonic Distortions In Musical Intervals. Daniel Joseph Dady. 2010.
- [8] Chaisson, Eric and Steve McMillan. Astronomy, A Beginner's Guide to the Universe. Fourth edition, 2004. Pearson Education, Inc.
- [9] All revisions only corrected minor errors, grammar, spelling, or added clarifications, no changes to content, except contact information, or assertions were performed.