

Scientific Proof of God Based on Quantum Phenomena - Wave Particle Duality as an Overwhelming Evidence of Direct Divine Intervention !

The Universe is Programmed !

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Abstract

From a new insight about the internal structure and dynamics of quantum particles such as photons and electrons, a conclusion has been reached that the exact point on the detector screen of a double-slit experiment where a photon will land is completely *predetermined* by fine tuning the initial conditions of the photon and the electron during emission. This means that where exactly a photon lands on the detecting screen is completely predetermined by its initial conditions, just as where exactly a ball lands on the ground is predetermined by its initial conditions. This means that an interference pattern or any arbitrary pattern could be formed on the detector screen by (almost) infinitely fine-tuning the initial conditions of the photon during emission, regardless of whether one or both slits are open, regardless of the distance between the slits, regardless of the distance of the detecting screen. In principle, a mechanical version of particle interference patterns can be created by repeatedly kicking a ball towards a hole ('slit') in a wall, with a 'detector' wall at some arbitrary distance from the hole(s). This would require almost 'infinite' fine tuning of the initial conditions of the ball, that is initial velocity, initial direction and other parameters. The interference pattern occurred just because of infinite fine tuning of the initial conditions of the ball and not because the ball 'interfered' with itself. We just made a successful simulation, and created the pattern as if the ball interfered with itself. A supernatural football player can create an 'interference' pattern on the net by accurately deflecting the ball from either pole. The interference pattern in the photon and electron double-slit experiment is fundamentally the same. The conclusion is that aiming a photon to a particular atom on the screen requires (almost) infinite fine-tuning during emission. This raises the burning question: WHO fine-tunes the photons during emission so that they form an interference pattern or a Gaussian pattern? The emitting atom? The light source conspiring with the detecting screen? Atoms have infinitely small intelligence as to do the infinitely complex task of fine-tuning a photon. The conclusion is that a super natural being is fine-tuning and, literally, aiming each and every photon emitted not only from the light source of a double slit experiment, but also all photons emitted from all light sources in the universe. The overwhelming evidence of divine intervention is that photons and electrons cannot by themselves behave both as waves and as particles simultaneously. LITERALLY, God has been behind all confusing light speed experiments and observations made over centuries. It has been discovered that the correct model of the speed of light is a novel, seamless fusion of ether theory and emission theory (Apparent Source Theory). Photons cannot by themselves exhibit this dual nature. Literally, all dualities observed so far in light, electromagnetism and gravity are possible ONLY by DIRECT divine intervention.

One of the yet unsolved, simplest yet fundamental problems in physics is the question of the speed of gravitational action. It is usually formulated as follows. Suppose that the Sun disappeared suddenly. This would be sensed on Earth as a loss of gravitational pull of the Sun and as a loss of sunlight. Obviously, sunlight would disappear after 8.3 minutes. The question is: will gravitational pull of the Sun on Earth disappear instantaneously or with a delay of the speed of light?

The accepted, mainstream understanding is that loss of Sun's gravity will also be felt on Earth with a delay of the speed of light. However, based on astronomical observations, some experts (Tom Van Flatern) have argued that the direction of gravitational pull of the Sun on Earth now is directed towards the position of the Sun now, implying instantaneous transmission. Moreover, they have argued that finite speed of gravity will result in instability of planetary systems. However, another line of reasoning has also shown that this literal view of instantaneous transmission is also wrong. This paradox leads us to a profound conclusion that the speed of gravity has dual nature: light speed and instantaneous. How can this be?

The new finding is that causality will be (apparently or actually) violated in gravitational phenomenon as follows. Suppose that the Sun disappeared at time $t = 0$. The strange thing is that the Sun will *anticipate* its disappearance and will emit zero gravitational field toward the Earth 8.3 minutes *before* its actual disappearance! This signal travels at the speed of light and reach the Earth after 8.3 minutes. This means that the signal of zero gravitational field will reach the Earth at time $t = 0$. The arrival of zero gravitational field at the Earth will coincide exactly in time with the disappearance of the Sun, implying instantaneous transmission. Thus, by apparent violation of causality, nature allows the speed of gravity to be both finite (light speed) and infinite.

Actually, the discovery of this idea of causality violation did not emerge from investigation of the gravitational phenomenon discussed above. It emerged from a line of reasoning during investigation of quantum phenomena, which is the main aim of this paper. Quantum phenomena discussed include particle interference patterns in double-slit experiments, quantum entanglement, "which way" and quantum erasure experiments.

The following questions will be answered:

1. What is the medium for quantum particles (waves) such as electrons and photons ?
2. How can particles (electrons and photons) form interference patterns ?
3. How can wave function 'collapse' be explained ?
4. In the "Which-Way" and quantum erasure experiments, how does a distant light source know whether to direct the photons to only one slit or to both slits ? How does the distant light source know whether there are polarizers there or not ?
5. In quantum entanglement, how is the state of one particle of an entangled pair communicated instantaneously to the other particle ?

Quantum mechanics (QM) asserts that there is no physical process underlying quantum phenomena and everything is determined by probability. In light of the new theory proposed here, for me this is nothing more than providing our ignorance of the mysteries of nature as an explanation. Quantum mechanics

asserts that the instant the spin of one of the electrons of an entangled pair is detected, the spin of the other will be fixed. There is no physical mechanism for this in quantum mechanics. Quantum mechanics is a mathematical description, not a physical explanation. Quantum mechanics tells us only what happened and only what happens. Mathematics helps to accurately formulate phenomena, but we should not stop there and should search for the underlying physics.

Physicists insist that there is no physical process (mechanism) underlying quantum phenomena, that there is only probability. They assert that that is the way nature works at the most fundamental level. I have no problem to accept this if that is the way nature really works. But what if there is an underlying physical process? I know that such ideas are not allowed in mainstream.

The new theory proposed here explains not only how a distant source ‘knows’ whether or not the polarizers are there, so as to aim the photon to one or to both slits, but also why and how the photon is absorbed by a particular atom on the detecting screen. It explains why photons and electrons, despite exhibiting wave properties, are not spread throughout space but are spatially localized.

Internal structure and dynamics of electrons and photons

Ordinary waves such as water and sound waves are travelling disturbances of their material media. If we drop a stone into a pond, a packet of circular water waves will form and travel radially outwards, with its center O fixed at a point where the stone was dropped. Let us see what happens at a certain point P some distance away from the origin of the wave.

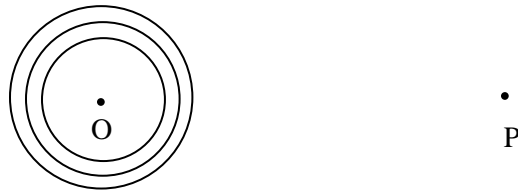


Fig.1

Before the arrival of the wave packet, the water is standing still at point P. As the wave arrives, the water molecules start to oscillate vertically. After the wave packet has passed through point P, the water molecules become standing still again. The *wave (the oscillation)* disappears from point P.

Let us note a seemingly trivial, yet key idea:

Disappearance of the water wave (oscillation) from point P doesn't mean disappearance of water molecules from point P.

This idea is the basis of the distinction between ordinary waves and quantum waves (the photon wave, the electron wave).

At first consider the electron as a continuous field of electron mass density field distributed continuously in space. With this picture, the electron is analogous to the pond water example discussed above. Assume that a wave is created somehow in the electron ‘pond’, analogous to the water wave. If we assume a direct analogy between the electron wave and the water wave, the electron *mass density* would be standing still at point P before the arrival of the wave, its mass density oscillates as the wave arrives, and becomes stand still again after the wave has passed through point P. But from our ordinary experience of motion of particles we know that there will be no particle at a point until the particle arrives at that point and after the particle has already passed through that point. The particle is detected at a point only when it arrives at that point. This is the crucial distinction of quantum waves from ordinary water waves.

Therefore, we need to modify this direct analogy for the electron wave as follows:

There will be no electron (zero electron mass density) at point P before the arrival of the electron wave and after the electron wave has passed. The electron mass density disappears (diminishes) from point P with the disappearance of the wave. Unlike the water wave, the medium for the electron wave, which is the electron mass density field itself, exists at a point only when the wave (oscillation) exists (is non-zero) at that point. This means that the electron wave drags the electron (the electron medium) with itself. Where and when there is no electron wave (oscillation), i.e. where the amplitude of the wave is zero, there will be no electron; the electron mass density will be zero. The mass density will always be concentrated at regions where there is high oscillation of electron mass density.

The puzzle can now be resolved:

“If an electron is a wave, then what is the medium for the electron wave? What is waving ?”

The electron is both the medium and the wave. The medium for the electron wave is the electron mass density field itself. No exotic medium is required.

The same applies for the photon. The electric and magnetic fields are the ‘mediums’ for the photon. No exotic medium (ether) is needed. In the case of the photon, *the medium is the electromagnetic energy density field.*

Fine tuning

Let us now consider a crucial related concept, fine tuning. By fine tuning, we mean setting the initial conditions of the electron mass density field. It means initially setting for every point in the field :

1. the mass density,
2. the time rate of change of mass density
3. the rate of rate of change (acceleration)

These are analogous with position, velocity and acceleration of a mechanical system.

The fine tuning of the electron (and the photon) occurs during the instant of emission. The initial condition determines the internal dynamics of the electron from the instant of emission to the instant of detection. Initial fine tuning determines not only the direction of photon emission, but also the instant of photon detection (absorption)! And the speed of the photon (or electron) !? The photon absorption occurs when all the mass of the electron converges into a single point in the field. Fine tuning determines all the parameters of the electrons between emission and detection.

Interference patterns in double-slit experiments

The new insight introduced above says that the reason why the electron (and the photon) is not spread throughout space but localized is that the electron mass will be concentrated only at points in space where there are *oscillations* of electron mass density. The mass density of the electron will be zero at points of space where the amplitude of mass density oscillation is zero. The mathematical formulation of this intuitive idea is yet to be done, and I will not attempt it in this paper.

Let us take again a deeper look into the internal structure and dynamics of the electron and the photon. Imagine the electron to be like a pond water. At each point in the electron field, there will be electron mass density oscillations (fluctuations), defined by the rate and acceleration, just like a pond water will have an instantaneous velocity and acceleration of the water molecules at every point. Just as the pond water can never be standing still, assuming there is no energy loss, the electron mass density can never be standing still. According to the new theory, the electron mass always keeps flowing from points of lower *density* oscillation to points of higher density oscillation. Considering the almost infinite internal degree of freedom of the electron, the internal dynamics and interactions of the electron will be complex. Suppose that at some instant of time there are multiple points in the electron (mass density) field. Due to the complex dynamics and interactions, those points will continue to change over time according to initial conditions, and points where there were high oscillations may change to be points of lower oscillations or points of even higher oscillations. The electron mass continuously flows from one point to another point and then to another point, and so on. The law behind this is the new theory that electrons tend to be concentrated at points (regions) of higher mass density oscillations or fluctuations.

But there is also a probability (however small) that all the mass of the electron flows towards a single point in the field, making the mass density infinite. This is what happens during detection! The same applies for the photon.

Now consider the double-slit experiment. We know from experiments that, if both slits are open, an interference pattern will be formed on the detecting screen. In light of the theory proposed above, *this is a deep mystery*, despite its familiarity. Why ?

We have said that fine tuning of the photon (that is, setting the initial conditions) occurs at the instant of emission. Fine tuning determines in which direction the photon is emitted, when and

where it will be detected. Detection occurs when all the energy of the photon converges to a single point in the photon energy density field.

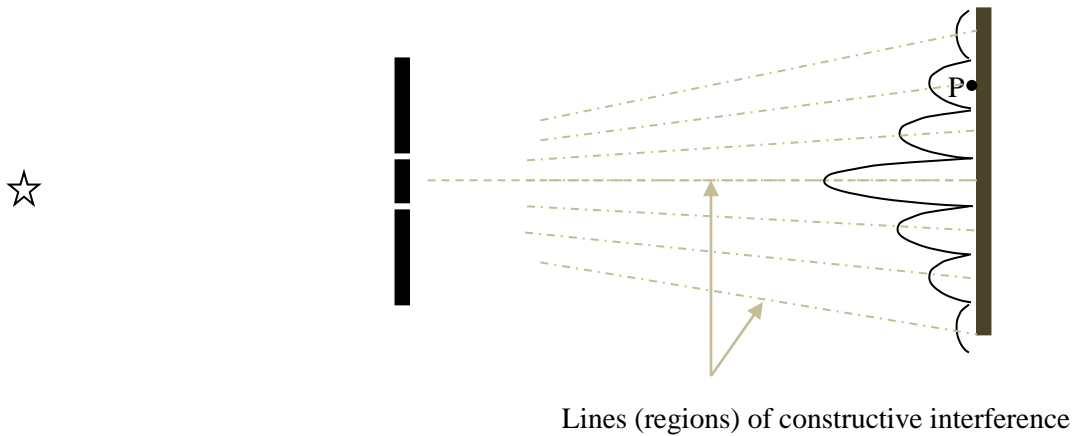


Fig.2

This is a deep mystery, a great puzzle. In the case when both slits are open, *who* fine-tuned each photon so that it will land at a point on the screen to form an interference pattern? ! Mind you, according to the new theory, where the photon lands on the screen is completely *predetermined* by the initial condition (fine tuning) of the photon during emission! Unlike classical waves, and unlike current understanding, the interference patterns are not formed after the photon has passed through the slits ! Imagine that you had the ability to fine tune each photon when it is emitted by the source. This means that you can form any pattern you desire on the screen, regardless of whether one or both of the slits are open! Even with both slits open, you can create (‘write’) any pattern different from the usual interference pattern we know from experience by fine tuning each photon emitted. Note by fine tuning each photon you can decide at which point on the detecting screen the photon will be detected !

In the same way as for mechanics, in which the exact place a ball lands on the ground is completely determined by its initial conditions, the exact point in the universe where a photon is absorbed is predetermined by its initial conditions, which are set during emission !!!

But suppose that you are told to form only the usual interference pattern when both slits are open and to form the usual Gaussian pattern when only one slit is open. You can form whatever pattern if you wanted, but you respect the order given to you and always stick to it. Imagine that nature ordered you what it wanted to happen.

The burning question is: WHO fine-tuned each emitted photon to form an interference pattern when both slits are open ? ! You can’t argue that the fine tuning is random. Random tuning will not consistently form an interference pattern. Did the emitting atom fine-tune the photon it was emitting ? Or, did the source and the detector screen conspire ? All of these are meaningless

because 'dead' atoms are not intelligent, and are not intelligent enough to (almost) infinitely fine tune the photon to *predetermine* where and when the photon will be absorbed on the screen!

My conclusion is that some intelligent being is fine tuning the emission of the photons every time a physicist is doing a double-slit experiment in the laboratory !!!

Imagine the level of fine tuning required to PREDETERMINE exactly where and when a photon will be detected on the screen, to predetermine by which atom of the detector screen it will be absorbed. Considering the almost infinite level of fine tuning required (note that the photon has infinite internal degrees of freedom), the intelligence required is supernatural !

What if a physicist is doing a double slit experiment by using light from a galaxy one billion light years away? Can you imagine that (almost) infinite fine tuning is required ? Just imagine aiming at an atom one billion light years away ! This is supernatural (GOD). Imagine the precision of fine tuning required, one hundred decimal places ? none thousand ? one million ?

Suppose that a photon from that galaxy entered through the slits and was absorbed by a particular atom on the detecting screen. This happened because GOD aimed the photon one billion years ago at that particular atom on the detecting screen.!!! This is not all. What is more, it is aiming at a moving target one billion light years away ! Ever since the emission of that photon from the galaxy, this particular atom has been moving due to rotation of the Earth, due to revolution of the Earth around the Sun, due to motion of the Solar System in Space, due to motion of Milky Way galaxy in space, and so on. You might say that these are predictable. But that atom on the detector was at some point on Earth before it was used to make a detector screen in a factory, which is not predictable. Which physics laboratory would buy that screen is unpredictable. It is unpredictable exactly when the physicist will perform the double-slit experiment, and exactly where in the lab the detector will be placed , and exactly how it is oriented. GOD had (has) a foreknowledge of all these and infinitely fine- tuned the photon one billion years ago, so that it would enter the slits at exactly the right moment. The detecting screen may even be subjected to some vibration, and GOD has a foreknowledge of all these.

GOD knew in advance that, a physicist, using his free will, would do a double-slit experiment one billion years later, at some point in the universe, and, literally, sent him a photon for his experiment!

Each and every photon emitted in the universe is aimed at a specific target atom somewhere in the universe, that can be one light year away or one billion light years away. Exactly at which point in the universe it is absorbed is predetermined by almost infinite fine-tuning of the initial conditions of the photon. When the convergence of the photon occurs at the predetermined point in the universe, the atom destined to absorb it just happens to be at that point. Aiming in the case of a photon is different from aiming in the case of a bullet. A bullet will hit anything it finds in its way. So you only have to make sure that the path of the bullet passes through your target. In the case of the photon, a photon is aimed at a single point in the universe. And there is no photon

that misses its target, there is no photon emitted that keeps propagating in the universe until it finds some atom to hit by chance. In other words, if that was the case, the target was that specific atom in the first place. The interference patterns in the double slit experiments, the puzzling behavior of photons in the “Why Way” and quantum erasure experiments and quantum entanglement are overwhelming evidences that this is the case.

But God does not fine tune light from natural sources only, such as light from galaxies. God also fine tunes a photon from a laser source during a double-slit experiment in a laboratory.

You may ask: if the pattern on the detecting screen can be changed arbitrarily, why then do we always see the same patterns consistently ? This would be the case if humans were given the power (intelligence) to fine-tune the emitted atoms. GOD always respects the laws he created himself.

And the laws and phenomena of nature (such as forming of interference patterns) are laws of nature just because GOD wanted them to be the way they are! He can change them if He wanted.

“ Which Way “ and quantum erasure experiments, causality violation

Consider the “Which Way” and quantum erasure experiment below.

Entangled photons, one X-polarized and the other Y-polarized, are each sent toward detectors D_p and D_s .

The experimental set up is to test whether it is possible to know which slit the photon has passed through and to have an interference pattern at the same time. Experiments showed that when the polarizer in front of D_p is removed, it is possible to know which slit the photon has passed through, but the interference pattern is destroyed and we will have only a Gaussian pattern. This means that the source emitted the photons only through one, and not both, slits. But when the polarizer is placed in front of D_p , it is impossible to know which slit the photon passed through. But the interference pattern is restored.

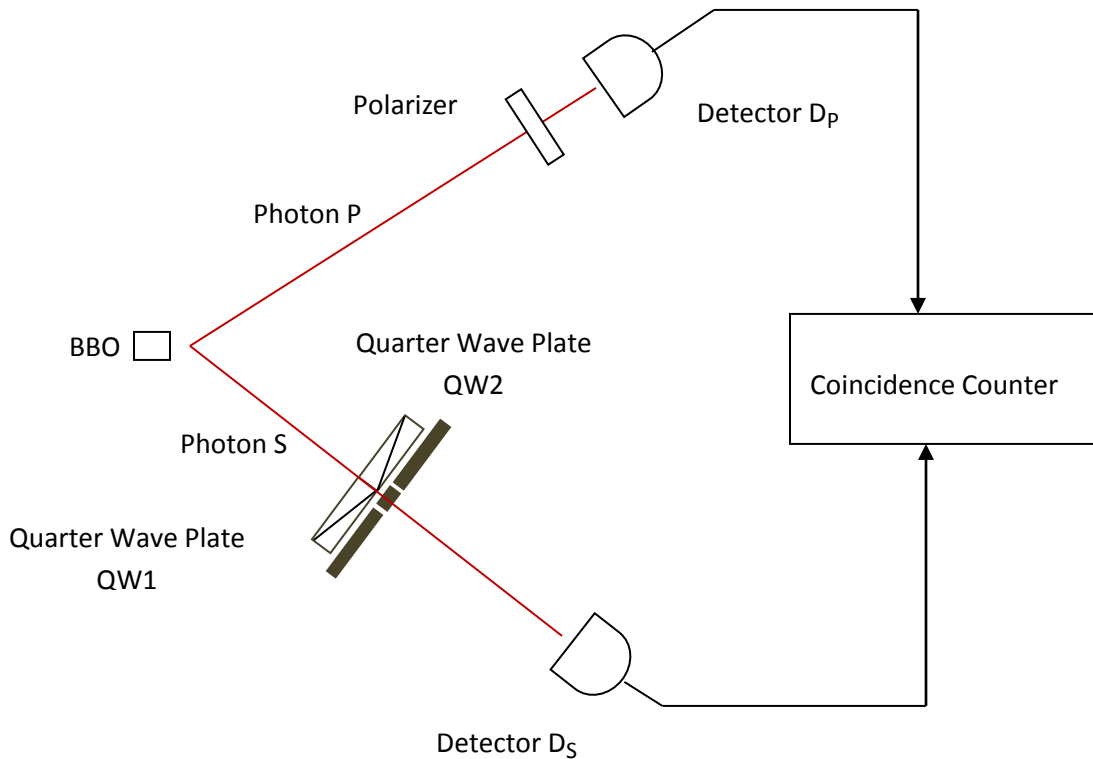


Fig.3

The puzzle is: how did the source ‘know’ whether there is a polarizer in front of D_p . Note that this will continue to happen even if the source, D_p and D_s are placed light years away from each other.

The explanation is the same as for the double-slit experiment.

The interference patterns are formed when there is a polarizer in front of D_p and are destroyed when the polarizer is removed just because, LITERALLY, God wanted it to be that way.

What I mean is that, according to the new theory, where a photon lands on the screen is completely *predetermined* at the instant of light emission, by fine tuning of the photon field (that is, initial conditions). This is analogous with mechanics that where a ball lands is completely determined by its initial conditions.

In the same way as for mechanics, in which the exact place a ball lands on the ground is completely determined by its initial conditions, the exact point in the universe where a photon is absorbed is predetermined by its initial conditions, which are set during emission !!!

The source ‘kicks’ each photon just like a football player kicks balls. Imagine performing a ‘double-slit’ experiment using a ball ! Two holes with correct sizes and spacing are made in a wall. Behind the wall is a ‘detecting’ screen. Can you imagine that, by extreme fine tuning the

initial conditions, a football player can in principle form an interference pattern ?! But no human can have such level of intelligence because the fine tuning required is almost infinite. The fine tuning includes the initial velocity and initial direction.

Note again that the ball is fine-tuned at the instant it is kicked to form an ‘interference pattern’. It is not because the ball ‘interfered’ with itself ! In fact, two holes are not necessary to form an interference pattern. It can in principle be done using only one hole. The exact point where the ball will land on the ‘screen’ is predetermined by the initial conditions, at the instant it is kicked. It is the same in the case of photon !

At this point, we have not make clear how ‘diffraction’ will happen in the case of the ball. It is possible to design a hole so that the ball can exit the hole at different angles. The hole may be designed to an internal structure. One can do an experiment to see whether or not a ball passing through a hole will exit at different angles.

Just to show how perplexing and mind-boggling this is, imagine a wall with two appropriately sized holes and a ‘detector’ wall behind it at some appropriate distance, as discussed above. Suppose that from some fixed point in front of the holes (analogous to slits), a ten year old boy/girl having no training in football repeatedly kicks the ball many times towards the holes and the point where the ball landed on the ‘detector’ wall recorded. Imagine that the ball formed an interference pattern on the wall ! Isn’t this surprising for a ten year old boy to infinitely fine tune the kicking of the balls intentionally to form an interference pattern ?! *He was super intelligent and simulated ‘wave-particle duality’ of balls!* The atoms in the light source have infinitely too small intelligence to form an interference pattern in the double-slit experiment !

Suppose that the ‘double-slit’ experiment with the ball really happened, that is, the boy/girl succeeded in forming an interference pattern by the ball. Imagine that this really happened. Wouldn’t all the world media start talking about this twenty-four seven? What possible explanations do you think people might give? People would say that the boy somehow used a supercomputer, using some unknown advanced technology. I would guess that the boy prayed to God. I am saying that whether by some advanced technology or by divine intervention, creating an interference pattern by a ball requires almost infinite fine tuning, and thus ‘infinite’ intelligence. I mean the interference pattern cannot be formed by randomly kicking the ball towards the holes.

The case of the double-slit experiment is even more perplexing because the light source (the emitting atom) has too infinitely small intelligence to do the infinitely complex tuning of each photon !!! Note again that where a photon lands on the detecting screen is *predetermined* at the instant of emission, just as where a ball lands on the ground is predetermined by its initial conditions.

The notion that atoms inside the light source of a double-slit experiment emit the photons randomly is completely ruled out ! Those fictitious interference patterns formed by a ball cannot

happen randomly without (almost) infinite fine tuning of the initial conditions of the ball, hence requiring (almost) ‘infinite’ intelligence. The same applies to the interference patterns in double-slit experiments. The interference patterns cannot be formed by random emission without (infinite) fine-tuning of the emission of each electron.

Now back to the “Which Way” and quantum erasure experiment. The interference patterns appear when the polarizer is placed in front of D_s just because, literally, God wanted it to be that way, and we call this a law of nature. There is no ‘explanation’ other than accepting it as a law of nature. All we can do is to model the phenomenon so that we can use it to predict the outcome of experiments.

So, according to our new theory it does not give sense to ask “how did the source know whether or not a polarizer is there, so that the source would direct the photon to one slit or to both slits accordingly?” The explanation is that God just wanted it to be that way. If He wanted, he could arbitrarily change the patterns on the screen, regardless of whether or not a polarizer is placed in front of D_p . Can you imagine that, just by fine tuning each photon, God can form the usual interference pattern by using only one slit, with the other closed? He can also form a Gaussian pattern or any arbitrary pattern with both slits open. He can send the photons alternately through each slit (so that we can know which slit the photon passed through) and form a Gaussian pattern or in interference pattern at will. God can form any pattern regardless of the distance between the slits.

In the ball ‘double-slit’ experiment, we assumed that there are two holes (‘slits’). But, in principle, it is possible to create an ‘interference pattern’ by using only one hole, by extreme fine tuning of initial conditions of the ball. In principle, an interference pattern or any arbitrary pattern, can be formed by using only one of the holes or both holes. In the case of two holes, we don’t say the ball passed through both holes to ‘interfere’ with itself. Whether only one hole is used or both hole is used, the ball always passes only through one hole. It is possible to create any arbitrary interference pattern regardless of the distance between the holes.

But God has regulated the laws of nature in a certain fixed way and not in an arbitrary way. In the case of “Which Way” experiment, he made it a law that it is impossible to know which slit the photon passed through and to have an interference pattern at the same time. But note that this may not be an absolute law and some experiments have shown that it is possible to both know the photon path and have an interference pattern at the same time by using weak measurement, but the weak measurement will degrade the interference pattern.

But, occasionally, God may ‘violate’ the laws He formulated and He does this with purpose and we call this miracle.

Now can you imagine that the super intelligent boy/girl can even simulate “Which Way” and quantum erasure experiment and even quantum entanglement? He can *define* some objects as polarizers and put them in front of the holes. To simulate, say, horizontal and vertical

polarization he may use not a spherical ball but a slightly elliptic ball. He may also simulate clock-wise polarization and counterclockwise polarization. He can kick the ball with some ‘infinitely’ fine-tuned initial conditions so that the ball will spin clockwise (or counterclockwise) after exit through the hole.

Quantum entanglement

Think of the usual quantum entanglement thought experiment. Imagine a pair of entangled photons sent in opposite directions into space, one with X-polarization and the other with Y-polarization. But it is unknown which photon is X-polarized and which one is Y-polarized before detection. A detector is placed at a distance of one light year in the path of one of the photons. After one year, one of the photons was detected to have, say, Y-polarization. According to quantum mechanics, the polarization of the other photon will be fixed to be X at the same instant. The puzzle is: how did information travel to the other photon instantly, with the photons separated by light years. Quantum mechanics has no physical explanation for this, it has only a mathematical ‘explanation’ : probability.

What is the explanation of quantum entanglement according to the new theory ? We have said that the initial fine tuning of the photon predetermines in which direction the photon is emitted, at which point in the universe it is absorbed. As we have said already, the initial conditions of the photon are tuned during emission. Therefore, accordingly, all the parameters of the photon, including the polarization, is also tuned during emission. Therefore, the orientation of each of the entangled photons are fixed during emission. There is no need for two photons light years away to “communicate” information about polarization.

Not only the polarization, but also where and when each photon is fine-tuned during the instant of emission. If we placed a detector at a distance one light years away, and if we succeeded in detecting the photon, then this happened because God fine tuned the photon so that it would be absorbed at that point in the universe.

To make these ideas clearer, we may ask: what if we did not place the detector ‘correctly’ ? First, there is a problem with this question itself because we can only try to make the probability of detection higher and we cannot know with certainty the path of the photon. But we say that, if the detector detected the photon, it is because we have placed the detector where there is significant probability of detection and because God fine-tuned the photon during emission. But what if we place the detector at a place where there is less probability of detection ? The answer is that our detector will not detect the photon most of the time, it detects, say, only 0.1 percent of the time.

Here two questions arise: what happens to those photons that have missed the detector. The answer is: God aimed at some other target in the universe. The other question is, if God can fine tune the photon so that He can aim it towards a detector where the probability of detection is low, why doesn’t He do so ? The answer is that God acts according to the laws He created

Himself, not arbitrarily. The law in this case is that, if a detector is placed at a place with low probability of detection, as we learned from experience, then there will be low probability of detection.

The GRAND question and the Grand plan

We have said that the double-slit experiment, the “Which-Way” and quantum erasure experiments behave the way they behave because, literally, God wanted it to be like that.

God can fine tune the emission of each photon so that it will land at any arbitrary point on the screen, regardless of whether only one slit or both slits are open, regardless of the distance between the slits, regardless of the distance between the slits and the detector. This means that God can fine tune the emission of each photon to form any arbitrary pattern on the screen.

But there is a GRAND question.

Why does God want that an interference pattern be formed when both slits are open and the interference pattern be destroyed when only one slit is open ?

Why does God want that, in the “ Which Way“ and quantum erasure experiments, the interference pattern be formed when there is a polarizer in front of detector D_p , but the interference pattern be destroyed when the polarizer is destroyed ?

Here is the GRAND plan of God.

The GRAND plan of God is for humanity to know and believe that He exists, that He has supernatural power and intelligence, that He is holy. What more *scientific* evidence can God give us about His existence other than the double slit experiment and the “ Which-Way” and quantum erasure experiments as we have seen extensively ?!

Suppose that God made it a law that double-slit experiments, with both slits open, do not give an interference pattern. Imagine how much that would affect the advance of physics. Thomas Young would not get the interference pattern in his experiment and the wave nature of light would be hidden from us. The new theory in this paper became possible because the quantum experiments behaved the way they behaved. If, in the “Which-Way” experiments, light behaved like ordinary waves (such as sound waves), the new theory proposed in this paper would not have been possible. These experiments and the way God made them to behave led to the scientific proof of God presented in this paper.

Can you see now that the wave-particle duality is an overwhelming direct evidence of divine intervention ? Photons and electrons CANNOT by themselves act as both waves and particles simultaneously! The observed wave-particle duality of quantum particles is, literally, a divine intervention. This is why we have found the wave-particle duality hard to understand.

Note that God does not do wave-particle duality with water waves or with macroscopic objects. Water waves are pure waves and macroscopic particles also behave purely like particles. I would say this was by design. Why does God not fine tune the initial conditions every ball we kick, like the photons? I think that He wanted us to see pure classical waves and pure classical particles so that He would challenge us with the wave-particle duality of photons and electrons, and, through this, so that we would be able to discover His existence.

Laws of the Universe

By now you may think that (I did) God intervenes in each and every quantum phenomena, and leaves classical phenomena to occur by themselves, according to the laws of physics. But what are the laws of physics or laws of the universe exactly ? We know that human rules and laws are formulated and written down on paper. But writing them down on paper does not automatically execute them. Somebody must execute them. Think of the laws and phenomena of physics (gravity, inertia, water waves, electrostatics, magnetism, Maxwell's equations, and so on) as being formulated and 'written down' by 'someone'. In this case, obviously 'someone' is God. Ok, God formulated the law of gravity and wanted every particle in the universe to obey it. But how can particles, having no intelligence, understand the complex mathematical model they are ordered to obey? I would conclude that God intervenes not only in each and every quantum phenomenon, but also classical phenomena.

When you drop a stone on a pond, WHO instantly solves the complex differential equations in real time for the waves to behave exactly according to a predetermined way (law). WHO, in real time, calculates and executes the equation of motion of a projectile? WHO, in real time, solves and executes Maxwell's equations for charged particles and for electromagnetic waves?

By now I can imagine that, whenever I throw a stone into the air, God continuously pulls the stone towards the ground, *as if* the Earth pulled by its 'gravitational field'. We just called this the law of gravity, and gravitational 'field'. We say that the Earth pulled the ball by its gravity. I imagine that whenever a physicist does an experiment on the electrostatic attraction between two oppositely charged steel balls, God pushes the balls towards each other precisely according to Coulomb's law, we gave it a name: electric 'field'. When you drop a stone on a pond, you are occupying God's computational power, which is not approximate but perfect (imagine how many decimal points He uses), which is done in real time, so you are making God busy when He has infinitely many important tasks to do. So don't throw a stone into a pond with no good reason. But His computational power is infinite, so you will never make him busy.

However, the case of Divine intervention in the case of classical phenomena is not as obvious as the case of quantum phenomena. In the case of classical phenomena, scientists used the concepts such as 'field', 'law' of nature to explain phenomena they observed. Quantum phenomena, on the other hand, has proved to be a glaring evidence of an invisible hand that we cannot attribute to some concepts in a scientific way.

A new view of electrostatics

Consider an electron pulse emitted from an electron source S, accelerated by an electric field, and then detected by a detector D.



The current paradigm is that the electric field will continuously act on the electron and continuously accelerate it at every instant of time. However, according to the new insight introduced in this paper, the time evolution of the electron wave is completely predetermined at the instant of electron emission, by initial fine tuning. Therefore, according to the new theory, the conventional view is wrong. *If electrons are waves, then electron waves move with constant velocity and are not accelerated, just like classical waves, which move with constant velocity.*

To make this clear, we state that classical (conventional) theory correctly determines the time of arrival of the electron pulse at the detector. However, the current paradigm that the electric field continuously accelerates the electron while moving in its path is wrong. Conventional theory determines the time delay from the formula:

$$L = \frac{1}{2} a t^2 \Rightarrow t = \sqrt{\frac{2L}{a}}, \text{ where } a = \frac{F}{m}$$

The new theory says that a supernatural being, from knowledge and foreknowledge of the electric field and the mass of the electron, computes the time delay from the above formulas and fine tunes the initial conditions of the electron wave so that it arrives at the calculated time.

$$V_f = at = a \sqrt{\frac{2L}{a}}$$

The electron moves with a constant velocity of V_f from the point of emission to the point of detection.

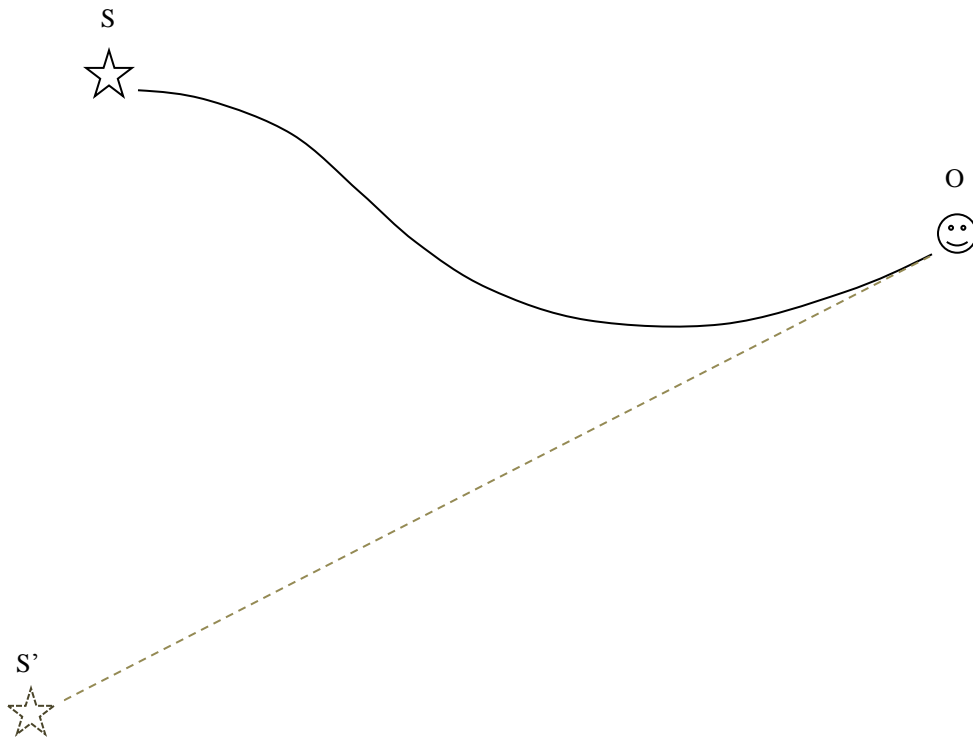
It follows that, in this case:

$$L' = V_f t = a \sqrt{\frac{2L}{a}} \sqrt{\frac{2L}{a}} = 2L$$

Therefore, the electron is emitted not from the actual/physical point of emission, but from an apparent point of emission.

One might attempt to challenge this view as follows. Suppose that the electron is emitted from the source and then accelerated towards the detector by the electric field. However, suppose that the electric field strength is suddenly increased (or decreased) when the electron is halfway between the electron source and the detector, so that the time delay of the electron pulse will be changed. One might argue that this would contradict the above theory because the initial tuning was based on the original electric field strength and hence the new theory will not correctly predict the time delay. The explanation is that God had/has a foreknowledge that the electric field would change when the electron is halfway between the source and the detector, so he had set the initial conditions accordingly so that the electron would arrive at exactly the same time predicted according to classical electrodynamics.

Imagine an electron source S emitting a pulse of electrons and electric fields arranged in such a way that the electron follows curved path to the detector O, where it is detected. The electric fields can even be time varying.



The conventional view is that the electron is emitted from the physical source S, and accelerated along its path by the electric fields. However, this view is fundamentally wrong. Assume that it

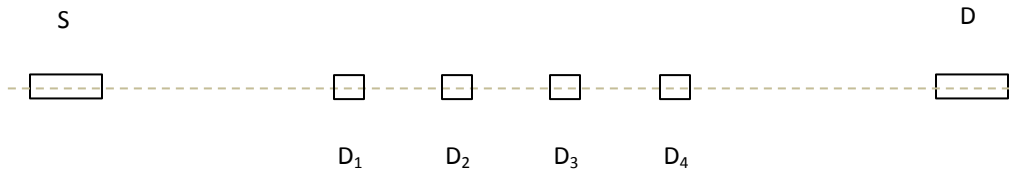
takes time T for the electron to travel from S to D and that the final velocity at the instant of detection is V_f . The fundamentally correct formulation is that the electron was emitted from apparent source position S' , not from the actual source S , where:

$$L' = V_f T$$

Line $S'O$ is tangent to the curve at point O .

One might also make another argument against the new theory as follows. Suppose that multiple detectors, D_1, D_2, D_3 and D_4 are placed along the path of the electrons going from S to D , with equal spacing between them. Then, from the time of detection of the electrons at each detector, it would be possible to see if the velocity of the electrons going from S to D is constant or not. However, this argument is wrong because the new theory applies to each of these detectors just as it applies to detector D . The electrons going from S to D_1 , from S to D_2 , from S to D_3 and from S to D_4 have likewise respective uniform velocities. For example, the velocity of an electron detected at D_1 is (L_1 is the distance of D_1 from S):

$$V_f = at = a \sqrt{\frac{2L_1}{a}}$$



Obviously, since the electrons are being accelerated to the right (due to electric field), the times of detection at D_1, D_2, D_3 and D_4 will not be equally spaced. However, we cannot use this result as an argument against our theory that the electron going from S to D will move with uniform velocity. The intermediate detectors have no access to the electron moving from S to D . If detector D_1 has detected an electron, then it detected an electron coming to D_1 , and not an electron going to D . From a foreknowledge of where a particular emitted electron will be detected (at D_1 or D_2 or D_3 or D_4 or D), it is emitted with the right initial fine tuning so that it will be detected at that point or by that specific detector, moving with the right constant velocity. Therefore, a *direct* experimental verification of the theory that the electron moves with constant velocity from S to D is impossible.

Glory be to Almighty God Jesus Christ and His Mother, Our Lady Saint Virgin Mary