THE GRAIL

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Waves + Particles = Wavicles

If we were to take an introductory physics or chemistry course in high school or college, we would be confronted with the particle or corpuscular theories of light, and the particle theory of the elements. The table of elements is presented to us in a graphic or chart in our textbook, and on the wall of the classroom itself. Being babes in the woods, we accept these premises as being true. However, if we continue in our studies beyond the introductory level, we soon discover that on the subatomic level of reality, these premises are not true.

So how do we do as the ancient mystics say and, "Lift the Veil of Isis?" It all starts with a man by the name of Thomas Young (1773–1829), and his famous double slit experiment. From Democritus to the time of Newton, it was believed that everything including light was made up of tiny atomic particles. Young did not have the coherent light[i] of a lasher like modern day scientists do. Young believed that by shining light through a double slit you should get two light images on the wall. If light were made up of particles, it would be like dumping particles of sand from a bucket through two slots and getting two piles of sand (see graphic 5-1 below). In the figure noted, notice how the sand creates two piles because of being strained through two openings. If light is made of atoms, and atoms are little particles like sand, then they should also trace a neat outline of two slots on a receptive screen.

However, when Young did finally shine his light through the two slots, he did not get two silhouettes of light on the receptor screen. Instead, he got a wave pattern (see figure 5-2). This result was unexpected and baffling to Young. Many years past until this experiment was redone again with modern instruments. That is where the anomalies begin to unwind about the sub-atomic world, and quantum physics is born.

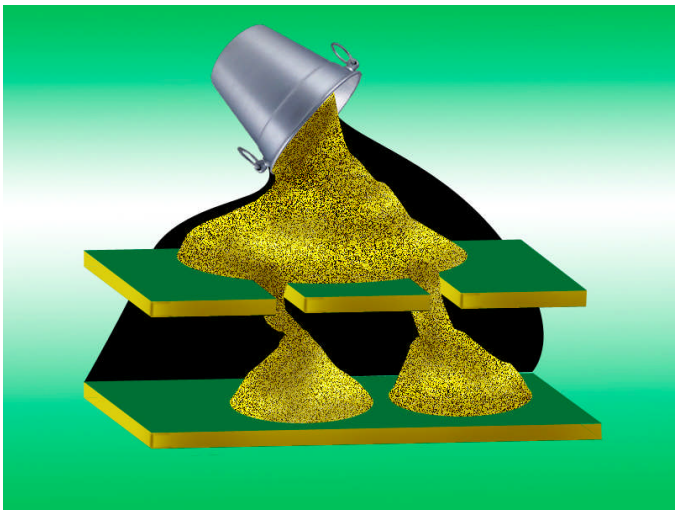


Figure 5-1: Sand particles passing through two slots.

In figure 5-2 we have depicted a light source, shining through two slots emanating waves, similar to the ripples created on lake surface, from a plummeting pebble. After passing through the slots, these waves interfere with each other creating a series of crested impacts against a receptive screen. This is similar to waves in the ocean hitting a sea wall.

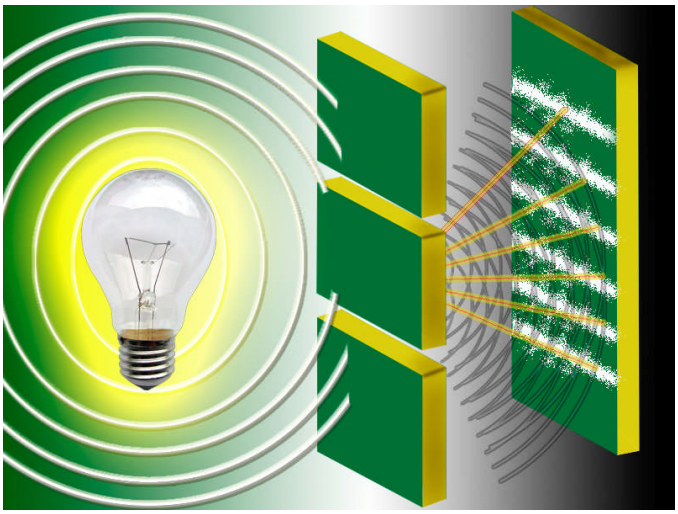
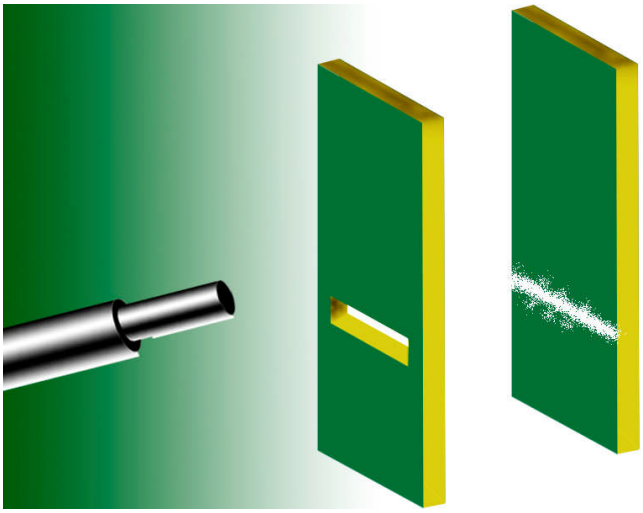


Figure 5-2: Intersecting waves of light interfering.

In the more modern experiments, by shining a coherent lasher light source through a single square slit, one should see a single square outline on the wall or photographic plate. If light is made up of particles, then this is just what we should get. This is exactly what happened, so far so good (see graphic 5-3).

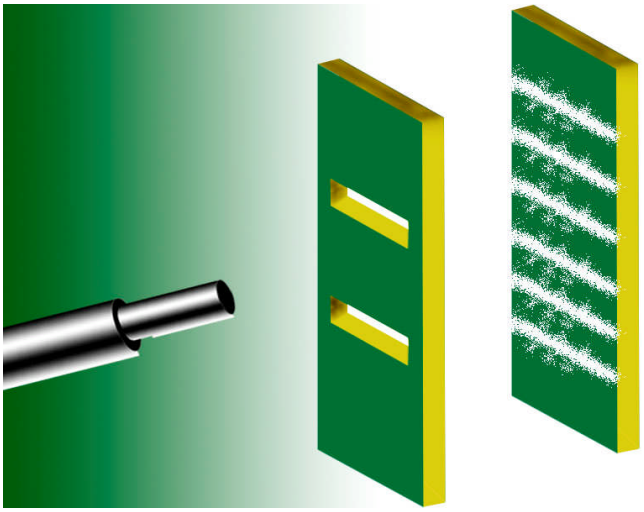
All the little photons or particles of light behaved just like stones or pebbles being fired from a canon through a square slot. The result was one line of photons within the parameter of the square slot impacting on a receptor plate. This was of course to be expected; therefore, we can now proceed to the next level of the experiment.



Graphic 5-3: Single slit shows single line or photons.

It was believed, almost like a tautology, that two slots should produce the same results. Two slots should allow for the photons to create two lines of impact on the photographic receptor plate. It must be noted, that in the modern version of these double slot experiments, that only one photon at a time was fired from the special lasher gun. This firing of one photon at a time has to insure that there will be no interference with the trajectory of the photon, as it travels through one of the two available slots in the second iteration of this experiment (see graphic 5-4).

The result was baffling to say the least for our modern day physicists. The receptor plate showed a wave interference pattern and not the two bands of photon impacts as expected. Since in the modern version of these experiments, only one photon at a time was fired at the two slots, how could this wave pattern emerge if photons were solid particles? How could these light particles become waves, interfere with themselves, and travel only through one of the two slots, one at a time? This is where the quantum weirdness begins, and the Veil of Isis is slowly lifting. Is light a wave, is it a particle, or is it both at the same time, a wavicle? Scientist were stunned at this and decided to set up a camera/instrument to measure/observe what slot the particle of light actually goes through (see figure 5-5).



Graphic 5-4: The Double Slit Wave Phenomena.

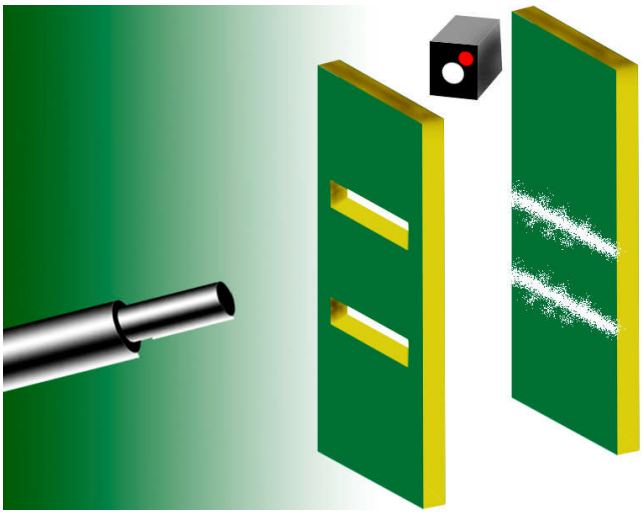


Figure 5-5: The photon acts as if it is being watched.

The result was a complete shock. When the camera was on and watching, the photon particle behaved like a particle, and created only two patterns on the receptor plate just like the sand particles do when being strained between two holes. How could the photon particle be aware it was being watched? When the camera was switched off, the wave pattern returned (figure 5-6).

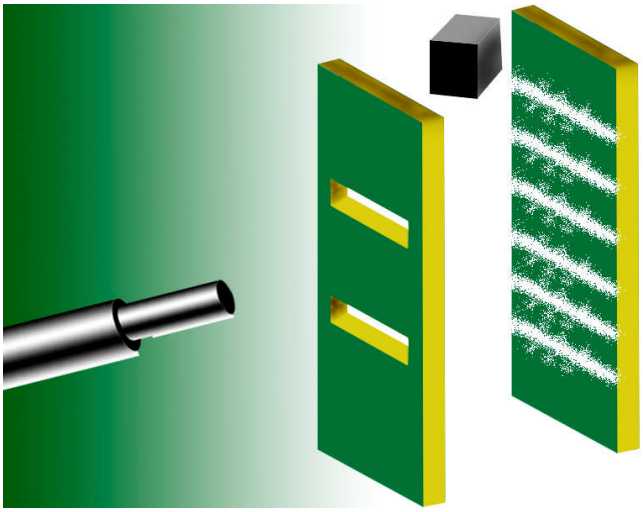


Figure 5-6: Photon particle acts like a wave with camera off.

This is not even the weirdest part either. It was later discovered, that if you did not turn the camera on until the after the photon particle had already passed through the two slots, it would immediately behave like a particle, going back in time, and recreating its whole trajectory and path! This is sometimes called backward causality or the quantum eraser. However, we will talk about this aspect a little more later on.

Lifting the Veil of Isis

What is implied here metaphysically speaking, on a sub-atomic level, is that observation, the act of measuring, affects the outcome of the experiment itself. Many arguments have been made over the explanation as to why this is so. What are the true mechanics involved with this phenomenon? As stated earlier, whatever a person or scientists' bias is metaphysically, will influence his/her explanation of the mechanics involved.

A materialist scientist will not want to see the consciousness of the observer affecting the experiment. He wants to believe in an objective universe that exists independently, whether it is being observed/measured or not. Idealist[ii] scientists will consider how the consciousness of the observer might be influencing reality if not actually creating it.

Today, many scientists have come out of the closet and are not afraid to express an idealist point of view. Many scientists, stemming from John von Neumann, John Wheeler, and Amit Goswami, to name just a few, are not afraid to express their idealistic ideas about physics. Goswami himself names his physics *Monistic Idealism*. He has authored many books and videos on the subject. Many other scientists are afraid to express their views fearing losing tenure at the university or being ostracized by the scientific community still so heavily dominated by naive materialism and prejudice.

We shall continue this discussion through out this work, as the data to support it is shown to the reader. For now, let us say that from my perspective, there is only one universal consciousness. It has many minds, and it is the foundation of all reality. The moon does not disappear, when I am not looking at it, because the one universal consciousness is always looking at everything as it really is. This is closer to Kashmir Shaivism, an Indian philosophy, and one that I have perceived to be the most correct in shedding light on the findings of modern physics. It must be understood, that from the Shaivism point of view, the universe is being recreated billions of times a second, by the one consciousness, giving the illusion of continuity and the ability for constant change. Finally, the implications of quantum physics are astounding to the open-minded and dread to the closed minded materialist.

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[i] Coherent light are light waves that are "in phase" with one another. This is similar to a chorus line of dancers moving in perfect synchronism with each other. Young did not have access to such a light source since lashers had not been invented because quantum mechanics had not been discovered yet.

[ii] Idealism, in terms of metaphysics, is the philosophical view that the mind or spirit constitutes the fundamental reality. It has taken several distinct but related forms. Among them are Objective and Subjective idealism. Objective idealism accepts common sense Realism (the view that material objects exist) but rejects Naturalism (according to which the mind and spiritual values have emerged from material things), whereas subjective idealism denies that material objects exist independently of human perception and thus stands opposed to both realism and naturalism.