

The Single Photon Version of the Double Slit Experiment: *Introduction*

The following series of papers is certainly NOT a finished and totally consistent account of *this* version of the Double Slit Experiment. It comprises, on the contrary, merely a trajectory of thoughts, which throughout its long gestation period have regularly "hit the fan", and seems to have reached many impasses. But, it is my experience that such is unavoidable, if the person or group involved is addressing a problem in a new way.

Try as we might, we cannot easily unload our assumptions and simplifications by means of which we get slowly improved conceptions of what is going on in a complex, and indeed, entirely holistic Reality.

The new feature that has had to be included, over and above those used in the **Electron Version** of this Experiment, is the universally accepted idea of the *moving* Photon, carrying its quantum of E-M radiation within it as a discrete oscillation.

Now, in most of the other musings about Photons, by this author, they have been of quite a different type.

They have, indeed, been in the form of a "paving" of all of the supposedly empty space of the Universe, and in addition they have therefore been both "empty" and *stationary* - literally **Empty Photons**.

In this normal state, they will not have been carrying Non-transferable gobbets of E-M radiations, but would be entirely capable of doing so.

They have, by some process, been turned into something very different from our usual conception of a Photon.

Now, of course, this sounds ridiculous, until you ask the question, "***What could possibly be carrying a well-defined quantum of such an oscillation?***"

To answer this, you must depart from disembodied, energy-only conceptions, and think instead about some form of **receptacle**. And to make matters worse, this receptacle must be **undetectable** of itself, and only become apparent when actually carrying the quantum of energy.

The task was one of considerable difficulty, until we investigated Pair productions and Pair-annihilations, involving an electron and a positron. Now these are considered to be not only of different charges - one is positive and the other is negative, but also of opposite sorts of Matter. The electron is of ordinary Matter, while the positron is considered to be of Anti Matter.

But it is entirely conceivable that a pair of these two particles could form a stable new particle, by their ***mutually orbiting*** each other.

For the resulting particle (when "empty") would seem to have both zero charge, *and* zero mass too, and would actually vanish in that state, and be undetectable, but it could still contain a gobblet of E-M radiation if such were available.

The Empty version of the Photon could be filled with such, but only ***momentarily***, for that oscillation could be immediately passed onto any adjacent empty Photon, and hence deliver Propagation. And this alternative has the advantage of delivering a **constant speed** for such propagation: it will be the ***speed of induction*** from Empty Photon-to-Empty Photon.

But though such ideas were sufficient for the Electron Version of this experiment, when it came to the Single Photon Version it was unavoidable that there must also be *moving* Photons too. For in the current versions of this experiment being carried out today by various groups, single, Moving Photons are clearly produced, one-at-a-time, checked for existence, then passed on through the rest of the apparatus, until they arrive singly at the final detection screen.

Now, in spite of what is usually claimed, these two versions of the Double Slit experiment are NOT identical, and therefore demanding the exact same explanation.

Negatively charged electrons, moving at speed, with clearly detectable mass, are very different from Single Photons apparently carrying only a gobbet of E-M radiation. They are obviously quite different!

So, this theorist, though there would be some carryovers from the theory of the previous case, would indeed have to think again, and find different reasons for an apparently very similar effect.

(666 words)