

Disapproval of quantum operational-ism (observables) :

In this paper, I'm going to clear up three concepts of Physics, which are believed to be explained only by operational-ism, by means of realism's application on very smaller particles (like electrons, etc.). The three concepts are meaning of de-broglie's wavelength equation, the inference of the results of Y.D.S.E. conducted using elections and particle wave duality & entanglement of electrons including Heisenberg's uncertainty principle & super-position concept.

The real meaning of de-broglie's equation is, a body of mass m can be converted into photon(s) of various similar/dissimilar frequencies, as the equation is derived as ' $mc^2 = h(\nu-1) + h(\nu-2) + \dots$ ' (i.e., Energy in the form of mass is converted into Energy in the form of photons) & it has to be clear that the (λ) in de-broglie equation doesn't mean the wavelength associated with the particle but it's the wavelength of the single photon that is produced out of the annihilation of the whole mass. The classical example for the above explanation is the pair production & annihilation of matter that is observed in Cosmic ray shower (the mechanism of this process is to be mentioned in the book I mentioned below).

Let's discuss about the results of Y.D.S.E. on electrons. Before going into this, we must know the fact that the property electric field of an electron is a wave & the energy of the field is equal to the mass of the electron (which is to be explained in the book I mentioned below). Now, we can see about the results of two cases (i.e., 1.shooting single electron at a time & 2.multiple electrons at a time) under various conditions ;

(1). When the slits are far apart, the electrons shows the particle characters pattern, i.e., direct hitting from the slits without any specific pattern (for both cases).

(2). When one slit is closed, the same mode of result is obtained, i.e., now, a single direct hit pattern (for both cases).

Note : When the distance between the two slits is greatly decreased, the formation of interference pattern is seen. This is not because of the wave nature of the electron but, because of the electric field produced by the electrons.

(3). In case of case-1, the electric field linked with the slit is parallel & the field moves with the speed of the electron but their force is mediated at c (speed of light), as they are electromagnetic waves (by photons). At the time of reaching the slit, the field linked with the slit

will change from parallel to spherical, due to the approach of spherical source (electron) & travels with the speed of the source (electron). At the time of electron exiting from the slit, the field from the electron at the time of entering will also be reached through the second slit (since, the distance between the two slits is very small) & emerges as a pseudo-electron [exists for a very small time (which is enough for redirecting the original electron from its straight path with its effect), since its field (which has no source for continuous supply) will be destroyed by the original electron's field (which has a source for continuous supply) after crossing the slits]. Thus, the path of electron after crossing the slit is determined by the interference pattern formed by the field from electron in 1st & 2nd slits. Thus, the interference pattern is observed.

(4). This same procedure will be followed for the case-2. Here the field of one electron gets integrated & opposed with the field of the other electrons, which will be an integral multiple of the effect seen in case-1 and so the net effect (i.e., the interference pattern) formed will be similar to that of case-1.

(5). In case of monitoring the electrons in case-1 using photons, after crossing, the electron gets struck by the photons, which will increase the movement of the electron by increasing its energy & after sometime the electron will reach the Ground state but, in the mean time, it doesn't get influenced by the effect of the pseudo-electron from the 2nd slit, due to its increased energy & even destroys it quickly before getting down to ground state. And so the interference pattern is not observed.

(6). But in the case of case-2, the interference pattern is formed due to the same even timely increase (getting excited) & decrease (reaching ground state) in energy among the electrons, due to same source of light, after crossing the slits, which creates the same effect as that of (4). The same effect is observed for protons, due to the presence of charge which is an indicator of the presence of electric field & these effects are not observed in neutral particles like neutron, etc., which will give the pattern of particles in all the cases & conditions. Thus, there is no role for Operational-ism in this experiment which can be purely explained by Realism as shown above.

By seeing the example & experiments on cases above, I'm willing to disagree the concepts of particle wave duality & entanglement i.e., in Cosmic ray shower, the high energy gamma ray leads to the production of a particle & its anti-particle, which on collision reproduces a similar gamma ray, which again involves in pair production & so on. From this we can confirm that, there is no such thing called matter waves. Only charged less weighed particles will behave as both particles & waves in different cases & conditions, due to the presence of electric field & very light weight. But, they are particles by nature not waves. (Photons are only waves not particles & its entanglement properties, which is also to be explained in the book I mentioned below.)

The property of entanglement can be shown by any massive (with mass) particles that have

the capability to undergo elastic collision. Eg : The elastic collision of two objects/particles of same uniform mass distribution will leads to entanglement. Since, during this process, it doesn't matter that they are from same source [i.e., their extrinsic properties (which are can be affected by environment) like speed, etc.] or not. But after collision, they will be opposite to one another say, if one rotates in clockwise, then the other in anti-clockwise & if one doesn't rotate & the other is also not. And it is important to note that after collision the sum of the two particle's properties will be zero (i.e., after collision, one is opposite of the other until they are interacted with external factors that has the capability to alter their properties). This same is observed in the electron's entanglement also (i.e., one will give the information about the state & condition of the other & there is no need for communication between them to expose their opposing properties).

In this way, we can disapprove the Heisenberg's uncertainty principle (since, the concept of matter wave duality has no existence, the theory based on that also has no existence) & super-position concept (since electrons are purely particles, It can't be existed in super-position states).

This paper is only a small part of Grand Unified Theory, that I will deal with in detail in my future book titled 'Toe Of Mine' by Bhasanpal S. & will be published on July 10, 2021.