10 CONCLUSIONS OF QUANTUM REALISM

In quantum theory things can be in two places at once, spin both ways at the same time and teleport past impassable barriers which isn't physically possible, so physics says the quantum world is unreal - but what if it isn't? What if it creates the physical world as quantum theory says? What if quantum reality doesn't *follow* the laws of physics because it *creates* them?

Note: Full details of the following ideas are here

10. In the beginning was quantum reality

(click image to view video)

Physics today is based on a miracle: That all the mass and energy of the universe came from nothing, in a "big bang" at a point in space-time. So in the beginning *nothing* created *everything,* then a huge anti-gravity field from nowhere *inflated* it faster than light to stop it collapsing into a black hole, then that field vanished to play no further part in things. In this new creation myth, one miracle made everything at a point then another stopped it collapsing in on itself. Now suppose that *in the beginning* was a quantum processing network, like a cell-phone network but finer. If part of it broke free by passing its code to its neighbours like a program server, to create in our terms one photon of light in one unit of space. Then as my computer starts up from a tiny *CMOS* code that loads a *Kernel* that loads the *BIOS* that loads the *operating system,* so one photon could cause others to do the same in a massive chain reaction, which physics calls inflation. This was the primordial reality creating the information of our universe from itself, which since then has been constant. Because each a new photon also made new space, eventually the expansion of space stopped inflation by diluting the photons causing it, see *here*. No black hole occurred because there was never a singularity of the universe at a point. In this view the big bang initially wasn't big at all, it was an expanding bubble not a bang and everything came from quantum reality not nothing.

9. Space is a surface

(click image to view video)

In 1919 *Theodor Kaluza* added a dimension to Einstein's theory to get Maxwell's equations but was ignored, as was *Riemann* who centuries before suggested that space was a 3D surface. Today astronomers tell us that space is expanding with no centre or edge like a balloon surface with an extra dimension. Space as a 3D *brane* could be the *inner* surface of a hyper-bubble in a quantum bulk, so the cosmic background echo of creation is all around us today because what goes "out" on a sphere surface wraps around. Space as a 3D surface as per Kaluza and Riemann also lets light move as a wave *upon* it. When a wave moves on a lake what moves isn't the water but its up-down displacement, hence a cork on the surface just bobs up and down as a wave passes. Likewise light waves must move s*omething* yet Laughlin (p56) calls the medium of light "*non-existent"* and Wilczek (p212) calls it a "*self-renewing field disturbance*" as if it was an electro-magnetic *Ponzi scheme*. In Abbot's story *Flatlanders* called the third dimension imaginary because they lived in two dimensions and likewise we *three dimensional Flatlanders* call the vibration of light "imaginary" because we can no more leave space than a game avatar can leave their screen.

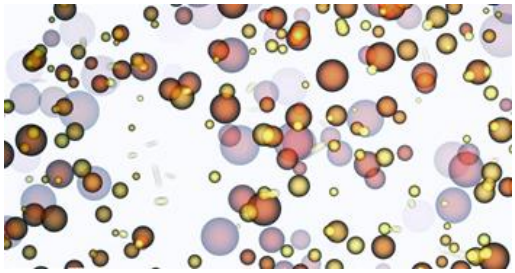
8. Light is space distributed


(click image to view video)

To Newton space was the canvas upon which God put things, to Mach it was nothing at all and to Einstein it was a surface that curved. Now imagine a 3D screen that locally curves as Einstein said and whose pixel resolution is the Planck length. If the screen is blank we see nothing but it still refreshes as screens do whether showing images or not. So *empty space isn't empty* but "full" of processing, as the *Casimir effect* shows. A null particle can't explain *vacuum energy* but a *null program* can. If the processing of empty space is a unit circle with no net displacement, distributing this processing over many points gives a sine wave just as light is. If light is the null of space spread out, the entire electro-magnetic spectrum from cosmic rays to radio waves is one program more or less distributed. Light then has no rest mass because if it rested for its wave train to catch up it would become empty space. Light energy reduces as

wavelength increases because more points running the same program reduces the *information throughput* we call energy. We see reality through the quantum window but one only sees a window if it is imperfect, has a frame around it or by touching it. However the quantum network isn't a "thing" we can see, it is all around so there is no frame and it transmits matter so it can't be touched. Like a network of *perfect diamonds,* quantum reality reflects the images of our reality without us even knowing it is there.

7. Quantum waves reboot



(click image to view video)

Schrödinger tried to give quantum theory a physical base but failed, as did all the others who tried, because unlike physical waves, quantum waves hit a barrier *at a point*. So an electron hits a screen at a point like a particle, but when fired through two slits *one at a time* give an interference pattern like a wave. The electron not only interferes with others but also with itself! Quantum theory says that a ghostly *quantum wave* goes through both slits, interferes with itself then *collapses* to a particle at the screen as if it had always been so. So what can travel as a *wave* but arrive at a point? A *processing wave* can spread on a *network* but still restart at any point that *reboots*. In this view an electron isn't a lonely particle wandering through space but a processing cloud spreading out everywhere. When this cloud overloads the screen the first point to reboot is where the electron "hits", with quantum collapse the inevitable disbanding of child instances when the parent code restarts. The physical event moment shows a particle but the rest of the time, which is most of the time, the electron is a quantum wave. *So surely reality is what is there most of the time?* In quantum theory quantum events cause physical events so *surely reality is the former?* It is incorrect to say an electron *has* a wave function but rather it ***is*** the quantum wave. Physics sees itself in the sunlight of rationality outside the strange quantum cave but it is in the cave of physicality with its back to the quantum sunlight observing unreal shadows on the wall of space. The quantum world is Wheeler's *great smoky dragon* and the physical world is its smoke.

6. Every path is taken.

(click image to view video)

Heron of Alexandria noted that light always finds the best way and wondered how it did so? It even *refracts* in water to take the fastest path so in 1752 *Maupertuis* formed the *law of least action* that nature always does the least possible work. Euler, Leibnitz, Hamilton and Lagrange added the equations sparking a furious debate on whether we live in *the best of all possible worlds*. Despite Voltaire's ridicule, super-computers today still take months to simulate what a photon does in a second see here p113. How do these tiny bits of reality with no known structure always find the fastest way to any destination including relativity and media? Wheelers delayed choice experiment shows that the photon's path is chosen *after* it arrives, so does it run time in reverse? If the photon is a *program* spreading *instances* through every spatial channel, it can take *all possible paths* and like the phoenix resurge if there is a problem. The first instance to overload a detector restarts the *entire* photon, making its path the "path the photon took" with quantum collapse the garbage collection of old data, like a clever magician removing the evidence of how a trick is done. The physical law of least action derives from a quantum *law of all action:* that all possible physical events actually happen at the quantum level. The quantum world tries every option then the physical world takes the best and drops the rest, so if this isn't the best of all possible worlds it isn't for lack of trying.

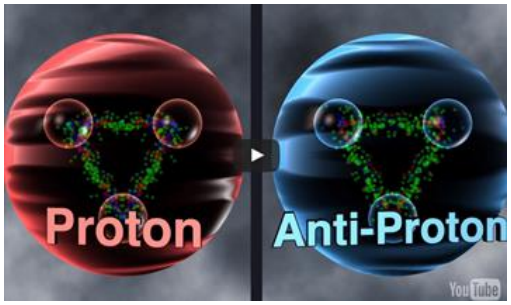
5. Matter is light entangled

(click image to view video)

Physics sees everything as a particle the same way a boy with a hammer sees everything as a nail. Yet its *particles* have no permanence, e.g. the Higgs is a million, million, million, millionth of a second energy flash that makes a bolt of lightning look slow. A brief eddy in a stream isn't a particle so why is a brief quantum eddy a particle? These are events not particle. And when a neutron decays, three of the "*building blocks"* of physics become four, so how can they be fundamental? How can a top quark that instantly decays be fundamental? What is fundamental doesn't decay and particles should be permanent, so clearly the "fundamental particles" of physics are neither fundamental nor particles. The real fundamental is quantum waves, i.e. light.

In the initial plasma a photon with a wavelength of two would be half-up and half-down. Two beams of this *extreme light* meeting head-on would entangle in the matter glitch giving an *electron* as explained *here*, with the negative processing left over its *charge.* The alternate *phase* collision gives a neutrino with no charge and a *three-way collision* gives up and down quarks with one-third charges. In this view, mass is when quantum processing gets in a loop, like the *gliders* in *Conway's Life*. Matter evolved as life did because it survived. Hydrogen atoms formed because a proton plus an electron is more stable than either alone and hydrogen was forged into higher elements in the matter factories we call stars, or by a supernova sacrifice. We are indeed star-stuff, yet our billion dollar accelerators search the transient debris of matter evolution for miracles. There were no divine shortcuts: matter evolved from light, life evolved from matter and sentience evolved from life. When it is shown that light alone colliding in space can create matter, the particle myth will collapse.

4. Our universe chose matter



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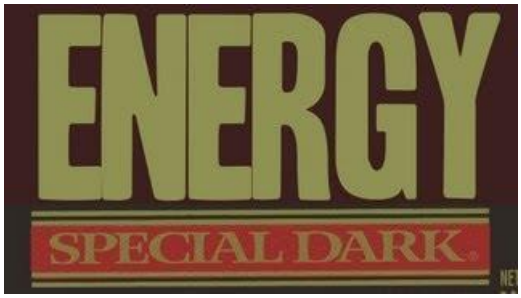
Every particle of matter has an *antimatter* opposite with equal mass but opposite charge, an "evil twin" that annihilates it, but both are equal before the laws of physics. In our universe, negative electrons orbit atoms but in an anti-universe positive "electrons" would orbit atoms. Yet both universes would seem the same to their inhabitants because the laws of physics would be the same. By this equivalence, the big bang should have made equal amounts of matter and anti-matter, so where are the anti-stars, anti-planets and anti-meteors? The current answer is that *somehow matter overcame anti-matter*, i.e. yet another "miracle". Now consider a simpler option. All processing sets a sequence of values that by definition can be reversed, so any matter made by processing must have an anti-matter version. Why then are there no anti-matter stars? If our universe began from one photon, it had to choose to move *up* or *down* with respect to space. In our case it went *first up* and the other photons followed suit so light collided into an electron *bump.* If it had gone *first-down* light would have collided into anti-electron *dimple*. This initial choice made our universe matter and from then on anti-matter was a path not taken. So the anti-matter physics is trying to explain never was and no physical reason for this will ever be found.

3. Time can go backwards

(click image to view video)

The equations of physics work equally well in reverse, so can time go backwards? Einstein wondered if reality is a block that can rewind like a video, but reversing time gives the *Grandfather paradox,* that I change the past so I don't exist to alter it, so one can have time reversal or causality but not both. And in my *Marmite paradox* I go forward in time to see me eating marmite on toast for breakfast but next morning eat strawberries instead, so one can go forward time or have choice but not both. Life as a video already made denies both choice and causality but the Feynman diagram of an anti-electron hitting an electron shows it *entering* the collision going *backwards in time.* Physics disowns these equations calling them unreal, but if processing creates time then matter ticks its time for every forward cycle and anti-matter ticks its time for every back cycle. Time for matter involves forward cycles and time for anti-matter involves reverse cycles, so anti-matter does run our time in reverse. Feynman diagrams need two time axes, one for matter *time* and one for anti-matter *anti-time.* Yet a physical event isn't reversible because it involves a *reboot* that loses all past information, and so can't be undone. Anti-matter does run time in reverse but it can no more undo a physical event than matter can. Events can't be rewound or fast-forwarded by matter or anti-matter because in this *Physics of 'Now'* p101 only *the ever-present here and the eternal now* exists.

2. Dark energy is new space



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Dark energy is a negative energy that pushes the universe apart to stop gravity from collapsing the universe. It is a weak effect spread evenly through space that hasn't changed much over time. Since it makes space flat some call it a property of space itself but the vacuum energy would give too bit an effect. Conversely any cause *in* space should weaken over time as space expands. Current physics has no idea what it is. However if new space is being added all the time from the quantum bulk, for its first cycle that point will receive data from its neighbours but not transmit. The overall effect is a negative energy occurring randomly in a space that is expanding everywhere at once. Since after one cycle new space becomes old space whose

input and output is the same no physical cause will ever explain it. Dark energy is the result of space expanding.

1. Everything observes

(click image to view video)

We think we are conscious but rocks aren't, but how then did inorganic matter evolve into cells, plants, animals and us? An unbroken causal chain links us to the first rocks, so how did consciousness arise? If we are conscious then are babies? If babies are conscious are dogs? If dogs are conscious are birds? If birds are conscious are lizards, or fish and so on back to plants, bacteria and rocks? Sooner or later we draw an arbitrary line to deny rocks consciousness but perhaps there is no line at all. Conway's Free Will Theorem states that *if any part of the universe has free will it all does but if any part doesn't then none of it does*. So if matter isn't conscious neither are we and if we are conscious so is matter. It is either a *clockwork universe* or a *conscious universe,* with no in-between, and both relativity and quantum theory need an observer to work. In the observer effect when we observe an electron it *observes us too,* so physical events occur on demand as in a game where a left click gives a left view and a right click gives a right view. The long sought frontier between quantum and physical worlds is the *click of observation.* Imagine creating a virtual world: *things* can be made of pixels, *time* can pass by processing cycles and a network can emulate *space* but *the observer* must be there from the start, so humans evolved *self-awareness* not consciousness which was *given*. The up-side of all this is that while one can make a universe of *things* and walk away, a virtual reality must be *sustained.* It beggars belief that the investment to sustain a simulation as big as our universe for fourteen billion years was for no reason. If the *simulation hypothesis* is true*,* our universe has a purpose whether we know it or not.