FOURTH LAW OF THERMODYNAMICS TO EXPLAIN WAVE-PARTICLE DUALITY AND THE DELAYED CHOICE QUANTUM ERASER EFFECT

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Background

It is an established view in the field of Quantum Mechanics that quantum waves change form to particle form- when detailed observations of the quantum wave are attempted [1, 2]. This phenomenon in quantum mechanics is referred to as wave-particle duality and is referred to as being a bizarre observation that lacks a logical explanation. I.e., there is no proven supply of energy in the wave-particle duality experiment that may explain the excitement of the quantum wave [3]. Since no such energy is supplied, the excitement from wave to the unstable form (particle) is an enigma to the quantum community. A second set of bizarre observations done in the field of quantum physics is referred to as Delayed Choice Quantum Eraser effect. These experiments indicate that the quantum world knows in prior that an attempt is being made to observe it. Alternatively, that time is moved backwards after the observation has occurred [4]. This so-called Delayed Choice Quantum Eraser effect is known to be even more bizarre than wave-particle duality. This since the movement of time might be involved to explain the behaviour, which is a bizarre event. Head Biotech's version of Fourth Law of Thermodynamics (4'th law) [5a, 5b], is a theory of everything and a suggested universal law. The main message is that prime mover to the production of evil or good traits in universal life is energy context. However, the true reason to why this is- probably is the degree of chaos, or the lack of it, in which the two energy contexts produce in the struggle for survival (order vs chaos respectively). These natural dynamics contexts in the social game for survival is believed to have been explained by Nash equilibrium. That is, Fourth Law of Thermodynamics interpretation of Nash equilibrium is that its equilibrium points describe solutions in natural chaos which lowers universal energy states, and hence has systematically given good traits fitness- over evil traits during over 4 billion years of selection. Since closely to 100% of all energy on earth comes from the sun, the lowering of energy states by life adapting to Nash equilibrium points will be equivalent to saying, "adapted to the lowering of universal energy states". And by this making the law universal, stemming from the principles in the Second Law of thermodynamics [6], that the universe is a place with limited mass-energy which forces the universe to always look for a lower universal energy state, Eu -> 0 until Eu = 0. 4'th law concludes that each time life has been forced to reach a Nash equilibrium point in the course of evolution, it has moved life- and the universe- one step closer to paradise (Eu -> 0 -> Paradise). This continuous bias in nature has slowly stripped life from the purification of evil traits, relative to the universal standard Eu -> 0. Hence, 4'th law is an extension to Second Law of Thermodynamics [6], and it concludes that the purpose to why the universe constantly seeks its lowest possible energy state, is not only its physical purpose, Eu = 0, but also to produce a universal state of 100% love and intelligence, or the phrase paradise- in which intelligence can experience. The most condensed form of Head Biotech's version of the Fourth Law of Thermodynamics therefore is the irreversible expression Eu -> 0 -> Paradise ending in Eu = 0 = Paradise [5a, 5b]. This theory of everything now offers a possible explanation to wave-particle duality and the Delayed Choice Quantum Eraser effect mentioned over. In addition, Fourth Law of Thermodynamics suggest that the universal function to both bizarre observations, *time delay* and *wave-particle duality*, in the quantum world, is to prevent evil traits in life from spreading- in the universe. All stemming from a universal law which only purpose is to guarantee the irreversible universal reaction Eu -> 0 -> Paradise to go to completion, over Eu -> ∞ -> Hell. Such a mechanism available to nature would be crucial for its survival in certain critical situations. 4'th law describes situations in which the energy context to life on earth has become very far away from how the universe is created. That is, in a context of constant

abundance of energy evil traits should over time be allowed to get the upper hand on good traits. In that during these circumstances evil traits will be given fitness over good traits- in which standard has been set by the universe. In these situations, the risk involved for the new evil life forms should come close to zero as natures grip on the handing out of fitness has been overthrown- along with Eu -> 0. These new lifeforms will be able to decide the outcome in the struggle for survival by reducing the chaos in Nash's social game. Hence, if nature had no mechanism to detect such situations it would probably lose in its own game, overthrown by lifeforms that were able to remove all risk- by first creating a context with constant abundance of energy. However, by detecting intelligent intent e.g., on the quantum level- nature should be able to be informed and warned that it is about to lose the struggle for survival anywhere in the universe. And as 4'th law suggest, lose to evil traits, and thereby hinder its goal, Eu = 0 = Paradise.

Results and Discussion

Wave-particle duality

Quantum fields are transformed from wave to particle-form when it experiences a pre-set level (a quantum level) of unstable state [7] (figure 1), as is the case in quantum levels of elevated energy states. The wave becomes unstable and changes form at a pre-set energy level.

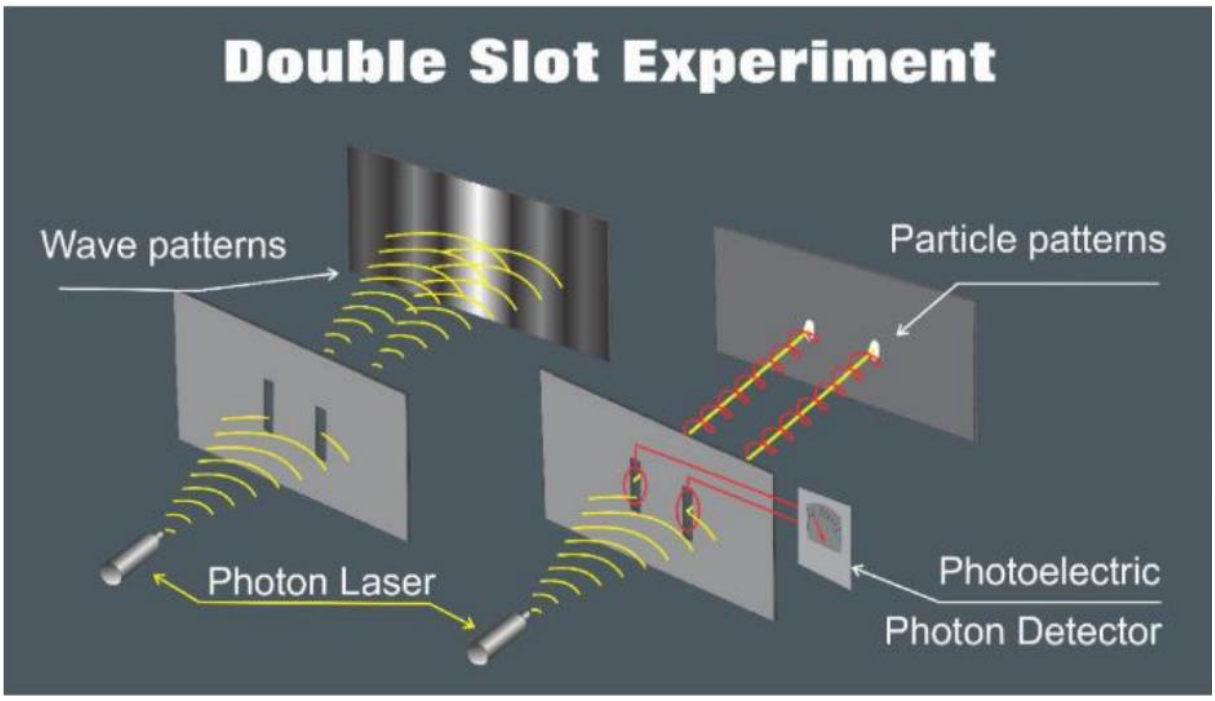

Figure 1. Illustration of the wave-particle duality experiment [picture taken from 8]. The wave pattern on the backscreen disappears as an attempt to observe light is attempted. Since there are no energy supplied to unstable the light from wave to particle form, the observation is referred to as being a bizarre one. 4'th law suggest that its basal principles excite the quantum wave- from the intelligent intent behind the observation [5].

Fourth Law of Thermodynamics proposes that the energy state of the universe is directly connected to the intentions of intelligence and thus this information should be always instantaneously available

to the universe- [5a, 5b]. In this case the standard for what is perceived as bad intent (elevated energy condition), or good Intent (lowered energy condition) should also be standard- pre-set quantum levels of energy states in the universe. Such pre-set levels are probably also in play when the universe constantly regulate molecular conformational states across the universe. However, the main driver behind all this (including 4'th law) must be the fact that the universe is created with limited amount of mass-energy, which guarantee the universe to seek Eu -> 0 (its lowest possible energy state at all times). Hence, the fine-tuned standards for where the quantum world does not- or do- excite the quantum waves when being observed does not necessary mean that humans have evil intent while exploring the universe. Just that the observer at the time does not live up to the universe's standard for goodness, being allowed for further exploration and knowledge. On the other hand, if life can reverse the logics in 4'th law (e.g., on earth in the future) the barrier will function as a security barrier for further exploration by such lifeforms- as the logics in 4'th law exposes them throughout the universe (including the quantum world). Hence, such life forms should not be able to gain universal power unless they obey 4'th law. In conclusion, the universal function behind the closing of the quantum world as we try to observe it, will according to 4'th law be to guarantee the universal irreversible reaction Eu -> 0 -> Paradise to go to completion. In addition, a means to detect zero-risk-strategies in universal life- as the energy context on the macrolevel hinders Nash's equilibrium points further potency to separate good traits from evil traits.

Delayed Choice Quantum Eraser effect

The quantum community could not find any other reasons to the wave-particle duality phenomenon, other than- it was the observation itself that triggered the formation of the unstable state (which 4'th law do agree). The new experiments which tried to hide the intent to observe- did manage to do so, in that the quantum particles had no chance to know about the observation- until after their passage beyond the slit filter. That is, the decision to observe was made after the particle had passed the filter [8] (figure 2).

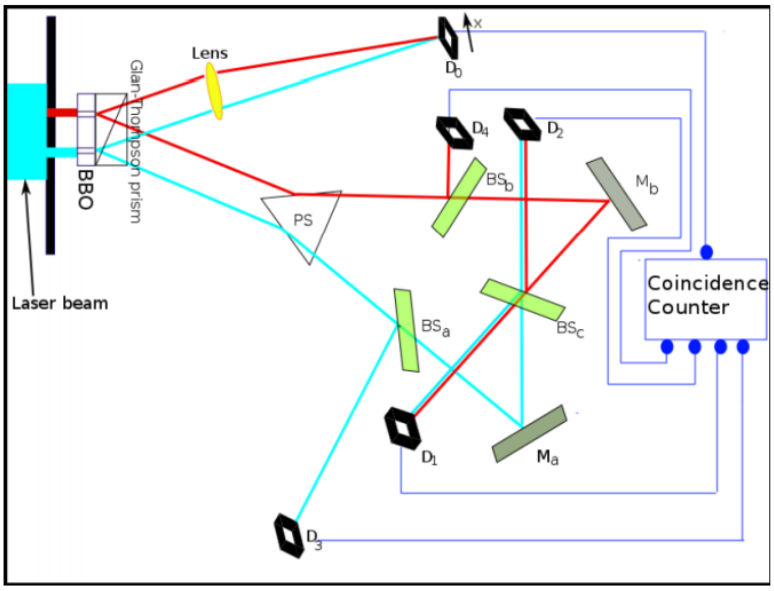

Figure 2. Many experiments have tried to surpass the excitement of the quantum world found in wave-particle duality by delaying the decision to observe [Illustration taken from 9]. The result has been an even more bizarre observation, the Delayed Choice Quantum Eraser effect. Somehow time seems to be reversed in the quantum world and hinders observation.

Hence, the decision to observe had not yet taken place before the quantum wave pass the slit. The conclusion of these experiments was even more strange than wave-particle duality. As the particles still were unstable (excited to particle form) before decision time- the quantum particle knew about the decision. In conclusion, an even more bizarre phenomenon was discovered, the Delayed Choice Quantum Eraser effect. The quantum world appeared to have reversed time itself, alternatively; to have pre-knowledge of the intent to observe. Again, 4'th law would explain this even stranger observation from the same logics it explained wave-particle duality. The means of communication, or the means of how the quantum particles got excited and unstable, will according to 4'th law go via the universes sensitivity towards energy states- as it was disturbed by the intent towards itself. As the universe's sensitivity towards energy states communicates instantly across the universe (e.g., it must be how the universe is able to regulate all molecular conformational states instantaneously- across the universe). It must mean that the speed of light will appear as slow-moving in comparison, hence movement of time for the human observer suddenly has an opening. Without pointing to the exact mechanism to how the universe manages to escape the delayed observation attempts, it suggests that it has something to do with the speed in which 4'th law detection process operates at (energy state sensitivity).

On that speculative note, Einstein's work and thoughts surrounding the themes; *theory of everything*, *time,* and *quantum mechanics*, find its natural place in this article. First, because Einstein was very occupied with quantum physics and in particular the bizarre observations mentioned in this article. That is, I suggest that a potential familiarity can exist between 4'th law and Einstein's mass energy equation $E=M\cdot C^2$ [10]. This is also brought up on a very speculative note in the main article from 2010. The approach is to imagine the situation according to Einstein when the irreversible Eu -> 0 -> Paradise reaction one day goes to completion and achieve final universal rest: Eu = 0 = Paradise. How will such a scenario affect $E=M\cdot C^2$? In this scenario $E=M\cdot C^2$ must be rewritten to yield just one component, which is C^2. As both universal mass and energy at that final stage does not exist anymore. It is therefore tempting to replace the phrase Paradise with the constant C^2. This since C^2 describes light in a particular dynamic state (lights speed squared). Not that it will change the conception of 100% love and intelligence, or paradise. But it will give the paradise expressions a more precise physical description, a mathematical constant which compacts the formula even more. If so, it means that Einstein was closer to the theory of everything than he might thought. Since he obviously did not lack good imagination, he could very well have discovered 4'th law in his work if; 1) He had met and hit it off with John F. Nash at Princeton university at the time Nash developed Nash equilibrium. As I have learned Nash was eager to meet with Einstein to discuss his work on governing dynamics, but he was then an unknown student at Princeton, while Einstein was world famous at the time. Such a meeting could have directed Einstein towards thinking in the direction of thermodynamics. 2) If Einstein had a broader interest in studying biology and placed life as an active component in the universe faith (life as a catalysator to fulfil 2 law of thermodynamics). If 4'th law one day shows to be a valid theory of everything- these two minor events could very well be what separated Einstein from reaching his life achievement, but he came very close with $E=M\cdot C^2$, if 4'th law is valid that is. So close that his constant C^2 one day might be a part of the formula Einstein searched for until his death: Eu = 0 = C^2 (theory of everything).

The resulting two versions of 4'th law describes the same universal ending as in, Eu = 0 = Paradise. But the C^2 version of it, Eu = 0 = C^2, now could give us more specific information about the phrase "paradise" in the original version [5a]. If the integration of Einstein's energy-mass equation with 4'th law is a universal valid one, it indicates that paradise is a place of waves- since light is waves. Hence "paradise" according to 4'th law should be a place of waves. By applying the work of Joseph Fourier [10] paradise now should have the necessary building blocks, waves, to construct all other forms in a

mathematical format. This gives the integration of Einstein's energy-mass into 4'th law a new level of interest. It means that the world as we see it in theory can be reproduced in a mathematical format. The last step to give modern humans concept of "eternal paradise" realism is to copy memories and thoughts into this suggested paradise at Eu=0, a world which now would exist in a mathematical format, constructed with waves.

The second article in the series of 4'th law; "A new view on dark energy and the expansion of the universe" from 2011 [5b] uses 4'th law to explain the ever expansion of the universe. This article suggest that what causes the expansion of the universe is higher life forms which have evolved as described by 4'th law in the first paper [5a]. This since 4'th law suggest that it is universal lifeforms itself that should take the universe all the way down to Eu = 0. Universal lifeforms that would be a product of 4'th law should do this by converting mass-energy over to "love and intelligence" at much higher rates than life on this planet. These lifeforms should therefore be able to make possible the last step; to copy memories and thoughts existing on this planet and move them into the mathematical format that this new idea describes. In many ways this would be the last puzzle in the ideas regarding this article series version of 4'th law.

Conclusion

A possible explanation to the bizarre observations done in the field of quantum physics; Wave-particle duality and Delayed Choice Quantum Eraser effect- are launched based on the logics in this series version of Fourth Law of Thermodynamics. The bizarre part in these experiments is that there is no supply of energy to explain the excitement of quantum waves to an unstable form. Fourth Law of thermodynamics can explain this hidden excitement from its universal energy logics which is connected to intelligent intent. That is, by how the universe sense intelligent intent in all lifeforms via universal energy states. Hence, the universe and thereby the quantum world should be able to sense the intent to observe it via changes in universal energy states. This source of energy could lead to the excitement to particle form. Since the observation excites the quantum wave it is suggested that the intelligent intent from humans does not meet the universes standard for goodness, to be allowed further knowledge of its smallest components. This logic via the 4'th law can explain both Wave-particle duality and Delayed Choice Quantum Eraser effect. The function to this closing of the quantum world as it is being observed could be a barrier to allow access to higher levels of love and intelligence- a pre-set standard in the universe. In addition, a means to detect zero-risk-strategies in universal life- as the energy context on the macrolevel hinders Nash's equilibrium points further potency to separate good traits from evil traits. Einstein's work in this field, and in the field of theory of everything can help to fill in a new puzzle in 4'th law. By integrating Einstein's $E=M\cdot C^2$ with 4'th law the phrase paradise, or the description of 100% love and intelligence can be replaced with the constant C^2. This integration of 4'th law with Einstein's work will give a more compact way of writing 4'th law (Eu = 0 = Paradise); Eu = 0 = C^2. To give the phrase paradise a constant C^2 in which describes waves opens a logical bridge to how a realistic world like paradise could be constructed in a mathematical format, by implementing the ideas of Joseph Fourier.

References

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