The Emergence of Consciousness from Chaos

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Abstract: The idea of consciousness emerging from chaos is not a new idea. In fact, it is one of the oldest ideas of philosophy. What makes it an important idea to herald here in the context of a newly proposed time-equation for space incorporating the Golden Ratio is how the idea of consciousness as a time-equation is associated to "chaos theory". This third paper shall briefly discuss the Schrodinger equation for light, and then present an improved equation as the time-equation Schrodinger analogue. From there, in using the time-equation, the idea of the emergence of a natural error from the temporal wave function shall be demonstrated to represent a well-known equation for chaos theory, the "logistic map equation". From there shall be presented the idea of consciousness as a need for this system of time and space to resolve the disparity between light and particle location, together with the need to reach an exact value for "π". A list of features of this proposal of consciousness as an emergent entity will be presented describing well-known features of conscious expression.

Keywords: consciousness; time-equation; chaos theory; golden ratio; Planck scale; Planck constant; quanta; Schrodinger; initial conditions; logistic map equation

1. Introduction

The key proposal in the second paper [2] of this current series of three papers [1-2] was the idea of light as the time-equation needing to trace "π" as a temporal wave function. Associated to this was the assumption that the atom alone is not enough to find an exact value for π and thus could not be expected to properly resolve independently, thus the need for separate atomic references that would resolve these disparities with each other via electron behaviour in the electron shells.

In criticism of these proposals, what was not presented in the second paper [2] was an equation for the energy of a package of light released from an electron shell. To explain this, we shall address the Schrodinger wave function equation [3].

Let us begin therefore with a review of the wave function presented in the second paper [2], and compare this to the Schrodinger equation [3]. Then we shall present a formula for energy as this package of light in this new time-equation context. Detailed there will be the "error component" intrinsic to the temporal wave function and how this would represent its own time-equation feature as the "logistic map equation". From there it will be proposed that the idea of "consciousness" [4] would *emerge* as the play between these two time-equation concepts, one time-equation being the gold standard (golden ratio equation) for phenomena, and the other being the "error" component, a component which consciousness is proposed to emerge from with the aim of rectifying the "error" as the agenda of the temporal wave function time-equation, presenting a list of features the "directive" of time in space would enlist to maintain its golden ratio principle ***as*** a model of consciousness emerging from this "logistic map equation".

2. Golden Ratio Time-Wave Mechanics in Space

The construction of the time-equation as the temporal wave function, as the anatomy for light, was the core discussion of the second paper [2]. There, we modelled axes of time onto axes of space, delivering a wave function with electric and magnetic components, while explaining the fine structure constant scale and importance thereof, and the disparity between the temporal wave function and the true value for π.

By comparison, the Schrodinger equation $i\hbar\frac{\partial}{\partial t}\Psi(r,t) = \hat{H}\Psi(r,t)$ [3] provides a description of a wave relevant to the idea of quantum states (packages of energy) [5] and wave-particle uncertainty [6] using the measurement device of momentum. Yet the way the time-equation for light is constructed already accommodates for both the ideas of particle uncertainty (Heisenberg's uncertainty principle) and quantum entanglement ([2]: p20-21), presenting a clear case for a temporal wave function demonstrating both wave and particle feature while also allowing for both standard time (what a clock measures) and time at c where time does not pass. It was for such a reason that the temporal wave function was considered superior to a standard time-linear equation for light.

Owing to the design itself of the temporal wave function, namely its intrinsic time-equation (golden ratio) feature, the process of time-equation analysis became a "directive" of time to trace a circle perfectly as π, *as* the wave function. Yet on the atomic and subatomic level the exact value for π had not been reached ([2]; p8 eq.3, p10 eq.6) with errors of ~0.021% and ~0.0013% respectively, hence there became the need for the atom to generate electron shells as a way of calibrating closer to the value of π as per interactions with other atoms. What we did not take a step toward was the energy value of a package of light, a photon [7].

3. Establishing the correct time and space granularity for a basic scale of temporal wave function energy

The equation for the energy of a package of light on the atomic level here is proposed to follow the same rules as presented in the second paper [2], here though by focussing on the relationship between energy and the temporal wave function characteristics of frequency.

For instance, owing to the derived electric and magnetic features of the temporal wave function, "charge" can be considered as the *electric* feature of the temporal wave function, and can thus be considered as the primary focus of the π-condition for the temporal wave function; *charge* thus would be an essential ingredient to the temporal

wave function, together with the idea of *frequency* and *wavelength*, and of course c. Simply, the most basic concept of charge would be considered here to be that of the electron, and thus e_c.

Let therefore the following be suggested if indeed the energy of the temporal wave function E should be proportional to the electrical feature of the wave function e_c and its associated frequency value f:

$$E \propto e_c \cdot f$$

There are though other features of the temporal wave function that need to be considered as presented in paper 2 [2].

For instance, here on the atomic scale for the temporal wave function, we need to consider the wave function of the *electric* component, a component which has five key features that need paying attention to in regard to its wavelength and thus frequency *on the atomic scale*:

- The primary "10-step" feature of the temporal wave function along each direction of the x-axis, and thus 20 temporal wave function steps (therefore a factor of 20).

- The fact that this 10-step process is primarily the *magnetic* wave function feature, with the *electric* component out of phase with the magnetic component, producing a 0.5 step error (therefore a factor of 19.5).

- That there is a spatial compression factor in play ([2]: p15-16), leading to an added ~0.2 compression factor on the temporal wave function (therefore an overall factor of 19.3).

- That there is an *underlying* c component to the temporal wave function (therefore an overall factor of $\frac{19.3}{c}$)

- That the energy of this temporal wave function must be a feature of t_A, and thus t_B^2, a squared feature of the electrical component of the temporal wave function, simply because here the energy of the temporal wave function is categorised by the magnetic component of t_A as presented in equation 6, paper 2 ([2]: p12, eq6) (therefore an overall factor of $(\frac{19.3}{c})^2$ is required).

Thus, the following equation would suit:

$$E = (\frac{19.3}{c})^2 \cdot e_c \cdot f \quad (1)$$

$(\frac{19.3}{c})^2 \cdot e_c$ is by our knowledge of the Planck equation $E = hf$ [8] the value for h, as the value here of approximately $6.639 \cdot 10^{-34}\ Cm^{-2}s^2$, an error of 0.2% to the known value of $6.626 \cdot 10^{-34}\ Cm^{-2}s^2$. In subsequent papers, it will be shown that the maximum temporal wave function compression is a value of $22 - 2.725 = 19.275$ where the value of 2.725 is the derived value of the minimum compression-temperature of space (temperature of the CMBR), and thus a value of 19.275 would need to be used in equation 1, bringing this proposed value of h to $(\frac{19.275}{c})^2 \cdot e_c$, and thus $6.623 \cdot 10^{-34}\ Cm^{-2}s^2$, an error of 0.04% to the known value.

Nonetheless, here as per the above 5 points, this equation $E = (\frac{19.3}{c})^2 \cdot e_c \cdot f$ would represent a fundamental feature of the temporal wave function, in fact as per its design, ***all*** the fundamental features that would be in play for the temporal wave function, suggesting that such a value indicates ***an absolute atomic scale limit***.

One thing has though become apparent, and that is a very small percentage error coming into play, namely a small percentage error between what is derived in theory and what is observed/calculated with physical phenomena, of course an error in play owing to the feature of the temporal wave function *seeking* to perfect π, in that as a temporal wave function it is only using a very close estimate to π, as described in paper 2 [2].

Still though, how would this error play out? Let us consider this error as the value "x", as a new condition that would play out, and indeed how in regard to the temporal wave function?

4. "x" time as chaos

Now let us consider a "supplementary" equation for time that recognises this "x" factor percentage error in play relevant to this primary atomic temporal wave function realm. The idea here is to exploit the mathematics of the time-equation beyond the confines of the atomic-based temporal wave function, to embrace the error in play that exists owing to the disparity between the true value of π and the one used for the temporal wave function.

The primary equation for time was presented as $\frac{t_A + t_B}{t_A} = \frac{t_A}{t_B}$ ([1]; p4, eq.6), or more simply $t_B + 1 = t_A$.

Then, when applied to space it became $(t_B \cdot -2\sqrt{3}) + 1 = \pi$ ([2]; p7, eq.2).

As a wave function needing to reach π, this became $(\varphi \cdot -2\sqrt{3})^2 = 31.416253$ ([2]: p12, eq6) as a 10-step temporal wave function.

Now we must consider a new process for time *beyond* the designed temporal wave function; we must also consider that time would still, beyond the intended design of the temporal wave function, seek a way of upholding its need to trace a perfect circle given the atomic context cannot be undermined, yet developed upon. How indeed can such be done in accommodating for the "x" error factor?

There is one way of exploiting this "x" error factor and that is to consider the "imaginary" component of the time-equation, namely i, namely in breaking the standard condition of the golden ratio and replacing it with the notion of i.

For instance, ultimately t_A as per eq.7 of paper 1 ([1]; p4, eq7) would need to be upheld as $t_B^2 = \varphi \cdot -\frac{1}{\varphi} = -1$.

In considering the other solution to t_B^2 gives t_B the value of "i", and thus time-after t_A becoming -1 (i^2), hence the equation for time becoming $t_B + 1 = -1$.

This can be expanded to $t_B + 1 = t_B - t_A$, if indeed $t_B - t_A = -1$.

Thus, we get the following: $t_B + 1 = t_B(1 - t_B)$.

Now let us add in a spatial-temporal component "x" that represents the carrier of new "x" condition, this new error scale in play:

$$x_{(t_B+1)} = x_{t_B}(1 - x_{t_B}) \tag{2}$$

The scale of the error for "x" needs to be considered, and so we must add a new constant k; thus repairing eq. 2 we now have:

$$x_{(t_B+1)} = k \cdot x_{t_B}(1 - x_{t_B}) \quad (3)$$

This constant k would represent a feature that highlights a *sensitivity* to the underlying temporal wave function atomic processes at play, as what we can term "*initial conditions*" for the error "x".

This equation would represent how any condition for "x" would evolve in time, would propagate through time, having an underlying structure in being the erroneous feature of the golden ratio time-equation, namely the disparity between the value for π used for the temporal wave function and the true value for π.

This is not the first time we have seen this equation, as it represents the "logistic map equation" [9], used in chaos theory [10], defining the idea of chaos with an underlying sensitivity to initial conditions [11], promoting fractal lattices [12], an equation that has been used to successfully study sentient population growth [10].

Here, we can propose that the "x" paradigm would be sensitive to the underlying initial conditions of the atom, and that the value "k" can be adjusted to accommodate for the proposed directive of time in space, and one way it can do this is through a fractal Fibonacci sequence [13] process of spatial modelling, given that the Fibonacci sequence is a golden ratio algorithm [14].

5. The directive of "x" time as chaos, and the emergence of consciousness

The need for this proposed time-equation system with space to define π perfectly and eliminate the error between light and particle location would nonetheless still be the "directive" in this chaotic "x" error equation paradigm. This would happen through the assembly of all these chaotic yet (golden ratio based) fractal conglomerations which would follow what we know as a Fibonacci sequence of layered temporal wave function building, a sequence that would adhere to the golden ratio code nonetheless, and in this case a way to build wave function structures upon structures [13] without corrupting the underlying sub-structure "initial conditions" of the π -agenda, all proposed to be undertaking their temporal wave function field interactions ([1]; p8-10).

The overall structure of reality is therefore proposed to play out as vast conglomerations of temporal wave function interactions and resonances in a context of (in all appearance) chaos yet with prescribed initial conditions of the golden ratio temporal wave function condition, noting also that the underlying time-equation feature within the atom requires that the temporal wave function associations still be vulnerable to that same set of conditional uncertainties that the atom was able to deal with as per its construction. How though can light (as the extra-atomic temporal wave function) behave to honour these underlying conditions of π reconciliation on the atomic scale?

The only thing to consider is that we must invite a new concept/process that can address this error, this fallibility of the time-equation, this initial condition of chaos, in going beyond the simple idea of the chaos at play instead as one that accommodates and seeks to rectify the natural chaos (error) at play. The proposal here is that such a "thing", such a determination of upholding the time-equation in preference over chaos, is consciousness [15], a general merging of the primary directive of the temporal wave function accommodating for the chaotic systems of fractal/Fibonacci phenomena [13], being the very device itself upholding the time-equation and the capability of temporal consciousness thereof as presented in paper 1 ([1]: p2-4), namely modelling the time-equation on the human temporal perception ability.

The proposal here is that consciousness would be a bringing together of a certain set of conditions intrinsic to phenomena related to the primary function of the time-equation. As a "bringing together" concept, it would represent vast array of different references of temporal and spatial context, working as one, along the directive for time to achieve π and have the error of the temporal wave function rectified as an endless event. Moreover, it is proposed that consciousness would be that feature of time and space that sets the value of "k" in the logistic map

equation (eq. 3) towards fulfilling the given protocols of the time-equation, and thus the reaching of an ultimate agenda, a "*universal*" agenda with the *time-equation*.

Let us detail therefore this hypothetical directive of time-space as consciousness and see if it bears all the ingredients of what we could consider as consciousness, yet not just consciousness, yet how consciousness can be applied to the idea of the time-equation and associated temporal wave function seeking to perfectly conceptualize/trace π in a universal context, as follows:

(i) The fundamental agenda for the idea of consciousness is that it would seek to define π for the temporal wave function, to develop that locale, and thus on a grand scale let us say seek to understand a "universal time-cycle" (UTC), a "theory of everything" that is complete, an agenda.

(ii) This process would logically involve light and particle matter, both as one in the context of consciousness, which would need to be understood in the one UTC.

(iii) Ultimately the idea of chaos would in all appearance be overarched by such a UTC understanding/protocol.

(iv) Associated to the UTC protocol, time-space would harbour conscious sub-structures (networks leading to the ultimate level) as "conscious-references".

(v) Consciousness for the system would exist as a fundamental process for any reference in the UTC with the "ideal" aim to uphold the UTC process, as a process of exercising observation and calculation of structures in diminishing the atomic-based disparity between what is observed and where mass is located, namely to be *real* and account for reality in the most *real* way possible.

(vi) In that UTC system of understanding would therefore exist the idea of "knowledge" [16], as a recognition of what is observed according to its correct placement, of what is *real*.

(vii) This knowledge would represent a process of the system's need to correct "errors" of observation and "reason" (reason being knowledge with the directive understood and in use), and to have this clearly documented in the form of symbols conveying such knowledge, symbols relevant to the conscious level of the UTC in accounting for what is real.

(viii) This UTC system would nonetheless harbour chaos as consciousness albeit in a restrained fashion else corrupt the fundamental principal of keeping the UTC system in play.

It does therefore seem that this hypothetical UTC bears some resemblance to our ideas of consciousness [15], if not process of science itself in seeking a "theory of everything", those constraints and associated processes of judgement, and how. The issue is of course now developing the knowledge for the temporal wave function, how far this system can go, can it be complete, and what the boundaries of that theoretic universe are.

6. Conclusion

The findings here in promotion of the idea of consciousness being an emergent feature of chaos are interesting, for “determinism” (UTC) appears in-play, such as a process of how a time and space system would “use” the idea of consciousness to satisfy a prime directive of the temporal wave function needing to trace π.

Although what has resulted there in that discussion appears similar to how we have regarded not just consciousness but the idea of scientific inquiry, the theoretic path ahead is still quite extensive for the development of the temporal wave function theory.

Here though the key finding has been an equation for the energy of a temporal wave function package (quantum), the time-equation photon analogue, together with an equation for time in accommodating for the inherent error (“x” factor) of the temporal wave function (as what we already know to be the “logistic map equation”, a key equation used in the investigation of chaotic systems). It was then proposed that from that equation, from the “x” factor error-realm, would *need to* emerge the idea of consciousness as a process of light/observation *needing to correct the error realm* in approaching the example of a UTC (universal time cycle, an “theory of everything” as a type of π-complete theory) resulting in many ideas regarding consciousness we may find familiar.

Conflicts of Interest

The author declares no conflicts of interest; this has been an entirely self-funded independent project.

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