

# THE GOLDEN RATIO TIME ALGORITHM

6<sup>th</sup> May 2019.

Stephen H. Jarvis.

<http://orcid.org/0000-0003-3869-7694> (ORCID)

EQUUS AEROSPACE PTY LTD

Web: [www.equusspace.com](http://www.equusspace.com)

email: [shj@equusspace.com](mailto:shj@equusspace.com)

This paper, a follow-on from seven previous papers [1]-[7], will discuss historical notions of time in science, time as a concept applied to scientific theory, and then discuss those problems that have been presented to science in using certain axiom definitions of time. The newly proposed axiom for time is re-presented as an algorithm that can knit together much of what is known of physical scientific data, including Einstein's well-known equation. The quest of this paper is to demonstrate that it is possible to marry up many known scientific principles using a common mathematical "function" for time, as the golden ratio time-equation.

## 1. Introduction

If it can be stated, as a thought experiment, that to be conscious of/as a theory of everything requires a stable consciousness through the entire spectrum of time and space one is examining, then it would be true to say that any variation in time through that spectrum would represent a variation of consciousness and thus understanding of that system being examined, if indeed the assumption that Einstein presented of consciousness being tagged to time, to the perception of a clock, is upheld.

The problem though with a reality in constant motion of varying speeds presents us with the case of different accounts of time and thus consciousness and thus awareness of the system being measured. How indeed therefore can we arrive at a "theory of everything" when there is a vast spectrum of time variation in play owing to the nature of bodies in motion and the effect of time there as specified in Einstein's Special and General relativity [8]?

The argument of this paper is that using special and general relativity isn't sufficient to reach a theory of everything, a grand unified theory explaining all physical phenomena according to the one general theoretic device/algorithm, in that it will never join EM/light and gravity, because one key variable is fixed as the speed of

light, and the other key variable (mass and thus gravity) is fluid as per gravity changing the nature of the relative motion and thus speed between mass and thus also *time* in the process, and thus an impossible equation to consciously reach in the context of aiming to examine that system.

What this paper proposes is a “standard” for time, for each reference of time, a common algorithm, regardless of the relative motion of objects, as a way the idea of time can be scaled for each reference of motion of a body in reality, and by such a mechanism make it possible to arrive at an equation that should link electromagnetism and gravity.

One key assumption in this paper that will be carried is the notion that consciousness is concordant to the awareness of the passage of time, that the conscious experience is determined by the flow of time, as Einstein presented with his example of someone travelling at near light speed, namely that time would slow down, yet the occupant of the craft would be none the wiser. The problem with relativity using simple linear time is that on the one hand perception appears to be the “standard”, and on the other it negates the idea of a universal reference of stable consciousness owing to the different rates of motion of objects. The question is, how do we get to that “scientifically”, how do we construct that algorithm for time for each reference of a body of motion? The first thing we need to consider is how and why we arrived at the idea of relativity and time’s role there in the first place.

## 2. Historical perspective: how does science theory evolve?

Modern science is not merely an examination of reality, it is a test of scientific paradigms. Most notably prior to Einstein was the achievement of the cartesian coordinate system, as presented by Rene Descartes [9], as a 3-dimensional space and associated 1-dimensional use of time. The cartesian coordinate system and 1-dimensional time are still used in the frame of reference of special and general relativity. In fact, it was the cartesian coordinate system that gave genesis to the idea of relativity as per tagging the cartesian coordinate system to consciousness, which Descartes achieved through his work in presenting not just the coordinate system, yet a model of logic/thought.

What this paper proposes is a paradigm shift to a new understanding of time, as the current paradigm for time is not useful for finding a theory of everything, of linking electromagnetism and gravity.

In the 1962 book *The Structure of Scientific Revolutions* [10], Thomas Kuhn argued that the process of observation and evaluation takes place within a paradigm, a logically consistent "portrait" of the world consistent with observations made from its framing. He argued that a paradigm also encompasses the set of questions and practices that define a scientific discipline. He characterized normal science as the process of observation and "puzzle solving" which takes place within a paradigm, whereas revolutionary science occurs when one paradigm overtakes another in a *paradigm shift*. Kuhn denied that it is possible to isolate the hypothesis being tested from the influence of the theory in which the observations are grounded. Moreover, he argued that it is not possible to evaluate competing paradigms independently; he suggested that more than one logically consistent construct can paint a usable likeness of the world, yet that there is no common ground from which to place two against each other, theory against theory.

For Kuhn, the choice of paradigm was sustained by rational processes, but not ultimately determined by them; the choice between paradigms he added involved setting two or more "portraits" against the world and deciding which likeness is most promising (*the proposal here in this paper being the establishment of a new algorithm for time to resolve the association between gravity and electromagnetism*). According to Kuhn, a paradigm shift occurs when a significant number of observational anomalies arise in the old paradigm and a new paradigm makes sense of them, which is precisely what is being suggested in this paper with the new proposal for time,

namely resolving the disparity between different references of bodies in motion at different rates of speed and thus resolving their time-dilation variations and thus perceptive frames of reference. Fundamentally though, the concept employed here is in using time as a process that *transcends the convention of mathematics*, time being defined as more fundamental than mathematics, *a set-relationship of its own kind*, as an entity more fundamental than mathematics which *can* therefore employ mathematics a certain way, as a certain relationship of functions, as a certain “equation”, *from* which other equations can arise, and the case in point here all the key equations of physics as per papers 1-7 [1-7].

### 3. Solution: the new axiom for “time”

In mathematics, an equation is a statement that asserts the equality of two expressions. To present an “absolute” equation for time requires a type of equality to be established between two expressions/properties of time. What can we say about “time” that has two properties using both “1” (as  $t_N$ ) and  $t_B$ , as an expression of equality?

If time is a singularity, we can relate time-before to time-after along a basic linear mathematical construct as via  $t_N$ . This has been the Achilles heel it seems of our logic of time, so let’s break it down further. For instance, we know that placing  $t_B$  next to  $t_N$  requires a negative sign for  $t_B$  (equation 1) given  $t_B$  is a “backward/negative” step compared to  $t_N$ .

$$(-t_B) + 1 = \text{fundamental property A} \quad \text{equation 1.}$$

Yet, if time is a singularity, we can present the case that  $t_N$  can also be “per” ( $-t_B$ ) as another equation as technically  $t_B$  would already be contained within the  $t_N$  construct, as it would have already happened (equation 2).

$$\frac{1}{(-t_B)} = \text{fundamental property B} \quad \text{equation 2.}$$

Thus, if these two features represent fundamental properties of time, and time itself is a singularity, then fundamental property A must equate to fundamental property B (equation 3.)

$$(-t_B) + 1 = \frac{1}{(-t_B)} \quad \text{equation 3.}$$

From equation 3, we arrive at the following (equations 4-5).

$$t_B^2 - t_B = 1 \quad \text{equation 4.}$$

$$t_B + 1 = t_B^2 \quad \text{equation 5.}$$

Equation 5 is interesting, as essentially it suggests that if we consider an “arrow of time” equation that is absolute, and we add the past as a “positive value” (as it would be in considering an arrow of time equation) to  $t_N$ , as past + present, only logically we would arrive at the future, let us call  $t_A$  (equation 6.)

$$t_B + 1 = t_A \quad \text{equation 6.}$$

Yet as we know,  $t_B^2 = t_A$  (equation 7.)

$$t_B^2 = t_A \quad \text{equation 7.}$$

This time-equation explains the golden ratio being integral to the arrow of time.

The elephant in the room with what we perceive of reality, what we understand of data, is the “pattern” of the data. Most notably in reality is the Fibonacci sequence pattern, how nature unfolds in “time”, as a development of time, from the small scale to the very large, thus implying different masses and speeds and thus relative motion at work and thus different features of time, despite the constancy of the golden ratio itself between these different size and speed and thus time states.

One would think that using the golden ratio as an algorithm for time is essentially to the greater success of scientific development, as the golden ratio pattern itself is the “elephant in the room” of our reality on all scales, from the images of galaxies, to Brownian motion, to the development of plants and animals. This pattern though is recognized not as scientifically or broad-spectrum in science as it perhaps should be, as the pattern of the golden ratio in reality is clear and implies by its nature a type of “universal time” regarding consciousness and thus as we would understand a type of “synchronicity”.

Sacco [11] writes *“Although applying mathematical principles to synchronicity may seem novel, the notion that synchronicity might depend on the Fibonacci numbers was anticipated by Jung in a letter on February 9, 1956 [12]. Jung did not specify how Fibonacci numbers caused synchronicity, but he recognized the conceptual value of postulating that synchronicity operated based on the Fibonacci numbers because of their ubiquity in nature. Mathematical models are increasingly being invoked in psychology. For example, dynamical systems theory helps to analyse a broad range of cognitive and affective dynamics, interpersonal and group dynamics, and personality dynamics [13]. Likewise, fractal patterns are found across the domains of psychology including the brain, visual search, speech patterns, memory retrieval, interpersonal relationships, and personality [14].”*

Is this the common universal reference time-algorithm we need to link all observable data of reality?

The only way to know is to apply this time-algorithm to 3-d space, as though building a theoretical model of reality from this new axiom for time. This process was outlined in paper 2 ([2]: p3-7), as the golden ratio axioms of time and space.

## 4. Conclusion

Any theory is a guide to explaining how something works. Theories compete with other theories based on simplicity yet also broad-spectrum effectiveness. Will the golden ratio theory for time stand up to contemporary science?

Contemporary science has a great repository of data, of known facts, yet the broad-spectrum theory is lacking. Here is a broad-spectrum theory proposal for time, a time-equation and associated theory seeking to be the reservoir of the known facts, the data of observed natural phenomena, albeit via a different mechanism owing to the need to use a new basis for time, the golden ratio algorithm, to reach a calculated link between EM and gravity.

### Conflicts of Interest

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

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