

## THE PHYSICS CHIMERA

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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)

**Abstract:** In this paper the Standard Model of physics shall be examined for harbouring what can be demonstrated to be a faulty definition for space, a chimera, which has prevented physics from joining electromagnetism with gravity as theoretical and physical field driven entities. This chimera will be exposed to be “inertia”, which has led to absurd conclusions in ultimate equations of field forces across the expanse of space, most notably the need for dark energy and dark matter. An alternative approach in replace of this chimera is proposed, as a new concept for time examining bodies in motion, namely the idea of time as “the” most fundamental concept, and not space as it has been assumed as a field of inertial potential, from which a golden ratio “scaling system” for time shall calculated, making the the idea of space evident as emergent from the dimension of time, and most importantly describe how time behaves as light in regard to space. Upon that emergent space, a list of all the features derived from the golden ratio algorithm shall be once again brought to attention as per the previous papers [1-8] in being married up with known observed physical data. Such a process of examination shall highlight the fundamental failure of the idea of “inertia” in physical equations of bodies in space, and expose those equations as the “chimera” of modern-day physics.

**Keywords:** relativity; time; space; gravity; electromagnetism; inertia; non-inertia; chimera; golden ratio; special relativity; general relativity; quantum field theory; quantum electrodynamics; standard model; equivalence principle; grand unified theory; Descartes; Einstein; consciousness; time dilation; emergence

## 1. Introduction

If there was something wrong with physics, something fundamentally flawed, how would we know? Are there too many unsubstantiated fixes in play (such as dark energy and dark matter), have we overlooked anything in previous theories, have we assumed anything too greatly (for instance inertia being a quality of “space”)? Are we therefore using a process of thought in physics that makes it impossible for physics, for instance, to reach a grand unified theory? How would physics react to the news that a fundamental change in theory must be made in order to move ahead, in order to for instance develop a sound and working theory that joins electromagnetism with gravity, given all the research already conducted along certain lines of “theory”, or is physics too embedded in theory established last century, too embedded in research to change? To begin to answer these questions, fundamentally so, it is necessary to focus on the heart of physics theory, and here the fundamentals of time and space need addressing. Here in this paper a fundamental paradigm for time [8] will be re-presented to accommodate for current “inertial” and “temporal” inconsistencies in special and general relativity, primarily how ineffective the idea of “inertia” is in explaining the movement of mass in space.

The English word **theory** derives from a technical term in philosophy in Ancient Greek; theoria, θεωρία, meant “a looking at, viewing, beholding”, and this was considered as a *use of perception*. It was thus natural for Descartes and even Einstein to tag the idea of perception to “theory”, together with a spatial frame of reference that was being examined. This essentially meant that the idea of theory must stand for each reference, and yet as Einstein outlined so too must the idea of “time”, as the ability to read the measurement of a clock (as simply put as it can be). So the quest became the creation of a theory of spacetime with the reference of our perception in mind, as Einstein did, and yet the case here with this paper, a proposal for a new paradigm of time and space is forwarded, the logos of which directly points to the idea of a fundamental logos itself of consciousness with time, as it must, if the assumptions of Descartes and Einstein regarding consciousness and time (and space) are correct. Ultimately, if this were a thought experiment, the notion forwarded is that it is possible to use a model of consciousness from which a theory of reality should, a model of consciousness as a theory of time and space, be sequestered from, if the theory of consciousness proposed represents a basic code of the law of time and space. The quest with this new description of time and space based on consciousness is thus how to predict and explain and test a phenomena contemporary physics clearly already can and then on another level something that contemporary physics as yet cannot predict (given its inability to join electromagnetism with gravity), while of course holding all currently observed phenomena as true except for being in disagreement with the old/contemporary “way” of explaining that phenomena (aka old/contemporary science). That basic model of consciousness was presented in paper 8 [8] as a way to explain how we would “best” understand the concept of “time” as an ultimate equation. Here in this paper we are taking that idea one step further, namely why to do such a thing in the first place, namely “what is the problem with physics theory that needs fixing”?

So, why the need to more closely examine the link between time, space, and consciousness? The answer is blunt, namely that it will replace the use of the notion of “inertia” as a feature of “space”, as the notion of “inertia” quite simply *cuts the idea of a body at rest off from all that is happening around it*, everything and anything outside the “bubble” inertial frame of reference that mass would exist within by using that notion of “inertia” to take it from its reference of being at rest compared to all else. In defense of the idea of inertia, historically, the idea of inertia has been the best way to introduce ourselves to the ideas of force and mass in regard to a theoretical tapestry of space; there could have been no other way to so simply begin. Yet as QFT demonstrates, inertia, those “training wheels” ideas for space, don’t work that well, especially if mass and gravity need to conform ultimately to elementary principles of the elementary particles and field forces, to light, and thus ultimately to ideas of time and space, by

definition. Simply, physics must “step-up” with theory in order to join EM and G, to shake off the inertia “training wheels” so very apparently tagged to the idea of space.

So, in replacing the idea of inertia and its association to the idea of space, more focus must exist on the idea of how a body can relate to another body in motion with regard to the process of time and consciousness in space to make that body more useful to the idea of time and not a concept of “inertia”. “Inertia”, as shall be highlighted in this paper, is the “**Chimera**” of physics that has prevented physics from reaching the goal of linking electromagnetism (EM) with gravity (G) simply by the nature of its own self-inclusive nature of definition regarding “space”. So here a theoretical process shall be proposed to demonstrate the ineffectiveness of the idea of “inertia” in forming physical theories of reality, and then a “fix” shall be proposed to highlight how all the equations and constants physical data relies on in the context of all the field forces and associated elementary particle congress and dimensions of the atom can not only be otherwise derived, yet can predict a certain “pattern” of time in using the “time-fix” being proposed.

## 2. The Experiment

Even on the surface description of the word “inertia”, the image presented by physics regarding tensors and mathematical transformations regarding inertial and non-inertial frames of reference in space is one of a veritable beast of space. That theory as a superluminal expansion of inertial space is going nowhere fast without major fixes like dark energy. Yet physics still uses that theory, which is quite an absurd notion, as using “inertia” as a concept, as a theoretical process of examination, is by its very definition a profoundly “isolationist”, non-inclusive, way of considering the idea of “mass” in itself, and if used will never arrive at a theory of everything, never link mass or gravity to anything other than itself. Quite simply, inertia is an entity unto itself, such that anything that effects it represents a force of “inertia”, nothing fundamental with a force field or an elementary particle, no inclusivity....it acts alone, like a **Chimera** [9], a behemoth of reality. The problem today though is the idea of “inertia” is embedded in Special Relativity and General Relativity [10], Quantum Field Theory [11], and thence the “Standard Model” [12] of physics, all because it is the “assumed” quality of the reference of space in all physical equations of bodies in motion. Einstein tried to include “inertia” as a process of gravity as non-inertia as mass cleaving to the curvature of space as gravity in his theory of General Relativity, yet this still made available the notion of inertia, as it had to owing to how the idea of space was being defined; and thus, inertia remained, despite taking upon a new “non-inertia” term in general relativity while still being exactly what it had been explained to be in special relativity, “inertia”. Suffice to say that physics is in trouble, and here’s why.

The current process of the theory of relativity depends on the idea of “time dilatations” between objects of different speeds, “whilst” there being a standard for the speed of light between objects of different speeds, together with the idea of using “inertial frames of reference” for bodies in this context of inquiry. Understandably therefore the baseline idea is a “speed of light” standard which ultimately for ease of theory leads to the idea of an underlying field theory, also known as “quantum field theory”, that uses spatial transformations with the aim of rectifying the time dilatations between objects of varying speeds, relativistic **inertial** particles, together with explaining how energy manifests in this quantum field, and how elementary particles arrive from that quantum field and interact with it. Of course the chimera in this entire equation is the “inertial frame of reference” of mass; inertia is basically putting mass in a spatial bubble of inertial regard and then measuring the effects on it based on the concept of inertia itself as space, entire of itself, which clearly can’t work at all with QFT, not even on the surface of a discussion in any serious notion of QFT.

Just looking at that entire scheme, “everything” that can be understood using solely the idea of a quantum field theory and associated time dilations through the use of spatial transformation equations and this associated derived process of activity regarding light and energy between elementary particles in that context of regard “should” be OK, “should” be understood to do the job, “except for gravity”, except for the chimera of inertial mass, or more precisely, space as inertia localizing the position of mass. As a result, a truly “massive” amount of energy would be required for the accelerating expansion of “inertial” space, according to red-shift observations, which, that expansion, would need to play into the hand of gravity also, and thus require it seems a form of “dark matter” to keep galaxies from spiraling apart.

And so, an experiment shall be proposed that presents “inertia” as the problem in physics today, that **Chimera**, and then a fix shall be proposed which shall link the previously thought of mass-gravity-inertial scheme to electromagnetism, to a standard model minus “*inertia*”, hence unremittingly “*inertia*” shall be highlighted as the **Chimera** of physics theory.

### 3. Background: The Physics Chimera

Here, as background to this experiment, four features of the Physics **Chimera**, “inertia”, shall be presented:

- 1. Inertia
- 2. The Principle of Relativity
- 3. Time dilations
- 4. Quantum Field Theory

#### 3.1 Inertia

**Inertia** [13], quite simply, is defined as the resistance of any physical object to any change in its velocity. This includes changes to the object’s speed or direction of motion. Thus, the clear implication of this definition is the tendency of an object to move in a straight line at a constant speed unless otherwise acted upon by a force. The principle of inertia is in fact a fundamental principle of classical physics still in use to describe the motion of objects and how they are affected by external structures and forces. Inertia comes from the Latin word, *iners*, meaning idle, sluggish, and yet it is the feature itself given to the reference of “space”.

Inertia is one of the primary manifestations of mass, which is a quantitative property of physical systems. Isaac Newton defined inertia as his first law in his *Philosophiæ Naturalis Principia Mathematica* [13], which states:

*The vis insita, or innate force of matter, is a power of resisting by which every body, as much as in it lies, endeavours to preserve its present state, whether it be of rest or of moving uniformly forward in a straight line.*

The term “inertia” is more properly understood as shorthand for “the principle of inertia” as described by Newton in his First Law of Motion:

*an object not subject to any net external force moves at a constant velocity.*

Albert Einstein's theory of special relativity [10] as per his 1905 paper "On the Electrodynamics of Moving Bodies" was built on inertial reference frames [14] as developed by Galileo and Newton; simply, Einstein's concept of inertia remained unchanged from Newton's original meaning. However, this resulted in a limitation inherent in special relativity: the *principle of relativity* (the requirement that the equations describing the laws of physics have the same form in all admissible frames of reference) could only apply to inertial reference frames. To address this limitation, Einstein developed his general theory of relativity [10], which provided a theory including *non-inertial* (accelerated) reference frames. Yet even this required the pre-supposition of inertial frames of references as per special relativity. Curved spacetime basically represented a feature of fixing non-inertial transformations to satisfy the principle of relativity from special (inertial frames of reference) to general (non-inertial), the idea of acceleration being intrinsic to the idea of the force of gravity itself creating a non-inertial (accelerating) references between bodies. Einstein basically aimed with words to factor in the issue of "inertia" in the context of an accelerating body and this as-proposed "non-inertia", which problematically still doesn't fix the problem of inertia, it merely relocates the idea of inertia to a curvature of spacetime in the regard of gravity....inertia hasn't gone away as a concept as it is still the assumed quality of space, and special relativity was still in play and thus the state of a body being considered as "inertial". Perhaps a closer examination of the principle of relativity is required.

### 3.2 The Principle of Relativity

In physics, the **principle of relativity** is the requirement that the equations describing the laws of physics have the same form in all *admissible* (one can only consider "observable") frames of reference. Such is really an aim to create a link between all frames of reference as a grand equation. For instance, the Maxwell equations have the same form in all inertial frames of reference for special relativity whereas for general relativity the Maxwell equations or the Einstein field equations have the same form in arbitrary frames of reference (which is quite a word-spin of definition from inertial to non-inertial without corrupting the idea of "inertia" for frames of reference). Let's highlight this:

#### ***Special principle of relativity:***

- According to the first postulate of the **Special theory of relativity**:
  - *Special principle of relativity*: If a system of coordinates K is chosen so that, in relation to it, physical laws hold good in their simplest form, the *same* laws hold good in relation to any other system of coordinates K' moving in uniform translation relatively to K (*Albert Einstein*) [10]
  - This postulate defines an **inertial frame of reference**.
- The **Special principle of relativity** states that physical laws should be the same in every inertial frame of reference, but that they may vary across non-inertial ones. This principle is used in both Newtonian mechanics and the theory of special relativity.
- The principle requires physical laws to be the same for any physical body moving at constant velocity as they are for a body at rest.

- The principle does not extend to non-inertial reference frames as those frames are unable to abide by the same laws of physics, thus the proposals of the **General principle of relativity** were constructed.

**General Principle of Relativity:**

- **The General principle of relativity** presents that physical laws are to be considered the same in *all* reference frames, inertial or non-inertial. For instance. an accelerated charged particle might emit a form of radiation, yet a particle at rest may not; to then consider now the same accelerated charged particle in its non-inertial rest frame, it emits radiation at rest, which technically is really a twist of words using the idea of a different observing frame of reference, what's moving and what isn't according to the observer, the feat being inertia still exists yet may not to seem to exist depending how it is "viewed" and from what reference.
- To achieve this feat, Einstein's physics treated non-inertial reference frames by using a coordinate transformation [15] as a way to mathematically validate the different frames of reference, by of course establishing the initial *inertial* reference frame, those calculations, obviously as it only can, and *then* using another set of calculations to return to the non-inertial reference frame, as it only could.
- An example of this trick is as follows:
  - In the non-inertial reference frame of Earth, having a reference on Earth as a fixed point of observer reference, when observing the stars in the sky they circling Earth once per day, much like the sun, yet as the stars are light years away then in the non-inertial reference frame of the Earth those stars technically are observed to be moving faster than the speed of light, if indeed the reference of the Earth observer is fixed around which all definitions are made not taking into account the rotation itself of the Earth.
    - Absurdly, since non-inertial reference frames do not abide by the special principle of relativity, such situations are not considered as a contradiction (a nice way of saying "not-absurd" yet as we shall understand something as *completely absurd*).
- The proposal was to formulate a stronger way to announce non-inertial frames of reference/relativity, as per the idea of matter "curving" spacetime, and that this curvature affects the path of free particles (and even the path of light), as per Einstein's "General Relativity" based on the name-sake principle.
- To achieve this idea with mathematics, General relativity *employed* differential geometry and tensors in order to describe gravitation as an effect of the geometry of spacetime. Einstein based this new theory on his general principle of relativity, and he named the theory after the underlying principle in question science waved as it's hallmark achievement process of recognition.

Quite simply though, what should be evident, the use of curved spacetime back in that day represented a feature of fixing non-inertial transformations to satisfy the principle of relativity from special (inertial frames of reference) to general (non-inertial), the idea of acceleration being intrinsic to the idea of the force of gravity itself creating a non-inertial (accelerating) references between bodies. Einstein basically aimed with words to factor in the issue of “inertia” in the context of an accelerating body as this “non-inertial” reference, which still doesn’t fix the problem of inertia when tagged to accelerating expanding space (as the red-shift effect appears to require), as it merely relocates the idea of inertia to a curvature of spacetime in the regard of gravity; inertia hasn’t gone away as a concept, as special relativity was still in play by definition and thus the state of a body being considered as “inertial” never lost even in General relativity. So how did Einstein try to resolve this issue? He used the idea of the “Equivalence Principle”, as the equivalence of gravitational and inertial mass, that the observation of a gravitational “force” as experienced locally (while standing on a massive body such as the Earth) is the same as the “inertial force” experienced by an observer in a non-inertial (accelerated) frame of reference. The problem therefore with the principle of general relativity is that it is **too general**, citing all physical laws to apply to all frames of reference common over, and here the problem being the idea of an “inertial frame of reference”, the true **Chimera**. The problems though for Einstein’s theory of relativity, that **Chimera**, were only to get worse.

### 3.3 Time Dilations

The real problem with bodies in motion and their calculated positions in time is the phenomena of “time dilations”, and how that must be resolved for objects moving at different speeds, conveying as it would for “inertial” theories *different* inertial process. What is a time dilation? Time dilation explains why two working clocks will report different times after different accelerations as viewed by an observer, and not just as viewed by an observer, yet as demonstrated by the function of the clock itself, whether mechanical or a natural process of radioactive decay. According to the theory of relativity, **time dilation** is a difference in the elapsed time measured by two observers, either due to a velocity difference relative to each reference in motion, or for those different bodies being differently situated relative to a gravitational field. For instance, a clock that is under the influence of a stronger gravitational field than another observer's will also be measured to tick slower than the observer's own clock. It is a fact, real data, not necessarily real theory, but real data. Quite simply as a body approaches the speed of light, it “slows”, and not only that it gets more massive, and by this effect, space becomes curved. The real foundation principle for time dilations is the common thread itself for all references, namely the “speed of light” as the fixed reference despite the varying speeds of bodies in motions, varying accelerations and inertial frames of reference; simply, the common link in relativity between objects in motion is the speed of light being a constant, which lead to the idea of a “common quantum field” underlying the nature of all inertial frames of reference. Enter Quantum Field Theory to properly ask “inertia” what it’s doing. Yet did it, given it itself, QFT, is presumably non-inertial?

### 3.4 Quantum Field Theory (QFT)

QFT is the idea of a “common quantum field” aiming to underly the nature of all inertial frames of reference, and thus all space. In theoretical physics, **quantum field theory (QFT)** [12] is a theoretical framework that is used to construct physical models of elementary particles using the idea of light/quanta and energy and how these would interact with the known field forces (EM and G) in inertial space, together with the other field forces. And so, to achieve this, QFT treats particles as excited states (also called quanta)

of their underlying fields, which, as they can only be, more fundamental than the basic particles. Interactions between particles are described by their corresponding *Lagrange* [16] fields, and how each of those field interactions can be visually represented by *Feynman* [17] diagrams as formal computational tools. Basically, using a field as opposed to a particle should provide a reference of energy for the behavior of a particle in alliance with the notion the speed of light being the foundation field constant between all references of bodies in motion. The development of QFT was thus logical and intuitive in facing off with “*inertia*”, at the time of relativity theory, culminating in the first quantum field theory known as **quantum electrodynamics**, eventually leading to the **Standard model**, the model currently used today, the full theory, including the electroweak theory and chromodynamics, suffice to say that the Standard Model only successfully describes all fundamental interactions **except gravity**. It, the standard model, of course “would” describe the elementary particles upon underlying field interactions, yet owing to the “inertia” **Chimera** granted to space as a quality of space, mass and gravity have remained separate to the other field forces.

#### 4. Objective: Slaying the Chimera

The objective here is to eliminate the idea of “*inertia*”, to then better measure the behavior of different (as otherwise defined *inertial* systems of space) bodies in motion relative to each other **using a different process of mass-gravity regard**. On such a fundamental level of time and space, and of course perception, it is a difficult task.

Quite rightly, elementary particles were employed as associated to the underlying quantum field, not mass and inertia, mass and inertia being the big “left out” feature of QFT and elementary particle congress. And so ultimately the whole idea of classical physics with special and general relativity and the idea of energy and time with different bodies of different motions lead to the idea of a field effect resolving the interaction between bodies in motion, as the standard model, all except for the idea of gravity and thus what would appear to be the “shape” of everything, the curvature of space, while leading to an endless high energy process of accountability for all the bodies in motion in the vacuum....something huge was missing, something that could perhaps explain gravity. The idea of light became the paramount feature of QFT and thus gravity took a back-seat, as light and its speed became the standard for each reference, yet time dilations were difficult to resolve with inertial frames of reference, hence a field theory for gravity with QFT became a **white elephant** [19]; according to QFT empty space is defined by the vacuum state which is a collection of quantum fields, and all these quantum fields exhibit fluctuations in their lowest energy density arising from the zero-point energy which theoretically is present everywhere in space. Now, according to QFT, these zero-point fluctuations should act as a contribution to the cosmological constant  $\Lambda$ , but when calculations are performed these fluctuations give rise to an enormous vacuum energy [20] the discrepancy between theorized vacuum energy from QFT and observed vacuum energy from cosmology is a **Chimera** of its own, with the values predicted exceeding observation by some 120 orders of magnitude ( $10^{120}$ , a “very big” number), a discrepancy that has been called “**the worst theoretical prediction in the history of physics!**” [19]. This issue is called the cosmological constant problem [21] and it is one of the greatest unsolved mysteries in science with many physicists believing that “the vacuum holds the key to a full understanding of nature”. Basically, it is the footprint of the “*inertia*” **Chimera** that has been unable to make itself inclusive into QFT; QFT tried to resolve the issue of time with special relativity and gravity, yet this results in the requirement of an absurd amount of energy in the vacuum to support the accelerating expansion of space which technically in representing the curvature of space and ability to hold mass, “must” represent that which isn’t included in QFT, namely gravity. The question is, “how can this be resolved”? Is space being labelled with inertia the problem?

The answer is as simple as it is obvious by the following musing:



.....the process of explaining different bodies in motion of different speeds, being resolved with each other based on light alone yet not accounting for mass leads to a huge discrepancy, and so ultimately the theory presented for time and time dilation **must** account for that energy and thus must account for gravity, and thus must account for the curvature of space, or more simply, **must** explain how space is curved from the basis of a definition of time, and time alone, not inertia.

So why not present a theory of time as energy that relates directly to space yet not just space yet the curvature of space? That is the proposal here, taking the idea of time and space a more fundamental step back, no longer assuming time tagged with the perception of the observer, yet going a step back into a more primordial aspect of axiomatic definition. Essentially, this is the required step, somehow legitimately fixing time into space with the curvature of space and thus gravity in mind, which should explain the idea of energy, as time, embedded in space, as the energy of the void, of the vacuum, explain QFT in a way relevant to the solution for **inertia**, and thus perhaps present a new set of 3-d graphs of space and time and associated equations, and this a new wave-function, which is what the solution here as papers 1-8 [1][2][3][4][5][6][7][8] presents. The proof here is predicting the footprint of time in space as that curvature of space, much like Einstein predicting light bending around a planet yet on a far grander scale, inclusive of all physical data relevant to the field forces, of reality, a big task. The clear problem though for modern physics is that this approach should lead to a new view of QFT, and it does as what is termed the **phi-quantum wave-function and associated 0-scalar space and golden ratio time-algorithm**; is that a big problem though if the idea of gravity is accounted for as a process of measuring time dilations with otherwise limited isolationist defined physical **inertial** frames of reference? Nonetheless, the new description will be filtered as time in space, a wave-function directly related to the curvature of space and thus gravity, and thus the elementary particle descriptions must use a new set of terms and phrases, although the data would remain the same, as it should.

## 5. Method: Paper 8 [8]

Is it allowed in this modern era to take such a great step back and re-define the axioms of time and space? Physics depends on data, like any science. Theory explains that data, namely how all the observed data we have fits together. Data is data though, and theory strings data together, ultimately as a theory of everything. Physics though in not being able to join the basic data of the two fundamental field forces, gravity and electromagnetism, is at a loss, trodden as it seems by the inertia **Chimera**. Although the data may be right that is being used by theory, the theory itself may be incorrect based on an incorrect platform of time and space logos, and in this case the employment of the idea of "inertia". On inspection of special and general relativity and how time is defined, the problem is simple, "physics is exercising a miscalculation if physics aims to find a grand unified equation for every reference in reality moving at different speeds, and thus different time dilations, requiring unique mathematical transformations, fixers, from one event in space to another to accommodate for all the different relative motions of objects in view of space being defined along the line of "inertia" thus defining bodies in motion in space via such regard, without a fundamental underlying common thread of either space or time to explain all those relative references in the one theory". Is a model of physics that primarily uses space as a platform of inertia valid if that model still requires a factor of  $10^{23}$  of energy (dark energy), and at least 80% more mass (dark matter) in the observable universe?

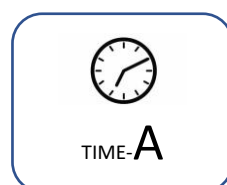
In defence of Einstein, Einstein tried to explain the common reference of *inertial*-bodies in motion and those time dilations as gravity, the curvature of space, yet no one can agree on what gravity really is; how can a curvature of space as an alleged common link between all *inertial*-bodies in motion be so separate from all the other underlying field forces? The argument here is that we're going the wrong way about the *inertial* "common reference" problem. Instead of using "*inertia*", instead of using gravity, instead of using space, its curvature as gravity, **let us use time**. Here "time" will be shown as the common link between all references of all bodies in motion, by using a simple algorithm, the golden ratio, or as commonly known "the Fibonacci sequence" as applied to "space", and how this can then sit in a common "observer" reference definition in support of the idea of a "common understanding" and this a potential "grand unified theory". A bold claim? The Golden ratio algorithm for time as presented in papers 1-7 [1-7], more specifically paper 8 [8], *does* link all the field forces, *does* explain the elementary particles, *does* derive all the fundamental constants, *does* explain the precise nature of observed astral phenomena, *does* calculate the background microwave radiation, and then *does* propose gravity emerging from "electrodynamics" in a laboratory setting. The problem, only problem, as one may suspect, is that when the simple arrow for time, "*t*", is manipulated, *all* the *inertial* spatial transformation equations change; the data, the results, the truth we see of reality is not changed, only the mechanism of the "explaining" of that data. In short, using this new algorithm for time changes everything, not the data, just the theories behind the data, with an upside though, explaining how gravity can emerge from this new explanation for time, and in the case here, from electrodynamics, which is useful in a laboratory setting, to do that, because that's gravitational propulsion from electromagnetism.

Yet this is not enough, as argument can still exist regarding the nature of time. For instance, if space can be measured with a ruler, yet time can't, how can time exist? Why can't it be possible to just equate time to a "0" entity and have space ultimately equate with itself as bodies in motion seeking equilibrium? If indeed time is considered as a zero-entity, or even if time in an absolute sense can be as either zero or infinity and just that, why can it not still be something more integral to not just space yet how we observe space as Descartes and Einstein assumed?

To address this issue, if indeed Descartes and Einstein assumed the observer is directly relative to time, then time according to scientific theory must play an integral role to the idea of consciousness itself, and thus theoretical formulation and calculation of associated data. To accommodate for such a notion, the simple compromise of theory, if not answer itself, is that time would in fact be the relative motion between otherwise "inertially-defined" objects, and that this time is standardised to our perception ability; this is in accordance with special and general relativity which holds that the relative motion between objects changes the standardised time of one reference compared to another depending where the reference of the observer is and what it is observing. Ultimately what is being proposed is that time is the relative motion between objects, yet more importantly, an observer.

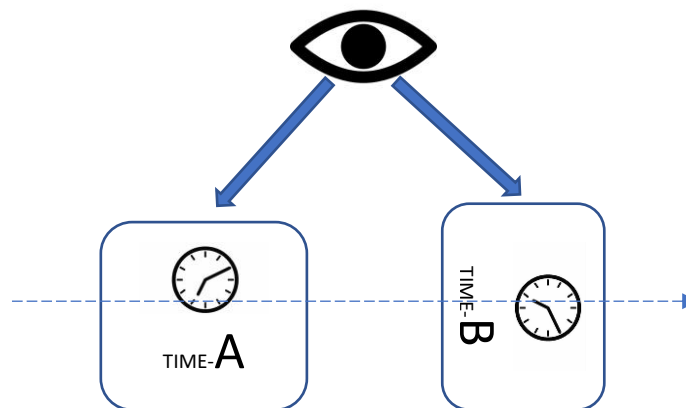
To explain this diagrammatically, take an object "□" in space at time-A, as per figure 1.

Figure 1



Time would be some type of movement of that otherwise defined “*inertial*” body relative to an observer, whether a spin of an object such as a sphere where the surface points change their position, and so on and so forth. So, we can reduce the concept of time to represent a change in space of a body relative to an observer as in figure 2.

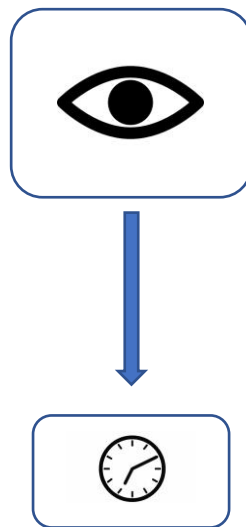
Figure 2



This time needs two theoretical references in space (to be time), two theoretical points that connote motion as an arrow of those references in space, references of interest, of observation, and this the intimate relationship between consciousness and space. Note here that what is being suggested is that the observer is the subject, and the time reference (clock) is the object, and both are “held” together in a spatial contextual bind. The idea here also creates the concept of *time-before* and *time-after*, and the “process” of this as *time-now* in between *time-before* and *time-after*. It’s an arbitrary scaling system for the concept of time. What needs to be held though as a concept is the idea of time as a process of spatial change, and thus the arrow of time itself could in theory represent a dimension in each of the 3 dimensions of space. The question is “how”.

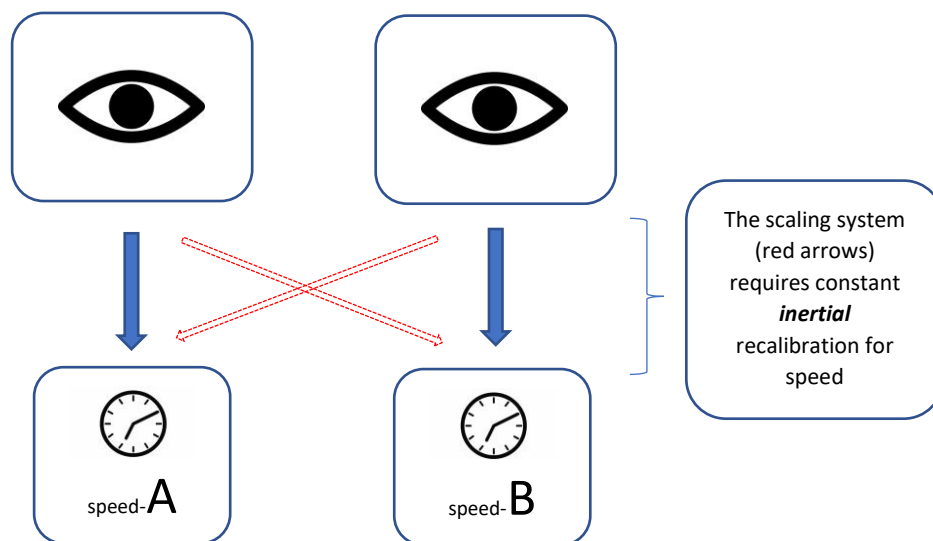
As presented in the previous papers [1-8], more specifically paper 8 ([8]: p4-5), the golden ratio algorithm to be this dual activity of time in space, as a structure, as a scaling system that all otherwise defined “*inertial*” bodies in motion can align into, must represent a common link between all bodies in motion in space. In diving further deeper into the logos of time though here in this paper, the current understanding of time in the context of special and general relativity presents us with the following, as per figures 3-4, as a standardised reference of the perception of time as a clock.

Figure 3



Now with different speeds and inertial references:

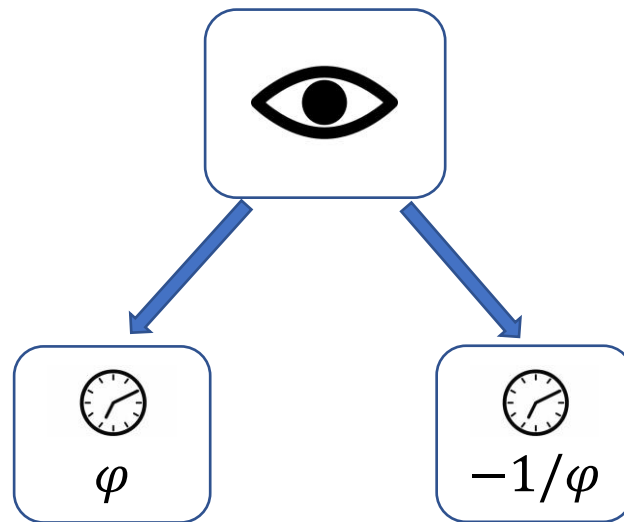
Figure 4



In figure 4, the clocks read differently across different *inertial* platforms of reference (red-line) yet read the same for the fixed observer in that same context of speed (blue-line). And so, with an equation aiming to link all bodies in motion from the one reference, ***inertial-discrepancy*** red-lines everywhere trying get a fix on all the *inertial* bodies in motion, the time reading for each body in motion is always by definition different. Something is missing therefore for a “theory of everything” to translate each *inertial* body in motion to another without making time ***the inertial-discrepancy*** “red-line” disparaging issue. So, a new proposal for time was made as per papers 1-7 [1-7], best summarised in paper 8 ([8]: p4-5).

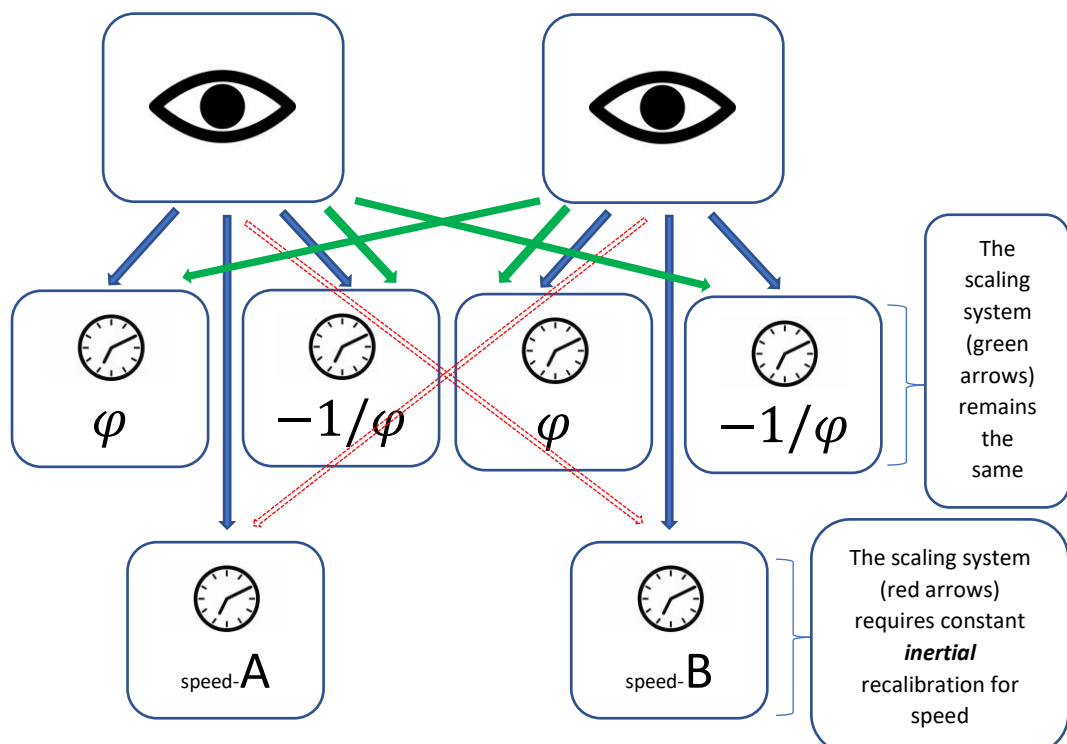
Papers 1- 8 [1-8] presented the idea of time related to our fundamental conscious ability of registering the logic of *time-before*, *time-now*, and *time-after*, and then a calculation was presented to capture that idea as a fundamental logical construct, which became apparent as a type of sliding scale of the golden ratio. This was presented most efficiently in paper 8 ([8]: eq 1-7, p4). Perhaps more can be presented though regarding that sliding scale as follows in figure 5. Here, we have the idea of consciousness in view of two possible features for time in the one frame of viewer-clock reference:

Figure 5



Thus, as a relativity with different speeds, we have the following in figure 6.

Figure 6



Evidently, the scaling system of the golden ratio doesn't change with the various accounts of time by the varying accounts of the speed of the otherwise defined "*inertial*" bodies in motion; the golden ratio scaling system remains the same. The idea of relative speed and thus relative time between objects is calculated into the golden ratio algorithm through the very nature of the golden ratio scaling system for time. The next question was how this applies to "space", how this scaling system for time applies to the notion of space, and more importantly, it's "curvature", thus dispelling the need for "inertial" calculations?

The process is one of definition. In paper 1 ([1]: p3-6), the front of time as a flow from a point in 3-d space is considered as a surface area of a sphere, and in the case there as an axis-system as  $i^2$ , as  $-1$ , as a surface area of a spherical time-front, and it was presented that it is along that feature of space that light as energy conforms to, forming a wave-front. In paper 2 ([2]: p3-12) that wavefront was defined with space, space derived as 3-d and a dual direction axis from the definition of time, leading to a new "wave-function". Thus, this idea of space in paper 1 [1] was somewhat misleading, as the idea of space as a 3-d construct was assumed and used as a tool for application to new scaling system for time. That assumption was addressed in paper 2 [2] though with the development of a golden-ratio time scaled 3-d spatial grid. In defence of paper 1 [1] though, the paper essentially began with a new proposal for the flow of time with 3-d space in mind, a new idea for time in challenging the current misunderstood if not entirely unforgotten and ill-defined idea of time; paper 1 [1] politely assumed 3-d space, as contemporary science already does through the use of the cartesian coordinate system, while endeavouring to establish whether giving the idea of time more granularity is a worthwhile path, and in doing so deriving both gravitational (gravity) ([1]: p8-9) and EM (coulombs) ([1]: p9-10) equations, while then highlighting how an atom would be generally constructed in that assumed 3-d grid (Rydberg constant and equation) ([1] p13-14). Those results beckoned the need to ensure the assumption of 3-d space was well-placed, well-placed though through deriving its precise link on an axiomatic level with time in paper 2 ([2]; p 3-12).

## 6. Results: Papers 1-7 [1-7]

When asked "what can your scientific theory predict that contemporary science can't?", something quite remarkable if not profound, even significant, has been overlooked, namely papers 1-7 [1-7]:

1. Gravity's from Electrodynamics [1]
2. Golden Ratio Axioms of Time and Space [2]
3. The Emergence of Consciousness from Chaos [3]
4. Phi-Quantum Wave-Function Crystal Dynamics [4]
5. Time as Energy [5]
6. The Relativity of Time [6]
7. Golden Ratio Entropic Gravity: Gravitational Singularity Field Testing [7]

The issue here is regarding the "curvature" of space as gravity, and how that golden ratio scaling system for time as "light" (speed of light, "c") precisely fits with space. This process was outlined primarily in paper 2 ([2]: p6-11) as per the wave-function proposal, and once again accounted for in paper 4 ([4]: p5-9). Yet beyond the scope of the  $c$ -related, quantum identified, wave-function (phi-quantum wave-function), how would light behave in the general sphere of space, especially in the sphere of the influence of gravity? Paper 1 [1], in not presenting the idea of a wave-function, outlined at the initiation of this theory the idea of light interacting with space along a 2-d time axis ( $i^2$ ), as per ([1]: p4-6). This is the idea of  $\varphi$  and  $\frac{-1}{\varphi}$  as the wavefront for time and thus light, and thus the

curvature itself of space when considering how 3-d space is concerned, namely that spherical flat-plane 2-d wavefront of  $i^2$ . This would still be a valid notion. The development of this notion of light and space, that front, is taken to a new level in understanding as per the proposal of paper 4 ([4]: p6-13) that a folded EM field, and thus time, that “complete” circle, would represent not only mass yet a force between masses as gravity, and thus as spherical wavefront itself, “as” therefore a curvature. Thus, logically, with space that is super massive as mass, we would have a firmer curvature as a scaling system of gravity. Logically therefore light would bend around supermassive space/mass structures in aligning with this curvature of space associated to mass, the greater the mass, the greater the curvature effect with light. Note though that the geometry of space is not being compromised, that the fundamentals of time emerging space are not being sacrificed with the emergence of space and in a more advanced form “mass” as per paper 4 ([4]: p5-9).

It is important to note that the golden ratio scaling system for time arrives at the same conclusions for a super-massive singularity, such as a black hole, and the behaviour of light there, as with contemporary standard model theories; here according to this new definition for time, in the most extreme form of curvature of space granted by a great mass light would bend endlessly around that structure. Simply,  $i^2$  represents the surface area time-front, how light moves along the  $r^2$  dimension axis, that spherical 2-d wavefront dual “ $i$ ” axis. This, with the new theory here, we can then prove how much a black hole weighs based on EM field and G relative field strength comparison and the weight of sun; for light to curve around mass independently in a super-massive (singularity) situation such as a theoretical black-hole structure, for every unit of light there must be  $\sim 10^{36}$  units of mass needed given the force of gravity is  $\sim 10^{36}$  times weaker than EM, a mass that would in theory result in a black hole critical mass “effect” of light being trapped in that “-1” ( $i^2$ ) axial sphere of influence. It’s a simple matter of equalising the forces, and thus stepping up gravity a factor of  $\sim 10^{36}$ . Note, the idea of symmetry breaking as per paper 1 ([1]: p3-4) is taken up by the golden ratio scaling system for time, and thus in the case of any point in space in taking into consideration the surface area plane for the direction of time to travel upon there will always be either  $\varphi$  or  $\frac{-1}{\varphi}$  in that plane perpendicular to the now axis in each of the 3 dimensions of space, which in the context of a super-massive singularity, will give rise to an interesting effect/shape of neighbouring light emitting structures, namely a spiral fractal display of light in the form of a golden ratio pattern, something contemporary physics has yet to theorise. The interesting feature of course is the golden ratio nature of the patterns of light we see of the galaxy, and other galaxies as per images 1-3.

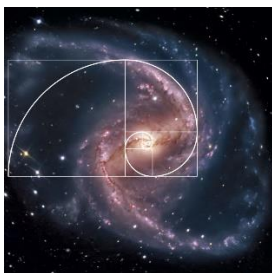


Image 1



Image 2

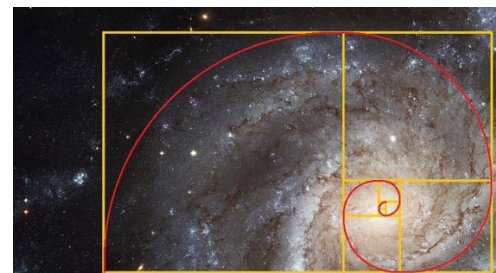


Image 3

Are not these patterns found “everywhere” in the Universe given the number of galaxies in our telescopic scope, to the point it could be argued the pattern in fact is:

“the most predominant and yet untheorized and thus underestimated pattern of the entire universe”?

Such can only be the galactic “elephant in the room”, the golden ratio footprint of time as it approaches a singularity, and here it is **predicted**, (such a bad word given the evidence), **almost stated to exist**, by this new theory for time. What other proof exists by virtue of this theory, what are those results?

Paper 8 [8] followed on from papers 1-7 [1-7], detailing a more fundamental description for the time-algorithm, as a “method”, an ideal “approach” to reviewing papers 1-7 [1-7]. In those papers a vast swathe of concepts inclusive of all the relevant data relevant to the physics of reality have **not** been hyperlinked from contemporary physics theory, **yet “derived”** from a new foundation for time and space; here with this golden ratio scaling system for time, the theories are derived and contemporary data fits perfectly nearly 100% of time (give or take very minor errors (<2%) due to the process of “error” in the golden ratio algorithm wave-function seeking  $\pi$ ). That is significant in itself, as the table from paper 7 ([7]; table 2, p19) highlights. The paper here explains why all of this is necessary, and what the key problem that needs solving in fact is, that ***Chimera***, namely “inertia” labelled to “space”.

As a comparative note to contemporary scientific theory, in 1899 Max Planck suggested that there existed fundamental natural units for length, mass, time and energy. These he derived using dimensional analysis, using only the Newton gravitational constant, the speed of light and the “unit of action”, which later became the Planck constant, the units as the “Planck length”, the “Planck mass”, the “Planck time” and the “Planck energy”. The basic scale being used by the temporal golden ratio theory though by definition ***derives*** the basic wave-function for time as light on the atomic scale ***inclusive*** of the elementary particles, and thus the need to play with numbers alone in joining vast dots as per the Planck scale ***isn’t*** required. What was then ***required*** from this determination of time and space as a need to actually achieve something, was “***how***” that wave-function would develop in order to reach its goal of a perfect time-circle,  $\pi$ , as explained in paper 2 ([2]: p6-11). From that point on it was necessary to derive all the key features of that wave-function as a process of seeking  $\pi$ , as a requirement to outline how everything in that theoretical reality would work **as a science** that actually could marry up with a human drive to actually want to understand the whole kit and kaboodle. This is not the idea of Einstein predicting the behaviour of light around stars to demonstrate his idea of relativity. Here, this process of theory formulation is a requirement in order to explain “everything” we as free-thinking humans can perceive, and do perceive, of reality, and not just one or two observable features at that. On a firmer theoretical point of order, when comparing this theory for time and space with Einsteinian relativity and the Planck scale, here in this theory, the idea of Euclidean geometry is contained within the golden ratio time scaling system, **and remains patent in its application to space**, despite the idea of gravity being a curvature of space.

There is one thing though that contemporary science may find “problematic” in the slaying of the inertia ***Chimera***, namely what this new theory concludes regarding the nature of the stars. This new theory makes no secret of the fact it relies on a steady state system, in that there has been no great “big bang” beginning, and that space is not expanding, yet merely an illusion of the way light and space interact, as per the derivation of the CMBR and associated red-shift effect of light ([5]: p8-9) in the context of a steady state system. Quite simply, if the red-shift effect and CMBR are explained as a process of “proof” from a golden ratio scaling system of time which in itself has no beginning or end, “from which” space emerges, then “**there is no case for a big bang, nor is there a case for expanding space**”. Consequent to this, based on all current observations of the stars, the true nature of the stars would be very difficult to explain given the image we see of them is distorted according to the golden ratio scaling system. In other words, the stars would in fact be a far more complicated entity than previously thought possible when equating in this golden ratio scaling system for time. Not necessarily though does this new theory make astrophysical observations more “complicated”, as the issue of dark matter and dark energy is solved if one considers that expanding space is in fact an illusion of time-space and light, yet it does make the observation of the stars a far more ***interesting*** field of research for the future.



The question of “where is the **new laboratory** proof, what can this new theory predict the current theory of time and space cannot?” A mechanism of proof was proposed in paper 7 [7]; this was a **proposed mechanism** of **laboratory** proof **despite all other natural reality-based proof presented**. Results were gained that were highly suspicious of something not accounted for by contemporary physics, yet owing to not being able to properly visibly account for the phenomena in the gravielectric field chamber, owing to the difficulty involved in achieving that and the resources available at the time of paper 7 [7], the conclusion was as per paper 7 ([7]: p16):

*In short, the provisional results here were achieved in employing a RF fed aerial design into a closed aluminium chamber, affecting what appears to be a high energy projectile effect within the chamber central to the resonant (EM destructive interference) field. The results are considered provisional as they compromised the boundaries of the testing structural framework thus warranting the need for further and yet more structured testing, results that are considered nonetheless by comparison to previous testing parameters to be noteworthy.*

That is still the case, despite the clear fact that many features of investigating the worthlessness of **inertia** as a process of spatial investigation of mass reaps quite the bounty of theory joining known efforts of data processing in what may as well be described as “what do we do with “inertia” with QFT and the standard model?”.

## 7. Conclusion

This paper has presented a case against the use of “**inertia**” as a quality of space to judge the movement between bodies in motion in space, instead replacing it with a finer account of time as the golden ratio time scaling system, a scaling system which allows for space to emerge with the feature of curvature as presented by the definition of time as stated and its passage. From this basis, a complete structure of reality is more than able to be theorized, inclusive of all the key elements known to exist in reality and such respective constants and equations and associated field force effects based on such respective signatures of elementary particle definition and force field association. A subsequent paper shall bring a more scientific description to the concept of consciousness itself, as a way for any observer to better relate to not only an individual reference in space, yet how that individual reference, our, can naturally digest what is perceived into temporal contexts, as we would perceive that, that “map” of understanding **better** than being instructed this way or that without proper purpose of contextual reckoning according to our process of survival as a species. In other words, it’s a significant change for philosophy as much as this is for science. Another paper shall investigate more thoroughly the problem with labelling space with inertia, and how the idea of “light” in space minus the labelling of inertia for space can better explain the red-shift effect and do without the need for the proposed manifolds of dark energy and dark matter, in once again highlighting that the structure of space as “inertia” is the key problem, the chimera, of physics today.

### Conflicts of Interest

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

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