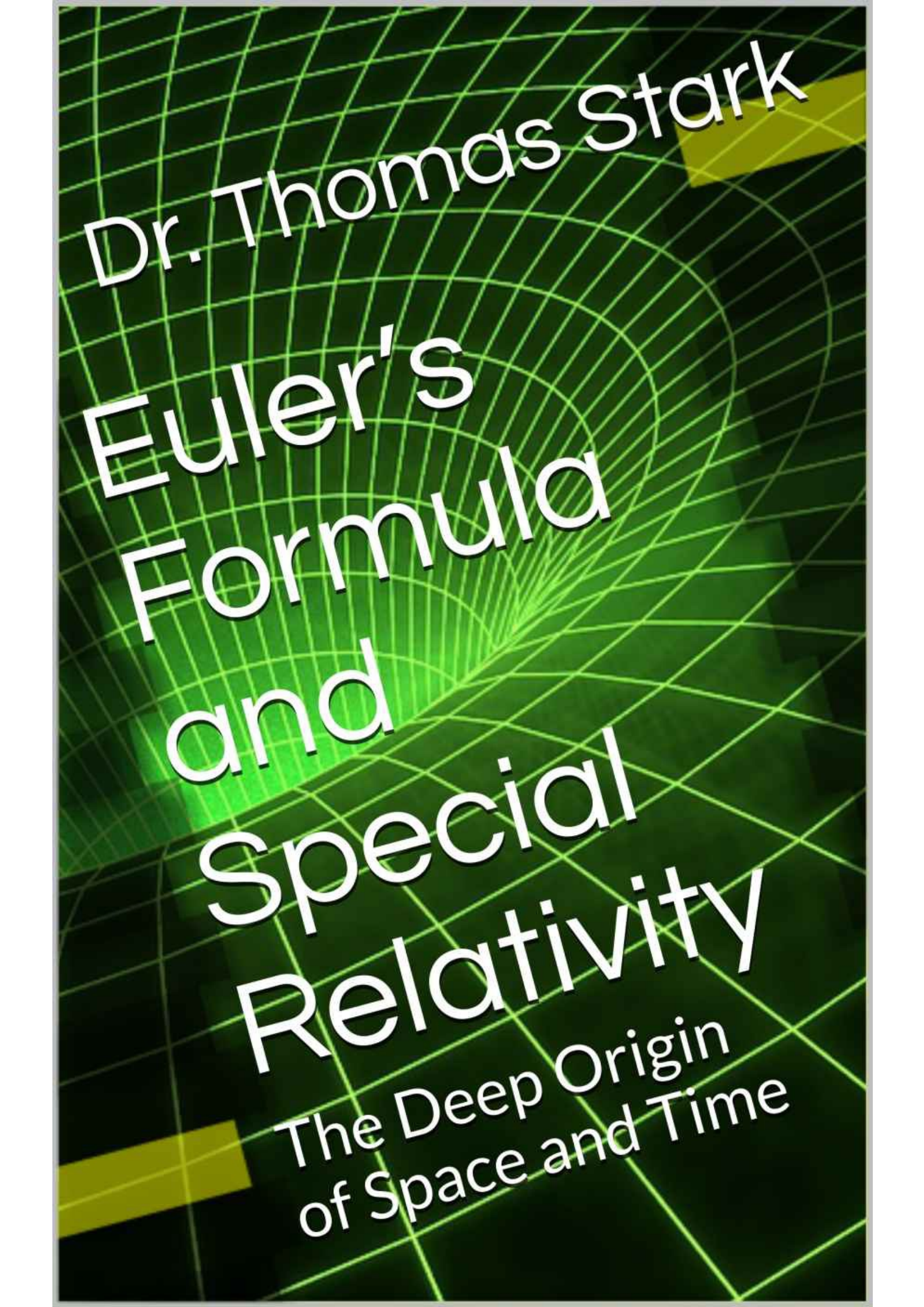


The background is a dark green field with a complex pattern of lighter green lines. These lines form a grid that appears to be receding into the distance, creating a strong sense of perspective. The lines are slightly curved, giving it a non-Euclidean or relativistic feel. There are some yellowish-green rectangular shapes scattered in the background, adding to the abstract aesthetic.

Dr. Thomas Stark

Euler's
Formula
and

Special
Relativity

The Deep Origin
of Space and Time

Euler's Formula and Special Relativity: The Deep Origin of Space and Time

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The Ontological Mathematics Foundation

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Introduction

What is the greatest scientific mystery of modern times, the mystery that would stump even Sherlock Holmes? It is this ... why, despite the greatest intellectual effort in scientific history over many decades, involving the most knowledgeable scientists there have ever been, in larger numbers than there have ever been, with the best resources available to them in all of history, including vast, multi-billion-dollar particle accelerators, is science unable to reconcile its two greatest theories: quantum mechanics and Einstein's general theory of relativity? How is it possible that two theories that have been fantastically successful, and fantastically well verified in all sorts of way, fail to communicate with each other? There must be something drastically wrong with one or both of these theories, or there is something drastically wrong with science itself. Why is science so incapable of figuring out what the problem is? Why is there no scientific research into why science cannot unify its two most successful theories?

Doesn't it strike scientists as fundamentally suspicious that they can't make any substantive progress? Doesn't it make them call into question the entire basis of their science? How can the two jewels of science be so resistant to being placed in a single crown? How can they be so contradictory? Doesn't it occur to scientists that something somewhere is seriously amiss with their enterprise? Where is the scientific investigation into why this paradox exists? Why does science refuse to look at itself in the mirror and confront some harsh truths about itself?

Scientists always say how open-minded they are. Where is the evidence? They seem amongst the most closed-minded people on earth, and most afflicted by groupthink. In religion, heretics are ostracized. In science, heretics have their funds withdrawn. So every practicing scientist is a good conformist and careerist.

The underlying reason for science's problems is that there is a fundamental ingredient missing from science: the *tertium quid* (the third thing), which is the common substructure supporting both quantum mechanics and general relativity. ("Tertium quid" refers to an unidentified and more fundamental third element that is present in combination with two known elements.)

To understand what science's tertium quid is, it's necessary to consider the elementary issue that the vast majority of scientists shy away from, namely what preceded the Big Bang, what *caused* the Big Bang? The reason why scientists refuse to engage with this question is that they imagine they

are being drawn into metaphysics, or even – God forbid! – religion. They believe they are being yanked out of their comfort zone into the arena of speculation and faith. It has never once occurred to them that science has a *necessary rational precursor*, i.e. you can't have science unless an essential prior ingredient is in place.

Science does not exist in its right, as something wholly independent and *sui generis*. It is something derived from an older – indeed *eternal* – parent. That parent isn't "God". (As if!) It is *mathematics*.

Plato said that the sensible world is an inferior copy of the intelligible world of perfect, immutable, eternal Forms. What he would say today is that the sensible (empirical), scientific world is derived from the intelligible (rational), mathematical world.

Science is contingent and temporal. Mathematics is necessary and eternal. Science deals with truths of fact. Mathematics deal with truths of reason. If you want the *ultimate reasons* for things, you have nowhere else to go but mathematics. Because science deals with facts and not reasons (it is preoccupied with "how" rather than "why"), it cannot penetrate to the rational layer that explains all theories, including relativity theory and quantum mechanics, and why they succeed or fail. This deficiency is why science breaks down and becomes incoherent. A collection of disparate facts does not and cannot explain reality. Only reasons can explain reality. Moreover, these reasons must be necessary, absolute, infallible, immutable, complete, consistent, perfect and eternal. Only mathematics qualifies.

It's an extraordinary thing, but every attempt to *rationally* justify the existence of "God" is much better understood as an attempt to justify the existence of mathematics. It's not "God" that creates the universe, it's math. It's not God that is perfect, flawless and exists forever, it's math. It's not God that is unerring, all-powerful, all-knowing, all-seeing and ubiquitous, it's math. "God" is simply the human attempt to turn math into a person to whom humans can emotionally relate. When you strip away all of the human characteristics that have been projected onto God, what remains is pure math. Math, not God, is what guarantees the "soul" and the "afterlife". The soul is simply an immaterial mathematical singularity, defined by Euler's Formula (as we shall demonstrate in this book), and the afterlife is inevitable since mathematics and mathematical souls are *eternal*, and reflect the most basic law of energy that energy can be neither created nor destroyed, which logically means that it has existed forever, can never cease to exist, and cannot be created out of nothing, as science bizarrely claims.

Science seems like Abrahamism at times with its claim that something can be produced from nothing at all, like a cosmic rabbit out of a magician's hat.

Carl Sagan, the patron saint of science, said, "Extraordinary claims require extraordinary evidence." Science never has, and never could, provide any evidence that existence can come from non-existence, hence it is hoist by its own petard. It is making demented claims, while failing to advance any evidence to support them. It therefore qualifies as an irrational quasi-religion.

Science has committed itself to a belief that energy *can* be created out of nothing, provided it is energy that overall balances to zero. This flagrantly contradicts the law of the conservation of energy. Wikipedia says, "In physics, the law of conservation of energy states that the total energy of an isolated system remains constant – it is said to be conserved over time." Plainly, the total energy is *not* being conserved over time, and the total energy is *not* remaining constant, if energy can be created out of non-existence. If energy can be created out of non-existence, even if it is required to balance to zero, this process should be happening all the time, everywhere, rendering stable existence impossible. Nothing could possibly prevent it. Self-evidently, we do not live in such a universe.

The fact that science seriously argues that this is possible proves how systemically flawed science is. These flaws are abolished by eternal mathematics, which defines eternal mathematical energy, which can be neither created nor destroyed under any circumstances, and is the root of all energy observed in the contingent, temporal scientific world.

Science could not exist without mathematics. The temporal cannot exist without the eternal to support it. The contingent cannot exist without the necessary. The relative cannot exist without the absolute. Science rejects all three of these eternal truths of reason, while mathematics fully supports them.

The biggest question of all for science is this: Was there a *mathematical world* before the scientific world ... was the state that preceded and caused the Big Bang a state of pure analytic mathematics? Was mathematics the eternal, necessary world that produced the temporal, contingent Big Bang universe of science?

In this book, we are going to show you exactly where space and time come from, exactly where matter comes from, exactly what mind is, and exactly what reality is. All we require is one thing, the most powerful tool

of analytic mathematics, Euler's Formula: $e^{ix} = \cos x + i \sin x$.

We are going to link this formula to Einstein's special theory of relativity and show that Einstein's theory is: a) derived from Euler's Formula, and b) a catastrophic misinterpretation of the mathematics that underlies relativity theory, stemming from the fact that Einstein supported the scientific philosophy of empiricism and materialism rather than the mathematical philosophy of rationalism and idealism.

All of the problems of science dissolve when it is understood that mathematics underpins science, that the eternal underpins the temporal, that the necessary underpins the contingent, that the absolute underpins the relative, that the rational underlies the empirical, that the intelligible underlies the sensible, and that mathematical idealism based on dimensionless mathematical atoms (monads) underlies scientific materialism based on dimensional scientific atoms.

Once these truths are understood, it becomes simplicity itself to demonstrate that the mind-matter problem first posed by Descartes is fully resolved by Euler's Formula. Euler's Formula leads directly to ontological Fourier mathematics based on monads, with mathematics supplying an eternal frequency domain of mind, and giving rise to a temporal, spatial domain of matter via the extraordinary mathematical properties of sine and cosine waves.

When the ontology of the Lorentz transformations – which provide the mathematical core of Einstein's special theory of relativity – is applied to Euler's Formula, we see exactly how Fourier mathematics works, and why it allows the mind to become a rigorous object of mathematics, wholly separate from the human body, and able to survive the death of the human body.

It's all in the math. To understand reality, you simply have to understand that science is built on top of mathematics. When you get the scientific empiricist irrationalism out of the way, you are left with nothing but rationalist mathematics, which explains *everything* in the universe. There is nothing in existence that cannot be traced back to Euler's Formula, which has been dubbed *The God Equation*. We don't need God to create the universe. We *do* need the God Equation.

The Singularity

Imagine a world without space and time. What is such a world like? It's like nothing you know, nothing you can easily comprehend. It's the world of ontological mathematics, the mathematics of existence. When you strip out space and time, you are left with nothing but the bare building blocks of existence, from which space and time are subsequently constructed.

Without space and time, you have nothing to deal with but pre-space and pre-time, which are wholly mathematical. The Big Bang universe of space and time comes from the mathematical Singularity of pre-space and pre-time. Science is nothing but mathematics with space and time added. Without space and time, science reduces to mathematics.

Space and time are defined by *extension*. When you remove space and time, you are necessarily left with the world of *non-extension*. This is a world outside science given that the whole of science is framed by space and time, and makes no sense without them.

Descartes, the first modern philosopher, famously divided the world into two incompatible substances: 1) matter (*res extensa* = extended substance), and 2) mind (*res cogitans* = thinking substance). Extended things never think, while unextended things do nothing but think.

Descartes said, "I am a being whose whole essence or nature is to think, and whose being requires no place and depends on no material thing."

For Descartes, mind and body were two radically different things. This is the position known as "dualism". When people imagine their mind or soul surviving death, they are, whether they realize it or not, subscribing to Cartesian dualism. Science, which is more or less synonymous with atheism, vigorously rejects this position. Science is exclusively about materialism, hence insists that mind is a product of matter, in some mysterious way that no scientist has ever explained or defined.

Descartes came close to being the most intelligent human being of all time. He just needed one further insight, which he was actually excellently positioned to make given that he was a mathematical genius as well as a philosophical genius. Mathematics was exactly what he needed to complete his depiction of reality. Indeed, he said, "With me, everything turns into mathematics. ... Mathematics is a more powerful instrument of knowledge than any other that has been bequeathed to us by human agency."

The mathematics of Descartes' day was not sufficiently powerful for him to make the leap to ontological mathematics, i.e. to claim that ultimate reality is mathematical, and that mind and matter are two expressions or

modes of mathematics, one being unextended (dimensionless), and the other extended (dimensional). Moreover, the religious climate of the day would not have accommodated such a radical suggestion, unless it were claimed that mathematics was God's language, through which he executed his creative endeavors and his divine will.

Descartes clearly knew or intuited that there was more knowledge to be revealed when he said, "I hope that posterity will judge me kindly, not only as to the things which I have explained, but also to those which I have intentionally omitted so as to leave to others the pleasure of discovery."

Leibniz, another mathematical and philosophical genius, and Descartes' true successor, ventured even deeper into the world of ultimate rational reality than his illustrious predecessor. To complete their brilliant work, it needed others to continue down the road of mathematics, guided by the philosophy of rationalism. Instead, a catastrophe intervened. The person responsible was the man commonly regarded as the greatest scientist of all time ... *Isaac Newton*.

Newton wasn't a philosopher and wasn't a rationalist. He was the most contradictory of people: a religious extremist and scientific empiricist rolled into one. He almost certainly suffered from autism, which characterizes many scientists to this day.

Newton added advanced mathematics to the "natural philosophy" of materialism and empiricism, and thus created modern science. He had nothing to say about the mind, except to deny that it was unextended, as Descartes and Leibniz insisted. He subscribed to the doctrine of the theological philosopher Henry More that the spiritual world was extended, just like the material world (hence, in More's view, why mind and matter could interact).

Where Newton succeeded in mathematizing empirical natural philosophy, Descartes and Leibniz failed in mathematizing rational metaphysics. They were on the correct intellectual track, but could not convert their system into a practical and successful enterprise. Newton was on the wrong track but *could* convert his system into something practical and successful ... thanks to mathematics.

Newton succeeded where Descartes and Leibniz failed because he relied on "extended" mathematics, whereas they needed a mathematics of the unextended, a much more difficult mathematical problem, much harder to visualize, and impossible to support via direct observational evidence.

Science is all about extended mathematics involving space, time and

matter. What Descartes and Leibniz were trying to do, although they weren't entirely conscious of it, was to construct an unextended mathematics, dealing with non-space, non-time and mind. Where Newton dealt with physics and matter, Descartes and Leibniz were concerned with metaphysics and mind. Mathematics in their day simply wasn't developed enough to accommodate mind and metaphysics. Now it is, which means the game has totally changed.

It is now possible to fully replace scientific materialism and empiricism with scientific idealism and rationalism. To put it another way, it is now possible to replace Newton's conception of reality with that of Descartes and Leibniz. This will usher in the ultimate paradigm shift, and completely change how humanity sees reality. Science will become rational and logical rather than empirical and observational, and all of the irrational premises on which current science is built will vanish.

Philosophy, *bad philosophy*, is what is holding science back. Science doesn't even recognize that it *is* a philosophy, such is its lack of self-awareness and intellectual integrity.

Science is emphatically not a rationalist philosophy. It is an empiricist philosophy, hence an irrationalist philosophy. Scientists believe that science is on the side of reason and logic. It's not. Mathematics is. The reason and logic that appear in science are inherited from mathematics. When science does not use mathematical arguments, it descends into irrational farce. The vast majority of what scientists say about quantum mechanics and cosmology is little short of gibberish, and is provably false.

The True Dualism

When Descartes spoke of the dualism of mind and matter, he failed to grasp a more fundamental truth that is now all too apparent. The true dualism is between physics and metaphysics. Physics is empiricist mathematics that has matter as its subject. Metaphysics is rationalist mathematics that has mind as its subject. Mind versus matter is simply unextended mathematics (metaphysics) versus extended mathematics (physics), mathematics that can't be visualized versus mathematics that can.

Mathematics is mind. Science is body. Mathematics is rationalism. Science is empiricism. Mathematics is intelligible. Science is sensible. That's reality in a nutshell.

Mathematics relies on reason and logic, and can be conducted without any reference to the senses. Science, by contrast, cannot do without the

senses, and always privileges them over reason and logic. Religion, meanwhile, relies on the emotions and mystical intuitions, and has no connection with the senses (science), or reason and logic (mathematics).

Philosopher Gilbert Ryle ridiculed the idea of Cartesian mind as an entity capable of interacting with matter, and dismissed it as a category error, derisively referring to the Cartesian mind as “the ghost in the machine.”

There is no “ghost” if mind is mathematics (unextended mathematics), and matter is also mathematics (extended mathematics). There is then nothing to prevent their interaction since they are both aspects of mathematics.

Echoing Ryle, P. C. W. Davies and J. R. Brown wrote a book called *The Ghost in the Atom*. But there is no ghost in the atom any more than there is a ghost in a collection of atoms (a body, or a machine). Mathematics is the invisible entity that controls atoms, and mathematics is the most rational thing you can get. There is nothing mystical or ghostly about it. The “ghost” – the entity which is deemed so ridiculous by scientists – is in fact dimensionless mathematics, the opposite of anything “spooky”.

All dimensional things are controlled by dimensionless things. All physical things are controlled by metaphysical things. All matter is controlled by mind. All living bodies are animated by the living minds that direct them.

Plato and Aristotle knew that the world could be intelligible only if matter – the stuff we see and with which we interact – has invisible form controlling it, form being the entity that organizes and unifies a given collection of matter into a single, discrete object. Form provides the definition and actuality of the object. Without it, matter would be undefined and unintelligible ... pure potentiality, and nothing else. Leibniz brilliantly carried forward these ideas in his conception of the monadic mind. It’s now clear that he, Plato and Aristotle were right all along.

Dimensionless mathematics is the unseen form of the world, while “matter” is what you get when mathematics is processed via the mathematical dimensions of space and time.

Mind is that which exists when space and time do not apply. Matter is that which exists when they do. How simple is that?!

The mind is immaterial and outside space and time. Mind is an unextended entity that links to extended matter via the well-known mathematical techniques developed by Joseph Fourier in the 18th century.

The mind belongs to the ontological Fourier frequency domain, while matter belongs to the ontological Fourier spacetime domain.

There is no mystery here. The problem for humanity lies in the fact that so many people – including scientists – regard mathematics as unreal, abstract and merely a manmade language, rather than as real, concrete and nothing less than the language of Nature itself.

Math existed before the first human, and will still exist after the last human has perished. Mathematics is the language of eternity, of eternal form, of eternal intelligibility. Mathematics is the answer to eternal existence. It is mathematics, not God, that exists eternally, perfectly, immutably, absolutely and infallibly. Math necessarily exists forever. It is *impossible* for math not to exist.

Scientists are not rationalists. They are empiricists, i.e. *irrationalists*. That's their central problem. That's why they keep thinking of math as a ghostly subject that they can't pin down rather than as the concrete foundation of science, and indeed of everything else.

Mathematics is the most concrete thing you can get. You can falsify science, but you can't falsify mathematics. You can verify, but not prove, science, whereas mathematics is all about proof, hence has no need at all of verification.

In many ways, science, as currently conceived, is the opposite of mathematics. Science won't achieve a final theory of everything until it realizes that science is merely an extension of unextended mathematics, and that unextended mathematics is where all the ultimate answers and explanations lie.

Forget the Big Bang universe of space, time and matter (the scientific universe). The thing that counts is the mathematical universe – the analytic Singularity – that preceded and caused the Big Bang universe. How can you understand the Big Bang universe of science if you do not understand its cause? Its cause was a mathematical universe – an analytic Singularity of eternal mental energy. What could be more logical?

The extended universe of space, time and matter was preceded by an unextended, immaterial universe outside space and time, i.e. a Singularity. To put it another way, the cosmic body (the physical universe of science) was created by the cosmic *mind* (the mental universe of mathematics), which *still* exists, and is completely controlling the physical universe.

To get to body from mind all you are required to do is add extension, and we shall mathematically explain exactly how it is done in this book.

No miracles are involved. No one needs to invoke gods, spirits, probabilities, indeterminism, chance, accident, or anything else. It is all pure, inevitable, inexorable, rational, deterministic mathematics.

When Einstein said that “God” does not play dice, he was incontestably correct. “God” is pure math, and pure math at all times obeys the principle of sufficient reason, i.e. for every fact, there is an exact reason why it is thus and not otherwise. Science once shared this understanding of reality before becoming disastrously misled by its empiricist philosophy. In a rational mathematical universe, unlike an irrational scientific universe, nothing ever happens for no reason. Explicable causality, not inexplicable probability, drives the physical universe.

The reason why Descartes’ apparently dualistic system isn’t dualistic at all is that it is based on mathematics, hence is monistic. Mind and matter can communicate because there is no obstacle to unextended and extended mathematics communicating with each other. In fact, the latter is entirely derived from the former. That’s what the Big Bang is all about. The extended, empirical universe of space, time and matter – which science studies – is born from a perfect, rational, analytic, unextended, mathematical Singularity – which mathematics studies. What stands beyond physics is metaphysics ... and metaphysics is simply unextended mathematics. Metaphysics versus physics = rationalism versus empiricism = mind versus matter = unextended mathematics versus extended mathematics.

The “mind” is not something bizarre, mysterious and unfathomable. Mind is unextended mathematics, i.e. pure mathematics, shorn of “space”, “time”, “matter”, and human senses and experiences.

The unextended mathematical Singularity is the true version of Plato’s perfect, immutable, eternal domain of absolute, infallible Truth outside space and time. The Truth *is* mathematics. Mathematics is the language of existence, of perfection, of the eternal truths of reason, which, by definition, have applied forever, and can never *not* apply. What preceded the Big Bang was a purely mathematical state, not “God”, or anything religious, spiritual or mystical. And definitely not non-existence, as science would have you believe.

The mathematical Singularity is the perfect home of the Principle of Sufficient Reason, the True “God”. “God” is not a being who manifests perfect reason. God is perfect reason itself, and perfect reason creates beings since perfect reason is nothing less than Plato’s Form of Life. Mathematics *defines* life. Life is a mathematical property.

The reason why science breaks down as it explores the world of the Singularity – where quantum mechanics and general relativity are unified – is that it is using entirely the wrong tools, concepts and ways of thinking. Science keeps using extended, empirical thinking where it should be using unextended, rational thinking.

Leibniz – with his concept of monads (unextended minds) – was the man who got closest to understanding the true nature of reality. Three hundred years after Leibniz's death, his monads can now be perfectly explained via mathematics. The key to Leibniz's *Monadology* is Euler's Formula, the most important equation ever devised. It is none other than the God Equation, the equation that explains the whole of existence. No other equation can do so. It is unique. It is sublime. It is divine.

The God Equation

The power of Euler's Formula is well illustrated through Einstein's famous special theory of relativity. Euler's Formula is the true basis of Einstein's theory, yet also reveals that Einstein committed several acute interpretive errors, which have plagued science ever since. Einstein misinterpreted his own theory precisely because he was thinking as an empiricist rather than as a rationalist.

Einstein said, "Imagination is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand." In fact, mathematics, not imagination, embraces the entire world, and is all there ever will be to know and understand.

Had he been more imaginative (!), Einstein would have realized this. Like all scientists, he suffered from a cataclysmic *lack* of imagination ... a wholesale inability to imagine a world without space, time and matter. Sensing types, such as Einstein, are the opposite of intuitive types. Intuitives have enormously more powerful imaginations.

The most important component of Einstein's special theory is the postulate that the speed of light in a vacuum is the same for all observers, regardless of the motion of the light source. Nothing is more extraordinary than the absolute character of the speed of light. Einstein did not attempt to explain this singular fact of nature. He merely accepted it as true, and built his theory around it.

If, as Newton believed, the speed of light is *not* fixed then space and time *must* be fixed. If, by contrast, the speed of light *is* fixed then it's space and time that are *not* fixed.

For Newton, the speed of light could go up to infinity. Infinity, in his thinking, was the speed deployed by God. Gravitational effects were instantaneous in Newton's theory of gravity because God – who was equivalent to absolute space in Newton's system – could literally transmit the necessary information infinitely fast.

When Einstein abolished infinite speed and made the speed of light the cosmic speed limit, it signified that all forces, including gravity, took time to be transmitted. It also meant that Einstein had killed off Newton's God.

It never once occurred to Einstein that the fact, proclaimed by his own theory, that no material thing could ever be accelerated to light speed – and hence that light speed was an ontological boundary and barrier – indicated that light belonged to *a different category of existence* from matter. All

material things travel slower than light speed. That immediately begs the question of how light can belong to the material world if it behaves differently from all material things. The answer, of course, is that it does *not* belong to material world, which is exactly why it exhibits entirely different behavior. Science is ideologically incapable of reaching this simple conclusion.

In Cartesian philosophy, there is only one thing that cannot be matter, and that is *mind*. The inescapable conclusion is thus that light is the agent of mind, and what indeed could possibly be a better candidate? The Singularity that precedes the Big Bang is a Singularity of *pure light*. Pure light = pure mathematics = pure mind. Light, ontologically, is what unextended mathematics actually is. The “Big Bang” is a light event, a mental event. In particular, the Big Bang involves the breaking of the perfect symmetry of light. “Matter” is broken light ... *asymmetric* light, recalcitrant, sluggish thought.

In mathematical terms, as we shall see, the domain of light is ruled by the mathematical property of *orthogonality*. The material universe, by contrast, is ruled by the property of *non-orthogonality*. Dimensionless existence is orthogonal existence, while dimensional existence is non-orthogonal existence. It really is that simple.

Dimensionality flows from the loss of perfect orthogonality. If perfect orthogonality is restored (as it always is in the end), the physical universe is eradicated, and reality returns to the Singularity of pure light.

God did not say, “Let there be light.” Light is eternal. In fact, light *is* God, the *real* God.

So, is light actually mind, as we have asserted? Let’s see if light does indeed have exactly the properties that Descartes attributed to mind. To do so, light must be immaterial, massless, unextended, outside space and time, and be constantly in motion (because if thinking stopped, mind would cease to exist ... a mind is simply that which thinks, and can do nothing else; it thinks *forever*).

The Cosmic Mind that controls the Physical Cosmos is a Singularity of light. Light controls matter. Matter is *made* from light, from the “breaking” of light. Ultimately, all that exists is light, and light is just ontological mathematics, i.e. mathematics exists *as* light. Mathematics is not some bizarre, unreal abstraction. Mathematics is light itself. The light from the sun is mathematics. We are bathed in pure mathematics every day. Mathematics is life. Mathematics is mind. The biggest mistake humanity ever made was

in failing to understand what mathematics actually is. Without light, we would be dead. Without light, we would not exist. Nothing would exist.

The Grand Unified, Final Theory of Everything is the theory of light, which is simply mathematics! Everything comes from math, everything comes from light, everything comes from mind. “Matter” does not exist in its own right. It is simply a special mode of mind, resulting from specific mathematical properties of mind.

Light and Immaterialism

Matter can be defined as that which can never be accelerated to light speed, because it would require an infinite amount of energy to accomplish this. The only thing that is not subject to this prohibition is, of course, light itself. Light, therefore, does not belong to the material world. It belongs to a different category of existence, namely *mental* existence.

It is extraordinary that science considers light part of the material world when it self-evidently isn't. It *interacts* with the material universe – exactly as mind interacts with body – but is not itself material (just as mind is not).

Light is that which matter can never reach in terms of speed, hence light is not the final material entity, but the first mental entity. It is separated from matter by the clearest of all ontological barriers.

Light and Masslessness

“The word ‘mass’ is given two meanings in special relativity: one (‘rest mass’ or ‘invariant mass’) is an invariant quantity which is the same for all observers in all reference frames; the other (‘relativistic mass’) is dependent on the velocity of the observer.” – Wikipedia

The photon – the particle of light – has zero rest mass. The rest mass of an object is the inertial mass it possesses when it is at rest, i.e. not moving in space. Everything in the material world has a non-zero rest mass. Light does not, hence light cannot belong to the material world. Once again, we see that light belongs to a different category of existence. The only alternative to material existence is mental existence. There is no other type of existence.

There are only minds and bodies; the mental and the material. Photons – the light carriers – belong to the mental, not the physical.

Before Einstein, an object's mass was regarded as a constant. Its rest mass was its mass in *all circumstances*, regardless of speed. Einstein's special theory of relativity ushered in the notion of relativistic mass (i.e. dynamic, non-rest mass), different from rest mass, and which would keep

changing as velocity kept changing.

If light speed is fixed, space and time cannot be fixed. If space and time are not fixed then mass cannot be fixed either since mass is implicitly defined with respect to space and time. The condition of light speed being fixed is the criterion for mental existence. The condition of material existence is space and time not being fixed, ergo light does not belong to material existence.

John Wheeler wrote, “Mass tells spacetime how to curve, and spacetime tells mass how to move.” This shows how intimately mass is related to space and time. Mass is just an aspect of spacetime. You cannot have physical mass without spacetime. Likewise, you cannot have physical mass in non-spacetime (a singularity). Light has no physical mass because it is not in spacetime.

Light *interacts* with spacetime. It is not *part* of spacetime. When we perceive light, we unavoidably perceive it from a spacetime perspective, which gives us a wholly false notion of its true nature. *We* are in spacetime. Light isn't. We can't help but perceive all things as being in spacetime – we are permanently wearing spacetime goggles – even if they are *not* in spacetime. If we were wearing green goggles, everything would appear green, including everything that wasn't green. The task is to try to conceive of light from its own perspective, not ours, i.e. to mentally remove our spacetime goggles. Only math can accomplish this transformation of perspective.

Nothing is more detrimental to our ability to think about ultimate reality than our spacetime goggles ... the basis of materialism and empiricism. If we could take off our spacetime goggles, no one would be a materialist or empiricist, and everyone would have a radically different conception of light. Light doesn't move through spacetime. Spacetime moves through light!

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Any object in motion has kinetic energy. According to Einstein, an object's mass increases as its energy increases. Therefore, the mass of an object is at its *minimum* when it is stationary. Its mass would be at its *maximum* if it could travel at light speed, but Einstein's equations show that its mass would then have to be *infinite*. However, this is a contradiction since light itself does not have infinite mass. In fact, it has no mass.

In special relativity, an object's dynamic mass, m , is calculated via the following equation:

$$m = m_0 / \sqrt{1 - (v^2/c^2)}$$

where m_0 is the rest mass, v is the object's velocity through space, and c is the speed of light.

When $v = 0$ (i.e. the object is stationary in space), $m = m_0$. As v increases, so does m . If $v = c$, m is infinite. Nothing in the material world has infinite mass, hence no material thing can be accelerated to light speed. It would require infinite energy to do so. This proves that there is a definitive ontological boundary between matter and light (mind). They do not belong to the same category of existence. It's therefore a category error to treat light as part of the material world. Science, since it refuses to accept the existence of mind as a real entity, independent of matter, continuously commits this category error, with fatal consequences for the coherence of its theories.



There is a fundamental problem with Einstein's equation. Light moves at light speed, yet does not have infinite mass. In fact, it has no mass. This means that in order for anything material to travel at light speed, it would have to cease to be material and become mental, i.e. it would have to undergo an ontological phase transition. We see exactly the same phase transition in the formation of black hole singularities. Massive stars implode to nothing at all. They leave spacetime entirely.

Any material thing approaching light speed would become so massive that it would collapse into a singularity, just like a huge star. Every moving object would thus have its dynamic equivalent of the Schwarzschild radius.

Wikipedia says, "The Schwarzschild radius ... is the radius of a sphere such that, if all the mass of an object were to be compressed within that sphere, the escape velocity from the surface of the sphere would equal the speed of light. An example of an object where the mass is within its Schwarzschild radius is a black hole. Once a stellar remnant collapses to or below this radius, light cannot escape and the object is no longer directly visible outside, thereby forming a black hole. It is a characteristic radius associated with every quantity of mass."

This means that the material world of mass is completely bounded and contained by the immaterial mental world of no mass. When anything in the material world becomes too massive, it leaves material existence and becomes mental. Nothing material can travel at the speed of light because

only mental things travel at that speed. To reach light speed, a material object does not need infinite energy. Rather, it needs to leave the spacetime world of matter, and it inevitably does so as soon as its mass reaches a certain critical point (determined by what we might designate as its “Schwarzschild velocity”).

The material world exists *inside* the mental world, in the sense that any means you use to leave the material world will necessarily involve your undergoing a phase transition to mental existence. When people wonder what space is expanding into, the answer is that it’s expanding into *mind*, not into non-existence. You can escape from the material world to the mental world, but you cannot escape from the mental world to anywhere beyond that. There is nowhere beyond the mind! The mind is the true universe. The false universe is the material construct – the Matrix – that resides within the mind, created entirely by mathematics.

All of these conclusions are implicit in the special theory of relativity, yet they are scrupulously avoided and ignored by small-minded, dim-witted, unimaginative and unintuitive scientists, who are entirely ruled by their senses, and never once consider the possibility of dimensionless, mental existence ... even though it’s staring them right in the face via their own equations!

Scientists hate rationalism, hate reason and hate logic. The only conclusions they entertain are those compatible with materialism and empiricism. That makes science a closed-minded faith, the opposite of what it purports to be.

Time Dilation

The “Lorentz transformation” – the mathematical engine of special relativity – predicts the phenomenon of time dilation, i.e. time can slow down, implying that seconds pass more slowly, that a second is “expanded”.

To a stationary observer, a clock in motion slows down relative to a stationary clock (but the effect is not noticeable on earth without high-precision clocks).

If it were travelling at light speed, the clock would tick infinitely slowly, i.e. time would stop for the object (it would take forever for a second to pass since a second has become infinitely dilated). The relevant equation is:

$$t = t_0 / \sqrt{1 - (v^2/c^2)}$$

where t_0 refers to the passage of time in a stationary reference frame, and t

to the passage of time in a moving reference frame.

Given this equation, light does not and cannot experience time. Anything that does not and cannot experience time cannot belong to the material world, a temporal environment.

Mind does not belong to the material world. Mind is made of light. Mind does not experience the passage of time, only body does. It is our body that ages, not our mind.

Our bodies are made of matter and exist in the material world of spacetime. Our minds are made of light and exist in the immaterial world of non-spacetime (the Singularity).

We do not die when our bodies die because our minds were never in spacetime in the first place! Our dead bodies turn to dust. Our minds do not. They simply attach themselves to a new body via the process known as “reincarnation”. This is a process involving Fourier mathematics. There’s nothing mysterious it. It’s not a religious or spiritual phenomenon. Reincarnation is strictly mathematical.

All “bodies” are actually contained within the Cosmic Mind (the collection of all individual monadic minds), i.e. if you understood bodies properly you would realize they are mental constructs. They only *seem* physical.

Bodies exist within the Collective Mind, and individual monadic minds link to them, i.e. “matter” belongs to the Collective Mind, while mind, as we conventionally understand it, is expressed through individual minds. There is no such thing as “matter” in the physical sense proposed by scientific materialists.

Matter is formally holographic, but this holograph is perceived by our senses as “solid”.

Length Contraction

The Lorentz transformation for distance is:

$$l = l_0 \sqrt{1 - (v^2/c^2)}$$

To a stationary observer, a measuring ruler in motion undergoes contraction relative to a stationary clock. If it were travelling at light speed, the clock would measure no distance at all, i.e. length would be maximally contracted (just as time was maximally dilated in the previous case). Distance would not exist for the ruler (just as time did not exist for the clock).

The Impossibility of Rest

Light has zero rest mass and is *never* at rest. What does “being at rest” actually mean? A parked car may seem to be at rest, but it’s on a moving planet, hence is partaking in that motion. Even if it were on some hypothetical perfectly stationary planet, it would *still* be moving. Why? Because spacetime things that are stationary in space are nevertheless *moving in time*. Likewise, if it were possible for spacetime things to be stationary in time, they would be moving in space.

Everything is always in motion. The only question is where the motion is being expressed.

Brian Greene, in *The Fabric of the Cosmos*, wrote, “...the maximum speed through space is reached when all light-speed motion through time is fully diverted into light-speed motion through space – one way of understanding why it is impossible to go through space at greater than light speed. Light, which always travels at light speed through space, is special in that it always achieves such total diversion.”

But this statement must be false. For one thing, light is massless and unextended, which by definition means that it is not in the material world at all. Greene has failed to understand the most basic point: if light isn’t in time, it can’t be in space either. It is outside both. When we switch on a light, light doesn’t flood into spacetime. Rather, spacetime interacts with the Singularity of light (the frequency domain as opposed to the spacetime domain), and our compulsory spacetime goggles generate the illusion that light is moving towards us.

Spacetime moves through light. Light doesn’t move through spacetime. Light doesn’t move *anywhere* in space and time. It isn’t *in* space and time. That’s why the speed of light is the cosmic speed limit. That’s why light is massless. That’s why light is never at rest. That’s why light is maximally length contracted and maximally time dilated. That’s why light belongs to an ontologically separate category from matter. That’s why nothing material can be accelerated to light speed. That’s why light is the boundary for matter. That’s why light provides the absolute condition for existence, while space and time are “relative”.

Greene wrote, “Special relativity declares a law for all motion: the combined speed of any object’s motion through space and its motion through time is always precisely equal to the speed of light.”

This applies to all material things, but it does not of course apply to light itself, which doesn’t have a combined motion through space and time. Light

does not belong to the material world; it belongs to the mental Singularity of frequency. Light simply isn't part of space and time, and that's exactly why nothing in space and time can go faster than light.

Green wrote, "The key fact, Einstein discovered, is that these two kinds of motion [through space and through time] are always complementary."

That's correct, but not for light itself. Light is the condition external to material existence, external to space and time. It is what conditions and limits the spacetime world of matter. It is what *surrounds* matter. We are all mathematically contained within a pure, eternal Singularity of light, i.e. we are all located within the Cosmic Mind. The properties of mathematics give rise to all of the things that scientists mistake for a material world independent of mind.

Physicist Carlo Rovelli wrote a popular science book called *Reality Is Not What It Seems*. Indeed! And it is absolutely nothing like how he imagines it. He is hoist with his own petard.

Brian Greene claims that light travels at light speed through space, but not through time. What would be the sufficient reason for such an extraordinary and improbable asymmetry? Space is not privileged over time, and therefore there is no such reason. Light would be totally unfathomable if it behaved as Greene suggested. Nature isn't arbitrary.

Einstein made it a postulate that light was the speed limit for the material world. That is simply to beg the question. Why should the speed of light be absolute, while no other speed is? Isn't the whole point to explain such things, rather than sidestep the question by declaring such unexplained things as "postulates"?

By exactly the same token, Greene is making it a postulate that light (in his opinion) is maximally diverted through space, hence ignores time. He hasn't offered any explanation for this. Moreover, the inherent symmetry present in the Lorentz transformations self-evidently demonstrates that he is wrong. Whatever is true for space is also true for time, and vice versa. If light is outside time, it is assuredly outside space too. How can an entity without extension, without any spatial dimensionality or mass, travel through space? It's impossible.

Light has *effects* in space and time, but it is not *in* space and time. Its effects in space and time are caused by spacetime moving in relation to the fixed Singularity.

Greene wrote, "And just as driving due east leaves no motion for travelling north, moving at light speed through space leaves no motion for

travelling through time!” By the same logic, travelling at light speed through time leaves no motion for travelling through space.

Greene wrote, “Time stops when travelling at the speed of light through space.” By the same logic, space stops when travelling at the speed of light through time.

Greene wrote, “A watch worn by a particle of light would not tick at all.” Equally, a ruler carried by a particle of light would not measure any distance other than zero.

When it comes to light, why should travel through space be privileged over travel through time? If there’s no sufficient reason for it, it cannot be true. That is a *rational* law. It has nothing to do with empiricism. If empiricism says something different, so much the worse for empiricism. It has committed an error in perception.

Light is not a single entity travelling through space but not through time. As we shall see later, it is in fact a *dual* entity (composed of a pre-time component and a pre-space component), and it isn’t travelling through space and/or time at all. Light belongs to the frequency domain, not the spacetime domain, and that is exactly why it is massless, maximally length contracted and maximally time dilated, and why it has a unique, fixed, absolute status in relation to its speed (unlike all of the things with mass within spacetime).

The Facts of Light

So, light has no length, and nor does it experience the passage of time. It is immaterial, and does not have any mass. Light is always in motion, and can never be at rest. These are *exactly* the characteristics of the unextended Cartesian mind. Light waves are none other than *thoughts*, the basic constituents of mind.

Mind can survive death because mind (light) isn't in space and time. Mind is unextended. It isn't part of the material world. It is exactly what matter *isn't*.

Imaginary Time

“One might think this means that imaginary numbers are just a mathematical game having nothing to do with the real world. From the viewpoint of positivist philosophy, however, one cannot determine what is real. All one can do is find which mathematical models describe the universe we live in. It turns out that a mathematical model involving imaginary time predicts not only effects we have already observed but also effects we have not been able to measure yet nevertheless believe in for other reasons. So what is real and what is imaginary? Is the distinction just in our minds?”– Stephen Hawking

“In 1905–06 Henri Poincaré showed that by taking time to be an imaginary fourth spacetime coordinate ict , where c is the speed of light and i is the imaginary unit, a Lorentz transformation can formally be regarded as a rotation of coordinates in a four-dimensional space with three real coordinates representing space, and one imaginary coordinate representing time, as the fourth dimension. In physical spacetime special relativity stipulates that the quantity

$$-t^2 + x^2 + y^2 + z^2$$

is invariant under coordinate changes from one inertial frame to another, i.e. under Lorentz transformations. Here the speed of light c is, following Poincare, set to unity.” – Wikipedia

Science conventionally treats both space and time as real-numbered quantities. However, there is overwhelming mathematical justification to treat time as an *imaginary-numbered quantity*. The reason this is not done is that it would destroy the entire ideology of science. It would leave materialism and empiricism in tatters. Science does not follow the truth, it follows its ideology, its faith ... just like a religion.

Science treats spacetime as a domain of real numbers. Spacetime should in fact be treated as a domain of complex numbers (which have the form $a + bi$, where a is a real number and bi is an imaginary number). In complex-numbered spacetime, space provides the real numbers while time provides the imaginary numbers. When treated this way, we can handle space and time on equivalent terms. “Time” becomes the imaginary space version of conventional space (“real space”). Because time is now imaginary space – i.e. merely a different version of space rather than something that is not space at all – we can give it *three* dimensions, exactly as we give to

conventional space. This means that we switch from a clumsy 4D spacetime involving three space dimensions and one time dimension (where space and time are regarded as radically different, and space is privileged over time insofar as it has three dimensions while time only has one) to a symmetric 6D spacetime involving three real space dimensions and three imaginary space dimensions, where space is no longer privileged over time, i.e. imaginary space. (Philosopher Mike Hockney has given a detailed account of how to interpret time in 3D terms in his *God Series* of books.)

This leads to a radical simplification of the whole of physics since it removes all of the bizarre properties that pertain to time when it is treated as if it is not a type of space.

Reality based on complex numbers is totally different from reality based on real numbers only. Science invests a huge effort in removing imaginary numbers (hence complex numbers) from the output of physics. It does not do so for any valid rational reasons, but purely because imaginary numbers do not register in the philosophy of empiricism and materialism. Thus philosophy, not science, dictates what science regards as real.

If science were driven instead by the philosophy of rationalism and idealism, science would not hesitate to base science on complex numbers rather than real numbers. Science would thereby be fundamentally simplified and become truly logical and rational. The many bizarre interpretations of quantum mechanics would vanish since these all flow from science's refusal to treat imaginary numbers as entities with actual existence. The entire weird, indeterministic, probabilistic worldview currently promoted by the real-numbered interpretation of quantum mechanics would be replaced by a fully deterministic, analytic, complex-numbered quantum mechanical system.

“God plays dice” applies only to a real-numbered universe. When that is replaced by a complex-numbered universe, the dice-throwing divinity immediately vanishes.

The most important question in science is whether or not imaginary numbers have an ontology, i.e. actually exist in our world rather than being unreal abstractions. If imaginary numbers are ontological – just as real numbers are considered to be – then we automatically move to complex numbers rather than real numbers as the basis of reality, and this instantly means that this is a mathematical universe of reason, logic and mathematical objects rather than a sensory universe of unreason, illogic and non-mathematical objects.

A mathematical universe is intelligible, rational and explicable. No other type of universe is. Only a mathematical universe has an answer.

It couldn't be simpler. We live in either a mathematical universe or a scientific universe. The difference between these two possible universes is complex numbers (which are rational) versus real numbers (which are empirical). We live in either a rationalist (mathematical) universe or an empiricist (scientific) universe. It's obvious which is true given that math has no need of empirical science, while empirical science collapses without rationalist mathematics.

Scientists, by relegating math to the status of an unreal abstraction, are putting the cart before the horse, with disastrous consequences. They misinterpret *everything* because they view everything through an empiricist rather than rationalist prism. They deploy a real-numbered filter over everything, when they should in fact be addressing unfiltered complex numbers.

Scientific experiments are all about real numbers. While science relies on experiments, it can never access true reality (defined by complex numbers). Reason accesses complex numbers. The human senses do not.

Imagine how complicated reality would be if we perceived a 6D complex-numbered universe rather than a 3D real-numbered universe in 1D real-numbered time (which we don't in fact perceive; we only perceive how the 3D world changes as a result of the passage of time). Evolution has simplified reality for us, but also thereby falsified it. Evolution is not something that cares about the truth, only about survival and reproduction. We cannot rely on evolution to have equipped us with the right tools to understand reality. In fact, we can safely assume it has enormously distorted our perception of reality.

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If we live in a mathematical universe, it is complex-numbered (hence imaginary numbers are as ontological as real numbers), and most of it is *unavailable* to sensory experiments, yet fully accessible to non-sensory reason and logic.

If we live in a scientific universe, it is real numbered, i.e. real numbers are regarded as ontological, having real, concrete effects, while imaginary numbers are regarded as non-ontological, hence unreal and abstract. Science has to explain why this should be the case. It never has. Why should math be half ontological (in the case of real numbers) and half non-

ontological (in the case of imaginary numbers)? Why should it be half real and concrete and half unreal and abstract?

Why should imaginary numbers be acceptable during scientific calculations, yet be required to be banished by the time the final results are produced? Scientists use imaginary numbers all the time – they are indispensable to science – yet they are always banished by various ad hoc, unjustifiable mathematical contrivances in order to leave strictly real results as the final outputs of any calculations. These are the contrivances that destroy the rational and logical coherence of science, and produce the bizarre misinterpretations of reality with which science is now full. Virtually everything said by scientists about quantum mechanics is false. The equations are right, the interpretations wrong.

Quantum mechanics is a complex-numbered subject, but scientists do everything they can to get rid of the complex numbers and leave only real numbers. It is this demented attack on the rational integrity of quantum mechanics that results in the comical interpretations that empiricist scientists insist on peddling. If they left quantum mechanics as a complex-numbered subject, quantum mechanics would become deterministic rather than indeterministic. God would stop playing dice. This is therefore one of the two most important issues in science, the other being whether or not dimensionless existence is true. In the latter case, scientific empiricists and materialists once again dismiss the possibility of it since dimensionless existence is not available to sensory experiments (but it *is* available to reason and logic).

This debate goes right back to Plato and beyond. Plato said that intelligible reality (available to reason and intellect) was true reality while sensible reality (available to the human senses, experiences and experiments) was an inferior copy that produced all manner of illusions, beliefs, myths and irrational opinions.

The ultimate intelligible (Platonist) world is the world of pure, analytic mathematics. That's the surest fact of all.

The Faith

Science is full of imaginary numbers, but tricks have to be used to get rid of them to produce real-numbered results as the final products of calculations. This, by itself, makes science irrational and incoherent. If imaginary numbers are unreal abstractions, they should play no part whatsoever in a subject purporting to be about concrete reality.

Science refuses to engage with these questions. It's therefore a faith. Specifically, it's the faith in the bogus philosophy of empiricism, materialism and real numbers (as opposed to rationalism, idealism and complex numbers). This fraudulent philosophy contradicts reason, logic and mathematics.

Scientists may use math all the time but they are actually resolute *anti-mathematicians*. They refuse to treat math as a complete and consistent whole, deriving tautologically from a single principle (the principle of sufficient reason, which by definition can never contradict itself).

Mathematics is not based on manmade axioms, it is based on pure, ontological reason. Gödel's incompleteness theorems demonstrate that manmade mathematics is incomplete and/or inconsistent. No such considerations apply to ontological mathematics, i.e. the natural mathematics of existence itself. True mathematics, as Wittgenstein correctly noted, is pure tautology, hence can never suffer from Gödel's critique. Axiomatic mathematics is false mathematics, divorced from mathematical ontology. Axiomatic mathematics is non-tautological, hence why Gödel's strictures apply.

The definition of what mathematics actually is yields the answer to existence itself. If you give the wrong answer, as science does, as axiomatic mathematics does, and as religion and philosophy do, you will definitely get the wrong answer to existence. True mathematics – eternal analytic ontological tautology based on complex numbers, zero and infinity – is the one and only immutable, infallible, absolute answer to existence.

Science rejects complex numbers because they are non-empirical. Science rejects dimensionless existence because it is non-empirical. In Cartesian terms, science accepts only extended, material existence (based on real numbers).

Unextended photons explicitly contradict this worldview, and support the existence of an unextended Cartesian domain, which is anathema to science, destroying its entire worldview.

Ontological mathematics makes two radical, decisive changes to science: 1) it allows extension based on imaginary numbers, thus switching from real numbers to complex numbers, and 2) it allows zero-infinity monads, which correspond to unextended Cartesian minds, and which exist entirely independently of matter and extension.

When these two changes are implemented, science changes from scientific empiricism and materialism to scientific rationalism and idealism;

complex numbers replace real numbers; and mind rather than matter becomes the ultimate reality. Mind is conveyed by zero-infinity mathematical monads made of photons. Science thereby undergoes a revolutionary paradigm shift, where mathematics, reason and logic become its core rather than the flawed, fallible human senses and sensory experiments.

The Tricks of the Trade

So, what is the square of a complex number? What is the square of $3 + 4i$ for example?

$$(3 + 4i) * (3 + 4i) = 9 + 16i^2 + 24i = -7 + 24i$$

But, oh dear, this is no good to science because a complex number *remains* a complex number when multiplied by itself.

Science has come up with a wheeze to banish pesky imaginary numbers. When scientists “square” complex numbers, they in fact do nothing of the kind, i.e. they *don’t* square them. To “square” a complex number, scientists do not multiply it by itself (hence this is definitely *not* a squaring operation), but instead multiply it by its “complex conjugate.”

If our complex number is $z = a + bi$, then the complex conjugate $z^* = a - bi$. It has the same real part, but is the “mirror image” in the imaginary dimension. The conjugate or “imaginary reflection” has the same magnitude, but the opposite angle (the opposite sign is placed in front of the imaginary number). Thus, when you multiply by the complex conjugate, you get:

$$(a + bi) * (a - bi) = a^2 + abi - abi - b^2i^2 = a^2 + b^2 \dots \text{a lovely } \textit{real} \text{ number!}$$

Way to go!

Believe it or not, but the interpretation of quantum mechanics is largely based on this mathematical farce, designed to eliminate imaginary and complex numbers, and leave nothing but real numbers. Scientists believe this is a valid procedure. There is nothing valid about it. It’s a total fraud. Yet they then draw conclusions about the nature of reality on the back of this blatant mathematical con. This is an outright *error*. If you are going to square a wavefunction, you had better square the wavefunction, not bogusly multiply it by its complex conjugate to banish undesirable imaginary numbers. What a joke! Scientists keep a straight face while they’re carrying out these outrageous manipulations to get the results they want, rather than the results Nature intends! No scientist has ever explained why it is

ontologically and epistemologically valid to perform calculations in this rigged manner. They couldn't care less.

Perpetual Motion ... For Real

A photon is a purely dynamical entity. It never stops. It is never at rest. There is no reference frame in which a photon is at rest. It has no mass. A photon exists by virtue of its motion. It is pure energy. It is the perfect, eternal, perpetual motion entity. Its energy never depletes and that's because it exists in the friction-free mental world of mathematics, not in the spacetime material world where friction applies and energy is always degraded. In the mental world, entities are driven exclusively by the principle of sufficient reason in its most mathematical form, which is always perfect and immutable. The principle of sufficient reason is, more or less, what Plato referred to as the Form of the Good, which Christians then personalized as God.

Creation and Destruction

According to science, photons are not conserved. They can allegedly be created and destroyed, hence their total number is constantly changing. Science is yet again completely wrong about this. This is arguably the biggest error in science. Photons are eternal and their total number is perfectly conserved, as per the law of the conservation of energy (i.e. energy can be neither created nor destroyed, and everything with ultimate existence has existed forever).

When science refers to photons being created and destroyed, what it is actually referring to is the *interaction* between the light domain and the spacetime domain. When you switch on a light, you are not *creating* photons, you are merely creating an *interaction* between light and spacetime. When you switch off the light, you are ceasing this interaction ... you are not destroying photons.

Wave-Particle Duality

The concept of wave-particle duality reflects the idea that any entity can exhibit both wavelike and particlelike properties. Regarding the wave and particle theories of light, Einstein wrote: "It seems as though we must use sometimes the one theory and sometimes the other, while at times we may use either. We are faced with a new kind of difficulty. We have two contradictory pictures of reality; separately neither of them fully explains the phenomena of light, but together they do."

Louis de Broglie posited that every particle was accompanied by a wave (called a pilot wave since it guided the particle on its trajectory). Wikipedia

says, “De Broglie ... proposed a pilot wave construct to explain the observed wave-particle duality. In this view, each particle has a well-defined position and momentum, but is guided by a wave function derived from Schrödinger’s equation. The pilot wave theory was initially rejected because it generated non-local effects when applied to systems involving more than one particle. Non-locality, however, soon became established as an integral feature of quantum theory, and David Bohm extended de Broglie’s model to explicitly include it.”

John Bell, one of the deepest thinkers of the twentieth century, wrote, “While the founding fathers agonized over the question ‘particle’ or ‘wave’, de Broglie in 1925 proposed the obvious answer ‘particle’ *and* ‘wave’. Is it not clear from the smallness of the scintillation on the screen that we have to do with a particle? And is it not clear, from the diffraction and interference patterns, that the motion of the particle is directed by a wave? De Broglie showed in detail how the motion of a particle, passing through just one of two holes in screen, could be influenced by waves propagating through both holes. And so influenced that the particle does not go where the waves cancel out, but is attracted to where they cooperate. This idea seems to me so natural and simple, to resolve the wave-particle dilemma in such a clear and ordinary way, that it is a great mystery to me that it was so generally ignored.”

There are two competing notions of wave-particle duality:

- 1) Mainstream science claims that entities *sometimes* exhibit wave behavior and *sometimes* particle behavior. An entity is never fully a particle and never fully a wave; it is somehow intermediate, dualistic. No explanation is offered as to why Nature should behave in such a strange way. It is left as a total mystery (like so many things in science).
- 2) In the de Broglie-Bohm system, a particle is *always* a particle and a wave is *always* a wave, but a particle is always *accompanied* by a wave (namely an unobservable, non-local pilot wave). As before, no explanation is offered as to why Nature should behave in such a strange way. It is again left as a mystery. How could science even begin to propose an explanation? There is no rational basis for its views on wave-particle duality.

In fact, a particle is not sometimes a wave and sometimes a particle, and nor is it something that is always accompanied by a *separate* wave. It is

actually *always* a particle that *always* follows a wave trajectory, as we shall see in detail later. Wave motion is directly programmed into particles. It is their Aristotelian form.

Science

Science is not about facts, it's about *process*. The facts are always changing, and the interpretation of the facts is always changing. Science always believes its interpretations are changing for the better, but, in fact, it's often for the worse.

The First Law of Motion

Newton's first law of motion states that every object will remain at rest, or remain in uniform motion in a straight line, unless compelled to change its state by the action of an external force. This is known as *inertia*.

Inertia is a most curious law. It doesn't have the character of scientific law at all. In fact, it has the character of a conclusion of the principle of sufficient reason, i.e. things will continue to act as they have always acted unless there is a sufficient reason why they should not. This has the quality of the eternal and the immutable.

If there were no such things as space, time, matter, friction, and so on, all laws would be perfect mathematical laws, reflecting eternal and immutable considerations. What existed before the Big Bang was pure math. All forces were mathematical forces, reflecting the principle of sufficient reason in its purest, most analytic form, shorn of any "scientific" considerations.

The principle of sufficient reason (PSR) is the underlying force behind everything. Before the Big Bang, the PSR reflected exclusively analytic mathematical considerations. After the Big Bang, it also reflected scientific considerations, which meant that space, time, matter and all the forces associated with these, were called into play. These are all ultimately mathematical elements too, but in a much more complex way.

If you remove space, time, matter and all of the forces connected to the material spacetime universe, including the force of friction, all that remains is dimensionless mathematics, controlled by the principle of sufficient reason. In fact, all that remains is light, the carrier of mind.

As the material world approaches absolute zero (which is the temperature of the immaterial mind ... the temperature of light in the Singularity), its properties become less and less "physical" and more and more purely mathematical.

Occam's Razor

Occam's razor says that when faced with competing hypotheses, you should select the one that makes the fewest assumptions. You should never multiply entities without necessity. What is the simplest explanation for what remains when you remove space, time and matter from science? What remains is not "non-existence", as science would have you believe, because non-existence can't explain anything, and cannot be defined. What remains is in fact mathematics. Mathematics is the beating heart of science. Pure dimensionless mathematics is what you get when you strip science of all extended dimensionality, specifically space and time.

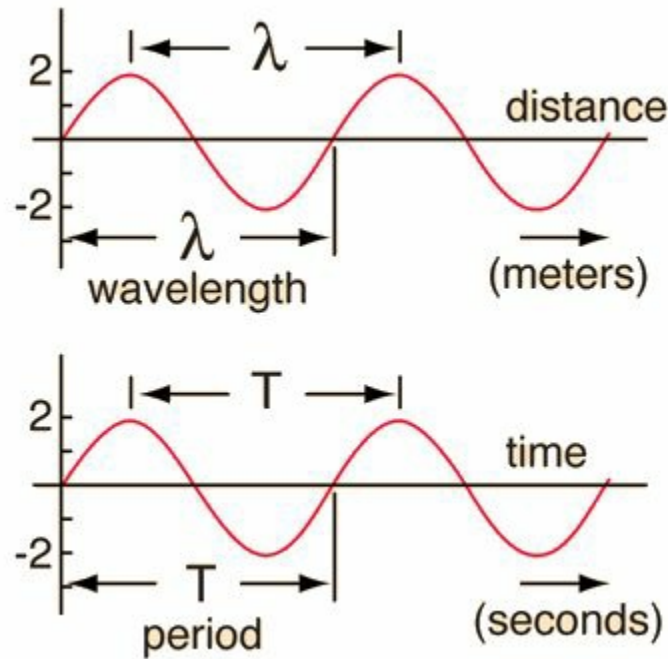
The Higgs Field

Fundamental particles acquire mass by interacting with the Higgs field. Photons do not interact with the Higgs field, hence have no mass. Anything that doesn't interact with the Higgs field isn't in spacetime. Anything that doesn't interact with the Higgs field is mental, not physical. Why do scientists keep avoiding the obvious? Photons constitute a mental field. The Higgs field is the first material field.

Waves

"Waves may be graphed as a function of time or distance. A single frequency wave will appear as a sine wave in either case. From the distance graph the wavelength may be determined. From the time graph, the period and frequency can be obtained. From both together, the wave speed can be determined." –

<http://hyperphysics.phy-astr.gsu.edu/hbase/Sound/wavplt.html>



This conception of waves already presupposes the existence of distance and time, i.e. scientific dimensions. What happens if we imagine waves *prior* to the introduction of distance and time? What would these waves be like? Instead of distance and time graphs, we would have graphs based solely on angle (zero to three hundred and sixty degrees). Moreover, we have real waves and imaginary waves. We have λ_r and f_r for real waves, and λ_i and f_i for imaginary waves. Real waves provide the precursors of space (distance) waves, while imaginary waves provide the precursors of time (imaginary distance) waves.

These real and imaginary waves are light waves, i.e. there is real light and imaginary light (mathematically speaking). Real light is a cosine wave, and imaginary light is a sine wave (as per Euler's Formula: $e^{ix} = \cos x + i \sin x$. Euler's Formula is the true equation of light.)

Immaterial light waves are the precursors of the spacetime waves that define material objects, and indeed spacetime itself (spacetime is a strictly wave phenomenon ... it is impossible for it to be anything else).

We know from the special theory of relativity that real light waves have maximal length contraction (i.e. they have zero spatial size) and are completely outside time (imaginary space), while imaginary light waves have maximal imaginary length contraction (i.e. they have zero imaginary spatial size) and are completely outside real space.

These light waves are not part of spacetime, but they give rise to spacetime via Fourier mathematics, as we shall see in a later section. Light

waves – the precursors of the material world of spacetime – are *mental* waves. They are mental because they are immaterial, massless, unextended, dimensionless, and outside space and time. For them, clocks do not tick, and rulers do not measure. Mind is the precursor, the cause, the origin, of matter. It's all in the math.

The state that precedes the Big Bang is a state of mental waves, i.e. light waves (analytic sines and cosines). These are the necessary precursors of the waves that define material existence. You cannot have matter without light. Matter is simply a kind of broken light.

If light waves are thought waves then matter is merely a special kind of thought... sluggish, asymmetric thought, to be exact.

Minds and the thoughts in minds are all that exist. Matter is just a type of thought, hence is actually mental. There is no such thing as the type of matter in which scientific materialists slavishly believe. The ideology of materialism, on which science is predicated, is false. It is the inversion of reality. We live in a universe of idealism, not materialism. Matter is constructed from mental activity, not the other way around, as scientists would have you believe.

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“Waves may be graphed as a function of time or distance. A single frequency wave will appear as a sine wave in either case. From the distance graph the wavelength may be determined. From the time graph, the period and frequency can be obtained. From both together, the wave speed can be determined.” – Hyperphysics

What is wrong with the logic of this statement? For one thing, waves do not need to be graphed as a function of time or distance. You must presuppose the existence of time and distance for the original statement to be true, but this simply begs the question of where time and distance originate. Before time and distance exist, you can in fact have non-time, non-distance waves, based strictly on angle.

We are then told that the wavelength may be determined from the distance graph, while the period and frequency can be obtained from the time graph. This is fundamentally asymmetric since we are taking two properties from one graph, but only one property from the other, and ignoring the second property. This is therefore contrary to the principle of sufficient reason. In particular, what happened to the spatial frequency (wavenumber)? Scientists routinely put frequency and period together, but

you encounter the corresponding wavenumber (spatial frequency) and wavelength pairing much less frequently, and only in special cases.

If you associate space waves with cosine waves (each with a wavenumber and wavelength) and time waves with imaginary sine waves (each with a frequency and period), you get a radically different model of reality. Science never considers rival models based on complex numbers rather than real numbers. They are ideologically dismissed, even though they are much more rational.

Reality: Mind Waves and Matter Waves

Reality comprises just two things: 1) mental waves, and 2) matter waves derived from them via combining sines and cosines. Later, we shall show in the simplest possible terms how this is achieved. It's a testimony to the simplicity, economy and elegance of mathematics.

David Hume: The Irrationalist

David Hume, the supreme empiricist philosopher, and the hero of many scientists (who dislike the rationalist philosophers Descartes, Spinoza and Leibniz), drew a distinction between "relations of ideas" and "matters of fact." Relations of ideas belong to rationalist knowledge, arising out of pure conceptual thought, logical operations, the principle of sufficient reason, and so on. Mathematics and logic are the archetypal subjects dealing with relations of ideas.

Matters of fact belong to empirical knowledge, arising out of a person's interaction with and experience of the external world. (Relations of ideas require no such interaction and experience.)

In Leibniz's philosophy, relations of ideas are similar to truths of reason (i.e. those statements whose denials are self-contradictory), while matters of fact are similar to truths of fact (i.e. those statements whose denials are *not* self-contradictory). John Locke similarly referred to ideas of reflexion, and ideas of sensation. For Kant, relations of ideas were replaced by analytic *a priori* statements, while matters of fact were replaced by synthetic *a posteriori* statements.

Relations of ideas are immutable, perfect and eternal. Matters of fact are not. Relations of ideas are demonstrably certain, and a denial of such a proposition implies a contradiction. Matters of fact have no such certainty. Relations of ideas deal with reason and logic, and have no reliance on experience (empiricism). Matters of fact deal entirely with experience.

As Hume pointed out, problems arise as soon as anyone attempts to combine relations of ideas and matters of fact. Since they belong to different categories of knowledge, it is in a sense an automatic category error to put them together. The statement that every effect necessarily has a cause is a truth of reason (since otherwise it would be claimed that effects can happen without causes, which is a contradiction given that an effect is defined as the result of a cause). It is not, however, a truth of fact given that causes cannot be perceived and experienced. Hume argued that we can clearly conceive or imagine an object or effect *without its cause*. For Hume, cause and effect

were separable ideas rather than inseparable, and had no necessary conceptual relation at all. Conceiving of the one without the other did not imply, for him, any contradiction or absurdity.

Hume was willing to contemplate a whole world of uncaused events. Modern science has been happy to follow this bizarre, irrational strand of thinking, which ends up claiming that unobserved things do not exist. Science has unblushingly claimed that existence can come from non-existence (a logical impossibility), that a whole universe can be born from nothing at all via the Big Bang. Thanks to the doctrine of quantum indeterminism, events are supposed to happen without a formal cause, but merely in accordance with various probabilities. This is why scientists claim that God plays dice.

In a universe ruled by truths of reason, by contrast, it's impossible for God to play dice. Everything in such a universe is rationally determined. In this view, we know things because of reason and logic, and it's irrelevant whether or not we can perceive them. We don't need to see the cause of the Big Bang to know that the Big Bang was caused. It's impossible for the Big Bang *not* to have a cause. If we wish to determine this cause, we shall use reason and logic, not sensory experiments, experiences and perceptions.

Mathematics is all about truths of reason. Science is all about matters of fact. These two subjects are therefore formally incompatible. Mathematics can live without science, just as truths of reason can live without matters of fact. However, science is absurd without mathematics, i.e. matters of scientific fact are meaningless without the support provided by mathematical truths of reason. So which is the organ grinder and which the monkey?

You can logically have rationalist mathematics as the foundation of empiricist science, but not vice versa. What science does is to reject rationalist mathematics (the mathematics of "God does not play dice", based on complex numbers), and replace it with "empiricist mathematics" (the probabilistic mathematics of "God does play dice", based on real numbers).

Of course, "empiricist mathematics" is an inherent contradiction. Science is thereby treating mathematics as an unreal abstraction, and claiming that it is valid to impose the philosophy of empiricism and materialism on mathematics, thus eliminating zero, infinity, imaginary and complex numbers, and most negative numbers too. This renders mathematics incoherent, inconsistent, incomplete, indeterministic and probabilistic.

No aspect of science is more important than its treatment of mathematics.

How it deals with math is currently irrational and illogical, driven purely by the bogus philosophy of empiricism and materialism. No scientist ever discusses these issues. Scientists refuse to acknowledge that they are bad philosophers. They believe that their empiricist, experimental method somehow elevates above them above philosophy. They refuse to acknowledge that their attitude to mathematics and experiments is solely philosophical. They refuse to acknowledge that they are driven by truths of fact rather than truths of reason (which they ideologically reject). They refuse to acknowledge that they interpret all experimental results via the philosophy of empiricism and materialism, which means that they refuse to engage with rationalism and idealism, which provide a much more logical interpretation of the results, far more consistent with pure mathematics.

All scientific explanations are false since they are not based on pure mathematics but on a bizarre, bogus, invalid version of mathematics designed to be compatible with the erroneous philosophy of empiricism and materialism. It is this ersatz mathematics that directly leads to the indeterministic and probabilistic thinking that now infects every part of science. If authentic mathematics were deployed instead, indeterminism and probabilities would vanish from science, and it would return to being what it used to be in the time of Pierre Simon Laplace (1749-1827), i.e. completely deterministic and causal.

Laplace wrote, "We may regard the present state of the universe as the effect of its past and the cause of its future. An intellect which at a certain moment would know all forces that set nature in motion, and all positions of all items of which nature is composed, if this intellect were also vast enough to submit these data to analysis, it would embrace in a single formula the movements of the greatest bodies of the universe and those of the tiniest atom; for such an intellect nothing would be uncertain and the future just like the past would be present before its eyes."

Such a view has been absolutely repudiated by modern science, purely on the grounds of the irrationalist philosophy of empiricism. Science is an inversion of what it ought to be and what it used to be. The only part of science that works is the part that can be traced back to rationalist mathematics. All the rest is speculative nonsense, driven by empiricism, and forming an empiricist Mythos that is as far-fetched as anything produced by religion.

Scientific empiricists are a new version of the priest, the pope, and the prophet. Scientists are perfectly willing to claim that the moon does not

exist when no one is observing it. That shows how ludicrous science has become. Scientists are willing to claim that non-existence can produce existence. Such a statement is worse than anything claimed by the stupidest religion. Science is increasingly offensive to reason and intellect. That's what happens when scientists reject reason and logic and instead trust their fallible, unreliable human senses, experiences, beliefs and opinions.

Science is prepared to say that underneath observable reality lies a world of *unreal abstractions*, such as the probability wavefunctions of quantum mechanics. This is preposterous. Unreal things, by definition, have no reality. They do not exist. It is insane to rely on admitted non-existents, and even more insane for empiricists to refer to entities that are unreal and unobservable as if they have some kind of explanatory power. Hume would be turning in his grave. If he denied causation because it could not be perceived, he would have even less trouble denying *unobservable unrealities*. How can such things be referred to at all by science? They have no place in empirical science. They simply demonstrate how illogical science is. Science fanatically denies the existence of "hidden variables", then enthusiastically embraces hidden wavefunctions that aren't even considered real!

The Ultimate Force: The Principle of Sufficient Reason (PSR)

The ancient Greek philosopher Anaximander argued that earth is suspended in the center of the universe, unsupported by water, pillars, or anything else. Aristotle wrote, “But there are some who say that [the earth] stays where it is because of equality, such as among the ancients Anaximander. For that which is situated in the center and at equal distances from the extremes, has no inclination whatsoever to move up rather than down or sideways; and since it is impossible to move in opposite directions at the same time, it necessarily stays where it is.”

Anaximander’s argument was the first historical example of the use of the principle of sufficient reason (PSR). If there is no sufficient reason for the earth to move – because it is surrounded by an entirely equalized environment where no net forces are acting on it – it will stay where it is forever. In this view, it is the force of the PSR that dictates what earth does. Reason literally holds the earth in place in the centre of space. It needs nothing physical to hold it up. When you remove all the forces of science, the only thing that remains is the force of reason, the true basis of all other forces.

The Eternal Law: The Logos

Heraclitus famously said that there is nothing permanent except change. He made this statement in the context of *observable* reality. However, he also posited an unobservable hidden reality called *Logos* that provided a unifying plan that made coherent and harmonious all natural changes and their opposing tendencies. He wrote, “It is wise to listen, not to me, but to the Logos, and to agree that all things are one. . . . Though this Logos is true always, yet people are as unable to understand it both when they hear it for the first time and when they have heard it at all again. For, though all things come into being in accordance with the Logos, people seem as if they had no experience of it.”

So, Heraclitus’ system had an underlying *permanence* (i.e. the Logos) which gave rise to constant impermanence, but within a rational formula and logical plan.

Heraclitus identified the carrier of the Logos as the element fire, thus making fire the *arche*, the root of all, the cosmic element. Fire is *always* changing. (Today, we would say “energy” instead of “fire”.) Heraclitus wrote, “The ordered universe, which is the same for all, was not made by one of the gods or by humans. Rather, it always was, is now, and forever will be an ever-living fire, ignited in measure, and extinguished in measure.”

If you divide up this “fire” into discrete units (energy monads) then you have eternal minds (souls), obeying Logos (or mathematics, as we would now say).



Heraclitus – the great philosopher of becoming – was much smarter than the Buddha, another ancient preacher of impermanence. Buddhism contains no permanent system such as the Logos. It has nothing permanent at all, and therefore it has nothing at all.

Heraclitus’ system is enormously more intelligent than Buddhism and can sustain the reality of the eternal soul, which is rejected by Buddhism.

The 19th century German philosopher Schopenhauer was also much more intelligent than the Buddha. He posited an eternal reality of Will outside space and time as the true basis of Buddhism, and placed the Will within a Kantian structure that distinguished between noumena and phenomena.

Buddhism is a primitive, false doctrine of empiricism. It denies the ultimate permanent reality ... the mathematical soul, the monad, which is the

rational, intelligible basis of existence.

The mathematical soul, not God, is the answer to existence. The soul and mathematics are exactly what Buddhism denies, hence Buddhism is false, and the Buddha is a false prophet who has led countless souls astray, into the embrace of nihilism. If you do not accept that you are a permanent entity then you are ipso facto a nothing, an illusion.

Scientific materialists and empiricists are highly attracted to Buddhism since they see it as a way of being spiritual while still remaining atheistic. Buddhism itself can easily be interpreted in materialist and empiricist terms.

Science claims that when we die, our atoms continue to exist, and to take part in new things. Buddhism says more or less the same thing. When we die, our “energy” isn’t destroyed but is redistributed throughout nature.

You never find scientists appealing to rationalism and logic. Exactly the same is true of Buddhists. They always adopt an empiricist worldview, based on their experiences. They never accept reason given that it has nothing to do with their experiences.

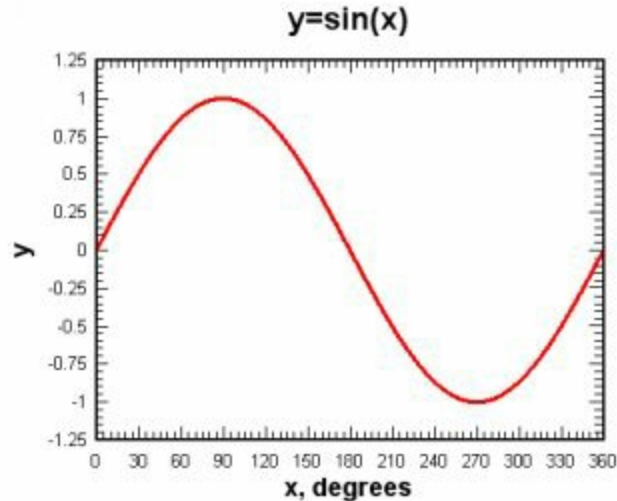
Experience can’t tell you a single thing about ultimate reality. Reason and logic tell you all. We can’t experience ultimate reality, but we can certainly know it and understand it since it is rational and intelligible, and, in fact, is simply ontological mathematics.

Plato’s system is similar to Heraclitus’, except he replaces Logos with “Forms”, and he separates the Forms from the changing world of appearances. Plato’s star pupil Aristotle altered Plato’s system by inserting Forms directly into the changing world (in much the same way as Heraclitus had located the Logos throughout the cosmic fire).

For both Plato and Aristotle, Forms furnished the intelligible aspect of the world. They were the source of change, but did not change themselves.

The Wave

Waves are the basis of reality. So, what *is* a wave? A wave is a precisely repeating pattern. For science, a wave repeats itself in a periodic and regular fashion over both time and space. But what if you omit space and time? Then all waves are plotted against angle, as shown below:



The sine function (aka the sine wave) is a smooth, continuous, repetitive oscillation. A single oscillation is shown above. The x axis is given in degrees. A full wave extends over the complete circle (360 degrees).

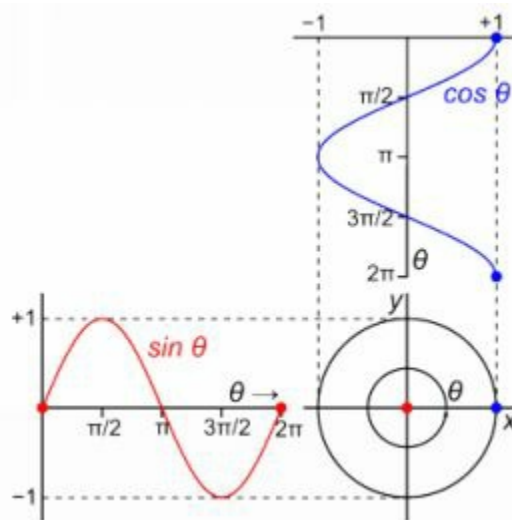
The frequency of the wave is the number of complete cycles (the number of occurrences of a repeating event) which are completed per 360 degrees.

The wavelength can be measured as the distance from crest to crest, trough to trough, or any point on a wave to the corresponding point on the next cycle of the wave.

Eternal Motion

Below is an animation and snapshot showing the basic process of existence, the process most in accord with Occam's razor. There is no simpler explanation of reality.

https://upload.wikimedia.org/wikipedia/commons/b/bd/Sine_and_cosine_ar



As a point travels round the circumference of a circle it generates a sine wave along the horizontal axis and a cosine wave along the vertical axis (both plotted with respect to angle), as shown. As the point goes around forever, so it generates waves that go on forever. These are perfect, eternal, immutable waves. They are none other than the basis waves of ontological Fourier mathematics. These are the ultimate building blocks of existence. The contingent world in which we live is what is produced when basis waves enter into various combinations with each other. Nothing else happens other than Fourier mathematics. Every single thing in our universe, and in our lives – no matter how removed it seems from mathematics – is derived from Fourier mathematics. Mike Hockney has written about this subject in great detail in his *God Series* of books.

All that ultimately exists are points going round in circles in accordance with the PSR, and producing sine and cosine waves.

The circle is the only valid entity consistent with eternity. The eternal background to existence is not “God”, but mathematical circles driven by the principle of sufficient reason. In other words, the true God is the PSR, and the PSR is ontologically expressed via Euler’s Formula.

Circles, and the waves associated with them, are the necessary, immutable, Platonist aspect of reality. The combinations into which the Fourier basis waves enter are those that provide the changing, contingent reality that we experience in our day-to-day lives.

Heraclitus and Plato were right. There is a permanent, intelligible background to existence. Heraclitus’ Logos is mathematics, and is conveyed through monads. The Forms are monads, defined by mathematics and the PSR, which is the ultimate Form (equivalent to Plato’s Form of the Good; in fact, it’s the Form of Pure Reason).

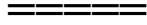
The PSR

Plato invoked the PSR when he wrote, “Everything that comes to be must of necessity come to be by the agency of some cause, for it is impossible for anything to come to be without a cause.”

Things that exist forever never come to be. They always are. It’s the things that exist forever that cause other things to come to be. The things that exist forever are necessary things. The things that are produced by their combinations are contingent things. These are the things that are caused.

When things are not caused – i.e. the things that have existed forever – there is a sufficient reason to explain their existence. There are no uncaused

things without a sufficient reason for their existence. Only Euler circles and their associated sine and cosine waves are uncaused and have a sufficient reason. They are eternal and necessary.



Archimedes used an argument based on the PSR when he wrote, “Equal weights at equal distances are in equilibrium, and equal weights at unequal distances are not in equilibrium but incline towards the weight which is at the greater distance.”

Leibniz proved to be the greatest exponent of the PSR.

The Speed of Reality

Contemplate a point travelling around the circumference of a circle. How fast does it go? It can't go at zero speed because then it wouldn't get round the circle at all. It can't go at infinite speed because then it would be on all points of the circle at once, hence wouldn't be a point at all, but *all points together*, the full size of the circle. Therefore, a point must rationally travel at a finite speed. There are two possibilities regarding this speed. It will be either arbitrary, or a specific speed. It can't be arbitrary if there is no sufficient reason for any old speed (and, indeed, there isn't).

What, therefore, is the sufficient reason for a fixed speed for a point moving around a circle (*any* circle)? We are talking about a situation outside space and time, so these can play no part in the discussion.

The principle of sufficient reason mandates that real numbers cannot be privileged over imaginary numbers, and nor can positive numbers be privileged over negative numbers. What this means is that the speed of Nature, viewed purely mathematically, is 1. The overall ratio of real space travelled to imaginary space ("time") travelled must always be 1, because otherwise we would be privileging one over the other, contrary to the PSR, which requires complete equivalence of options that are inherently equal in status.

Therefore, we can conclude that all points move around all circles at exactly the same speed. This is the fundamental speed of mathematics, of ontology, of Nature, of reality ... of the dimensionless mind. We already know what this speed is from the special theory of relativity. It's none other than the speed of light!

Light is just another name for ontological mathematics, for the core ontology of reality. The speed of reality is a fundamental constant of mathematics, not a fundamental constant of physics. The speed of reality is as fundamental as π , e , ϕ and other such key mathematical constants.

Mathematics is conventionally treated as an unreal, static abstraction, probably manmade. In fact, it's the language of Nature, and there is nothing manmade about it. It is eternal, necessary, absolute, infallible and immutable, and it is entirely dynamic. There is no such thing as static mathematics. Everything in mathematics is moving, and the core speed of mathematics is the speed of light.

The PSR, not anything "scientific", drives the speed of light, i.e. it is a rational, logical speed, not anything arbitrary, mysterious and inexplicable.

We don't need to accept the speed of light as a brute fact of existence, as

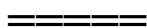
Einstein did. We can fully explain it. Einstein failed to account for why the speed of light is absolute and has the finite value it has. We have rectified his failure. Light is mathematical, not physical. Pure mathematics is mental, not material.

Mathematics must always be conceived as dynamic, not static, and must always be conceived to be under the motive power of the PSR, which preceded the motive power of anything scientific. All scientific motion ultimately derives from the principle of sufficient reason. The PSR is the source of motion. It is the *explanation* of motion. It is the First Mover, the Prime Mover.

Aristotle said that behind every motion lies a chain of preceding events. To avoid the absurdity of infinite regress, he argued that this chain of events must lead back to an origin ... to something that initiates motion but is not itself in motion (since then its motion would have to be explained). He referred to this as the Prime Mover (God). However, there is a category error here. How can non-motion produce motion?

Motion has no beginning, but it does have an explanation, namely the Principle of Sufficient Reason. The PSR replaces Aristotle's Prime Mover.

Eternity comprises points moving around Euler circles under the compulsion of the PSR. That's all they do, all they have ever done, and all they can ever do. Of necessity, their circular motion generates eternal sine and cosine waves, and these are the entities that are then used to spawn the temporal, contingent world.



The finite speed of Nature is always a perfect balance between real and imaginary, positive and negative. The PSR ensures exactly this balance. That's what the PSR does ... finds the solution of perfect balance, perfect equality, where no equal thing is privileged over any other equal thing (since there would be no sufficient reason for such a violation).

As soon as you grasp that the PSR is the explanation of all motion in the universe, then, logically, you are instantly compelled to conclude that this is an intelligible, mathematical universe of reason and logic, and not a physical, scientific universe.

Science uses time to inject motion into its equations, but time, is simply imaginary space, hence is no more connected to motion than real space is.

Science has no rational explanation for the origin of motion. It claims that motion ultimately arises from non-existence, which is absurd. The Big

Bang universe, which is full of motion, supposedly erupts out of nothing at all. But nothing at all doesn't exist and doesn't have any motion, hence can achieve none of what science needs it to do.

Science replaced Aristotle's Prime Mover with non-existence. At least Aristotle tendered an explanation. Science couldn't be bothered.

Science is willing to summon impossibilities, absurdities and lunacies as the ultimate origins of things. By definition, non-existence doesn't exist, hence can't give rise to anything, least of all a universe, or motion.

Science is an incoherent belief system, increasingly becoming as irrational and dangerous as religion. It is deceiving humanity and leading them away from the path of Truth.

What Has More Reality?

Descartes argued that there must be at least as much reality in the cause as in the effect. In fact, in terms of ultimate causes, there must be *more* reality in the causes than in the effects. The causes have necessary existence, while their effects have only contingent existence. There was no necessity for these to come into existence. Their causes could have combined in different ways and produced different effects.

According to scientific empiricism and its doctrine that things exist only at the point of observation, effects have more reality than their causes. This is a preposterous doctrine to which no rational person could ever sign up. Effects can *never* have more reality than their causes under any circumstances. The world exists *regardless* of your observations, not *because* of your observations. This is an objective world, not a world made up by you (as science now ludicrously claims).

What Scientists Never Do

Never once do scientists engage with philosophy. They refuse to address all philosophical questions. They refuse to explain their own philosophy. They always hide behind their "method". What are they afraid of? Are they not up to the task? Don't they have enough intellect? Are they ignoramuses? It would be one thing if they were carrying out an activity that did not involve philosophy at all – as they delude themselves into believing is true of science – but the reality is that science is nothing but philosophy.

Science is merely the philosophy of materialism and empiricism laid over mathematics, and reliant on the evidence provided by sensory experiments, which by themselves have zero meaning. "Meaning", such as it

is, is extracted from science via science's irrationalist philosophy, i.e. its philosophy that explicitly opposes rationalism, idealism, and which also rejects mathematics as a real, concrete, ontological subject.

Reality is syntax, while semantics concerns the meaning we apply to the syntax. Religion produces a meaning of faith and mysticism, art produces a meaning of taste and aesthetics, hedonism produces a meaning of pleasure and happiness, capitalism produces a meaning of profit and loss, communism produces a meaning of equality, and science produces a meaning of materialism and empiricism.

The true meaning of reality is rationalism and idealism. This results from the fact that the syntax of reality is based on mathematical minds (monads), made of Euler circles and their accompanying Fourier basis waves. The semantics of reality – rather than the semantics of fantasy and delusion – must reflect the true syntax of reality, not a false syntax. Everything other than mathematics produces a false syntax. There is no “God” as ultimate syntax. There is no non-mathematical mind as ultimate syntax. Unreal, abstract, probability wavefunctions are not ultimate syntax, and non-existence is certainly not the ultimate syntax. Science makes both of these false claims.

Ultimate syntax does not involve indeterminism and chance. There is no dice-playing God, and there are no cats that are simultaneously alive, dead, and in mixed living-dead states.

Science is just another Mythos, as bad as religion. Its sole truth content lies in the rationalist mathematics it occasionally uses. When it uses empiricist mathematics – i.e. real-numbered mathematics greater than zero and less than infinity – it always produces interpretations that are nonsense. Most popular science books are fairytales, luring innocent minds into the morass of anti-knowledge, unreason and illogic that accompanies the disproven philosophy of empiricism and materialism.

Scientists – being a particularly ignorant species of philosophers – have no clue that their game has been rumbled and all their idiotic claims refuted down to the finest details of rationalist mathematics. It's game over for contemporary science. It has run out of road. The ultimate answers lie in a different type of science, the one championed by Leibniz, involving rationalism, idealism and metaphysics. The ultimate science is ontological mathematics.

New Scientists

We need a new type of scientist, the rational type that follows in the path of Leibniz rather than the empirical type that follows in the path of Newton. Scientific materialism and empiricism is all about the human senses, not about reason and logic. You cannot arrive at an intelligible answer to existence via the senses and empiricism. Intelligibility is all about reason and logic, about the necessary and eternal, the analytic, the immutable and absolute, the infallible, the indisputable Truth. Science is ruled by the falsification and verification principles. The falsification principle is unfalsifiable, hence false in its own terms, and the verification principle is unverifiable, hence false in its own terms.

The Truth is by definition *unfalsifiable*. The Truth is eternal, hence is in no need of temporal, sensory verification. Scientific materialism and empiricism has gone as far as it can. What lies beyond it is scientific idealism and rationalism. What lies beyond physics is rationalist metaphysics, i.e. ontological mathematics.

The Revaluation of All Scientific Values

It's time for all scientific values to be revalued, for empirical experimentalism to be subordinated to rational mathematics. Science cannot do without math. Math has no need of science. So, which is the real deal, the real language of reality? It's time for the scientific fraud to end. It's time for rationalism. It's time for math.

The Universal Mind

Sages of ancient Eastern religion believed that the highest reality was a Cosmic Mind. This was the macrocosm. Its microcosmic counterpart was the individual soul. The sages said that to escape the cycle of death and rebirth, to achieve liberation, we must bring the individual mind into union with the Cosmic Mind.

Reality does indeed reflect a Universal Mind. However, this Mind is not the ultimate reality. It is in fact composed of myriad individual minds (monads), and these are the true ultimate reality, the true base of existence.

Each individual mind has a will of its own. The Universal Mind reflects all of these individual wills. It does not have its own Will. Everything that the Universal Mind is comes from its parts. The whole is only good as its parts. The parts are the fundamental reality, and the whole is their collective expression. The better the parts, the better the whole.

This goes for humanity too. Humanity will be better if individual humans are better. To have an optimized humanity requires every individual to be optimized. Only the enlightened State has the power to bring about such an optimization, by harnessing the State's energies and powers to bring it about. All ideologies are evil that oppose the optimization of individual humans through the Enlightened State. These wicked ideologies include anarchism, libertarianism, free-market capitalism, mainstream religion, Discordianism, liberalism, relativism, subjectivism, narcissism, solipsism, multiculturalism, and so on.

The optimization of humanity involves the social application of mathematical symmetry. The most perfect humanity is a Society of equal Gods!

The Antidote

“In mathematics there are no hidden agendas, no gurus, no charlatans, no fakers, no propaganda, lies or misinformation. Maths is just pure and unadulterated truth. The truths of mathematics are as true now as they will be in a million years time, and they were true even before we humans came into existence! Maths is eternally true, eternally perfect and therefore can never not be true.”

“The fact that a great many people hate maths yet love Trump or Clinton says a lot about the human condition. It means that we’d prefer to hear bullshit over necessary truth. So blame no one but yourselves for the epistemological clusterfuck we’re in. If you want to make a difference, learn calculus!” – MB

Imagine how different the world would be if no one prayed, no one meditated, no one had faith, no one believed their own propaganda, no one worshipped their senses and experiences, and everyone was mathematically literate and understood calculus and Fourier mathematics. Our world would be unrecognizable. It would be a rational paradise, ruled by the wise. It would be a sophocracy.

Energy Distribution

A light wave’s energy is not distributed across the entire wave. It is localized at the flowing point, which can be called the quantum of action. This is the photon itself. This is the particle aspect of light. The wave aspect is the wave trajectory that the quantum of action is inexorably tracing out.

The quantum of action is entirely localized, but not in spacetime ... in the frequency domain. Light quanta never at any time appear in the spacetime domain, but they interact with the spacetime domain via Fourier mathematics.

The Heisenberg uncertainty principle does not apply to photons since they are not in spacetime, hence do not have a spacetime location. Their energy is always precise, and is distributed uniformly across the extremely small flowing point (quantum of action).

Photons exist regardless of the material world, and their total number is perfectly conserved. Photons are the proper basis of the conservation of energy. Photons can be neither created nor destroyed. They are eternal energy systems, powered by the principle of sufficient reason, which never degrades.

Frequency and Wavelength

The speed of light is defined as $c = f \lambda$, where c is light speed, f is frequency, and λ is wavelength. Since c always stays the same, if f goes up, λ must go down, and vice versa. Neither f nor λ can become infinitely large or infinitely small because then c would no longer have its fixed value.

If $c = 1$ (in natural units) then $1 = f \lambda$, so $1/f = \lambda$ and $f = 1/\lambda$.

If $E = hf$ (where E is energy, h is Planck's constant, and f is frequency) then $E = h/\lambda$ (if $c = 1$).

But we can differentiate between real waves and imaginary waves: $c = f_r \lambda_r$ for the real case, and $c = f_i \lambda_i$ for the imaginary case. The term λ_i is the mathematical root of what physics regards as time, while λ_r is the root of space. Time and space both have a frequency, which is derived from f_i and f_r respectively. They also have an energy, deriving from $E_r = h/\lambda_r$ and $E_i = h/\lambda_i$ (given $c = 1$). (Also, $E_r = hf_r$ and $E_i = hf_i$.)

The real and the imaginary can now be treated on an equal footing. This satisfies the principle of sufficient reason.

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Just as the speed of light can't be zero or infinite, but must be a fixed number, exactly the same is true of Planck's constant, h .

Planck's constant concerns the size of the point flowing around the circumference of the circle. A point of size zero would not flow at all. Its speed would be zero. Any circle can contain *infinite* zero-sized points, so there's no way to get to the end of the circle, and, indeed, no way to even get started since the zero-sized point has no speed.

What about a point of infinite size rather than zero size? That in fact isn't a point at all. Such an entity is associated with infinite speed and is everywhere on the circle's circumference at once.

The fixed speed of light is automatically and necessarily associated with a point in motion that is neither zero nor infinite in size, but has a fixed size (a tiny but non-zero size). We call such a point a "flowing point".

A zero-sized point is a static point. A moving point is non-zero-sized.

The flowing point is able to get from the beginning to the end of the circle precisely because it has a finite speed and a finite size. If it had no size and speed, it wouldn't move at all. If it had infinite size and speed, it would have no characteristics of a point. The infinite case and the zero case would both lead to uninteresting universes. In both cases, the universe

would do nothing; in the second case because nothing would ever start, and in the first case because everything would already have finished. Only a finite speed of light and finite-sized points lead to a universe with interesting properties, such as the one we are self-evidently in.

The flowing point is the smallest part of a circle consistent with completing a full circle when the point flows at light speed in the manner mandated by the PSR.

The PSR requires continuity, uniformity, stability, unerringness. There can be no errors, deviations, flaws, discontinuities, arbitrary elements, or anything else of a similar defective and deficient nature.

The flowing point, under the sole direction of the PSR, is the ultimate perpetual motion entity. It flows perfectly, friction-free, with absolutely nothing capable of retarding its progress. It is mathematical perfection. It is perfect motion and perfect energy. It is the basic process of the eternal universe. It is the foundation of the universe. The universe ultimately comprises nothing but points moving in circles forever according to the principle of sufficient reason. This is the sole conceivable basis of an eternal universe. It is a perfect mathematical universe. It is analytic. It has an exact answer. What could be more beautiful than a universe of points moving in circles, and thus producing perfect waves (sines and cosines)?

That is quite literally all you need for our universe. To build our universe, you take the simplest possible thing (hence the thing most consistent with Occam's Razor) – the point, the nothing, the zero, the entity with no properties at all – and make it move at a fixed speed according to the Principle of Sufficient Reason. That's it. That's the whole universe right there.

This core universe of reason, points and circles produces the basis waves of ontological Fourier mathematics, and it's from Fourier mathematics that we get the myriad fascinating things that happen in the universe. There is *nothing* more powerful than Fourier mathematics resulting from the PSR. It is the greatest power of all. You might as well call it God.

Leibniz wrote "In whatever manner God created the world, it would always have been regular and in a certain general order. God, however, has chosen the most perfect, that is to say, the one which is at the same time the simplest in hypothesis and the richest in phenomena."

"God" is actually the PSR, and by doing nothing but make points move in circles and thereby produce perfect sinusoidal waves, it does exactly what

Leibniz required: to make the universe that is simplest in hypothesis, and richest in phenomena.

Nothing could be simpler and more productive than the ontological process we have described. It is the explanation of existence that best reflects Occam's razor. All other theories of existence, whether religious, philosophical, spiritual or scientific, are false. Ours is the infallibly correct answer. Any other proposed theory would violate the PSR and Occam's razor, hence be both irrational and needlessly complex.

Leibniz used a PSR argument when he said, "If there were no best among all possible worlds, God would not have created one." The idea here is that God would not make any old universe. It has to be the best universe, or God would choose no universe at all since there would be no good reason to do so.

Leibniz provided the most rational explanation for why evil exists in a universe created by a perfect God: "I do not believe that a world without evil, preferable in order to ours, is possible; otherwise it would have been preferred. It is necessary to believe that the mixture of evil has produced the greatest possible good: otherwise the evil would not have been permitted.

"The combination of all the tendencies to the good has produced the best; but as there are goods that are incompatible together, this combination and this result can introduce the destruction of some good, and as a result some evil."

In fact, there is no God, and there are not infinite possible universes that God evaluates, and from which he then chooses the best. There is just one inevitable, eternal reality, resulting from the PSR. However, being based on eternal circles, this reality creates an infinite succession of cyclical universes, each of which repeats the same pattern, but has unique details, i.e. there is no repetition of universes, but there is always a repetition of the same basic pattern.

Mark Twain said, "History doesn't repeat itself but it often rhymes." The universe likewise never repeats itself but always rhymes.



The circle is the perfect expression of the PSR. All points on the circumference of a circle are equal; none is privileged over any other, hence all must be sampled equally, with none having any special status. This automatically results in a flowing point tracing out a perfect circle at a uniform speed. A flowing point would not trace out a line because a line has

either a privileged start (the first point), or is subject to infinite regress, which is irrational (hence contrary to the PSR). Moreover, it has no ending, which is again irrational, undefined, and incompatible with the PSR. Only a circle, with no beginning and no end, yet fully contained and defined, is compatible with the PSR, and with eternal, necessary existence.

Although the speed of the flowing point is always “1”, we can arrive at this result in many ways since $n/n = 1$ for any n . What values of n are possible? It turns that n must always be an integer since the flowing points generate stable, harmonic standing waves only.

In *University Physics*, Hugh D Young, Roger A Freedman, and Ragbir Bhathal wrote, “Electromagnetic waves can be *reflected*; the surface of a conductor (like a polished sheet of metal) or of a dielectric (such as a sheet of glass) can serve as a reflector. The superposition principle holds for electromagnetic waves just as for electric and magnetic fields. The superposition of an incident wave and a reflected wave forms a standing wave. The situation is analogous to standing waves on a stretched string... The total electric field is a sine function of t , and the total magnetic field is a cosine function of t . The sinusoidal variations of the two fields are therefore ninety degrees out of phase at each point. At times when $\sin \omega t = 0$, the electric field is zero *everywhere*, and the magnetic field is maximum. When $\cos \omega t = 0$, the magnetic field is zero everywhere, and the electric field is maximum. This is in contrast to a wave travelling in one direction...”

Euler’s Formula is the true basis of James Clerk Maxwell’s famous equations of light. It’s the ontological precursor of those equations. Maxwell dealt with electromagnetic traveling waves, while Euler’s Formula deals with electromagnetic standing waves ... as they exist for all eternity, as Fourier basis waves.

The difference between the two types of waves is illustrated here:

http://clas.sa.ucsb.edu/staff/martin/EM_StandingWave.html

http://clas.sa.ucsb.edu/staff/martin/EM_TravelingWave.html

Mike Hockney discusses this subject at length in his book *Psychophysics*.

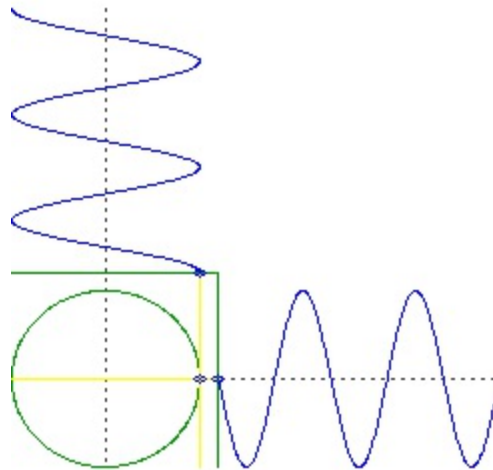
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Euler’s Formula provides a formula for the ontological mathematical equivalent of an eternal electromagnetic standing wave.

Forever

Have a look at the following animation, once again depicting a point flowing around the circumference of a circle, and generating a sine wave and a cosine wave:

http://31.media.tumblr.com/d4ff7401491c6cdc57abba47c1fc717b/tumblr_na



The above still from the animation shows the basic processes of existence. Via nothing more complicated than a point following a circular trajectory (an Euler unit circle, to be exact), we generate an eternal process (it has no beginning and no end), accompanied by eternal sine and cosine waves. That's all we need to create the universe.

Via wave mathematics (Fourier mathematics), we get the Fourier frequency domain of mind, and from that we get the Fourier spacetime domain of matter. We don't need anything else. Math gives us 100% of what we need to explain the eternal universe. Nothing else does. Everything else gives us exactly 0%, i.e. everything else has literally zero truth content. Mainstream religion does not intersect with reality at all. Science intersects with reality only via the mathematics it relies on, and otherwise it wouldn't intersect with reality either.

The point's motion is driven exclusively by the PSR and goes on flawlessly forever. Reason is what causes motion. Reason causes motion because it is rationally obliged to cater for all equal possibilities in exact sequence (thus reflecting the continuity principle: nature makes no random jumps), at a constant speed. There is no reason why it shouldn't treat all equal possibilities identically, hence it does. The outcome is a set of points traveling in circles forever, and creating sine and cosine waves as they do so.

Without the PSR, nothing would move. There would be no energy.

Energy is simply that which derives from the PSR's mandatory requirement to produce motion in order to equally satisfy all equal possibilities. If this requirement did not exist, there would be no energy, no motion, and no existence.

Leibniz said, "Everything that is possible demands to exist." It is the PSR that allows all fundamental, necessary, eternal possibilities to actually exist. Mathematics is what results from their existence, and mathematics is what gives rise to everything else (i.e. they are all aspects of mathematics).



The human race has always been baffled by what thoughts are. The answer couldn't be simpler: thoughts are sine and cosine waves.

If we want complex thoughts, we simply add sines and cosines together. We can do so without limit, hence there are infinite thoughts for us to think. The material world is made out of sine and cosine waves, hence is actually an immense thought. What is it that is having this extraordinary thought? The religious would say God. In fact, Bishop Berkeley's idealist philosophy is easily sustained by what we have proposed, i.e. God creates all things within his own mind, and sustains them all by contemplating them. If he stopped contemplating them, stopped perceiving them, they would cease to exist. However, it's not actually God that thinks the world into existence. Instead, it's the collection of all individual mathematical monadic minds.

When you dream as an individual mathematical monadic mind, you create a world inside your mind in which the dream (subjective reality) unfolds. When the collection of all individual mathematical monadic minds performs exactly the same process, it creates a world inside its own collective mind and it is this collective world in which objective reality unfolds. All individual minds can connect to bodies within the public world created by the collective mind. In other words, bodies are the products of collective thinking, but the individual minds that control bodies are autonomous minds, acting separately from the collective. And that's why the world is as it is. That's why we have free will. Simple!

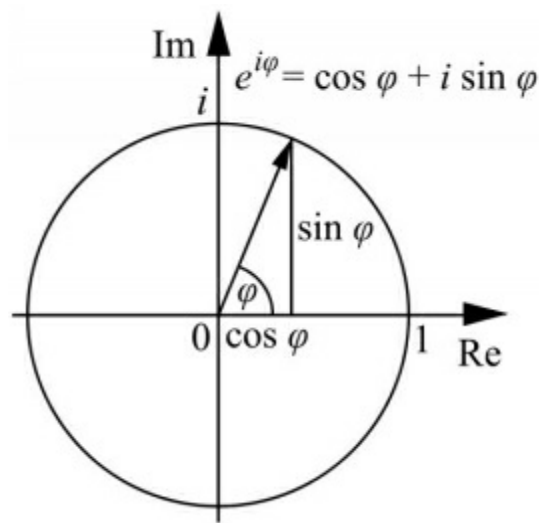
Before bodies evolved that could host individual minds, the physical universe was entirely under collective mental control, i.e. the Big Bang universe was strictly ruled by the Collective Mind up to the wondrous point when "living" cells emerged. When cells appeared (at the prompting of individual minds seeking to have a means to express themselves in the collective world), individual minds were then able to have a direct

influence on the operations of the Collective Mind, and increasingly take control.

Individual minds are destined to become more and more powerful, until they are the equivalents of gods.

Axial Waves versus Non-Axial Waves

Referring to the above still from the animation, we see a sine wave running along the x-axis, and a cosine wave along the y-axis, orthogonal to each other. These waves are both travelling at light speed. Hence they are massless, have zero extension and are dimensionless, i.e. they are pure “frequencies”, not spacetime waves.



In the above diagram depicting the Euler unit circle, the frequency waves can be thought of as running along the real and imaginary axes, albeit we have to imagine a real and an imaginary axis for angle appended to the above diagrams, as shown in the stills from the animations. However, if we regard 360 degrees as “1” (one full rotation), we can use the radii of the unit circle as surrogates of these appended axes, and just refer to the surrogates to illustrate our points.

This is mind-bending stuff, right at the limit of communicability in terms of words, but run with it as best you can. The more intuitive you are, the more you will “get it”.

So, if sines run horizontally along the real-axis radius, and cosines run vertically up the imaginary-axis radius, what about waves that run along the non-axial radii? Such waves are subject to *non-orthogonal phase*. Look at the above diagram. Here we see a phase angle of φ degrees. As we shall see in detail later, the waves that run along such a radius are composed of a

linear combination of sine and cosine waves, which are thus dependent on each other rather than being independent (as in the orthogonal case).

As we change phase value (ϕ), we increase or decrease the relative contribution of sine or cosine to the relevant linear combination. This is the true ontological basis of Einsteinian relativity, of time and mass dilation, and length contraction as speed through space (or through time) increases. The details of these arguments will become clearer as we go through the mathematics in due course.

The inter-axial region of non-orthogonal phase is none other than dimensional spacetime. Spacetime is produced thanks to non-orthogonal phase. The axial, orthogonal region, by contrast, is dimensionless non-spacetime (i.e. the frequency domain; the Singularity).

When a black hole singularity is formed from a massive star, non-orthogonal phase is converted into orthogonal phase, i.e. spacetime mass is converted to orthogonal, massless light.

Electromagnetism relates to orthogonal frequency phase while gravity relates to non-orthogonal spacetime phase, i.e. to “broken” electromagnetism. Higgs bosons and the Higgs field concern this breaking of electromagnetism.

The strong and weak forces derive from different, more complex symmetries that are made possible when we switch from a frequency domain to a spacetime domain.

We don’t need anything else to explain the universe. All of the forces of existence come from the relationship between electromagnetism and broken electromagnetism (due to phase). All scientific forces can be traced back to sine and cosine waves, to odd and even functions, antisymmetric and symmetric functions, fermions (antisymmetric) and bosons (symmetric), to dimensionless orthogonality and dimensional non-orthogonality.

Photonic Mass?

Photons have no rest mass. But what does this really mean? Is it possible that photons actually have a mass, yet a mass that *averages to zero*?

A photon *always* has energy, hence always has a mass in some sense, if we link mass and energy, as Einstein famously did in $E = mc^2$. The question is ... what is that sense?

An observer will never encounter a photon with *no energy*, i.e. a genuinely massless photon. That’s impossible.

The *dynamic mass* of a photon is given by: $m = h/(c\lambda)$ in terms of

wavelength, and $m = hf/c^2$ in terms of frequency.

This dynamic mass of a photon varies with its frequency. Higher frequency photons have higher mass. A photon's mass is inversely proportional to its wavelength. The smaller the wavelength, the larger the photonic mass.

If light has mass then it should exert a gravitational influence. However, if its mass *averages to zero*, this will not be the case. It will have no gravitational consequences.

Science has proved incapable of explaining what happens to the mass of a collapsed star, when all of its mass ends up located in a single point (singularity). In fact, what happens is that it goes from having a *net* mass greater than zero to a *net* mass of zero. It's not that the mass has vanished. It's that it is now organized radically differently. In particular, it means that all phase information – which is concerned with the non-orthogonal coupling of sines and cosines – is removed, and the sines and cosines are thus decoupled, hence are strictly orthogonal to one another.

The property of non-orthogonality is associated with net non-zero mass. The property of orthogonality is associated with net zero mass. Orthogonality hides mass, and renders it neutral. Science has no clue about this radical reorganization of mass that serves to remove it from any relation to the spacetime world of matter. Science completely fails to understand the organization of mass, and how different ways of organizing it lead to radically different outcomes and consequences.

Standing Waves

A photon is a standing wave. It doesn't have a rest mass since it is never at rest. It does have a dynamic mass, but this always averages to zero relative to spacetime. It has an averaged dynamic mass of zero, not a true dynamic mass of zero. The reason it has an averaged mass of zero is that the photon is the product of the Euler unit circle, which is a circle whose perfect symmetry between the positive and negative, the real and imaginary, ensures that all outcomes are net zeros. However, they are non-zero if isolated at any specific instant on their trajectory. A net zero is produced as the average across all specific instants.

Defining Energy

“Energy is a purely abstract quantity, introduced into physics as a useful model with which we can short-cut complex calculations. You cannot see or

touch energy, yet the word is now so much part of daily conversation that people think of energy as a tangible entity with an existence of its own. In reality, energy is merely part of a set of mathematical relationships that connect together observations of mechanical processes in a simple way. What Bohr's philosophy suggests is that words like electron, photon or atom should be regarded in the same way – as useful models that consolidate in our imagination what is actually only a set of mathematical relations connecting observations.” – Paul Davies

Science cannot define energy. Mathematics can. Energy is exactly what is defined by Euler's Formula. Energy is nothing other than sinusoidal waves, which can exist dimensionlessly (as orthogonal mental thoughts), or dimensionally (as non-orthogonal matter).

Why would any rational person accept science's *non-definition* of energy in preference to ontological mathematics' exact definition?

Science refuses to provide definitions of the most important things. For example, it has never defined time. It tells you how to *measure* time – with a clock – but it does not define what time actually is.

Instrumental definitions based on measurements and measuring instruments are not *ontological* definitions (i.e. those that tell you what something actually is, those that tell you the exact nature of its existence), and nor are they *epistemological* definitions (i.e. those that place the entity within a coherent, consistent, complete body of knowledge).

Mathematics provides ontological and epistemological definitions. Science provides instrumental definitions. This is a fundamental difference. This means that science will never be able to provide ultimate explanations and answers. Science, it must never be forgotten, is an empirical *method*, not a rational system of explanation. In fact, science usually rejects explanations, especially rational ones, since these are deemed “metaphysical”. Science is concerned with how, not why. Science explicitly rejects teleology, which is all about “why?”. Therefore, science cannot be said to be looking for true explanations. It is more concerned with describing processes within models, and then fallaciously calling these descriptions “explanations”. They are nothing of the kind.

Newtonian physics has been formally falsified by Einsteinian physics, and also by quantum mechanics, yet useful “explanations” can nevertheless be generated by Newtonian physics since our everyday world reflects the domain of applicability of Newtonian physics extremely well, i.e. in most situations Newtonian physics will produce accurate results and predictions.

Newtonian “explanations” can be furnished for all sorts of things, but they are never *true* explanations since Newtonian physics is emphatically *false*. They are explanations reflecting the Newtonian *model* of reality. This is a good model within a certain range of our experiences, but it is not a *true* model. Good “explanations”, based on models, are not true explanations based on reality. Scientists have never grasped this distinction. Scientists are never anything more than modelers, and their models are always ultimately wrong, even though they may provide successful results within specific domains and ranges.

Nietzsche said, “Success has always been the greatest liar.” This is very much the case with science. All scientific models are lies that are regarded as true. Science tells us *zero* about true reality. Science always reflects its fallacious philosophy of empiricism and materialism, which is its philosophical model of reality, upon which all of its specific models (specific theories) are based. Every scientific model and “explanation” would be different if rationalism and idealism were the underlying philosophy rather than empiricism and materialism.

Every scientific “explanation” rejects mind as a causal agent. Imagine how different science would be if it recognized that mind – made of photons – was the true basis of reality, and that all explanations must start with the mind. *Every* explanation in science would change! That’s how sensitive scientific explanation is to its underlying philosophy.

Science is just a large collection of sensory measurements, organized according to provisional, quasi-mathematical formulae, which are interpreted via the sensory philosophy of empiricism and materialism.

Science’s entire method opposes both idealism and rationalism, hence science is a formally *irrationalist* ideology. Science endorses empiricism, not rationalism. Everything that science does is hostile to ontology and epistemology. Science is an ad hoc undertaking, full of arbitrariness. Science is heuristic. Wikipedia says, “A heuristic technique, often called simply a heuristic, is any approach to problem solving, learning, or discovery that employs a practical method not guaranteed to be optimal or perfect, but sufficient for the immediate goals.”

Science is all about the practical exercise of measuring things, and producing patterns. The patterns are then matched to various mathematical formulae. The formulae are then placed within the context of empiricism and materialism, by which they are interpreted, and used to provide “explanations” regarding this model and philosophy of “reality”.

The whole scientific enterprise is provisional. Anything can be falsified at any time by new data, and everything is in permanent need of verification, i.e. nothing is ever definitively proved. An explanation is *not* an explanation if it can be overturned at any time. It's a belief system, a kind of religion. It's better than standard religion, to be sure, because it has a method, and, above all, uses mathematics, which automatically brings it into contact with *true* reality (which is wholly mathematical).

No rationalist could ever take science seriously, but empiricists – who don't care about proof and definitive answers, and indeed regard such things as “non-scientific” – believe that science is the best humanity can do as far as “knowledge” and “answers” go. They are happy to doubt their theories, happy for nothing to ever be properly resolved. They even try to make a virtue of this, this catastrophic inability to get to the ultimate, definitive truth.

Mathematics – the quintessential rationalist subject – rejects all of this. All rationalists are drawn to mathematics, all empiricists to science. Thinking types are mathematicians. Sensing types are scientists. Mathematics is about reason and logic. Science is about the senses, and has scant regard for reason and logic. These are not part of the scientific method, which revolves around sensory observations, and finding real-numbered mathematical formulae to make sense of them.

It's a disgrace when prominent scientists set up “Reason” foundations and institutions. Science is as opposed to reason as religious faith is. Reason enters science only through mathematics. Remove mathematics from science, and all reason would vanish too. Science would revert to alchemy, astrology and divination, which are its authentic roots.

Martin Luther said, “Reason is the Devil's whore”, meaning that faith is God's bride. Science also says that reason is the Devil's whore, with the human senses now becoming God's bride. Mathematics regards religion and science as the Devil's whores. Faith and empiricism must be rejected. They are the twin enemies of rationalism. The principle of sufficient reason is the True God, and mathematics is the mind and body of God! All other gods are false gods, and all prophets of non-mathematics are false prophets.

Syntax and Semantics

Manmade languages have an arbitrary syntax and semantics. Nature's language – mathematics, set by the principle of sufficient reason – has a *necessary* syntax and *necessary* semantics. Manmade languages can tell you nothing about reality because they have nothing to do with Nature's syntax and semantics. Humans just make up nonsense. They are Mythos people (emotional storytellers), not Logos people (rational analysts).

The syntax of reality involves the Euler circles and waves that we have been discussing. But what about the semantic level? All individual waves and wave combinations also have an empirical (semantic) level, i.e. every wave or wavefunction is associated with a unique *experience*. Some experiences are colors, smells, tastes, sounds, tactile sensations, and so on. Some are thoughts, feelings, sensations, perceptions, intuitions.

A precise syntax produces a precise semantics. The “meaning” of each wave or wavefunction is the precise experience it conveys. All waves and wavefunctions are expression of energy, and every energy is *experienced* in a different way. We are energy experiencers and interpreters. That's all we are.

Mathematics is not dry, abstract, unreal syntax – divorced from everything else, as so many people erroneously believe – but an extraordinary, infinitely vibrant kaleidoscope of experiences. It's laden with thoughts, feelings, sensations, and intuitions. It's an ocean of empiricism (semantics) sitting on top of an exact mathematical framework (syntax).

Everything we experience has a mathematical underpinning. Experiences are impossible without the math to cause them, support them, and convey them.

Empiricist philosophers – including scientists – never once consider what an experience is, where it is located, how it is produced, how it is conveyed and what experiences it! Only rationalism can explain empiricism. Empiricism certainly can't explain rationalism.

Reality

Reality comprises arrays of waves within monads, and arrays of monads within the collection of all monads. The Singularity (*all* monads) contains myriad singularities (individual monads). Waves from individual monads interact with the waves from the collection of all individual minds, and thus produce everything we individually experience. Subjective, private reality is created by our individual minds. Objective, public reality is created by

the collection of all minds.

The Last Drop

It's essential to draw out every last drop of the ontology and epistemology of the basic Euler circle. *Everything* – all of math, science, philosophy, psychology, and so on – is implicitly present in the Euler circle. We need to be able to attribute an ontological, epistemological metaphysical, and physical significance to every single aspect of it.

Once we entirely reinterpret the concept of the wave, and of electromagnetism (which is all about the frequency domain) versus gravity (which is all about the spacetime domain), we can fully reconcile Maxwell, Einstein, Schrödinger and Heisenberg.



There are countless different ways of mathematically modeling systems, but in ontological mathematics they always have to include the primary ontological features of waves, and wave containers (monads).

In ontological mathematics, one of the defining numbers is c , the speed of light. It is every bit as important as π , and every bit as fundamental to mathematics. It is not a constant of physics, but of mathematics.

The Zero Condition

The condition for anything to have a zero extension is for it to be travelling at light speed, as per the Lorentz transformations.

Virtually no one has understood the ontology of Lorentz transformations. What they actually say is that anything travelling at light speed (an absolute condition) belongs to a different category of existence from anything travelling below light speed (a relative condition, which can be varied).

You can change speed through space and speed through time as much as you like, but you can *never* reach c . Waves moving at c are frequencies, outside space and time, without extension and without mass. Space and time waves moving at less than c are moving in spacetime, hence are associated with extension and mass (including imaginary mass and also imaginary energy).

Non-locality embraces anything travelling at c . Non-locality signifies the frequency domain rather than the local spacetime domain. Non-locality signifies the dimensionless domain of things travelling at c . Locality, by contrast, signifies the dimensional domain, of things travelling at less than c .

Waves traveling at c move axially, while everything else travels non-orthogonally, along non-axial radii. The axes are orthogonal while everything in between (in the non-axial region) is non-orthogonal.



All explanations should be brought back to waves, monads (autonomous collections of waves) and their properties. Waves are the basic explanatory units of existence. What science, and academic mathematics, is lacking is an ontological understanding of waves. Waves are *not* abstractions. They are actual things with a syntax and a semantics, and they have two domains available to them: 1) dimensionless and orthogonal (the frequency domain; the mental world), and 2) dimensional and non-orthogonal (the spacetime domain; the material world).

Independent Waves; Decoupled Waves

When sine and cosine waves run orthogonally to each other, they are *decoupled*. Neither is contaminated by any trace of the other. When they run non-orthogonally to each other, they become *coupled* (they pick up properties of the other), and this coupling produces the phenomenon of spacetime waves.

All of the forces of science are buried in the *coupling* of sines and

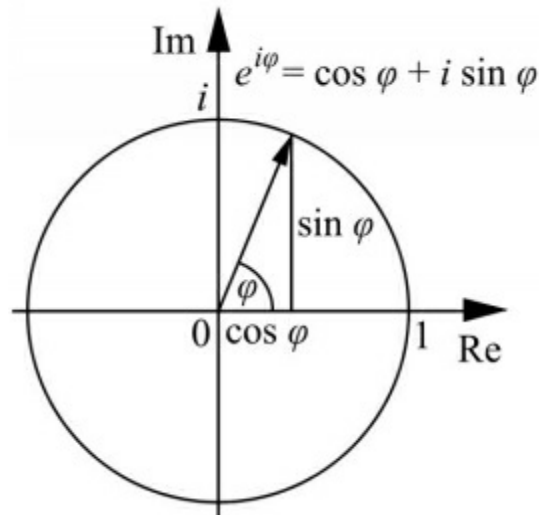
cosines to form spacetime waves (which, when they are highly compressed, produce spacetime particles), and also the opposite process involving the *decoupling* of combined sines and cosines to form light waves (outside spacetime).

The Big Bang involved a vast coupling of sines and cosines (thanks to non-orthogonal phase). The formation of black hole singularities and also the Big Crunch Singularity (which undoes the Big Bang) involve reverse engineering by decoupling sines and cosines (making them orthogonal once again).

Science fails to grasp this because it ideologically rejects non-spacetime existence. It has no scientific grounds for this rejection. This rejection is driven purely by philosophical considerations. It is obvious that science's own equations refute it. Scientists insist on misinterpreting these equations by slavishly adhering to the fallacy of materialism and empiricism.

The Graph of Eternity

The whole of ontological mathematics revolves around Euler circles as the ultimate, eternal reality, the fundamental root of ontology and epistemology:



Look at the first quadrant (the upper right section of the circle). In this quadrant, we can produce a series of Pythagorean triangles where the radius serves as the hypotenuse. This is true *until* we reach ninety degrees. At that exact point, the series terminates. Then we have two *independent* radii (two rival hypotenuses, if you will), and the previous series necessarily ends. In other words, there is something truly extraordinary about the axial radii. They have a fundamentally different character from the other radii, a different ontology. The Lorentz transformations reflect this, as does Einstein's special theory of relativity in respect of the special, absolute status of light. Light (mind) is an axial property. Non-light (matter) is a property of the non-axial region. There you have the whole mind-matter problem resolved right there, and its solution is owed to none other than the first mathematician, the wondrous Pythagoras, and his equally wondrous triangles.

Time Speed

As soon as you grasp that “time” is simply imaginary space, you can treat space and time on an entirely equivalent footing, with neither being privileged over the other, and neither having a special status, or requiring special, exceptional treatment. Science currently supports a 4D model of the universe, with three spatial dimensions and one temporal dimension. This is automatically offensive to a rationalist. With time being equated to imaginary space, we can immediately replace 1D time with 3D time, and thus have a 6D universe, with space no longer being privileged over time, and time no longer being treated as a weird exception. Because we can’t perceive imaginary space, we continuously misinterpret it. Mike Hockney in his *God Series* of books analyzes this issue in great detail.

Once time is equated to imaginary space, we can do for time everything we can do for space. So, just as there is a speed through space, so there is a speed through time. Because we are near enough stationary in space, we are all moving through time (i.e. imaginary space) at close to light speed. We therefore live in a timelike environment (an environment dominated by time), yet our perceptions are linked to space, hence we see ourselves in an essentially spacelike environment (an environment dominated by space). This is a classic example of how our unreliable, fallible human senses continuously deceive us, and why we should always be highly cautious about the sensory experiments upon which science chooses to predicate itself.

Just as material things can be defined with regard to space, so they can be defined with regard to imaginary space (time), i.e. we have temporal materialism as well as spatial materialism. Just as we have real-numbered mass defined with regard to space, we have imaginary numbered mass defined with regard to imaginary space (time). Everything becomes symmetrical regarding space and time. Nothing exists in space that does not thereby have an exact counterpart in imaginary space.

Just as there is real-numbered energy, there is also imaginary-numbered energy. And we can also carry out exactly the same exercise with regard to positive and negative numbers, to positive and negative energy, mass, length and time. Real numbers can never be privileged over imaginary numbers, and positive numbers can never be privileged over negative numbers. Science disastrously commits both of these flagrant errors, in order to serve its “real positivist” philosophy of materialism and empiricism.

Science’s philosophy is wholly fallacious, yet it refuses to debate it, thus

demonstrating that scientists are nothing but quasi-religious fanatics, with an evangelical disposition. They despise reason and logic. They reject rationalism. Like priests, rabbis, imams and gurus, they're too illiterate to deal with philosophers, so, exactly like these religious extremists, they shut down the whole discussion. They are people of faith, not of reason. They *believe* in their ideology, even though it is manifestly and provably false. Such is the autistic, inflexible, unimaginative scientific mind.

Scientists once walked hand-in-hand with deterministic mathematicians. Now they are amongst their bitterest enemies, and all because they have sworn their allegiance to their empiricist philosophy rather than rationalist mathematics.

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“The results of special relativity can be summarized by treating space and time as a unified structure known as spacetime (with c relating the units of space and time), and requiring that physical theories satisfy a special symmetry called Lorentz invariance, whose mathematical formulation contains the parameter c .” – Wikipedia

If space and time can be treated as unified structure known as spacetime, this should obviously be a 6D spacetime rather than 4D. You would immediately have to provide a sufficient reason for the proposed asymmetry. Science never does, and never can. The speed of light, c , relates the units of space and time precisely because space and time *come from light*. Science vehemently denies this obvious and self-evident rational truth. The speed of light is the invariant constant in the Lorentz transformations exactly because light, the basis of mind, defines the spacetime world of matter.

“Lorentz invariance is an almost universal assumption for modern physical theories, such as quantum electrodynamics, quantum chromodynamics, the Standard Model of particle physics, and general relativity. As such, the parameter c is ubiquitous in modern physics, appearing in many contexts that are unrelated to light.” – Wikipedia

The speed of light is ubiquitous in modern physics because light is the true root of the whole of physics. The material world of spacetime is simply a world of “broken” light ... light that has lost its orthogonality via Fourier mathematics.

The Lorentz Factor

“The speed at which light waves propagate in vacuum is independent both of the motion of the wave source and of the inertial frame of reference of the observer. ... Special relativity has many counterintuitive and experimentally verified implications. These include the equivalence of mass and energy ($E = mc^2$), length contraction (moving objects shorten), and time dilation (moving clocks run more slowly). The factor γ by which lengths contract and times dilate is known as the Lorentz factor and is given by $\gamma = (1 - v^2/c^2)^{-1/2}$, where v is the speed of the object. The difference of γ from 1 is negligible for speeds much slower than c , such as most everyday speeds – in which case special relativity is closely approximated by Galilean relativity – but it increases at relativistic speeds and diverges to infinity as v approaches c .” – Wikipedia

The speed of light is the speed of mind, and it controls the speed of matter. The speed of mind belongs to the frequency domain, and the speed of matter to the spacetime domain. There could be no speed of matter without the speed of mind. The converse is not the case. Mind is the primary reality, and matter the derived reality. The mental Singularity is the axial region, and the inter-axial region – the region between the axes – is the domain of space and time. The Big Bang is simply a process whereby the axial region populates the inter-axial region via the wave property of phase. It really is that simple. That’s how mind creates matter.

Technically speaking, the axial region maintains a strict orthogonal relation between sine and cosine waves (pure sine and cosine waves are always at right angles – at exactly ninety degrees – to each other). In the inter-axial region, this orthogonality is replaced by non-orthogonality, by phase differences between sine and cosine waves that are different from ninety degrees. This is the mathematical deviation that produces space, time and matter. There is no other cause for space, time and matter. They could not exist without non-orthogonal phase. A strictly orthogonal universe would be a permanently mental universe, with zero trace of matter. However, the very fact of combining sines and cosines produces non-orthogonal phase, and thus matter.

What could be a simpler explanation of the mind-matter universe? What could be more in accord with Occam’s Razor? Has anyone else got anywhere near our impeccable, elegant, simple solution? Nature is always beautifully simple. It doesn’t do anything bizarre and random.

Space derives from real number frequencies, and time from imaginary number frequencies. In the axial region (the mental Singularity), real and imaginary numbers are always perfectly separate. In the inter-axial region, they combine, thus forming *complex numbers*. Spacetime is a complex-numbered environment, while the mental domain of frequency is made of independent real and imaginary numbers. That's the whole difference between mind and matter right there. It's purely a result of the properties of numbers. It has nothing to do with "physics". Scientists are totally deluded about what is going on ... because they are empiricists and not rationalists, hence they reject rational, logical, exclusively mathematical solutions.

Scientists posit a false reality based on real numbers alone, since only these are compatible with science's ideology of empiricism and materialism. That's why science rejects mind, and why it fails to understand spacetime. You need real numbers *and* independent imaginary numbers for mind. For matter, you need numbers that are dependent on both real numbers and imaginary numbers, i.e. complex numbers.

All of the fallacies with which science is now riddled, all of its absurd misinterpretations of reality, especially as regards quantum mechanics and relativity theory, derive from its failure to use numbers properly, from its insistence on real numbers, and its denial of the ontology of imaginary and complex numbers. Science uses imaginary and complex numbers all of the time during its calculations, but it is demanded by science that no imaginary and complex numbered solutions ever survive to the final "cut". All of the outputs of scientific formulae are positive real numbers. All other numbers are banned, and have to be abolished by whatever means. All of the lies that science peddles derive from this wholly invalid, bogus, fallacious procedure of eliminating all numbers bar real numbers.

It's science's slavish quasi-religious faith in empiricism and materialism – its hatred of rationalism – that drives this 100% false worldview. There is much more truth in the *workings* of science than in its final outputs. The workings contain imaginary and complex numbers. The final outputs do not. The most bizarre reasons are given for this anti-mathematical, irrationalist idiocy. Reality itself is totally falsified by these measures.

Above all, this procedure results in quantum mechanics being changed from a deterministic mathematical subject, based on complex numbers, into an absurd, indeterministic, anti-mathematical subject based on real numbers alone. God plays dice only if God is too dumb to use imaginary and complex numbers. Scientists are. God (Nature) is not. Nature does not

subscribe to empiricism and materialism. Nature is ontological mathematics.

Science's fanatical advocacy of positive real numbers, and hatred of imaginary and complex numbers, and of zero and infinity, and its distaste for negative numbers, results in a drastically false ontology and epistemology. Never forget that science makes the choices it does for *philosophical* reasons, not for *scientific* reasons. There is nothing in science that demands that mathematics be butchered and distorted in order to privilege positive real numbers over all other numbers (the vast majority of numbers). It is solely the philosophy of empiricism and materialism that drives this lunacy. The counter philosophy of rationalism and idealism accepts all of the numbers rejected by science, and thus leads to a complete and consistent ontology and epistemology that truly reflects mathematics.

True mathematics easily accommodates dimensionless existence (mind) and dimensional existence (matter). False mathematics, i.e. the fallacious real-numbered version deployed by science, cannot cater for dimensionless existence (mind), hence has to make up all sorts of garbage that mind is created from matter in some miraculous and entirely unexplained way.

Science is the inversion of the truth. Mind is the true reality, and matter is mathematically constructed from it.

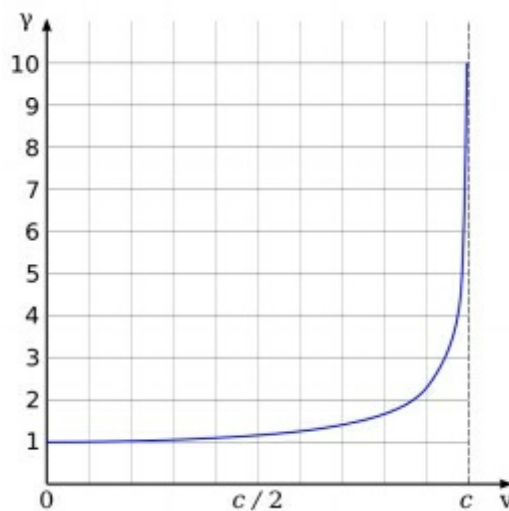
Science also hates everything to do with zero and infinity, and does everything it can to remove them from science. It "renormalizes" reality to get rid of inconvenient infinities. This immediately falsifies its theories. Zero and infinity are an integral part of reality and cannot be abolished. All so-called infinite things can in fact be rationalized in finite terms. For example, the finite region from zero to one contains infinite points, so here we have something that is both finite and infinite. All infinite cases in fact have a finite analogue. The finite and infinite belong to the same common system. Neither can be privileged over the other, just as real numbers cannot be privileged over imaginary numbers, or positive numbers over real numbers.

Normal reality doesn't need to be *renormalized*. It's perfectly normal as it is. Science is what needs to be renormalized! It has to accept mathematics as its true basis. It has to accept all numbers, and not just those compatible with scientific observations and experiments. While science slavishly worships real-numbered experiments, measurements and observations, driven by the ideology of materialism and empiricism, it will *always* be false, and it will *never* reconcile quantum mechanics and relativity theory.

It's the integrity and coherence of mathematics that is thankfully stopping scientists from combining their incoherent theories, which are wholly lacking in rational integrity.

Their renormalization techniques would be wholly unnecessary if scientists simply accepted that dimensional spacetime existence is mathematically bounded by dimensionless frequency existence (i.e. the “physical” world exists within a mental Singularity, and does so as an ontological hologram, in accordance with ontological Fourier mathematics). Science cannot handle mind-matter phase transitions because it denies the existence of the mind!

Look at a graph depicting the Lorentz factor γ as a function of velocity. It starts at 1 and approaches infinity as v approaches c .



It's not a case of reality falling apart as infinity is approached. Rather, this simply shows the difference between mind and matter! If matter undergoes an ontological phase change, it becomes mind and can then be exactly defined by the mathematics of the frequency domain. However, science refuses to accept the existence of any such domain. A dimensionless domain makes perfect sense rationally but not empirically (where it makes no sense at all!).

Science is continuously baffled by simple mathematical relations because it sees unmanageable infinities rather than mathematical phase changes between dimensionless and dimensional mathematics. Science systematically and systemically gets everything wrong! And all because science has never once bothered to define mathematics, the very thing on which it is built. Since science cannot define what math actually is, it cannot define the relationship between science and mathematics. It is thereby

rendered totally incoherent, and simply incredibly bad philosophy.

The sole thing that gives science power is its use of math. Since math *is* reality, anything that uses it is bound to be much more successful than anything that doesn't (such as religion, spirituality and philosophy). Yet science is radically unsuccessful compared to mathematics itself, i.e. ontological mathematics, the language of Nature, of existence itself.

Science is disastrously false. It can be cured only by being replaced by ontological mathematics, which reflects the philosophy of rationalism and idealism.

Science is a bad philosophy that abuses and misinterprets good mathematics. We need to get rid of the bogus philosophy of materialism, empiricism and positive real numbers, around which science revolves.

Science must reflect rationalism rather than empiricism. It must reflect idealism rather than materialism. It must reflect all numbers rather than positive real numbers only. The latter are self-evidently incompatible with complete mathematics, and science is nothing without mathematics. The more mathematical science becomes, the better it becomes. The single biggest obstacle that remains to the progress of science is its mania for positive real numbers.

To any rational person, how science goes about its business is demented. It uses philosophy all the time, yet refuses to call itself a philosophy, and refuses to engage with philosophers. It uses mathematics all the time, but refuses to say what mathematics actually is, then feels free to subject math to all manner of bizarre indignities and fallacies in order to sustain science's bogus philosophy.

What a mess!

Scientists have neither shame nor respect. When you reject rationalism, you automatically start peddling demented irrationality, and that's exactly what science does now in spades. It is getting further from the true, not closer.

Linear Combinations

How, exactly, does light (mind) turn into matter? It's via the wave property of phase. We shall provide the simplest possible demonstration of the process, using the most elementary wave mathematics.

The first thing to note is that a linear combination of a cosine wave and a sine wave of equal periods can be expressed as a single trigonometric function with the same period but with a different amplitude and phase shift.

In general, linear combinations of sines and cosines can be expressed in the forms $A \sin(x \pm \phi)$ or $A \cos(x \pm \phi)$, e.g.

1) $c_1 \cos x + c_2 \sin x = A \cos(x - \phi)$, where c_1 and c_2 are linear coefficients, A = amplitude, and ϕ = phase shift.

Or

2) $c_1 \cos x + c_2 \sin x = A \sin(x + \phi)$, where c_1 and c_2 are linear coefficients, A = amplitude, and ϕ = phase shift.

(Bearing in mind that $\sin(90^\circ - x) = \cos x$, and $\cos(90^\circ - x) = \sin x$)

We can use Equation 2) in conjunction with the trigonometric identity $\sin(\alpha + \beta) = \sin \alpha \cos \beta + \cos \alpha \sin \beta$.

$A \sin(x + \phi)$ can therefore be equivalently written as $A \sin x \cos \phi + A \cos x \sin \phi$.

Thus $c_1 \cos x + c_2 \sin x = A \sin x \cos \phi + A \cos x \sin \phi$.

Hence, by inspection, we see that $c_1 = A \sin \phi$, while $c_2 = A \cos \phi$.

If $c_2 = 0$, then $A = c_1$ and $\phi = \pi/2$ (since $\cos \pi/2 = 0$ and $\sin \pi/2 = 1$).

If $c_1 = 0$, then $A = c_2$ and $\phi = 0$ (since $\sin 0 = 0$ and $\cos 0 = 1$).

If $c_1 \neq 0$ and $c_2 \neq 0$ then $A = \sqrt{c_1^2 + c_2^2}$ and $\tan \phi = c_1/c_2$.

This mathematically demonstrates that when we combine matching sines and cosines, we produce a resultant that, in this case, is a phase shifted sine. Using a different but comparable trigonometric identity we can alternatively produce a phase shifted cosine. In fact, there are four relevant trigonometric addition formulas:

$$\sin(\alpha + \beta) = \sin \alpha \cos \beta + \sin \beta \cos \alpha$$

$$\sin(\alpha - \beta) = \sin \alpha \cos \beta - \sin \beta \cos \alpha$$

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

$$\cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

What are phase-shifted sines and cosines? The trick to understanding them is to realize that they are *impure*. A phase-shifted sine is contaminated with a cosine contribution. A phase-shifted cosine is contaminated with a sine contribution. A pure sine runs along the real-axis, extends into the imaginary domain (both positive and negative regions), and has zero cosine

component. A pure cosine runs along the imaginary-axis, extends into the real domain (both positive and negative regions), and has zero sine component.

Waves that are orthogonal to each other are fully decoupled, fully independent. Pure sines and cosines do not contaminate each other.

Waves that are non-orthogonal are coupled. They are dependent on both sines and cosines.

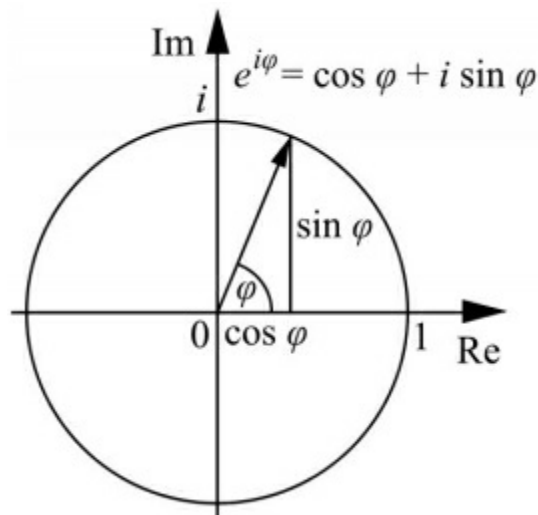
What happens when you rotate a sine wave running along the horizontal axis through ninety degrees? It doesn't end up as a sine wave running along the perpendicular axis. Instead, it is mathematically converted into a cosine wave, its "opposite".

At zero degrees, we have a pure sine wave. At ninety degrees, we have a pure cosine wave. As we rotate from zero to ninety degrees, the sine wave loses more and more of its sine nature until at ninety degrees it has lost all of its sine properties and turned into a cosine wave. The axes are where we have pure, decoupled sines and cosines. In the inter-axial regions, we have coupled sines and cosines. The decoupled waves are mental waves. The coupled waves are spacetime waves.

Orthogonal phase creates mind. Non-orthogonal phase creates spacetime. It's all in the math. There is no rational explanation for space and time other than math. Space and time have no "physical" origin. There is no physical origin for anything at all. The "physical" doesn't exist. It is always a misinterpretation of the mathematical (which defines the eternal mental).

Science is nothing but the systematic distortion, corruption and misinterpretation of mathematics, stemming from the unreliable human senses (which scientists worship), and the bogus philosophy of materialism and empiricism (which scientists also worship).

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Consider every radius of the above circle (the Euler unit circle) as a unique spacetime frame of reference. Each radius serves as a hypotenuse, *except* the four orthogonal, axial radii. These therefore have a different status from all of the others. This, bizarre though it may seem, is the difference between mind and matter. Mind concerns the axial radii, while matter concerns all of the other radii (non-axial radii). The spacetime universe of matter is bounded on all sides by the frequency world of mind for the simple reason that all non-axial radii are bounded by the four axial radii.

When everything in the universe is confined within the axial radii, we have an immaterial universe of perfect mind, a Singularity, with no physical extension, no physical dimensions, and without space and time. The Big Bang occurs when decoupled sines and cosines enter into combinations (they become coupled), and non-orthogonal phase is thereby added to them. This is the mathematical condition necessary for the creation of space, time and matter. It really is as straightforward as that.

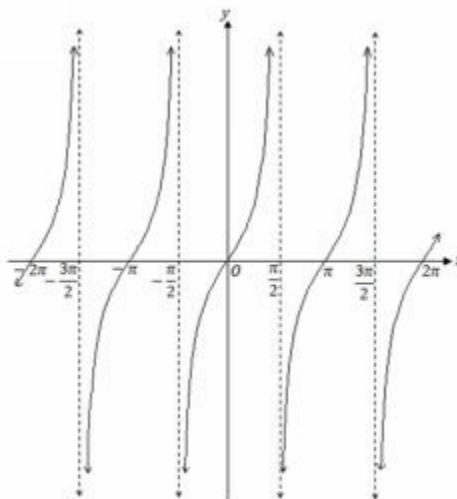
The Big Crunch – which reverses the Big Bang – occurs when non-orthogonal phase is removed, and all sines and cosines again become completely decoupled (orthogonal) once again.

The mental universe is a universe of perfect symmetry. The material universe is asymmetric. The coupling of sines and cosines creates the asymmetry that drives the Big Bang. The decoupling of these coupled sines and cosines at the Big Crunch then restores the symmetry that was originally lost.

It should always be understood that the “phase universe” is never anything other than a mental construct, and owes its entire existence to the mind. It is a hologram contained within the cosmic mind, and will return to the mind over the course of a cosmic cycle. There is emphatically no such

thing as a standalone, independent “physical” reality, as scientists claim. There is only the *interpretation* of physical reality via our senses.

Consider the following diagram showing a graphical plot of the trigonometric tangent function:



The tangent function is nothing like the sine and cosine functions. It has a completely different shape. As we can see, it goes between negative and positive infinity. At 0 , π radians (180°), 2π radians, and so on, it crosses through zero. (The same is true for $-\pi$ radians, and -2π radians, and so on.) At $\pi/2$ radians (90°) (and also $-\pi/2$, $3\pi/2$, and so on) the function is undefined, because it could be positive infinity or negative infinity. This, once again, highlights the different status of the orthogonal axes. We see an ontological boundary between matter and mind. Matter can never reach mind through any material process. It must undergo a phase transition to become mind. Such a transition occurs exactly when black hole singularities are formed. A singularity is formed via the stripping out of all non-orthogonal phase information. It truly is that simple.

All of the mysteries of existence are staring out at us from plots of trigonometric functions. We just need the eyes to see, the knowledge to utilize, and the wisdom to understand.

We humans are so brainwashed by empiricism, materialism, emotionalism, mystical intuitions and religious faith – and so dismissive of reason and logic – that we cannot see what is staring us right in the face.

This is a strictly mathematical universe. All else is delusion. Only mathematics can rationally, analytically explain reality. Science certainly cannot, and nor can religion.

Science absurdly believes that mind comes from matter. The exact

opposite is the case, as we have mathematically demonstrated. Science cannot explain where space and time come from. Mathematics achieves this easily.

Humanity has been relentlessly told that mathematics is unreal and abstract, that nothing in the world is perfectly mathematical. In fact, perfect mathematics exists in the mental Singularity (the Cosmic Mind) that controls the universe, while the mathematics of the spacetime universe seems complicated and imperfect only because of the addition of complicated phase information.

Humanity has to get over its hatred of mathematics, and its inability to see it as real, concrete and ontological. The only real, concrete things in the universe are waves and the monads that contain them. They are eternal and necessary. All other things are temporal and contingent, owing their existence entirely to this deeper, permanent level of eternal mathematical waves.

Imagine a pure sine wave running along the real axis of the Euler unit circle (all values of this wave are imaginary numbers since we are dealing with $i \sin x$), and imagine a pure cosine wave running along the imaginary axis of the Euler unit circle (all values of this wave are real numbers since we are dealing with $\cos x$).

Now imagine a sinusoidal wave running along each of the radii that stands between zero and ninety degrees. Each such wave reflects phase, hence none is fully a sine wave or fully a cosine wave. The waves between zero and forty-five degrees of phase are more like sine waves, and those between forty-five and ninety degrees are more like cosine waves. At exactly forty-five degrees, we have a sinusoid that is half sine and half cosine. It can easily be imagined that special things happen at exactly this angle of phase. It must have extraordinary mathematical properties, and may be the gateway from mind to matter. This ought to be a major area of mathematical and scientific research.

Let's imagine a sinusoid running along the particular radius that stands at thirty degrees to the real axis. Like all such "radial sinusoids", this sinusoid travels at light speed (hence belongs to the mental domain, in common with everything else that travels at light speed). Although this is a phase wave, it is not itself inside space and time. What phase waves permit is the creation of waves that *are* in space and time.

The radius forms a hypotenuse of a Pythagorean right-angled triangle. So, what about the adjacent and opposite sides of the right-angled triangle?

The opposite side (associated with the sine function) is none other than “time”. The adjacent side (associated with the cosine function) is none other than “space”.

Remember that the law of right-angled triangles is that the square on the hypotenuse is equal to the sum of the squares on the other two sides. When you square space and square time and add them together, you get non-space and non-time (light = mind). To put it another way, the mind square equals the sum of the time square and the space square. Space and time are just “Pythagorean” mind, fragmented mind, mind split into two components.

Our minds are not designed to tune into the mental hypotenuse but, rather, the component opposite and adjacent sides (time and space). We would have an entirely different understanding of reality if we had minds that focused on the Pythagorean hypotenuse rather than the other two sides of the triangle. That’s evolution for you! Evolution decided that space and time were more useful ways for animals to conceive reality. When our minds become sufficiently evolved, however, we will turn away from space and time to the frequency domain of mind, away from the dimensional to the dimensionless.

Any sinusoid running along any radius travels at the speed of light. However, all waves running along the opposite or adjacent side of a Pythagorean triangle most certainly do *not* run at this speed. Since the sine wave runs along the horizontal axis and has all of its values in imaginary space, all waves that run along the horizontal side of the Pythagorean triangle are sine waves too, except they are curtailed sine waves (meaning that they are forced to fit into a length less than 1, which automatically prevents them from moving at light speed, and turns them into temporal waves). They are now constrained, distorted sine waves. They are, in other words, temporal sine waves rather than sine waves outside time. They do not travel at the speed of light. Instead, they travel at a specific speed through time, the specific speed being set by the relevant phase angle.

Every phase angle constitutes a different frame of reference, and has a different, unique speed associated with it. Exactly the same arguments apply to cosine waves. In Pythagorean triangles with the radius as hypotenuse, these become *spatial* cosine waves rather than cosine waves outside space. As before, they travel at a specific speed through space, the specific speed being set by the relevant phase angle.

So, by the Pythagorean law, the square of the speed of light equals the square of the square of the speed through space plus the square of the speed

through time:

Equation 1): $c^2 = v_s^2 + v_t^2$, where c = light speed, v_s = speed through space, and v_t = speed through time. Solving for v_t , we can write:

Equation 2): $v_t = c(\sqrt{1 - (v_s^2/c^2)})$.

The term $\sqrt{1 - (v_s^2/c^2)}$ is none other than the Lorentz factor (in its reciprocal form) that forms the basis of Einstein's special theory of relativity! Thus we have linked Euler's formula – the most powerful equation in analytic mathematics – with Einsteinian relativity, one of the two jewels of modern science. Yet Euler's formula is also the basis of Fourier wave mathematics, from which is derived both quantum mechanics and holography. Therefore, Euler's Formula is none other than the means of unifying quantum mechanics and relativity, which is the object of science's obsessive pursuit of a final theory of everything. Euler's Formula *is* the final equation they are seeking. Euler's Formula is the God Equation, the answer to everything.

Science, if it came to its senses, would understand that it is grounded in analytic mathematics. Euler's Formula defines the frequency Singularity of mind that gives rise to the spacetime universe of matter. It's all in the math. If you do the math, you get all of the answers to existence.

Fourier mathematics is the basis of holography, and the spacetime universe is simply a hologram mathematically contained within the Cosmic Mind (Singularity). The material world exists inside a mind, and is just an elaborate mathematical thought of that mind (a collective thought).

Just as an individual mind can create a dreamworld, the Collection of all individual minds can create a world too. The world created by all minds is *this* world. When an individual goes to sleep, his mind goes to his own private dreamworld. When an individual wakes up, he returns to the collective world, the collective reality. All individual minds have access to their own private world, and also access to the collective world which they share with every other mind.

Sleeping/waking simply involves transitioning between the individual world and the collective world. That's it. There's no mystery. Reality is all about the operations of individuals minds, in conjunction with the operations of the collection of all individual minds. Fourier mathematics is at the core of all of it. We could not have the world if we did not have Fourier mathematics. The reason the world is as it is is because Fourier

mathematics is as it is. If Fourier mathematics were some other way, either we wouldn't exist at all, or we would be radically different.

Mathematics gives rise to the world. If mathematics were different, the world would be different. Every feature of our world can be traced back to Fourier mathematics, not to "God", or anything else.

In Equation 2), if $c = 1$ (as it does in our Euler unit circle) then:

Equation 3) $v_t = \sqrt{1 - v_s^2}$, so $v_t^2 + v_s^2 = 1$.

The Pythagorean trigonometric identity is a trigonometric identity expressing the Pythagorean theorem in terms of trigonometric functions. The identity is: $\sin^2 \theta + \cos^2 \theta = 1$.

If we choose a value of 30 degrees, $\sin^2 \theta + \cos^2 \theta = 1$ is $(0.5)^2 + (0.866)^2 = 0.25 + 0.75 = 1$. As the angle increases to 90 degrees, v_t goes to 1. As the angle decreases to 0, v_t goes to 0. Since v_t is imaginary length = time, then time stops at zero, while space stops at ninety degrees.

A time-like environment is close to ninety degrees. A space-like environment is close to zero degrees. We are more or less stationary in space, so we are all moving through time. If we were stationary in time, we would be permanently moving through space. We would be in a world made of time objects (imaginary space objects).

Isn't it amazing that spacetime reality reduces to Pythagorean triangles and trigonometry? Such is the wonder of math. Such is its divine power.

Fourier Mathematics

Coefficients such as c_1 and c_2 are, as we have seen above, connected to amplitude and phase. Phase is connected to space and time. Thus the coefficients that appear in Fourier mathematics – which are simple numbers that appear in front of each frequency in the Fourier formalism – are actually jam-packed with information, and contain how much of each frequency is in the overall signal (i.e. the amplitude of the individual frequency signal), and also what the space and time characteristics are of each frequency. None of this information is obvious, i.e. the coefficients do a marvelous job of hiding information, and it takes a lot of effort to unpack the coefficients and reveal their spacetime and amplitude secrets.

The Fourier process would not be able to convert frequency functions into spacetime functions, and vice versa, if the spacetime information could not be encoded in some way. It is encoded via the coefficients.

Lorentz Aether Theory

“Between 1892 and 1904, Hendrik Lorentz created an electron/aether theory, in which he introduced a strict separation between matter (electrons) and aether. In his model the aether is completely motionless, and it won’t be set in motion in the neighborhood of ponderable matter. Contrary to other electron models before, the electromagnetic field of the aether appears as a mediator between the electrons, and changes in this field can propagate not faster than the speed of light. A fundamental concept of Lorentz’s theory in 1895 was the ‘theorem of corresponding states’ for terms of order v/c . This theorem states that a moving observer (relative to the aether) makes the same observations as a resting observer, after a suitable change of variables. Lorentz noticed that it was necessary to change the space-time variables when changing frames and introduced concepts like physical length contraction to explain the Michelson–Morley experiment, and the mathematical concept of local time to explain the aberration of light and the Fizeau experiment. That resulted in the formulation of the so-called Lorentz transformation by Joseph Larmor and Lorentz whereby it was noted by Larmor that the complete formulation of local time is accompanied by some sort of time dilation of moving electrons in the aether. As Lorentz later noted, he considered the time indicated by clocks resting in the aether as ‘true’ time, while local time was seen by him as a heuristic working hypothesis and a mathematical artifice.

“...Albert Einstein’s special theory of relativity [gave] the mathematics

of Lorentzian electrodynamics a new, ‘non-aether’ context. ... Einstein based his theory on Lorentz’s earlier work. [Lorentz suggested] that the mechanical properties of objects changed with their constant-velocity motion through an undetectable aether... [Einstein] demonstrated that the laws of physics remained invariant as they had with the Galilean transformation, but that light was now invariant as well.” – Wikipedia

How many people are aware that an alternative exists to Einstein’s special theory of relativity, involving a radically different conception of reality, which has never been refuted? Brilliant physicists such as John Bell have preferred the alternative. Einstein’s theory simply proved more popular and fashionable, and the alternative faded into obscurity where it remains to this day.

Lorentz Relativity Versus Einstein Relativity

There are two versions of relativity theory. Hendrik Lorentz, after whom the Lorentz transformations are named, developed his theory before Einstein. Lorentz accepted an ether whereas Einstein rejected it. Thus Lorentz’s theory supports objective reality and an absolute reference frame for existence. Einstein’s theory, by contrast, switches to subjective “reality”.

Both theories revolve around the Lorentz transformations, yet apply drastically different interpretations of what these transformations mean. Lorentz’s theory maintains objective physical reality, while Einstein’s establishes subjective, observer-centric reality. Length contraction in the Lorentz theory is the same for all observers, hence is observer-independent. In the Einstein theory, length contraction is not the same for all observers, hence is observer dependent. This means that the two theories are associated with two entirely different ontologies, even though they use exactly the same mathematics. This illustrates that science is a philosophy, engaged in interpreting mathematics. Different philosophies change the interpretation. No scientist does any work regarding which philosophy is correct. Science invariably subscribes to empiricism and materialism.

Einstein’s implicit ontology is more accurately described as an anti-ontology. It is formally *impossible* for objective reality to be subjective, i.e. for its nature to be observer-dependent. Science, sadly, is increasingly an anti-realist undertaking. In order to preserve the philosophy of empiricism, it is willing to say that “reality” exists only at the point of observation, and it does not require observations to be objective, i.e. the same for everyone ... the basic requirement of objective reality. No one is taught at school that

science now rejects objective reality. They keep very quiet about such things, and hope no one will draw any attention to them. Sorry, guys! We're going to keep shouting about, until reason prevails.

The ether is the key to the different interpretations by Lorentz and Einstein. For Lorentz, the ether – a preferred, absolute frame – exists, and everything is relative to it. For Einstein, the ether does not exist, hence there is no preferred, absolute frame, which means that any reference frame can itself claim to be the ether, the preferred frame. The ether is thereby rendered subjective rather than objective. Two opposing observers can each regard themselves as being in the ether frame, with the other therefore being in a non-ether frame.

Professor Herbert Dingle damningly wrote, “According to the theory, if you have two exactly similar clocks, A and B, and one is moving with respect to the other, they must work at different rates ..., i.e. one works more slowly than the other. But the theory also requires that you cannot distinguish which clock is the ‘moving’ one; it is equally true to say that A rests while B moves and that B rests while A moves. The question therefore arises: how does one determine, consistently with the theory, which clock works the more slowly? Unless this question is answerable, the theory unavoidably requires that A works more slowly than B and B more slowly than A – which it requires no super-intelligence to see is impossible. Now, clearly, a theory that requires an impossibility cannot be true, and scientific integrity requires, therefore, either that the question just posed shall be answered, or else that the theory shall be acknowledged to be false. But, as I have said, more than 13 years of continuous effort have failed to produce either response.” Dingle is actually making a mistake here ... he's applying the thinking associated with objectivity reality to a theory that is not based on objective reality! For Einstein, it's not objective reality that counts; it's what each subjective observer sees from his own point of view.

In Einstein's special relativity, any observer moving at a constant velocity in a straight line can consider himself stationary; velocity is therefore always relative. Lorentz's relativity prohibits this and instead relies on absolute velocity, i.e. velocity measured with respect to a unique, preferred frame ... a physical ether.

In Lorentz's relativity, a moving observer's clock absolutely rather than relatively slows down. Time dilation and length contraction are absolute, not relative, effects. In Lorentz's relativity, all observers note the same things, i.e. there is an objective physical reality, agreed upon by all

observers. All observers have the same consistent view. There are no contradictions or paradoxes.

Things are very different with Einstein's special relativity. According to Einstein, a stationary observer can regard a moving observer as experiencing length contraction and time dilation, yet the "moving" observer can say exactly the same thing in reverse. There is therefore no common reality between the two observers. Incredibly, it is this blatant rejection of objective reality to which the scientific community has eagerly signed up.

The whole dispute comes down to the status of the ether. As it turns out, Einstein and Lorentz were both right and both wrong about the ether, but in opposite ways.

Einstein was right that there is no spacetime ether, but wrong that an ether does not exist. Lorentz was right that an ether exists, but wrong that it was a spacetime ether. There is in fact no absolute, privileged spacetime reference frame, which is what is conventionally meant by the ether. If there were no ether at all, it would automatically follow that Einstein is right. However, there *is* an ether, but it is not physical ... it is *mental*! The ether is the light Singularity!

It is exactly because the true ether is immaterial, massless and outside space and time that it cannot be physically detected. Science cannot conceive of any such concept, hence dismisses it out of hand, preferring to believe in non-objective reality!

The ether, the absolute reference frame against which all spacetime reference frames are defined absolutely (rather than relatively, as Einstein claimed) is simply the axial region of Euler's unit circle. This is the region that defines light. The reason why light has an absolute speed is that light belongs to the absolute, privileged reference frame that is outside space and time, yet controls the whole of space and time. All inter-axial regions (which are the spacetime regions) are entirely defined by the axial regions. That's all that the "ether" means. It must be conceived *mathematically*.

The ether is that which places spacetime reference frames in a Lorentzian absolute context and supports objective reality. Without an ether, all spacetime reference frames are relative, and there is only a subjective "reality", which is no reality at all. Einsteinian relativity reduces reality to a fantasy. The absolute Truth is replaced by "everyone has their own truth, their own perspective".

Einstein's subjectivist, relativist views have disastrously spilled into every aspect of our culture, and now everyone goes around saying that they

have their own truth, and no one is allowed to contradict them. These people are all lunatics. There *is* an absolute, objective world, and we are all in it. We can never avoid it.

The brilliant physicist John Bell, a far clearer thinker than Einstein, said, “One wants to be able to take a realistic view of the world, to talk about the world as if it is really there, even when it is not being observed. I certainly believe in a world that was here before me, and will be here after me, and I believe that you are part of it! And I believe that most physicists take this point of view when they are being pushed into a corner by philosophers.”

The trouble is, today’s physicists do not want to take this view at all. They now religiously believe in subjectivity, relativity, uncertainty, incompleteness, indeterminism, chance, accident, probability, acausality, and so on. God is a dice-player, they say. This is their mystical worldview, which they bizarrely claim is “scientific”. They are now enemies of reason, realism and objective reality. Yet all of this nonsense can be abolished by introducing a *mental ether* – a Singularity, a Cosmic Mind, which stands at the dead center of the physical universe.

Reference Frames

Scientists are for the most part shockingly inept at communicating their ideas to a non-scientific audience, which suggests they don’t understand those ideas.

One of the biggest questions in physics is the meaning of the absolute speed of light. Everything can vary its speed through space except light. What’s different about light?

In Lorentz’s ether theory of reality, there is an absolute, static spacetime ether in which the speed of light is fixed, and spacetime reference frames move at constant velocity relative to that. However, the speed of light is always the same in these moving reference frames, and the only way to bring this about is to invoke length contraction and time dilation, as per the Lorentz transformations. These are *absolute* effects since everything is absolutely defined by the privileged reference frame of the ether.

Einstein abolished the absolute ether. This meant that any reference frame could define *itself* as the stationary ether, and measure all motion with respect to itself. The speed of light was again the same in every reference frame thanks to the Lorentz transformations, but now the meaning of length contraction and time dilation was totally different. It had become *relative* rather than absolute, i.e. two observers moving at constant velocity with

respect to each other could each define themselves as stationary and say that the other was length-contracted and time dilated, which means that these effects have no absolute meaning. They are all in the eye of the beholder (the observer). Different observers can see completely different things. There is no objective reality.

What neither Lorentz nor Einstein considered – nor indeed any scientist at all – was that light itself is the ether, which is exactly why its speed is fixed. The domain of light – which is not in spacetime at all – is the fixed ether. Light speed is constant exactly because light isn't in spacetime. It is always measured to have the same value from any spacetime reference frame because: 1) it is not in spacetime at all, hence is unaffected by the spacetime perspective, and 2) all things in spacetime actually move at the speed of light when you take into account their appropriately combined speed through space and speed through time, i.e. the speed of light is inherently fixed for *everything* in the universe. This fact, by itself, establishes that the whole universe is derived from light, which is the *arche*, the basic substance of existence.

Scientists believed that light, like sound, needed a medium to convey it. It never occurred to them that light *is* the medium, and the medium *is* the message. Light is the fabric and fiber of existence. Everything else is built on it and from it. Light is the framework, the stage, for everything else. Light conveys the thoughts of the universe, and the material universe of space and time, is just one of its thoughts.

Why are people so confused about light? It's because they imagine that they are at rest and light is moving. It never occurs to them that although they may be stationary in space, they are not stationary in time. They are always moving in time. They are always being carried along in the cosmic time stream. It is their unperceived movement through time that creates for them the illusion that light is moving. But light isn't moving at all. Light is stationary with respect to space and time. It's confined to a mental Singularity that isn't in spacetime.

The Hopesters

Scientists are the masters of the ad hoc and heuristic. They look for techniques that might advance whatever idea they currently have in their heads. They see something that might be useful and explore it until they reach a dead-end. They *always* reach a dead-end because they are not entirely sure what they are doing, and they are not grounding their work in

any ontology and epistemology, in any complete and consistent, eternal and necessary system. They do not use rationalism and logic. They are hoping that their exploration of a hunch, technique or method might produce a startling breakthrough. It's all arbitrary. It's all speculation and conjecture. As soon as any theory seems to match a pattern, it's eagerly seized upon as some sort of "truth". But what is truth in these ad hoc terms?

String theory, for example, has thrown up plenty of promising ideas, but they have all hit the buffers. String theorists fondly imagine that eventually they will one day stumble on some super technique or insight that will clarify everything, but this is impossible because they have no idea what they are actually looking for, and there are countless mathematical highways and byways on which to take a detour.

Science ought to go right back to basics, to fundamental ontology and epistemology. That's what Leibniz attempted. Leibniz sought to define the ultimate units of existence – monads – then build up everything from there. He was always in a position to return to his ontology and epistemology. Scientists never can because they don't have an ontology and epistemology. All they have is a heuristic method.

Dark Energy and Dark Matter

“In physical cosmology and astronomy, dark energy is an unknown form of energy which is hypothesized to permeate all of space, tending to accelerate the expansion of the universe. Dark energy is the most accepted hypothesis to explain the observations since the 1990s indicating that the universe is expanding at an accelerating rate.

“Assuming that the standard model of cosmology is correct, the best current measurements indicate that dark energy contributes 68.3% of the total energy in the present-day observable universe. The mass-energy of dark matter and ordinary (baryonic) matter contribute 26.8% and 4.9%, respectively...” – Wikipedia

Science has recently speculated that normal matter accounts for only around 5% of the energy of the universe. It has no clue what the other 95% is. We can answer the question immediately. Dark matter is not the matter of a hidden entity within space. Dark matter is the matter of space itself! Space is made of sinusoidal waves, each of which has a tiny but non-zero mass. When John Wheeler wrote, “Mass tells spacetime how to curve, and spacetime tells mass how to move”, the only reason why this is true is that space itself has mass. Space can in fact be regarded as nothing other than a vast collection of extremely low-density particles, while particles can be regarded as extremely concentrated packets of spacetime.

As far as dark energy is concerned, this is none other than the expansive capacity of space itself. Space is not contained in a sealed spacetime box. It is untethered. It has no spacetime boundary. What surrounds spacetime isn't spacetime or non-existence, it is mind (the mental Singularity). Because space is made of waves and these waves aren't being held by anything, they simply stretch at a uniform rate, hence their frequency steadily falls and their wavelength steadily gets longer. This produces the appearance of a universe expanding at an accelerating rate.

There is nothing in the universe other than waves. All light is made of waves, all normal matter is made of waves, all dark matter is made of waves and all dark energy is made of waves. Light, matter, dark matter and dark energy are simply different aspects, properties, interactions and behaviors of waves. There are no mysterious extra substances out there.

Everything in our universe can be traced back to waves, the true building blocks of our universe. There are no others.

Waves are the *arche*, the beginning, the origin, the fundamental and

original source of action. The *arche* is the first principle, the first element, the ultimate underlying substance, the ultimate intelligible, noumenal principle. It is the root of everything. What could possibly be a better arche than analytic mathematical energy waves? The universe has an answer only if it is made of analytic, intelligible, definable things. There is nothing baffling about existence. It is pure mathematics, hence is the most knowable thing there is.

Montaigne said, “Nothing is so firmly believed as that which we least know.” Likewise, nothing is so firmly disbelieved as that which we most know. We most know mathematics, hence that is what humans least trust, and find least plausible.

Aesop wrote, “Beware lest you lose the substance by grasping at the shadow.” Science grasps at the shadow (phenomena) while the substance is made of mathematical noumena, which are wholly ignored by science.

Aesop also wrote, “Appearances are deceptive.” Scientists are always taken in by appearances (phenomena) and can’t see beyond appearances to noumena, where the rational, intelligible truth lies.

Gravity

What is gravity? Gravity is, as Einstein realized, spacetime geometry. Spacetime is made of waves, and is thus quantized, granular, full of flowing points (quanta of action). Spacetime is an energy substance that can be warped. It has a texture. It’s a fiber, a fabric. Spacetime is a fluctuating energy field. It’s an energy ocean, full of all manner of different energy densities, creating different pathways for particles. They always follow the path of least resistance, the shortest possible path. Nature never acts uneconomically. It never does more than it needs to. It never wastes energy. It never takes a more complex path when a simpler one is available. It always obeys Occam’s razor.

The general theory of relativity, like the special theory, is contained within the all-powerful, all-explanatory Euler circle. Everything is contained here, all of mind, all of matter, and all the forces that operate within and between them. There are no external ingredients. *Everything* can be reduced to Euler’s Formula. It is the all, the whole.

Extreme Remedies

“Extreme remedies are very appropriate for extreme diseases.” – Hippocrates

The extreme remedy for the extreme disease of scientific empiricism is extreme mathematical rationalism ... hyperrationalism.

Individual Minds and the Collective Mind

There are two kinds of minds: 1) individual monadic minds, and 2) the Collective Mind (equating to the *collection of all individual monadic minds*). An individual monadic mind is a Fourier system, and so is the Collective Mind (just more complicated).

The individual mind can create a spacetime for itself, and so can the Collective Cosmic Mind. In the former case, the resultant spacetime is a subjective dreamworld that keeps changing from dream to dream, and even within a dream. In the latter case, by contrast, the created spacetime corresponds to an objective world that stays largely the same from moment to moment (changed only by the various mathematical-scientific forces that are in operation throughout it).

When you dream, you inhabit your own spacetime dreamworld, but this is not located in the same Fourier spacetime world as the Fourier spacetime created by the Collective Mind.

Just as a subjective spacetime dreamworld is located inside an individual mind, the objective spacetime world is located inside the Collective Mind. Just as your subjective dreamworld is completely surrounded by, and contained by, your individual mind, so the “physical” universe is completely surrounded by, and contained by, the Collective Mind. In other words, the “real universe” is a mathematical hologram, located within a Singularity. It does not have physical dimensions, it has *mathematical* dimensions. These mathematical dimensions are contained inside a dimensionless mind (just as we see in the case of the individual’s dimensional dreamworld), except they are inside the Universal Mind, rather than merely inside an individual’s mind.

The private spacetime (the dreamworld) is separate from the public spacetime (the material world). An individual monad produces an individual spacetime. The collection of all monads produces a collective spacetime (the Universe). There is a Fourier process for the individual, and a separate one for the Collective.

Labeling and tracking waves inside individual monads, and waves inside the collection of all monads, and inside individual spacetimes, and inside the collective spacetime, and how they all interact, is where a lot of the difficulty lies as far as analysis goes, which is why it’s much easier to use brute computing force to simulate the monadic system with all of its myriad waves.

The Mental Ether

The ether is a mental, not physical, absolute reference frame. It is an axial reference frame, not inter-axial. The ether is the mental Singularity of frequency which is stationary at the centre of the physical spacetime universe. It controls everything in the universe. Just as we have a mind that controls our body, so the universe has a mind that controls its body, but the body in the latter case is the universe itself, and the mind is the Cosmic Mind (the collection of all minds). *As above, so below.*

The material Cosmos is controlled by the Cosmic Mind, which is made of countless individual monadic minds, each of which can link to an individual body in the universe and control it.

The domain of light is the ether. The speed of light is fixed because the ether isn't in spacetime at all and is set exclusively by the mathematical principle of sufficient reason.

The ether relates to the axial region of the Euler circle, while all spacetime reference frames relate to the non-axial region, which are dependent on the axes.

The Invariant Laws

Einstein claimed that the laws of physics are invariant (i.e. identical) in all inertial systems (non-accelerating frames of reference). If he meant that the Lorentz transformations apply to every non-accelerating frame of reference, then that's right, but it's certainly not right that every non-accelerating frame of reference can regard itself as stationary, as he claimed. Every non-accelerating frame of reference is in fact in an absolute state of motion, with respect to the absolute reference frame (ether) provided by the Singularity. Moreover, it is obvious from the Lorentz transformations that the domain of light is not part of spacetime, and, therefore, that different laws of physics apply there. In fact, the Singularity is purely mathematical, not "scientific."

There is no friction in the domain of light, no space, no time, no matter, no net mass. Light is the domain of mind. Mind is a friction-free, zero viscosity superconductor that exists at absolute zero. Which is why science knows nothing about it!

The equations that drive light are in fact exactly those from which those that drive non-light are derived. The spacetime world of matter (of non-mind) differs from the world of light simply by virtue of being the inter-axial domain of non-orthogonal phase, yet that difference produces a completely different physics, hence Einstein is wrong as a matter of fact.

Strange Dimensionality

An ant on the circumference of a circle can only go backwards or forwards, just as on a straight line. Therefore, a circle is one dimensional, just like a straight line.

Complex numbers have a different dimensionality from real numbers. Each point in the complex plane is defined by a single number (a complex number), but this has two parts, a real part and an imaginary part ($a + bi$). Therefore, the complex plane is not 2-dimensional but 1-dimensional!

The real plane has 2 real dimensions, but the complex plane is actually a 1-dimensional complex line. So, a complex circle is still 1-dimensional.

The False Theory

Einstein's special theory of relativity is unquestionably false. An effective analysis of its errors is provided here:

<http://worknotes.com/Physics/SpecialRelativity/TwinParadox/htmlpage9.aspx?print=true>

As you would expect, science refuses to engage in any debate about one of its most cherished theories. It's just like a religion. It does not accept criticism. Only groupthink is permitted in science.

The Lorentz theory, which uses the same mathematics as Einstein's theory but with a different physical interpretation, is correct, except for its conception of the ether.

Einstein was right that no ether of the type envisaged by Lorentz exists. The true ether is much more radical ... it is the ether of light itself! It's exactly because light is the absolute ether that the speed of light is absolute. What could be more obvious? But not to scientists!

Planck's Constant

"Physicists had assumed that atomic vibrations were continuous; that is, they could vibrate at any frequency. Planck decided to assume that atoms could only vibrate at certain frequencies that were whole number multiples of some base frequency, which he called h . In other words, atoms could vibrate at the h frequency, or $2h$, or $3h$, but not $2.5h$

"It turns out that atoms (and a lot of other stuff) can only take certain specific values. In physics, we say that atomic vibrations are quantized." – Avery Thompson

Planck proposed that a vibrating atom had a fundamental frequency and

could oscillate only at this frequency, or at whole-number multiples of it, hence the radiation it emitted could only have certain energies based on the equation $E = nhf_1$, where E is energy, h is Planck's constant, f_1 is the fundamental frequency, and n is a positive integer.

It's impossible for an atom to vibrate at below this frequency. The atom necessarily has a ground energy level of $E = hf_1$.

If $f_1 = 1$, h is the base frequency of nature, and E_h (the energy associated with the base frequency) is the base energy.

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“Quantization. Starting in 1900, experimental results started forcing physicists to quantize physical quantities that are continuous in classical physics. Quantizing Oscillator Energy (1900) ... Planck quantized the energy levels in atomic harmonic oscillators to explain radiation emitted from a glowing mass. His energy levels are given by $E_n = nhf$, where $n = 0, 1, 2, \dots$. The n refers to the n^{th} state of vibration, f is the frequency of the lowest energy state, h is a constant called the Planck constant, and E_n is the energy of the n th level of vibration.” – Michael Ruiz

The Minimum Energy

If the speed of light $c = 1$ and $c = f\lambda$ then $1 = f\lambda$. If $f = 1$ then $\lambda = 1$.

The fundamental wave is a sine or cosine with frequency 1, and wavelength 1.

1 is the fundamental frequency of nature ... the *lowest possible frequency*. 1 is the fundamental wavelength of nature and is the *highest possible wavelength*. As frequency increases, wavelength automatically and proportionately decreases.

If $E = hf$ then, when $f = 1$, $E = h$. In other words, Planck's constant, the quantum of action, is the lowest possible energy in the universe. However, since we can have positive and negative energy and real and imaginary energy, we can balance all energies to zero, making zero the *net* energy, hence the lowest possible energy, and the compulsory ground state energy of the universe.

$E = h$ is the smallest amount of energy possible, the energy of a single wave cycle. We proportionately multiply the energy as we multiple the numbers of wave cycles.

Harmonics and Overtones

A harmonic is an integer (whole number) multiple of the fundamental frequency of a vibrating object. An overtone is any resonant frequency above the fundamental frequency, and may or may not be a harmonic. A non-harmonic overtone is one where it is not a whole number multiple of the fundamental frequency. We define all sine waves with whole number frequencies as harmonics or harmonic overtones of the fundamental sine wave, which has a frequency of 1 and a wavelength of 1. Non-harmonic sine waves are impossible since they are inherently unstable, hence instantly self-destruct.

Harmonic Reality

“Fourier analysis is a basic engineering implement for determining the frequency components of an arbitrary time-varying function.

“In such analysis, the lowest frequency is called the *Fundamental Frequency*, and the higher frequencies which are integral multiples of the fundamental frequency, are known as *Harmonics*. For a periodic function, a *Fourier series representation* of a function is employed to determine the amplitudes of the fundamental and harmonic frequencies present in a waveform. A Fourier series is therefore sometimes called a Harmonic Series.

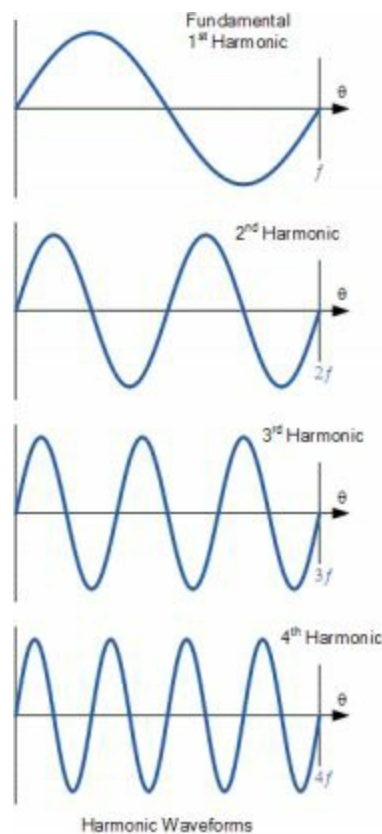
“Representation of a signal as a sum of harmonic oscillations is defined as a resolution into its *Spectrum* which is the sum of individual harmonic components of the signal. The spectrum of a signal is often more informative than its time representation.

“Fourier analysis is also applicable to *Non-periodic Signals* by assuming the period of analysis (not that of the signal in question) to be infinitely long. This leads to the concept of *Fourier Transform* in which all frequencies are present instead of just those which are integral multiples of the fundamental frequency.” – V. K. Khanna, *Digital Signal Processing*

Regardless of its shape, any periodic complex waveform can be mathematically resolved to its individual components: the fundamental frequency and its “harmonic frequencies”. The fundamental frequency can be called the first harmonic. It is the lowest or base frequency, f , on which the complex waveform is constructed. Each of the further harmonics operates at a frequency that is an integer (whole-number) multiple of the fundamental frequency.

If the fundamental frequency is $1f$ then the additional harmonics are multiples of the fundamental frequency: $2f$, $3f$, $4f$, etc. This is demonstrated

in the following diagram:



Periodic signals have a frequency spectrum consisting of harmonics. If the fundamental frequency (first harmonic) is at 1000 hertz, the second harmonic will be at 2000 hertz, the third harmonic at 3000 hertz, and so on. The frequency spectrum can be regarded in two ways: (1) as continuous, with all frequencies except the harmonics set to zero; (2) as discrete, i.e. only defined at the harmonic frequencies.

Therefore, the frequencies *between* the harmonics can be thought of as existing, but as having a value of zero, or simply not existing at all. Either way, they do not make a contribution.

The Soul: The Pythagorean Harmonic Monad

What is a monad? It's a photonic "atom" of atomic mass zero. To be more exact, it's a photonic atom made of standing waves, and contains all possible harmonics from Nature's fundamental frequency upwards. Nature's fundamental frequency is 1. This means that one complete wave cycle occurs within 360 degrees (a full circle). In nature, you cannot get a frequency less than 1. A higher frequency corresponds to a higher number of completed wave cycles within a full revolution of the flowing point. Each additional wave cycle proportionately increases the energy of the wave.

Regarding wavelength, Wikipedia says, "In physics, the wavelength of a sinusoidal wave is the spatial period of the wave – the distance over which the wave's shape repeats, and thus the inverse of the spatial frequency." In the pre-space domain, there is no distance to which to refer. Wavelength in this domain corresponds to the number of degrees (or radians) required to complete a full wave cycle.

Therefore, 1 wavelength corresponds to 360 degrees (2π radians). This is the wavelength that accompanies the natural fundamental frequency (of 1 wave cycle in 360 degrees). As the integer number of wave cycles increases in the 360 degrees, the wavelength is divided by that number, e.g. if there are two wave cycles in the 360 degrees, the wavelength is 180 degrees, and if there are five wave cycles, the wavelength is 72 degrees.

360 degrees is therefore the maximum natural wavelength. Since this is one full revolution, we can refer to it as "1". Every harmonic wavelength will be a fraction of 1.

Just as a chemical (material) atom has electron orbits, so a photonic atom has sinusoidal orbits, and these are simply the harmonics.

When a point flows around the Euler unit circle, it produces a full set of sine and cosine waves all at once, each one of which is an eternal stationary wave. It does so because the principle of sufficient reason requires all valid possibilities to be actualized at once.

A monad is thus a complete and consistent set of basis Fourier waves for constructing any Fourier series, and thus any periodic wave, no matter how complicated. In every monad, we have every possible frequency required to produce any possible periodic ontological signal.

A monad is a photonic Fourier "atom". This is none other than what people refer to as the *soul*. It is an eternal system of indestructible energy, sustained forever by the perfect motion engendered by the flawless principle of sufficient reason.

We have thus brought the soul in from the cold. It is no longer an object of faith or mysticism. It is now the most basic unit of ontological Fourier mathematics. It's a strictly rational, mathematical entity, indeed the most basic unit of natural mathematics, from which everything else is constructed.

A soul is an autonomous, living system for performing Fourier mathematics. When a soul performs Fourier mathematics on its own, it produces its own private, subjective dreamworld. When a soul performs Fourier mathematics in conjunction with all other monadic souls, it produces a public, objective "physical" world.

When we sleep, we disengage from the collective world and enter our private Fourier domain (dreamworld). When we wake, we re-engage with the collective world once more, i.e. the public Fourier domain (material world).

An out-of-body-experience occurs when our body goes to sleep but our mind remains linked to the collective world. An out-of-mind-experience occurs when our mind goes to sleep and performs private Fourier processing, while our body remains connected to the collective world. This corresponds to being on mental autopilot as we sleepwalk, with no consciousness of what we are doing.

When we die, we can enter either a private dreamstate or a conscious out-of-body state, in which we can exercise conscious control and choice over the reincarnation process, rather than it merely being done to us by automatic Fourier mathematical processes.

Every individual monad is a living, thinking, autonomous, harmonic Pythagorean organism playing the divine Music of the Spheres. What could be grander, nobler and more wondrous? We are the vibrations of eternity.

Inside the Monad, Inside the Mind

Only certain, discrete frequencies are produced within a monad: the fundamental and its harmonic overtones. These are the stable stationary states, and have well-defined analytic solutions. The monad is therefore a discrete, quantized system.

There is a sufficient reason for discrete energies rather than continuous energies, namely that most energies are eliminated because they cannot generate a self-reinforcing wave, hence are unstable and destroy themselves. They are not valid mathematical solutions.

A monad is therefore an autonomous unit made up of all possible frequencies, starting from a frequency of 1, and wavelength of 1. No smaller frequency is possible, i.e. we can't have a frequency of zero. Nor is a larger wavelength possible (since wavelength is the reciprocal of frequency).

Crucially, frequencies of infinity are *impossible* because, as frequency rises, wavelength decreases, hence there will come a stage when the wave cycle is attempting to be smaller than the size of the flowing point itself, which is the smallest ontological size possible. Therefore, such wavelengths are unreachable. Neither f nor λ can become infinitely large or infinitely small because then c would no longer have its fixed value.

Accordingly, there is a smallest possible ontological wavelength, and thus there is a highest possible ontological frequency.

The highest possible ontological wavelength is 1, and the lowest possible ontological frequency is 1.

Given that Planck's constant is exceptionally small, the highest frequency is an immensely large number, and this number may be considered the ontologically highest number. This may in fact correspond to the total number of monads in existence (i.e. the total number of monads is not infinite).

A monad is a net zero, and it's convenient to refer to it as a "zero-infinity" entity. However, it doesn't quite reach infinity. Finite limitations necessarily kick in.

The Principle of Sufficient Reason and Monads

If c (light speed) = 1, and 1 can be made up of any integer n divided by itself (i.e. $c = 1 = n/n$) then the principle of sufficient reason mandates that all of these possibilities are equally possible, hence *all must be realized* (unless a sufficient reason can be advanced as to why they should not, such as a limit on n).

So, when a flowing point travels at c around the circumference of an Euler circle, it *simultaneously creates all possible waves consistent with $c = 1 = n/n$* . This means that it also produces all possible frequencies, wavelengths, energies and masses. This is what a monad (a mathematical soul) truly is: a complete and consistent set of ontological waves generated all at once by the principle of sufficient reason, producing an autonomous, indestructible, eternal, self-contained unit. There is no mystery about the soul. It is pure math, pure mathematical waves. There is nothing vague and mystical about it. It is the most rationally definable thing you can get. It is the opposite of an undefined, mysterious object of religious faith.

If the fundamental energy $= E_h = h$, then E_n (the energy of level n) $= nh$, where n is an integer. As n (which furnishes the frequency) increases, $1/n$ (which furnishes the wavelength) correspondingly decreases. As ever, $c = 1 = n/n = f\lambda$.

If $E_n = nh$ then $h = E_n/n$. The principle of sufficient reason requires all possible E_n 's and n 's to be actualized to satisfy all possibilities for producing the result of h , since none can be privileged over the others.

Planck's constant h is none other than the flowing point itself. It is energy distributed over a tiny 1D complex-numbered segment ("string", we might say!).

What happens when a 1D real, imaginary or complex wavelength becomes the same order of magnitude as h ? Can it become smaller? Or does h set the limit? Does h provide a sufficient reason why wavelength reaches a lower limit (hence frequency thereby reaches an upper limit)?

If there is a non-zero minimal frequency then it stands to reason that there is also a non-infinite maximal frequency. If there is a finite maximal wavelength, there should be a finite minimal wavelength too. If there is a finite minimal energy, there must be a non-infinite maximal energy. Just as anything with a beginning must have an end (since there can be no undefined, open-ended processes), so anything with a finite minimum or maximum must also have a corresponding finite maximum or minimum.

Linear, open-ended processes are impossible. All processes are closed, cyclical processes. Science never considers such rational constraints.

In terms of the speed of light, as frequency goes up, wavelength must go down in order to keep c constant. Likewise, in order to keep h constant, then, as energy increases, wavelength must go down (hence frequency goes up).

Planck's constant can be considered to be a flowing point with an

internal structure defined by wavelength and frequency, which determine the energy content of the flowing point.

Similarly, the speed of light, c , has an internal structure, similarly defined in terms of wavelength and frequency. Where $c = 1 = f\lambda$, then $h = E/f$ and $h = E\lambda$. Also, $E = mc^2$, thus linking E to m via c .

E , m , c , f , λ and h are all intimately connected, and all reducible to the basic ontological properties of waves, and in particular to a finite flowing point moving around the circumference of an Euler unit circle at the finite speed of light speed (by virtue of the principle of sufficient reason).

This is an entirely deterministic, analytic system. Indeterminism and probability don't come into it at all, as science idiotically claims (because it refuses to engage with ontology, epistemology and metaphysics).

The Ontology of Planck's Constant

Planck's constant, h , is the amount of energy associated with the flowing point. The flowing point traces out the fundamental sinusoidal wave with frequency 1 and wavelength 1, and also all higher harmonics. All higher harmonics (overtones) are associated with integer multiples of h . Energy tracks frequency, and the inverse of wavelength. In the spacetime world of matter, the flowing point is what is detected as a "particle". A flowing point is a concentrated packet of energy, which in the spacetime environment, has a non-zero mass.

The 3D Monad

We concentrate on Euler circles in one orientation in order to convey the basic ideas of ontological mathematics as simply as possible, but things are more complicated than that of course.

Science says that the "real" world comprises 3 spatial dimensions and a linked 4th dimension of time. In the Euler universe of mind, three complex planes stand at right angles to each other, producing a universe of three real dimensions and three imaginary dimensions, or, equivalently, a total of three orthogonal complex dimensions. (These are spatially unextended "frequency" dimensions and not conventional spacetime dimensions.) A full monad exists in this 3D complex domain.

Mathematical Waves versus Scientific Waves

All mathematical waves are mental waves. They are based on the speed of light, angle, frequency, wavelength and energy. They do not make any

reference to space or time.

Scientific waves are material waves and add space and time (which are derived from phase) to mathematical (mental) waves.

Curtailed Waves

Normal sinusoidal waves travel at light speed and are outside space and time. They exist in the frequency domain and are orthogonal. When they are altered by phase information, they generate space and time waves, which are non-orthogonal since they are dependent on a phase angle different from ninety degrees.

The Autonomous Agent

“Furthermore, why must it be that everything is acquired by apperceptions of external things and that nothing can be unearthed from within ourselves? Is our soul in itself so empty that, without images borrowed from outside, it is nothing?” – Leibniz

A harmonic Leibnizian monad is an autonomous agent that can generate entire worlds on its own. The soul is as full as it is ontologically possible to be. It is the ontological definition of eternal fullness.

The Heisenberg Uncertainty Principle

The Heisenberg “uncertainty” principle is a feature that naturally arises in a monadic system. However, it is no longer associated with uncertainty at all since we are now dealing with the *certainty* of analytic, well-defined mathematical monads. Everything that science regards as “uncertain” is in fact deterministically contained within monads.

Scientific “uncertainty” arises because scientific materialism refuses to accept the existence of monadic containers, which provide complete certainty. From the scientific point of view, monads are unobservable “hidden variables”, which science ideologically rejects.

Science says that if something has an exact position then it has infinite uncertainty associated with it in terms of momentum/energy. Actually, all that science has done is implicitly define a monad: a monad is an infinite energy system located at a point! Except it’s not quite infinite, and thus nor is the Heisenberg Uncertainty Principle concerned with infinity. Nothing is ontologically smaller than the flowing point, and nothing is larger than the highest frequency compatible with it. That’s Nature. It’s granular ... because of the flowing point.

There is no mystery and no uncertainty. However, to reach this conclusion, you have to invoke a rational, mathematical entity beyond the reach of empirical science, which science refuses to do for philosophical reasons. “Uncertainty” is merely an artifact of science’s ideology, not of rational fact.

Thoughts

What are thoughts? They are the waves that exist within monads (minds). When we want to construct complex thoughts, we simply add waves (thoughts) together, as per Fourier mathematics. That’s it!

We have explained the mystery of mind using nothing but the principle of sufficient reason and ontological mathematics.

Waves – light waves to be exact, which are sines and cosines, as per Euler’s Formula – are the basis of both mind and matter.

When a monadic mind operates on its own, it produces its own subjective mental world, as we experience in our dreams. However, when all monads act together, they produce an objective world – the world we experience as the persistent material universe of space and time.

We can change our dream world night after night because our mind is the only one involved with it. We cannot change the material world day after day because it is the product of every mind in existence, so every mind bar ours obstructs and resists any attempt by us to change it. It is this mental resistance that we perceive as an unchangeable objective world of alien matter. This is, however, a purely mental world. “Matter” is exclusively a product of mental waves. There is no such thing as “matter” independent of mind, as science fallaciously claims.

Simple, Simpler, Simplest

“It can scarcely be denied that the supreme goal of all theory is to make the irreducible basic elements as simple and as few as possible without having to surrender the adequate representation of a single datum of experience.” – Einstein

“Everything should be made as simple as possible, but no simpler.” – Einstein

“Make things as simple as possible, but not simpler.” – Einstein

Occam’s razor says that given competing hypotheses as to the explanation of something, the simplest hypothesis is always the most plausible, and always

to be preferred. Well then, what could be simpler than that the whole of existence results from points moving in circles according to the principle of sufficient reason?

Nothing could be simpler than the point, and nothing could be more rational, intelligible and have more rational explicatory power than the PSR.

Ontological mathematics is the subject that is produced from the study of nothing but points in rational motion. Therefore, ontological mathematics is the answer to existence. Nothing could be simpler, nothing could be more rational. It has no intelligible rivals, only unintelligible speculations.

Einstein, as a typical empiricist, tried to draw experience into the reckoning. Reason has no requirement for experience, and no requirement for Einstein's spurious, anti-rationalist thinking. Experience is itself an unnecessary complication. It has nothing to do with the essential building blocks of existence. These have necessarily existed forever, hence are permanently outside any conceivable human experience. No human beings experienced the Big Bang or what preceded it, so how can their experiences, observations and experiments have any relevance to it whatsoever?

Reason has always existed. Humans have not. Occam's razor *demand*s that we exclude humans and their experiences from any explanation of reality. They are a needless impediment, a superfluous ingredient. Science has never grasped this elementary truth ... because science is about empiricism, and is explicitly opposed to rationalism.

Occam's razor for an empiricist is entirely different from Occam's razor for a rationalist. Occam's razor for an empiricist is a contradiction in terms since experiences are not, and never can be, *explanations*. David Hume, for example, abolished causation because it could not be perceived or experienced. Occam's razor most certainly does not abolish causation. Without causation and the PSR, all "explanations" become absurd, as we see with modern science, especially regarding quantum mechanics and cosmology.

There is no requirement for a rational hypothesis to be compatible with observations. It must, however, sustain ironclad reason and logic.

Empiricism and rationalism reflect wholly different standards and types of knowledge. Science is on the side of empiricism, while mathematics is on the side of rationalism.

The universe is either scientific or mathematical. It cannot be both.

Mathematics is much simpler than science. Mathematics can stand without science. Science cannot stand without mathematics. When Occam's razor is applied to this fact, there is only one rational conclusion ... mathematics is fundamental and science isn't, hence ultimate explanations must be entirely mathematical, and must not be contaminated in any way by scientific considerations, especially those involving empiricist thinking.

Euler's Formula

Euler's formula is: $e^{ix} = \cos x + i \sin x$

Using the exponential law for integer powers, we can write:

$$(e^{ix})^n = e^{inx}$$

Which leads to...

$$e^{inx} = \cos nx + i \sin nx$$

We can introduce the speed of light, c , into Euler's Formula by writing:

$$e^{icx} = \cos cx + i \sin cx$$

However, if $c = 1$ then this simply reduces to the basic Euler Formula.

If $c = 1 = f\lambda$ then $\lambda = 1/f$, and $f = 1/\lambda$.

We can write $e^{if\lambda x} = \cos f\lambda x + i \sin f\lambda x$. Frequency always has integer values in our harmonic system. As it rises, wavelength falls correspondingly, ensuring that $f\lambda$ always stays equal to 1. This means that although all waves operate at the same speed – the fixed speed of light – this speed can be achieved in myriad different ways by adjusting the frequency and the corresponding wavelength. The PSR guarantees that all of these different possibilities are realized at once since there is no reason to privilege any of them over any of the others, so all are accommodated equally.

If $E = hf$ and $c = 1 = f\lambda$ then $E = h/\lambda$ and $h = E \lambda$.

Just as c is a fixed quantity but can be achieved in many different ways by adjusting the frequency and wavelength appropriately, so h is a fixed quantity that can be achieved in many different ways. As wavelength decreases, frequency increases, and energy increases.

The quantization that characterizes quantum mechanics is thus supplied in two different ways: 1) energy can come only in h -sized bundles, and not in any old bundle, and 2) energy derives from standing waves that have

integer frequencies and reciprocal integer wavelengths. Non-integer frequencies are not possible. These two considerations mean that energy will always appear in parcels, in chunks, in packets, in quanta, and only certain energy levels are attainable.

It's not that energy is *not* a continuum but rather that most energy points on the continuum are unstable, hence only certain discrete points on the continuum prove stable and selectable. As ever, we find the finite appearing in the midst of the infinite. That's the beauty of math.

The Two Realities

There are only two realities ... the individual mental reality produced by single minds acting separately, and the collective mental reality produced by all minds acting together. Although both are mind-constructed realities, they have an entirely different character, and we experience them entirely differently. Our individual dreamworld can be changed at will. The same is not true of the objective world. We are up against every other will in the universe. Every will is resisting us. Therefore the objective world seems alien, other, full of resistance to our will.

Standing Waves

Ontological standing waves don't go anywhere. They don't travel through spacetime. Standing waves form in a bounded medium. The Singularity is exactly such a bounded environment. It's the ultimate such boundary ... a single point.

The Universal Language

There is only one universal language ... *mathematics*. This universal language is, by definition, the language of the universe, of Nature, of existence itself.

There is nothing except mathematics. Mathematics is the all, the total, the whole. We are mathematical beings in a mathematical universe, interpreting the mathematical ocean of information in which we are immersed. We interpret it not in terms of mathematical form (pure math), but as mathematical content, which means the information, the experience, conveyed by mathematics.

Mathematics is not unreal and abstract. It is real and concrete. Mathematics is ontological. It exists. It is what existence actually is, despite everything that human beings tell themselves to the contrary.

When people write down mathematical equations, they are expressing mathematical *form* disconnected from mathematical *content*. The writing down of mathematics makes it seem unreal and abstract. The equation $y = x^2$, as written by a person on a piece of paper, is pure form. It has no content, no meaning (i.e. no semantics). It is pure syntax. By contrast, when $y = x^2$ is written by Nature itself, it is both form *and* content, syntax *and* semantics. It carries specific information that you can *experience*.

For argument's sake, let's say that all equations of the type $y = x^2$ correspond to the range of feelings concerned with love. As x rises, love becomes more passionate. And let us say that all equations of the type $y = x^3$ correspond to the range of feelings concerned with hate.

If you are immersed in a world of love and hate, you are preoccupied with these emotions. What you are not preoccupied with, and what you don't perceive at all, is that you are actually immersed in a world of x^2 and x^3 . Love and hate have meaning for you, x^2 and x^3 do not.

People who love and hate never contemplate what their love and hate is made of, how these emotions are defined, how they exist ontologically, what is carrying these experiences, and how the carriers interact with carriers of different types of experience.

All experiences have exactly the same substratum – simple sinusoids, alone or in combination – which is why all of your experiences can interact with each other.

You experience the universe as *content*. If you had a more powerful mind, you would be able to “see” the form too, i.e. the form that carries the

content, which delivers the content, which allows the content to exist in the first place.

Imagine you had a mind that could switch off content, i.e. *all* empirical experiences. Would reality disappear? According to the likes of empiricist philosophers David Hume and Bishop Berkeley, it would. According to the transcendental empiricist Immanuel Kant, it would become unknowable. They are all wrong. You would in fact encounter reality as pure form, i.e. pure mathematical syntax. You would encounter nothing but simple sinusoidal waves and their combinations. There is literally nothing else out there.

The human mind has evolved in such a way as to screen out ontological form (which is permanently hidden), and instead detect only ontological content.

Only reason and logic, which transcend our experiences, can lead us to the underlying form, which constitutes the intelligible, explicable aspect of reality.

The philosophy of empiricism is all about content. The philosophy of rationalism is all about form. That's why they can't agree with each other. Science has proved astoundingly successful (but not as astoundingly successful as it could be) because it has combined empiricism and materialism into a reliable, yet ultimately fallacious, method.

Science relies on sensory experiments to handle the empiricist aspect of reality, and relies on mathematics to handle the rationalist aspect of reality.

An experiment produces some kind of observable pattern, and scientists then guess at various mathematical formulae to fit the observed pattern. This is exactly how Max Planck discovered quantum mechanics. Planck had no idea why his formula that invoked "Planck's constant" worked, or what it signified, but it perfectly matched the observed experimental pattern, hence had to reflect some kind of truth.

This practical, ad hoc "success" is actually the whole problem with science. It can match formulae to patterns, but it can't explain what it has thereby achieved, and what this means ontologically and epistemologically. As Nietzsche rightly said, "Success has always been the greatest liar."

Science is just a whole bunch of speculations, conjectures and interpretations – many of them completely demented – attempting to explain why such and such a formula matches such and such an experimental pattern. Science excludes *all unobservable patterns*, i.e. patterns that are inaccessible to scientific experimentation. In fact, it denies that these exist.

Absence of evidence is taken by science to be evidence of absence.

Science applies the bogus philosophy of empiricism and materialism to everything it observes experimentally, and explicitly excludes the alternative, and much more intelligent, philosophy of rationalism and idealism.

Leibniz, the brilliant rationalist philosopher and mathematician, was the supreme champion of the latter approach. For Leibniz, the universe was based on unobservable monads (minds), and the observable universe resulted from the properties of these monadic minds. As we have shown, it's easy to convert Leibniz's monadic minds into containers for complete and consistent collections of sinusoids, and then to explain the whole of reality on the basis of these mathematical energy waves originating in monads. When this is done, all interpretations of observable patterns change from indeterministic and probabilistic (as science insists) to deterministic and analytic.

Leibniz defined his monads metaphysically, which meant they could not be developed in a productive way. Now, however, they can be defined mathematically, using Euler's Formula and Fourier mathematics.

Leibniz's *Monadology* is one of the greatest works of all time. Written in the early 18th century, it describes metaphysically the world of holography ... a scientific discovery of the second half of the twentieth century. In other words, Leibniz was hundreds of years ahead of his time. The mathematics available in his day was not powerful enough for him to reach a mathematical conception of reality, so he chose rationalist metaphysics instead. Virtually all of his metaphysical statements are true, and can now be converted into rigorous mathematical statements.

A Leibnizian monad is an entity defined by the generalized ontological Euler Formula. It forms a complete Fourier system, and all it does is perform Fourier mathematics, both individually and collectively. That is all you need to explain the *whole* of reality!

By applying Leibnizian monadic thinking to quantum mechanics and relativity theory – the two jewels of modern science – the crazy things that scientists say about these subjects (such as cats being simultaneously dead and alive, or reality having no absolute reference frame to guarantee objective reality and thus a reality principle, or existence randomly leaping out of non-existence) vanish, and are replaced by logical and rational explanations. Mike Hockney has conducted this exercise in his epic *God Series* of books. He exposes all of the bizarre, irrationalist, empiricist

misinterpretations that scientists have applied to the successful mathematical formulae they have produced.

It's essential to understand that math is the part of science that works, the part that matches experimental observations. The part of science that definitely doesn't work is the systematic misinterpretation of these incredibly successful mathematical formulae via the fallacies of the philosophy of empiricism and materialism. It's science's philosophy that is wrong, not its math. Science can be *easily* cured by changing its philosophy to idealism and rationalism, exactly as Leibniz advocated.

Scientists have never understood that they are just philosophers with a method, and that they are disastrously misinterpreting mathematics.

Their calamitous philosophy is most exposed when it comes to the task of trying to reconcile quantum mechanics and general relativity. The most well-informed scientists in human history – tens of thousands of them – have been trying for decades to unify the two treasures of science. The plain fact is that they have no clue what they are doing, and the reason they have no clue is that they refuse to use any arguments based on rationalism and idealism, which are exactly the arguments they need in order to succeed in their task.

Their quasi-religious faith in materialism and empiricism has destroyed their ability to think clearly. They have excluded the tools they need to succeed. Just as Muslim “scientists” automatically exclude any conclusions that would contradict the Koran and destroy their faith, so mainstream scientists automatically exclude any conclusions that would contradict their philosophy of materialism and empiricism, regarding which they are true believers, just like religious fundamentalists. They are as blinkered, closed-minded and fanatical as any people of faith. They have shut themselves off from reason and logic, yet, laughably – and with the utmost irony – they often claim to be the sworn defenders of reason and logic.

If they were, they would support rationalism rather than empiricism. In fact, they completely reject rationalism. No scientist ever defends the likes of Pythagoras, Plato, Descartes, Spinoza, Leibniz and Hegel. These geniuses are all rejected out of hand.

Scientists are dummies, saved from their own stupidity by the mathematics they use. Mathematics is the opposite of science ... it is wholly rationalist and idealist, and has no reliance on human experiences, feelings, observations, measurements, experiments, or anything else characteristically human.

The Wave War

Mathematical waves in a Singularity cannot refer to space and time since space and time do not exist in the Singularity. All waves in the Singularity are maximally length contracted (they have zero length) and maximally time dilated (they do not experience the passage of time). They are massless, immaterial and travel at the speed of light.

When scientific waves are created from mathematical waves, the scientific waves acquire spatial and temporal features, they become material and acquire mass, and they travel at less than light speed.

Mathematical waves are unextended and dimensionless. Scientific waves are extended and dimensional. The latter are derived from the former.

It's essential to realize that you cannot apply the concept of temporal period and spatial distance to waves travelling at light speed (i.e. mathematical waves). Instead, "period" and "distance" are replaced, as we have seen, by definitions relating to angle.

Consider the concept of frequency multiplied by angle. Let's write:

$$e^{ifx} = \cos fx + i \sin fx$$

If $x = 1$ and $f=10$ then $fx = 10$. Every angle is reached ten times quicker than in the base case of $e^{ix} = \cos x + i \sin x$. To compensate for this, the wavelength must be reduced by a factor of ten. So, for e^{ix} , we have a frequency of 1 and a wavelength of 360 degrees (1 revolution). For e^{ifx} , where $f = 10$, we have a frequency of 10 and a wavelength of 36 degrees (a tenth of a revolution). We can therefore have one wave cycle completed in 36 degrees, and ten wave cycles completed in a full circle (rather than just one), and this is accompanied by ten times the energy since there are ten times more wave cycles. The speed remains the same since $c = f\lambda$. So, if you put a frequency f in front of angle x , you complete a total 360 degrees wave f times quicker, but you also need $1/f$ fewer degrees in order to do so, so you have $1/f (= \lambda)$ less angular distance to cover, hence the net effect is to keep $f\lambda$ at exactly the same value, c . Each wave cycle equals one energy cycle. Ten wave cycles have ten times more energy than one wave cycle.

This way of thinking about waves is ignored by the academic community, and especially by scientists, who can never get beyond thinking about space and time, and forcing everything to have spatial and temporal characteristics. Reality in itself, reality *before* the creation of space and time, can have no spatial and temporal characteristics, but must certainly

contain the *precursors* of space and time, from which space and time are then built. We have shown that this is done simply via linear combinations of mathematical waves which couple sines and cosines rather than keeping them strictly decoupled (i.e. orthogonal).

We have shown how a Singularity of mathematical waves without space and time can give rise to a Big Bang universe of space and time waves. There's nothing else to it. Do the math!

Wittgenstein

Wittgenstein, one of the most renowned philosophers of the twentieth century, is remarkable for raising so many of the right questions, and giving so many of the wrong answers. If you go through Wittgenstein's philosophy and more or less invert all of his conclusions regarding mathematics and its relation to reality, you will arrive at the correct answer to existence ... ontological mathematics.

One key point that Wittgenstein definitely got right regarding mathematics, however, is that mathematics is pure tautology, hence can *never* be inconsistent and/or incomplete. Gödel's incompleteness theorems do not apply to ontological mathematics, which is constructed from a single formula (the God Equation), but do apply to mathematics based on multiple axioms selected by humans, which destroy the tautology required of true mathematics.

In order for tautology to be restored, all *true* mathematical axioms must be derived from a single axiom, an *arche*. They are therefore all expressions of the same thing, hence cannot be inconsistent and/or incomplete with regard to each other. Axioms, in order to support tautology, must be dependent on a single origin. If axioms are independent of each other, and have no common source, then it is *inevitable* that they will produce incompleteness and/or inconsistency, as Gödel demonstrated.

Gödel's work does not apply to mathematics itself but to human attempts to find an arbitrary set of axioms from which to build their version of mathematics. No such arbitrary exercise can *ever* be valid.

Mathematical Semantics

Mathematics has traditionally been regarded as pure syntax, with no semantics, i.e. the claim is made that math is “unreal” and devoid of meaning. In ontological mathematics, it is essential to dispel this pernicious notion that math is just abstract syntax, hence made by man, and unconnected to reality.

In essence, ontological mathematics contends that *being* (concerning the questions “what actually is it?”; “what is its exact definition?”; “what is its intelligible form?”) is syntax, while *becoming* (concerning the questions “what does it do?”; “what is it for?”; “where is it going?”; “how is it experienced?”) is semantics, i.e. the meaning (semantics) of mathematical reality concerns the teleological development/evolution/ dialectic of a living, thinking mathematical Cosmic Organism, made of interacting, living, thinking monads composed of nothing but energy waves.

Symmetry is the key to mathematical semantics. The Singularity is where perfect orthogonal symmetry reigns. The Big Bang corresponds to a symmetry-breaking event, which throws the mathematical Cosmic Organism into an epistemological abyss, total darkness, chaos and confusion. Non-orthogonality now reigns. The “perceptions” of monads, so clear in the Singularity, now become very murky. This is an inevitable mathematical outcome of *asymmetry*, which underlies friction, viscosity, spacetime, matter, temperature, entropy, gravity, and so on ... all of the things associated with a *physical* universe (but not with a *mental* universe).

The Big Bang is an “involution” event (i.e. a higher mental state produces a lower physical state). The mathematical Cosmic Organism then has the task of restoring symmetry, i.e. restoring a wholly clear, rational, logical, *mental* universe (heaven so to speak, populated by monadic gods which know, see and understand *everything*). The approach towards this state is what “evolution” is all about. (“Devolution” involves the degradation and regression of physical states. It has no connection to “involution”, which is about optimal mental states giving rise to sub-optimal physical states of maximum potential and minimum actualization.)

Evolution involves the replacement of physical asymmetry by mental symmetry, and monadic minds are what achieve this outcome, i.e. mind overcomes matter (whereas, at the Big Bang, matter overcomes mind, or, rather, mind abandons itself to matter ... it commits divine suicide, so to speak).

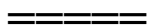
This process provides the basic concept of the semantics, the meaning,

the purpose, the teleology, of a mathematical universe. People's lives become more meaningful and real to the extent that they align with this agenda, which entails that they become more and more rationalist, more and more mathematical.

We bring the universe mathematically to its conclusion (its Omega Point) because we ourselves become perfect, *conscious* agents of mathematics, with complete clarity of purpose and understanding of the task in hand and how to achieve it.

To put it another way, all monads start off competing with each other irrationally (non-mathematically), hence we get the savage law of the jungle. However, we all end up rationally cooperating with each other (mathematically) to achieve the collective goal of perfect symmetry, in which every monad is thereby rendered perfect, completes its cosmic mission, and thus satisfies the meaning of existence (which is to attain completeness, completion, wholeness, perfection, i.e. to become "God").

We want people to stop believing that the universe is meaningless and purposeless, as science claims, or that it is ruled by an eternal God, as Abrahamism claims, or that it is a system of illusion that is corrected by empirical meditation, as Eastern religion claims.

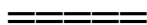


There are two "realities", one true and one false (*episteme* versus *doxa*). True reality is based on *necessary* syntax and semantics, and concerns nature's language: mathematics (numbers). False reality is based on contingent, arbitrary syntax and semantics, and deals with man's languages (dealing with emotive, non-analytic words rather than non-emotive, analytic numbers).

The latter denies that numbers are real, and ends up as the dysfunctional, infantile pseudo-philosophy of Discordianism. The former, by contrast, denies that words are real, and ends up as Illuminism (ontological mathematics).

The ultimate idea is to have a kind of Leibnizian calculating device which shows what statements are compatible with true reality (Nature), and which belong to false reality (manmade reality). It should be possible to prove to every rational person that the Abrahamic God, for example, and all statements associated with him, belong to false reality: a syntax and semantics of fantasy rather than reality. It should equally be possible to demonstrate all of the falsehoods of Discordianism, or any other false

religion/philosophy.



A second way of talking about mathematical semantics concerns *information carrier* (syntax; form) versus *information carried* (semantics; content). A mathematical sinusoidal wave of a specific frequency may be experienced as the color blue, but it is *never* experienced as a numerical frequency, as a mathematical waveform. In this view, empiricism is the semantic level of mathematics, while rationalism is the syntactical level of mathematics.

The empirical meaning of something is how it is experienced, not what it actually is. Our phenomenal experiences shield noumenal reality from us. The world is pure math, but we don't experience it as math: we experience it as feelings, perceptions, intuitions, desires, and so on, all of which belong to the level of information carried and experienced rather than the level of the information carrier and transmitter. We experience content, not form. In Platonist terms, we experience the sensible aspect, not the intelligible aspect.

With mathematical semantics, the task is to overcome the unreal, abstract, purely syntactical terms in which mathematics is so often treated, and instead to show that all of our experiences, and the whole way in which the universe is evolving and in which our minds are evolving, relate to the ontological, semantic reality of mathematics.

This is a universe of information agents (monads), which are getting better and better at interpreting information. Eventually, they will be so good that they are able to understand that all information is carried by mathematical waves, and that they themselves are made of waves and carry wave information.

The semantic universe of our experience, from which we derive meaning, is sitting directly on top of a syntactical universe of sinusoidal math derived from Euler's Formula. The mathematical form is the noumenal level of reality, while the mathematical content (information carried) is the phenomenal level. Humans are attuned to phenomena, not noumena. Only our reason and logic can access the hidden noumenal level that defines existence, and which provides the answer to existence.

The domain of mathematical form (syntax) is the intelligible, rational, explicable aspect of reality. The domain of mathematical content (semantics) is the sensible, irrational, mysterious, mystical, acausal (in

terms of appearance), experiential aspect of reality.

This is a universe of information waves, organized within monads (autonomous mathematical wave containers), which are able to interact with each other via wavefunctions (generated by Fourier mathematics).

Another way of looking at things is to say that we are seeking to turn the wavefunction of quantum mechanics into an ontological, semantic reality rather than an unreal, probabilistic mathematical abstraction (as science absurdly claims it is).

Syntax operates at the inexorable, mechanical level. Science is an entirely syntactical theory given that nothing in science is teleological. In science, nothing has a meaning, point or purpose. Nothing has any aims. Nothing is going anywhere. According to scientists, everything happens ultimately by chance, accident, probabilities and statistics. No intelligence is ever in operation, with a will to achieve desired ends. Things happen purposelessly. Only minds are inherently teleological, but minds are completely denied by science, hence teleology is denied. Science makes “mind” – if it can be called that – some sort of undefined, unidentified field (which science has never detected, and has no theory of what it would be attempting to detect!), with no causal efficacy, which arises from the interaction of brain cells, hence perishes as soon as the brain perishes.

Matter has no teleology, so a material universe can have none either. Mind does have teleology – in fact is all about teleology – so a mental universe is always evolving towards a final goal. It is inexplicable in scientific terms that all human beings are teleological – we are all driven by purposes and meaning – given that, according to science, we are made of dead, inert, lifeless, mindless lumps of matter with absolutely no purposes and meaning. The scientific view is a category error, a contradiction in terms, and a logical impossibility.

Nothing in science has any objectives, not even evolution. Things just happen according to the syntactical “laws” of science, which are now barely syntactical at all since everything is considered to be probabilistic, acausal and indeterministic, driven by chance and accident.

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Where math is regarded as unreal, abstract and syntactical, science is regarded as real, concrete and syntactical. Math and science are both regarded as non-semantic. Neither is regarded as having any meaning whatsoever. Meaning is left to religion and philosophy. Neither has any

purpose. Again, that is left to religion.

A semantic layer requires a mind to confer *meaning* on processes and events. Without mind there can be syntax only.



A further consideration is unconscious versus conscious semantics. Animals exhibit unconscious semantics. Humans exhibit conscious semantics, but rely on manmade language and stories to assign conscious meaning. A proper conscious semantics should rely on natural mathematics and rationalism rather than on silly, invented stories (of which religion is the supreme example).

Descartes asked why we find in our minds an idea of supreme perfection even though we know we are imperfect. He concluded that God was the cause of this idea of perfection. In fact, it is mathematics that causes our idea of perfection, and also our idea of the infinite, the all-powerful, and the omniscient. Math causes this knowledge intuitively, unconsciously. In conscious terms, we attribute it to anything other than math, and average humans especially attribute it to “God”. “God” is really just a personification of perfect math. People don’t understand the mysteries of math, so they convert them into the mysteries, the stories, of mythical beings, or just one Super Being.

Matter always acts syntactically. Low functioning mind also acts more or less syntactically, while high functioning mind acts semantically. As we ascend the unconsciousness ladder from minerals to plants to animals, more and more semantics becomes involved. Consciousness is entirely semantic.

Dreams reflect high-level unconscious semantics. Dreams are imbued with meaning, but their meaning is not self-evident to the conscious mind, which desperately tries to interpret them.

Ordinary humans have no awareness at all of ontological syntax. Higher humans and gods do.

Science and philosophy are hopeless when it comes to semantics. They refuse to consider that semantics cannot exist without syntax. A false semantics results from a false syntax (such as those provided by science, philosophy and religion). A true, ontological, natural semantics results from a true, ontological, natural syntax. Mathematics provides both ... the semantics hardwired to the syntax. Everything else is false.

Academic mathematics has no semantics, science has no semantics, religion has plenty of semantics but no syntax (or no syntax other than

“God”, or some unexplained divine force), and philosophy is an immense muddle of systems involving false syntax and false semantics.

Ontological mathematics cuts through all of the crap and provides a total, analytic, rational, logical solution to everything.

David Hume: Anti-Soul Man

“For my part, when I enter most intimately into what I call myself, I always stumble on some particular perception or other, of heat or cold, light or shade, love or hatred, pain or pleasure. I never can catch myself at any time without a perception, and never can observe any thing but the perception.... If any one, upon serious and unprejudic’d reflection thinks he has a different notion of himself, I must confess I can reason no longer with him. All I can allow him is, that he may be in the right as well as I, and that we are essentially different in this particular. He may, perhaps, perceive something simple and continu’d, which he calls himself; tho’ I am certain there is no such principle in me.” – David Hume, *A Treatise of Human Nature*

Here we see the classic position of the empiricist. These people cannot get beyond their perceptions. They are so irrational that they cannot grasp that their perceptions themselves must have an ontology, which cannot be perceived. You *experience* a perception, but you don’t experience what the perception is made of, what conveys it, what set of laws it obeys. Of necessity, perceptions conceal what they are made of.

We are dealing with a dual-aspect ontology, a two-sided coin. If your perceptions are attuned to heads, you will *never* see tails. If a coin always lands heads up, you will never see tails, but that doesn’t mean tails doesn’t exist. In terms of the dual-aspect ontology of the information carrier and the information carried, you always perceive the information carried and *never* the information carrier. A rationalist works out that the information carrier *must* exist. An empiricist, such as Hume, does not. He maintains that anything that cannot be perceived *does not exist*. He denies his own soul, his own self ... simply because he cannot perceive it. It is not something that *can* be perceived ... it is the perceiver himself! A perceiver’s mind is full of perceptions, but none of those perceptions can be of the perceiving mind since the mind is the collective perception carrier, not the individual perceptions it carries. You cannot perceive the perception itself as well as what carries the perception since that would require two independent perception systems, one for each side of the “coin”. A human cannot see heads and tails simultaneously. You would need an entirely different way of

perceiving reality to see both sides of the coin at once.

Empiricism deals with the layer of what we perceive (the information carried), while rationalism deals with the layer of what we don't perceive (the information carrier). A rationalist accepts that empiricism must exist too (in order to reveal both information carrier and information carried; cause and effect). However, the converse is not true. Empiricists do not accept that rationalism must exist too. As the likes of Berkeley and Hume fanatically argued, what we do not perceive does not exist (even though it rationally must!). The absurdity of this argument is fully revealed as soon as we consider *what a perception is made of*. It plainly isn't made of *nothing*, so must be made of *something*, but we do not perceive what it is made of, hence what it is made of cannot exist (by empiricist "logic"), and if what the perception is made of cannot exist then the perception itself cannot exist! Which makes empiricism absurd, and more or less insane.

Perceptions are not free-floating "nothings", made of nothing, and obeying no laws. They are not miraculous and magical. They are actual things, with an ontology, and reflecting an epistemology.

Tragically, this empiricist irrationalism and lunacy is found everywhere. The bizarre religion of Buddhism is all about empirical introspection, and rationalist ontology is totally denied. The Buddhists, long before Hume, denied the existence of the self, the soul. Buddhism is empiricism *as a religion*. It is the purest anti-rationalism. It does not invoke a single rationalist argument, and any "reason" it deploys is strictly empiricist "reason", which is inherently false reason since true reason is rationalist reason.

Science, catastrophically, shares the empiricist worldview, hence rejects rationalism. Science always reasons wrongly. It is wholly dependent on rationalist mathematics, yet rejects rationalism. It doesn't even use empiricist reason properly since it routinely invokes things that cannot be perceived – abstract, unreal probability wavefunctions, singularities, and, above all, laws of science that cannot be perceived, and which are eternal, immaterial, and have no specified location, and no ontology. Everything about science is fundamentally contradictory. Scientists are so inept philosophically that they cannot grasp that the subject they swear by is a joke, and an enemy of reason. Science can however be readily cured ... by being converted to ontological mathematics. Sadly, it's much harder to cure scientists themselves. They are irredeemable empiricists (anti-rationalists).

Signified and Signifier

“The terms signified and signifier are most commonly related to semiotics, which is defined by Oxford Dictionaries Online as ‘the study of signs and symbols and their use or interpretation’. Ferdinand de Saussure, a Swiss linguist, was one of the two founders of semiotics. ... Saussure explained that a sign was not only a sound-image but also a concept. Thus he divided the sign into two components: the signifier (or ‘sound-image’) and the signified (or ‘concept’). For Saussure, the signified and signifier were purely psychological; they were form rather than substance. Today, the signifier is interpreted as the material form (something which can be seen, heard, touched, smelled or tasted) and the signified as the mental concept.”
– Wikipedia

In ontological mathematics, the signifier is the unseen, noumenal signifier (the ontological syntax), while the signified (the semantics) is the perceived, phenomenal experience we actually have when we encounter the signifier. We experience information (the signified), but not the information carrier (the signifier).

Carnap

Rudolf Carnap said that all philosophical problems were really syntactical problems. Sort out the syntax, and the problems would vanish. We say that all the problems of philosophy concern the syntax and semantics of mathematics, and nothing else.

The syntax and semantics of arbitrary, manmade languages relate to fantasy, religion, myth, politics, psychology, sociology, and so on. Manmade languages have nothing to do with reality, with why we exist, what we are doing, and where we are going. Manmade languages (words) tell us an emotive story (myth). Natural language (numbers) tells us the analytic Truth. Any philosophy not based on numbers, math, reason and logic is a pseudo-philosophy. Pseudo-philosophy is what Discordians attack. Their problem is that they regard *all* philosophy as pseudo, and everything as manmade, hence subjective, relative, and unconnected to objective truth and reality. They are Sophists who agree with Protagoras that man is the measure of all things. And, of course, their own philosophy is itself a pseudo-philosophy.

All serious philosophers oppose the anti- philosophy and pseudo-philosophy of Discordianism, although many strands of postmodern philosophy reflect Discordian tropes (but much more intelligently).

In *The Logical Syntax of Language*, Carnap said, “Philosophy is to be replaced by the logic of science – that is to say, by the logical analysis of the concepts and sentences of the sciences, for the logic of science is nothing other than the logical syntax of the language of science.”

We want to replace “philosophy” with the logic of mathematics, by the logical analysis of the concepts and sentences of mathematics, always ensuring that any statements about semantics are firmly grounded in syntax, i.e. we must trace everything back to the properties of waves with their dual-aspect ontology of form and content, information carrier and information carried, map and territory, phenomenon and noumenon, rationalist aspect and empiricist aspect, signifier and signified.

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“By the logical syntax of a language, we mean the formal theory of the linguistic forms of that language – the systematic statement of the formal rules which govern it together with the development of the consequences which follow from these rules. A theory, a rule, a definition, or the like is to be called formal when no reference is made in it either to the meaning of the symbols (for examples, the words) or to the sense of the expressions (e.g. the sentences), but simply and solely to the kinds and order of the symbols from which the expressions are constructed.” – Carnap

The only natural language is that of numbers (math), not that of manmade words. All word-based philosophies are necessarily false.

“According to this view, the sentences of metaphysics are pseudo-sentences which on logical analysis are proved to be either empty phrases or phrases which violate the rules of syntax. Of the so-called philosophical problems, the only questions which have any meaning are those of the logic of science. To share this view is to substitute logical syntax for philosophy.” – Carnap

We are substituting logical mathematical syntax and semantics for philosophy.

“In order to determine whether or not one sentence is a consequence of another, no reference need be made to the meaning of the sentences. The mere statement of the truth-values is certainly too little; but the statement of the meaning is, on the other hand, too much. It is sufficient that the syntactical design of the sentences be given.” – Carnap

We can carry out a strictly syntactical study of ontological mathematics and

then draw semantic conclusions from what the syntax makes possible, i.e. the mental evolution of the universe, to the extent of mind ultimately overwhelming “matter”, which is merely math passed through the dimensionality filter of space and time, which are themselves merely products of Fourier mathematics. *Frequencies* in the mental Singularity are the basis of time and space in the material universe, once non-orthogonal asymmetry resulting from *phase* is factored in.

“It was Rudolf Carnap’s dream for the last three decades of his life to show that science proceeds by a formal syntactic method; today no one to my knowledge holds out any hope for that project.” – Hilary Putnam

We are effectively replacing Carnap’s ideas regarding science with those regarding ontological mathematics, and also adding a semantic layer, *necessarily* rather than *arbitrarily* linked to the syntactical layer.

Saussure pointed out, with respect to manmade languages, that the link between signifier and signified is arbitrary. We are saying that, with respect to natural language, the link is *necessary*, i.e. if you encounter a wave with a specific frequency (the signifier), an exact experience (the signified) will always correspond to this, e.g. a specific wave frequency causes the color blue, and there is nothing arbitrary about this. If we were sophisticated enough, we could read off all hidden signifiers (noumena) from the visible signifieds (phenomena) that we actually experience and encounter.

In our system, signifier is the syntax, and the signified is the semantics, i.e. the meaningful experience – whether a feeling, perception, sensation, intuition or thought – that accompanies the syntax. This is a dual aspect system reflecting a syntactical carrier (a mathematical wave), and a semantic experience associated with it (the information carried by the mathematical wave).

Humans assign meaning and significance to the experience, not to the carrier of the experience, which is typically treated by science as an unseen, unreal, noumenal abstraction ... a quantum mechanical “wavefunction”, which does not become “real” until it is “collapsed” by an observation (i.e. an experience). In our system, the quantum mechanical wavefunction is real, hence has no need of any arbitrary and unexplained collapse mechanism. It is always associated with an experience, with observational and empirical semantic properties. Observers are not required to confer properties upon the wavefunction: it possesses them necessarily.

A straightforward PhD thesis would be to take Carnap’s work and recast

it in terms of ontological mathematics rather than science ... to establish a proper rationalist logical positivism, rather than one incoherently based on scientific empiricism, falsification and verification, all of which are contrary to logic. Or to interpret the quantum mechanical wavefunction in the radical new way we have suggested, with quantum mechanical wavefunctions ultimately deriving from monadic singularities, each made of a complete and consistent set of mathematical waves.



Mathematical semantics is all about what meaning we can derive from the fact that math is real and concrete rather than unreal and abstract, as scientists and even most mathematicians claim. Plainly, no semantic analysis can be applied to something regarded as unreal, abstract, pure syntax, with no ontological significance, as math is currently regarded.

Math is the ontological syntax of reality. All valid, true meanings are invested in this valid, true, ontological syntax. Everything else is literally nonsense and fantasy, including the vast bulk of philosophy, the common (mis)interpretation of science, and the prevailing (mis)interpretation of mathematics based on set theory. Set theory has absolutely no connection to ontological mathematics and is just another spurious philosophy, a pseudo-philosophy, based on empiricist ideology, tacked on to math.

A set is *not* a number and has no ontology, hence is totally invalid in terms of what we are doing. The set of numbers is not a number. Numbers can be manipulated by mathematics. “Sets” of numbers are not mathematical and cannot be manipulated by mathematics. There is no Leibnizian calculus regarding the constitution and the movement of arbitrary, abstract sets. Sets are manipulated via bogus language-based logic and axioms, a procedure which necessarily generates paradoxes. No such paradoxes exist in the real world.

If you gathered together all of the cans of baked beans in Germany, you would be able to point to those cans. You would not be able to point to the set of all cans of baked beans in Germany. This “set” is a concept manipulated in the mind. It is not a real, ontological entity in the world. The cans are real, the set of cans isn’t; individual humans are real, “humanity” is an abstraction.

The paradox of the set of all sets that are not members of themselves is not a mathematical problem, and it is not an ontological problem. It’s a bogus problem of wordplay, and logical confusion over self-reference and

subjectivity as opposed to other-reference and objectivity. The same problem infects Gödel's work on incompleteness. The only valid reason you would have for referring to set theory would be to refute it!

We are moving mathematics away from set theory and turning it into a theory concerning points, movement, circles and waves. Sets do not feature at all. Our work is all about real, concrete ontology. Our task is to eliminate all reference to unreal, abstract concepts with no ontological significance or relevance.

Sets are a catastrophe in terms of the promotion of our view. They are the antithesis of what we are doing. They are the exact problem we are seeking to overcome, the exact means by which the impression is given that math has no connection to reality but is just a set of logical, abstract statements generated by human minds ... just another manmade language.

One day, the entire basis on which math is currently taught will be abandoned. A thousand years from now, no one will have heard of the set theory of mathematics.

Duality

“Because the photon, which, as everyone knows, is a wave, is also a particle, why should not the electron (or any material particle) also be a wave?” – Louis de Broglie

“I was convinced that the wave-particle duality discovered by Einstein in his theory of light quanta was absolutely general and extended to all of the physical world and it seemed certain to me, therefore that the propagation of a wave is associated with the motion of a particle of any sort-photon, electron, proton or any other.” – Louis de Broglie

Why should wave-particle duality extend to all things unless all things share a common origin? If light is the basis of all things, we should not be surprised at all that matter reflects key properties of light. If light is *not* the basis of all things, it is extraordinary that it has any commonality at all with material particles. There would be no reason for commonality, and indeed a specific reason for non-commonality, i.e. non-matter (mind) cannot be compatible with matter (going back to Cartesian dualism). The fact that material particles reflect the properties of light particles (mind particles) *means* that matter comes from mind, that the dimensional comes from the dimensionless (while the reverse can't be true).

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“It would seem that the basic idea of the quantum theory is the impossibility of imagining an isolated quantity of energy without associating with it a certain frequency.” – Louis de Broglie

Energy cannot be conceived as anything other than a property of a flowing point. Energy cannot be divorced from the flowing point, and thus from circles and sinusoidal waves, hence energy is always associated with a speed, with a frequency, and with a wavelength. It also has a mass. A photon has a mass that *averages* to zero over the course of a complete Euler circle. Particles in the spacetime domain have masses that do *not* average to zero.

Think Again

We have said that 360 degrees is the maximum natural wavelength. The more astute of our readers will say, “Aha, but what if we have wave cycles that take place over 720 degrees, 1080 degrees, and all other multiples of 360 degrees, rather than just 360 degrees?” Indeed! And if we do this then we get frequencies less than 1, e.g. if wavelength = 2 (720 degrees) then the relevant frequency is $\frac{1}{2}$.

We get far more powerful symmetry between frequency and wavelength if we make this adjustment. This procedure allows us to put wavelength and frequency on an equal footing. However, the same arguments as before will apply, i.e. we will reach a lowest possible frequency, and this will provide a limit for the highest possible wavelength.

Anything for which a sufficient reason exists *will* happen. Things for which there is no sufficient reason will *not* happen.

Zero Entropy

The mental universe that precedes the Big Bang has *zero entropy*. It is *perfectly* organized. It contains no disorder (asymmetry) whatsoever. The Big Bang universe produces entropy. The Big Crunch removes entropy.

No Understanding

Scientists like to *apply* science. They don't like to *understand* science. That's because they are irrationalists who despise philosophy. Philosophy is about clear and deep thinking. Science is about murky and shallow thinking. Scientists do not comprehend anything in depth. They have no regard for ontology and epistemology. They take a useful result and run with it. They don't care about the coherence and integrity of a result, only its productivity. They are practical people, not intellectual people. That's why science is

offensive to rationalists.

The Spirit Ether?

“Sir Oliver Joseph Lodge, FRS (12 June 1851 – 22 August 1940) was a British physicist and writer involved in the development of, and holder of key patents for, radio. ... Scientific work on electromagnetic radiation convinced Lodge that an ether existed and that it filled the entire universe. Lodge came to believe that the spirit world existed in the ether. As a Christian Spiritualist, Lodge had written that the resurrection in the Bible referred to Christ’s etheric body becoming visible to his disciples after the Crucifixion. By the 1920s the physics of the ether had been undermined by the theory of relativity, however, Lodge still defended his ether theory and rejected relativity.” – Wikipedia

The Singularity of light is the “spirit world”. The ether does not fill the physical universe. Rather, the ether is what the physical universe is ultimately made from. The physical universe is entirely derived from light.

Oliver Lodge, a very prominent scientist of his day, has been largely written out of scientific history because of his spiritualist beliefs. On that basis, science should also have written Isaac Newton out of scientific history since he was far more interested in religion than science, had incredibly bizarre and fanatical religious beliefs, and identified absolute space with God! “God” was essential to his theory of gravity, and was the exact means by which the force of gravity was transmitted instantaneously across completely empty space. They don’t teach you that in physics class, do they? They’re very hush hush when it comes to Newton’s bizarre beliefs, which underpinned his science, and which led him into conflict with the great rationalist Leibniz.

Brain or Mind?

Scientists say that we are a brain, and that a mind is something created by the activity of brain. In fact, we are a mind, and a brain is something created by the activity of mind.

A brain is a spacetime entity to which a mind, located in the Singularity, links, and through which it expresses itself. While a mind controls a brain, the brain is alive. When the link is broken, the brain dies and turns to dust. The mind cannot die.

Why You Cannot Trust Your Senses

Scientists swear by their senses. Their enterprise revolves around the

central doctrine of logical positivism: “The meaning of a statement is its method of verification.” Science, above all else, is about providing sensory verification for hypotheses. A hypothesis is taken seriously if a sensory experiment seems to verify it. Otherwise, it isn’t. If a hypothesis, once successful, fails to be verified by new data, it must be revised or discarded. All hypotheses are rejected that involve “hidden variables”, anything that does not produce an outcome verifiable by the human senses. The fact that the human senses are unreliable, fallible and frequently subject to illusions and delusions, is completely ignored. Repeatable sensory facts are regarded by science as the surest facts of all. Reason and logic are totally dismissed if they have no sensory evidence to support them, thus relegating reason and logic to below the irrational human senses. That’s science for you ... the enemy of rationalism!

What is the Difference Between Mind and Matter?

Mind and matter are both ultimately composed of simple waves (sines and cosines), so in this regard there is no difference between them. We *perceive* them differently because of the wave property of phase, which underlies the creation of space and time, and thus of matter. However, the fact that mind and matter are the same is revealed in the fact that all “matter” was originally contained in the pre Big-Bang Singularity, where all phase information is absent, apart from the orthogonal phase relation between sines and cosines.

A huge material object such as a star can be reduced to a black hole singularity. In this process, matter is transformed into mind. It loses all of its non-orthogonal phase information. This is a strictly mathematical process. It has nothing to do with “science”.

What Are They?

What are space and time? Where do they come from? How are they possible? The answer lies in the most important and powerful equation ever discovered: Euler’s Formula. This extraordinary formula is the basis of eternal existence. It furnishes the building blocks of reality. It not only explains the pre-time, pre-space domain that produces the Big Bang universe, it also solves the intractable problem of Cartesian dualism by showing exactly how mind produces matter.

As we have demonstrated mathematically, Euler’s Formula is the true basis of Einstein’s special theory of relativity, and the all-important Lorentz

transformations. Euler's Formula reveals the exact difference between Einstein's relativity and Lorentz's relativity, and shows how they can be reconciled via a higher level of theory. Euler's Formula is the true equation of light.

Reality is nothing like what it seems. It is not religious, it is not philosophical, and it is not scientific. Do you want to know how deep the rabbit hole goes?

Are you ready for the ride of your life? Are you ready to discover the true secrets of reality? Only the greatest adventurers can embark on this expedition.

Of Any Importance

"Everything of any importance is founded on mathematics." – Robert Heinlein

Mind is simply dimensionless orthogonal photonic waves, while matter is non-orthogonal, dimensional waves. Mind is the universe of orthogonal phase. Matter is the universe of non-orthogonal phase. What could be more straightforward?

Descartes was right all along. Mind is unextended and matter is extended, but the two are indissolubly linked by mathematics, and in particular by the Fourier mathematics that underlies quantum mechanics and holography.

It's time to wake up. Reality has an answer and that answer is an eternal "God Equation" – Euler's Formula.

The Soul Factory

The most incredible feature of the God Equation is that it is literally a soul factory. The God Equation generates immortal souls. It is not God that creates souls and the world, it is the God Equation. All of the arguments historically used to defend the existence of God can be redeployed to rationalize the existence of an eternal God Equation. “God” is a personification, an anthropomorphization of a perfect, eternal, absolute God Equation.

When God is replaced by the God Equation, it means that we ourselves can literally solve the problems of existence, and thus we ourselves shall be Gods ... those who know everything and can solve everything.

Always a Reason

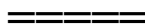
Leibniz’s principle of reason: *Nihil est sine ratio* (nothing is without a reason; everything has a reason).

The idea that things happen without reasons is absurd. Science is now based on the claim that, ultimately, there are no reasons and no causes, only probabilities that, on the macroscopic level, *appear* as if they are obeying causality (in fact, they are only obeying probability, and some things are more probable than others).

The Mathematical Organism

The universe is a giant living mathematical organism made of energy waves which is relentlessly solving itself to establish its optimal symmetry, the symmetry of perfection, the symmetry that produces God.

The universe is a wondrous singularity of light which projects a hologram (the universe), to which our minds then link, and via which we come to complete consciousness of ourselves and what we truly are. We ourselves are the answers to existence! We are how existence becomes conscious of itself. God did not make us, we are making God. God is the culmination of our collective journey.



“Mathematics is not only real, but it is the only reality. That is the entire universe is made of matter, obviously. And matter is made of particles. It’s made of electrons and neutrons and protons. So the entire universe is made out of particles. Now what are the particles made out of? They’re not made out of anything. The only thing you can say about the reality of an electron is

to cite its mathematical properties. So there's a sense in which matter has completely dissolved and what is left is just a mathematical structure." – Martin Gardner

Get with the program, get with Truth, get with mathematics. Mathematics is the answer to everything. Read it and weep.

Sapere Aude: Dare To Know

Well, are you daring enough? Only the brightest are brave enough.

"Happy be he who could learn the causes of things..." – Virgil

Only the most daring can learn the causes of things. They dare to leave behind religion, science and philosophy and embrace the ultimate subject for providing answers: *mathematics*. None but the boldest are bold enough for mathematics.

"The source of every crime is some defect of the understanding; or some error in reasoning; or some sudden force of the passions." – Thomas Hobbes

When people can reason correctly, crime will fall to zero. A mathematical society solves every problem.

"This being of mine, whatever it really is, consists of a little flesh, a little breath, and the part which governs." – Marcus Aurelius

The part which governs is the mathematical soul. It is not part of the flesh. The body exists in spacetime. The mind links to it from the Singularity outside space and time. The body is like a drone being controlled by a remote pilot. When a body (drone) dies, the mind (pilot) gets a new one ... via reincarnation.

The Creator?

"How does your reason not lead you to realize the truth that God exists and the Cosmos is His fingerprint?" – Anonymous

Reason leads rational people to realize that mathematics exists and the Cosmos is its fingerprint. Who needs some magic superbeing, a preposterous sky wizard? Mathematics is the quintessence of reason. God isn't. God is an object of faith, superstition, opinion, conjecture, hope, fear and mysticism ... which are the opposites of reason!

The Wave Alphabet

Every complicated wave is a sum of simple waves. Every complicated wave can be reduced to its simple component waves. Everything in the universe of our experience, no matter what, is a complicated wave, hence can be reduced to simple waves. In other words, simple waves, which are irreducible, are all that truly exist.

Simple waves are the letters of the ontological alphabet, and, when we put them together, we produce ontological words, sentences, paragraphs, chapters, verses, poems and novels written not onto paper but onto the universe itself.

Just as every novel is merely an enormous collection of letters combined in different ways by a human mind, Nature is a “novel” produced by the Cosmic Mind, and reflecting nature’s alphabet ... simple waves, i.e. sine waves and cosine waves. Sine and cosine waves are “sinusoids”.

What scientists call “matter” is merely a combination of simple waves. Mind, whose independent existence is denied by scientists, is also made of simple waves. The simple waves that produce mind are exactly the same simple waves that produce matter, hence why mind and matter can interact. The thing that makes mind and matter so apparently different is the property of waves called “phase”. That’s it!

In the mind, all sine and cosine waves are perfect, meaning that all cosine waves are orthogonal to all sine waves (they are phase-shifted by exactly ninety degrees). When it comes to matter, all sine and cosine waves are rendered imperfect because they enter into relationships with each other where they are phase-shifted by values other than ninety degrees. Therefore, mind is defined by orthogonality and matter by non-orthogonality.

Mind and matter interact purely because they are in fact exactly the same thing – simple waves and their combinations – made to seem different by the mathematical property of phase. There is no mind-matter dualism, as Descartes famously claimed. Matter is entirely the product of mind, by which we mean that we begin with a system of pure, orthogonal sines and cosines, and by combining them non-orthogonally, we produce the entity that is *experienced* as matter in space and time.

The original orthogonal waves are not material, and do not exist in space and time. They are the components of mind.

Mind is *eternal*; matter is not. The ideology of materialism is wholly false. Science, the gospel of materialism and empiricism, is therefore wholly false too. We must move away from materialism and empiricism to

idealism and rationalism ... to the Truth! Isn't it time?

Conclusion

This is a mathematical universe. Mathematics explains eternal existence. It explains the mind-matter problem. It explains how space, time and matter come from an immaterial Singularity of mind. The only thing stopping humanity from having the knowledge of the gods is ideological resistance.

Abrahamists want to believe in silly stories about an invisible Sky Wizard. They want to kneel, pray, and have faith.

Followers of Eastern religion want to meditate, introspect, empty their minds, and be absorbed into some underlying Cosmic Oneness in which they all mindlessly believe.

Scientists, just like the religious fanatics, will never abandon their faith in their ideology. Regardless of reason and logic, they will doggedly and dogmatically cling to their materialist and empiricist doctrines.

Only when humanity has transcended itself will it be able to master the mathematical truth of reality. We may be waiting a long time.

“I am about to take my last voyage, a great leap in the dark.” – Thomas Hobbes (last words)