

'Each point of space is a world in itself.' *Monadology*,  
*Leibniz, father of relational space-time; on the 5<sup>th</sup>*  
*dimension.*

'I would like to know the thoughts of God, the rest are just  
detail's *A. Einstein, father of 4D metrics; on TOE.*



'The Universe is a fractal of cyclical space-time actions,  
knotted into existential worldcycles, which travel along  $3 \pm i$  planes of the 5<sup>th</sup> dimension between birth and  
extinction' Sancho, son of relational space-time, *father of*  
*5D metrics, on everything.*

## **5D T.O.E: A UNIVERSE OF $\infty$ FRACTAL SPACE- TIME ACTIONS AND WORLDCYCLES**

### **What is a Theory Of Everything.**

The scientific method has become, with the computer age,  
an enormous procedure of collection of data about the  
form in space and function in time of an almost infinite  
array of parts and wholes, which together shape the  
different systems of Nature. This exhaustive analysis of  
how-data, keeps growing as A.I. (Algorithms of  
Information the true meaning of Artificial intelligence)  
becomes more sophisticated and its sensorial and  
intelligent machines elaborate its mathematical models of  
the Universe.

But the wealth of details hides the forest. So the enormous  
knowledge provided by A.I., makes increasingly difficult to  
create a 'Theory of Everything' (TOE) that unifies the  
Universe and all its species – physical, biological and  
sociological – under a few, simple principles.

Most scientists today simply consider impossible to discover the ‘Theory of Everything’ (T.œ), unless perhaps one of their idol-ized computers finds it; as they seem to think a TOE is a question of ‘quantity’ of data, not of ‘quality’ of synthesis... So they keep gathering details with their machines, instead of exploring the ‘thoughts of god’ with their minds. And because machines use only the mathematical language, they reduce also the concept of knowledge to mathematical models, forgetting the biological, logic≈ causal and metaphysical≈sensorial elements of the Universe.

Those elements, which are mostly internal to the being, cannot be described with simplifying mathematics, where entities are shrunk into ‘points without breath’, in which its internal vital spaces and cyclical, time clocks and its properties are ignored. Only external motion is truly described and so, because physical systems are the simplest ones, where those motion properties dominate, a T.O.E. becomes reduced at best to mathematical attempts to unify the forces of the Universe, a minor form of unification, which in any case we shall resolve easily within the much larger frame of a Philosophy of Science, based in relational fractal space and cyclical time actions, able to unify all sciences under its rather self-evident principles.

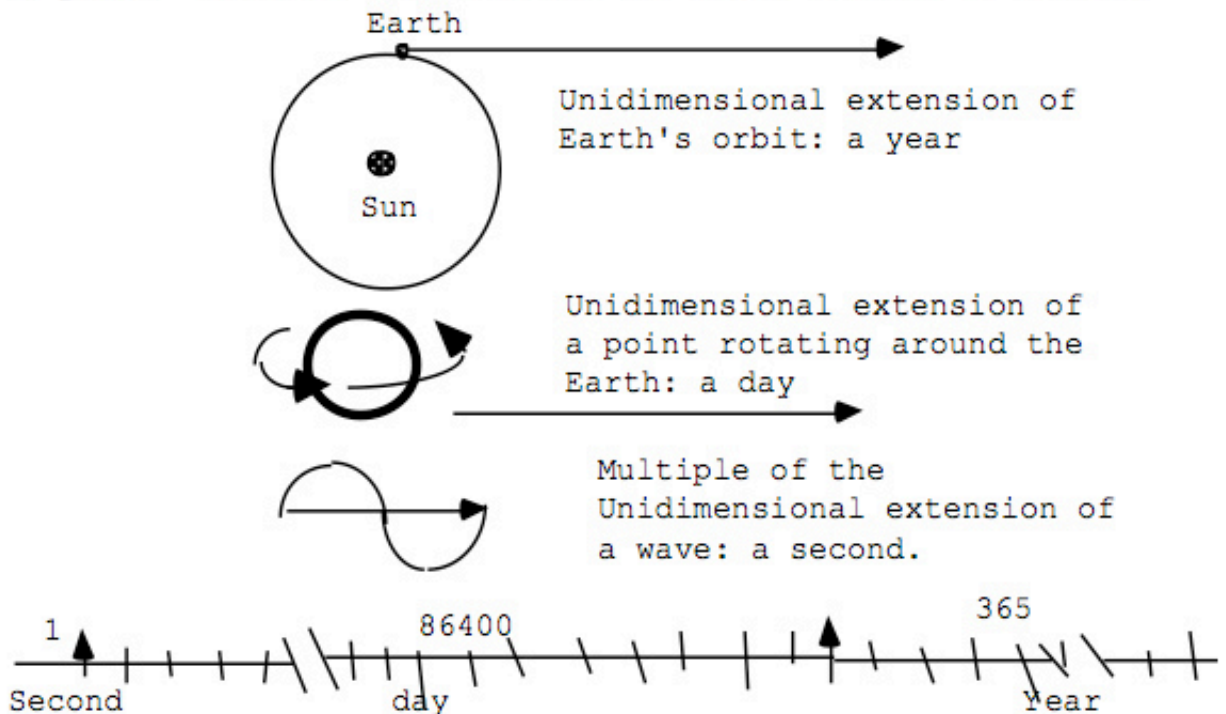
Since, as Einstein put it, ‘the Universe is simple and not malicious’.

So in fact, the path to find the Tœ is the opposite to the quest with A.I. for data details that rules today all disciplines. ‘More is less’ said the philosopher Gracian. And indeed a real ‘scientific Tœ’ requires to get into the minimalist truths of the Universe – the meaning of points, lines, waves, time, space, dimension, energy, form, life and death...

Those ultimate entities and events of reality, those first postulates, of which we hardly think, because they are in words of Kant, the 'a priori categories' of the mind, are the windows to peer in the absolute. That is, there are some simple principles, based in those absolute categories of reality that all systems of Nature share and obey that explain the order and unity of reality.

**The 2 simple whys of the Universe: Fractal, moving, lineal Space, Se and Cyclical Time. To.**

**A year:** Cycle of existence of the Earth respect to the sun



*In the graph, mathematical physicists developed a Universal Cartesian graph to facilitate measure. So they equalized all time clocks with the mechanical time clock, and as times went by, they confused this artifact with reality, forgetting its abstract nature, which reveals nothing of the cyclical closed nature of time cycles, its forms and functions.*

*Now it is important to realize that those Time Cycles*

*enclose Vital Spaces. Hence according to the first theorem of knot theory and topology they break space into inner and outer regions, making space, a broken fractal, reality.*

*Those 2 simple, self-evident truths, are the departure point of a Tœ with applications in all sciences, and a higher predictability, due to the cyclical patterns of time cycles, which store the information of the Universe in the form and frequency of its patterns, where time not space unlike in the physical versions, is the dominant element that commands reality.*

Those 2 categories fractal space and cyclical time, therefore must be the basis of any Theory of Everything – as only those 2 elements exist in all realities - all events happen in time, and all entities exist in space.

Further on when we observe entities, we can reduce them to a mass of vital spaces (atoms, cells, individuals in societies, celestial bodies in galaxies), which follow certain finite time cycles, of which the most important is the cycle of existence and extinction (the cycle of life and death in human organisms). Thus we could say we are also made of vital spaces, which last a finite time in its 'word cycles' (the technical name we shall use for time cycles).

When we say we do not have energy and time to do something we mean it. We are made of vital spaces with 'energy' with capacity to move and information, form, with capacity to replicate that form in the external world (ideas, objects, our own being reproduced).

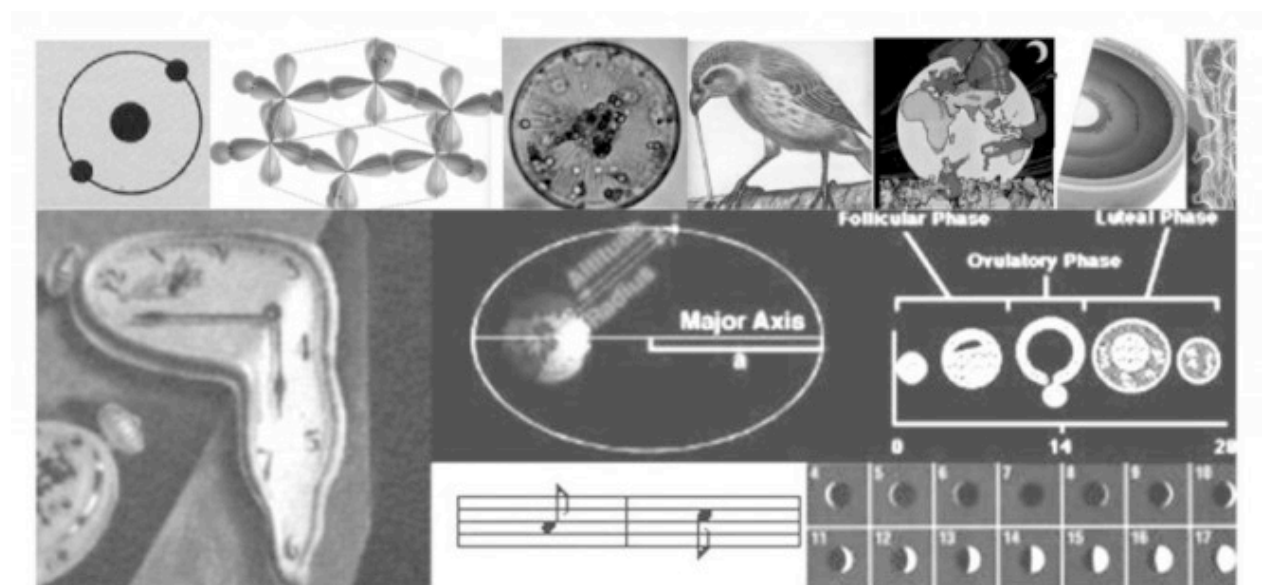
Thus the interplay of inner cyclical time which stores information in the form and frequency of its cycles, maximised in spherical forms (particles and heads) since the sphere is the geometry that stores maximal information in minimal space; and vital energy waves and

bodies moved by lineal limbs-fields of space since the line is the shortest distance between two points, is truly the next 'organic', 'species-oriented' level of organisation of those time cycles and the expansive vital spaces with motion, with energy, they enclose.

As such cyclical Times and vital, fractal Spaces are the keys to unveil the ultimate structure of reality. So once both are properly defined, we can rebuild a simplified architecture of the Universe, in which all its detailed species will easily fit.

To that aim we must consider the 3rd and 4th more complex elements of the structure of space and time in the Universe: its fractal existence in infinite numbers, which can be classified by the relative size of the cycles of time, and the space energy they enclose.

Indeed, there are infinite time cycles and vital spaces, in the next graph we can see an image of them in more elaborated forms:



*In the graph, all systems of nature are made of time cycles that enclose a vital space with motion, creating a fractal Universe of infinite cyclical frequencies of*

*repetitive actions, in which systems absorb and emit energy and information, repeating their motions to ensure their survival beyond death. The sum of those repetitive space-time actions (ab. Time cycles) through the entire existence of a being creates its worldcycle, which substitutes in a model of relational space-time, the simpler worldlines of absolute ST physics. We could then consider the Universe a zero sum of worldcycles, made of space-time actions that exchange energy and information between infinite space-time beings.*

This reality of infinite time cycles break space into inner and outer forms, which provide motion and energy of reproduction for the cycle.

So we are in a broken, fractal world of  $\infty$  time cycles, which we shall call mathematically, 'non-Euclidean fractal points', which interact and moves and reproduce its cycles.

And we need to order them. To classify them. And this is what the 5th dimensional metrics - where the 5th dimension is the absolute sum of all of them, enters.

### **The 5th dimension, is a dimension of time.**

Now in a universe of infinite 'world cycles' of time, there must be a way to order them. Indeed. If there are infinite speeds of time cycles. So we need to order all those world cycles that require to study all those different sizes and speeds of the cycles of time of the Universe.

But to do so we need to encase all those fractal space enclosed by cyclical time'sin scales of size from micro to macrocosms and the actions beings perform within scales, in a mathematical, simple 'metrics' of space-time. This

formalism is what we call the '5th dimension': a series of laws that order the infinite species of the Universe according to their size in space, and the speed of its cyclical actions in time.

Thus, the fifth dimension metrics is the ice cake element needed to order a fractal Universe broken up into an infinity of beings made of vital space and time cycles (of body-waves and particles-heads).

Only then we have a scientific model able to order it all, with its bio-topo-logic properties, isomorphic laws and 5D metrics.

This can be done since all those systems of 'spatial energy' (body/waves) and temporal information (particle heads), can be roughly classified by 'size' in space, and 'speed of motion and action-reaction' in time.

Then a 'new rule of order' appears: bigger systems move slower than larger ones. Their clocks and metabolisms tick slower. This is a Universal law: mice beat hearts faster than elephants and particles turn faster than galaxies. Yet the product of both, the spatial size and temporal speed of any system remains co-invariant. So we can write in a first approximation:  $S \times T = C$  and define a 5<sup>th</sup> dimension of scales of size that organize the Universe from past, smaller, faster systems into future, larger, slower systems. Moreover, for the first 'time', we find a clear arrow from a relative past to future, as wholes cannot exist without the evolution of simpler parts first.



In the graph we can see 3 of such scales and its relative

size and speed measure in frequency (the inverse of lineal time duration:  $T=1/f=1/T_0$ , whereas  $T_0$  or  $T_i$  are the fundamental symbols for cyclical time):

The galaxy, the human and the DNA. Those scales create in groups of 3  $U_{\pm 1}$  'universal planes', complex organic systems, in which the faster speeds and information of smaller systems, codes larger wholes, which in turn control the motions of the smaller systems. And those are precisely the organic properties of the Universe, which extend also to physical systems.

### **The Unification of sciences: A graph of scalar space-time.**

Let us see in a simplified graph those 3 elements, and how they can order all the species of the Universe, in *different sciences, each one specialized in the study of a relative 'plane of space-time size/speed' of the Universe. Since indeed, the final concept to structure all knowledge is the realization that each science is merely the study of a relative scale of size of the Universe, from quantum physics (smaller scales), through chemistry (molecular scales), biology and history (human scales), geology and astronomy (cosmic scales):*



Spheric particle-head:

To:  $\text{Mind= Minimum Energy-Space, Max information-time.}$  X

**Planar-Toroid Fields/limbs:**  
Maximum Energy-Space  
Minimum information

**UNIVERSAL ORGANISM :**

**Macrocosms U=9**

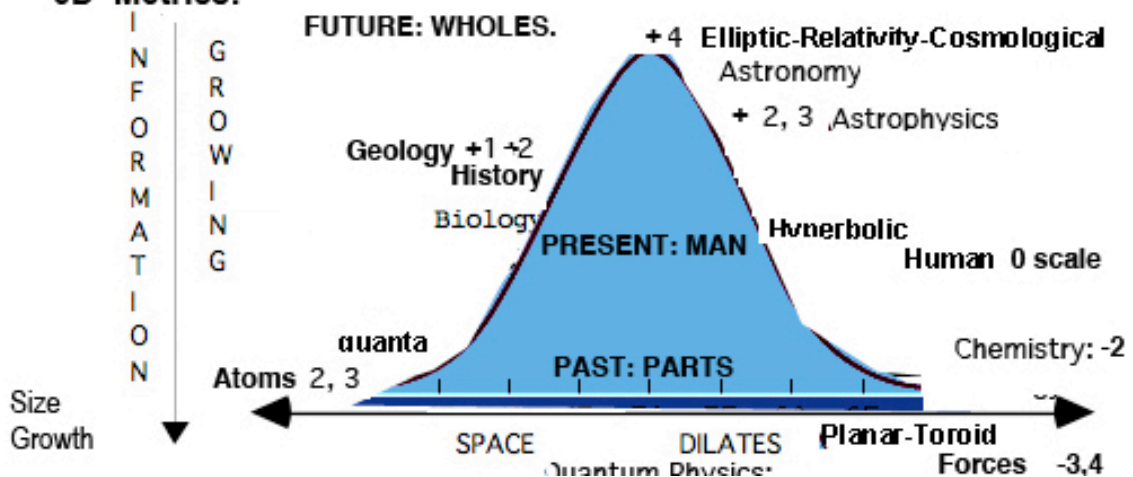
Galaxy=Black Hole+Herd of stars  
Economy:Digital Information+Herds of Machines.  
History=Wor[ld] Religion+Herd of Men

Relative Small Observer: Man

Relative Big Observer: Man u=5

Animal=Light-Brain+Herds of cells.  
Cell=DNA+Herds of Carbohydrates  
Molecule:Herds of Atoms+  
Electronic forces.  
Atom: Herd of Nucleons and Electrons, communicated by gravitational and  $\Psi$  forces. **Microcosms u=1**

**5D Metrics:**



The graph is a synopsis of the 3 fundamental elements that structure the Universe: the bidimensional topologies of spherical heads/particles, which assemble with planar toroid fields/limbs, forming together organic body/waves. And this simple structure is obeyed by all systems of the Universe. There is no particle without an associated wave (quantum complementarity), and there is no living organism without head.

On the other hand, those systems extend across several planes of different size and time speed, synchronized by complex organic relationships. Since clocks carry the information of the Universe in its form and frequency, we can then talk of two inverse arrows of time: information increases when we look downwards on those scales as in

*fractals, but size and speed grows when we go upwards.*

*This 'non-commutative' asymmetric direction of space-time is the key to most mysteries of the Universe. For example, since information flows freely from down to up scales, there are genetics (information flows from smaller systems) but there is no Lamarckian evolution, (the whole does not inform the parts). On the other hand, since motion flows freely from up to down sizes, we can move the hand and everything smaller within it moves in perfect harmony, but the other way around there is a waste of motion called 'entropy' that does not flow upwards.*

The existence of such clear cut directions of time and the co-invariance in 'families of systems' of the product of its size and the speed of time clocks, (metabolic animals, particles, orbital planets, etc.), allow to create a 'metrics' of the 5<sup>th</sup> dimension; that is, a series of rules which dictate how systems 'travel', in 'size' and 'speed', as they grow and evolve, live and die through that 5<sup>th</sup> dimension.

Life for example is born as a fast seminal particle, with high metabolic rates, which emerges from the microscopic, cellular state, into a 'Universal plane' of larger size, at birth.

Then the system goes through life, with changes in its relative energy and information and dies back to the lower 'plane' of cells.

Yet those phases of a life-death cycle are the same in any physical or biological system, since they follow the same simple metrics of the 5<sup>th</sup> dimension, and the laws of a 'cycle of time' that always ends in its point of initiation.

For example a star is born out of a 'seminal cloud' of atoms that collapse its energy into the form of a vortex of matter, a galaxy that will feed a denser black hole and finally die

into a quasar explosion that will return the energy to the universe. So energy never dies but transforms into form, into information back and forth in life-death cycle for all species.

Moreover, all systems start with a lot of energy, which becomes form, information, from gas to solid state, from a young energetic age to an old, informative one. And this is a simple law of all time cycles that 'curve space into time' (Einstein).

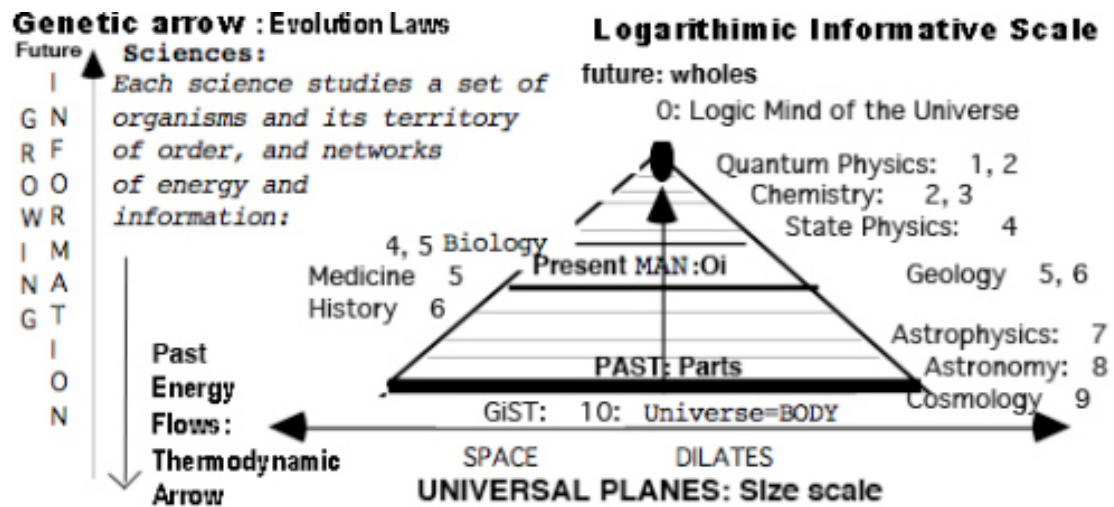
Thus if you consider the past, the lower planes of the 5<sup>th</sup> dimension, the future, the wholes, the time 'worldcycle' of life and death, the creation and destruction of those wholes from parts (it is no longer a worldline as in physics but a worldcycle as we have added this 5<sup>th</sup> dimension from past to future), we do have a clear cut order, and organization of the Universe, through the new 5<sup>th</sup> dimension and the new worldcycles of life and death (no longer worldlines), which is an enormous expansion of the principles of science, and a complete reorganization of all sciences and species, with new global laws, that deeply enlighten our comprehension of the ultimate phenomena of reality.

Now it should be obvious to the reader that the 5<sup>th</sup> dimension is a dimension of time, of motion and as such it must be a dimension that moves from past to future or future to past.

It is worth to repeat: 'the 5<sup>th</sup> dimension is a dimension of time, from past to future and future to past.

The 4<sup>th</sup> dimension is the dimension of 'present', as it is calculated in both versions, Galilean and Einstein's relativity, with  $\partial t = \partial s / \partial v$ , instantaneous derivatives, 'moments' of present time; and in Einstein's different notations with Lagrangians, 'o' derivatives and

simultaneous=present measures. Now, the motivation of understanding the past to future causal, deterministic time flows is what makes 5D metrics so fascinating.



In the graph you can see, the scales from past to future of 5D fractal space-times.

In the graph you can see the metrics, which are simple: Spatial Size x Speed of temporal clocks = Constant. This is an empirical fact, larger systems have slower clocks, and small systems faster clocks. Yet since information stores in the 'form' and frequency of time cycles, smaller systems run faster cycles and have more information. Thus they code larger systems. Genetics goes from a smaller 'Universal plane' (logarithmic scale) of  $i-1$  quanta (DNA information) to the larger scale, but there is NOT lamarkian evolution (information is not moving downwards).

And viceversa, larger systems have more 'energy-space-size', so energy goes downward, with perfect fluidity, hence you move your hand and all the cells move in synchronicity, but vice versa, there is 'entropy', the smaller informative scale does NOT transfer all is motion. This metrics,  $Se \times Ti = C$  (I like to write it, as Energeitc Space, x Informative Time, to get the acronym  $E \times I = ST$  (and call it in mystical jargon the function of existence), are not

only 'real' in the facts of science (metabolic rates, chip paradox, black hole attractive, faster power, etc.) but logically as if you write them in inverse fashion,  $Se = C/Ti$ , it merely means that lineal momentum=spatial energy is the inverse function of cyclical angular momentum (time clocks). Hence they are inverse, and the astounding number of facts obtained from those first principles will fill many pages of this blog. The reason smaller informative scales are called the relative past is obvious: you need to make them first to create the larger wholes. So we say that in the arrow of size, smaller things come first before big ones. But and this is the astounding contradiction, there is another arrow-dimension of time, that of information that grows from larger things to smaller sizes, and so we can consider also the arrow of information as opposed to the arrow of energy, the future. How to solve this 2 arrows of past to future, obviously by giving one by convention the name of past to future arrow.

But couldn't be that Universe of infinite time cycles managing, vital spaces with energy≈motion, exist in perfect chaos and freedom, or as a series of closed compartments, as opposed to a logic, universal order required for the existence of a T.∞?; And in that case science would suffice with the gathering of how data, in specialized, limited jargons proper of each species and compartment? No. Because our knowledge of it always hint to that universal simple, order, based in the cyclical, causal, repetitive actions and clocks that carry that information in the frequency and form of its cycles.

*It is thus the passing of time, and its accumulation of information and cyclical clock-like forms, what creates the order of reality.*

*While the opposite process of entropy and disorder that*

*uncoils time clocks into spatial distances, explosive big-bangs and death processes, is the origin of disorder. And so we can establish a first and fundamental 'definition' of the two poles of the Universe:*

1. *Cyclical, informative time order and life arrow vs. Energetic, expansive, spatial disorder and death arrow.*

Of course, ignorance is also a cause of subjective disorder. In that regard chaos can be defined as the lack of knowledge about order, in the case of sciences, their lack of understanding of the nature of temporal cycles and dimensional information, its causal, cyclical arrows of past, present and future and its synchronicities.

This ignorance is due to a basic error in our measure of those universal time cycles, which we have reduced to a single human clock-time and whose cyclical form we have for the sake of measure reduced to a 'line' of continuous duration 'towards infinity'.

And this grave error, which has 'killed' the cyclicity, hence the repetitive order and the causality from past to future of time cycles, like Ptolemy's error, who disguised the centrality of the sun, is a heavy burden to advance further in our understanding of the Universe.

The origin of this lineal error were subjective myths of Abrahamic Religions, which lacked an objective, nature-oriented rational view, and were dominated by self-centered Anthropomorphic ego-trips. So for them, man or rather the tribe, was the center of the Universe, and time was lineal since it was a constant progression of the tribe towards absolute rule over other man, nature, and the animal world. Those were also the subconscious thoughts of the first 'pious believers' of science.

Newton spent more time in biblical studies than in

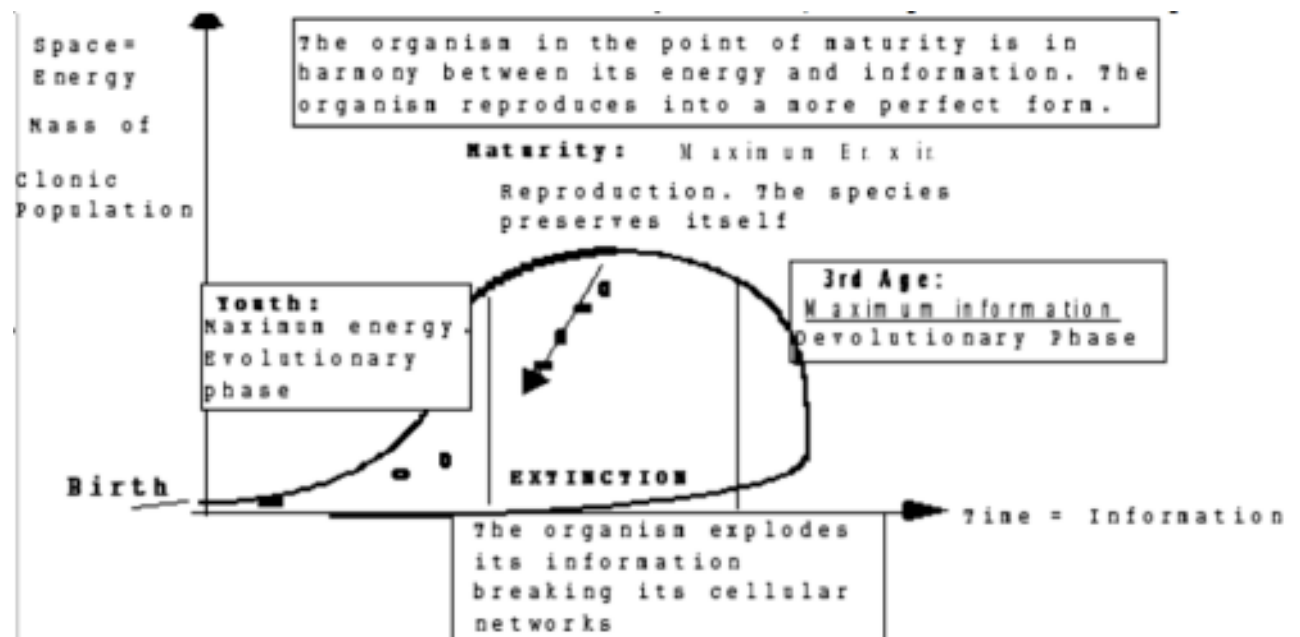
physics, and Descartes, a staunch catholic invented the theory of ‘matter and soul’, to make man the only intelligent being of the universe. And so there were certain absolute dogmas to maintain their beliefs that still endure in science (lineal time towards a manifest destiny, man as the center, perhaps not of the spatial Universe, but certainly of the pyramid of informative and conscious beings).

Those are the dogmas that have prevented for so long, the completion of the Greek-Asian-Leibnizian model of fractal, cyclical organic space-time that unifies all systems, and this blog completes.

### **Definition of a world cycle**

Let us then express this fundamental truth of reality, the worldcycle of life and death in more precise terms:

“Life is a travel through 3 scales of the 5<sup>th</sup> dimension, from an age of pure form, information, the ‘seminal seed’ of the  $i-1$  informative scale, which emerges into the  $U_i$  world of the being, and moves from a lineal age of energy, into the hyperbolic, space-time maximal point of existence in balance between the spatial energy and temporal information of the being (since  $S \times T$  is maximized when  $S=T$ ), back into the explosion of pure energy we call death”.



Whereas the maximal point is, and we shall always find this to be the case, the hyperbolic point of balance, and action of the body/wave, which combine the information of the head-particle and the pure motion of the field-limbs – the *relative past and future, which as such only exist potentially. So we can deduce also the fundamental equation of logic, causal time.*

*Past-motion x future-information = Present-existence.*

Yet since only present exists, and we can trace a symmetry between the 3 dimensions of time and space:

Past=planes-lines/fields of energy, future=spherical points of information. Hyperbolic waves=repetitive present.

(Due to the fact that the line is the fastest=shortest distance in space and the sphere the largest informative volume, but only the hyperbole has both forms/curvatures and can therefore repeat both).

We conclude hyperbolic waves/bodies of present/reproduction dominate the organic, living Universe. And we shall see indeed that reproduction=repetition is truly the nature of it all, even of



motion-speed, which is reproduction of a wave form along a lineal trajectory.

Indeed, to express that dominance of the hyperbolic waves/bodies over pure form and energy we could say as the Taoists did, that pure yin=form is not perceivable, so it does not exist for the observer (black holes being a cosmic case), and pure yang=energy without form is also non – perceivable. So only the reproduction of a little yin-information along a path of space-energy, a hyperbolic body-wave 'exists'. And motion is reproduction.

Thus the two pillars of a true theory of everything (which unifies all sciences not only physical concepts as all sciences happen in space and time), are on one hand:

- A proper understanding of the 2 foundational concepts of 'time cycles', since all clocks do have a cyclical nature, and its causality from past, present and future 'states.' And the concept of a vital space, occupied by a body-wave with motion and energy.
- On the other, the understanding of the 'scales of size' of the Universe, and the 'actions' systems make by relating to entities of those microscopic and macroscopic scales. So we move by expelling and dissolving into smaller parts, storage energy, we perceive by integrating very small pixels of light, from the lowest scales of size man perceive, the U-3 scale, we iterate by emitting a seed in the U-1 scale, we evolve socially into an U+1 scale as a super organism of history, nation or civilization.

### **The predictability of cyclical time.**

But couldn't be the Universe in perfect chaos≈freedom, as opposed to an absolute order? Because our knowledge of it

always hint to that order, based in ‘dimensional form’, in ‘information’, in the cyclical, causal, repetitive clocks that carry that information in the frequency and form of its cycles. And so there is an ultimate source of order: the ‘causality and form’ of iterative time cycles.

Whereas chaos is merely the lack of knowledge about that order, in the case of sciences, their lack of understanding of the nature of temporal cycles and dimensional information, its causal, cyclical arrows of past, present and future and its synchronicities – due to a basic error in our measure of those universal time cycles, which we have reduced to a single human clock-time and whose cyclical form we have for the sake of measure reduced to a ‘line’ of continuous duration ‘towards infinity’.

And this grave error, which has ‘killed’ the cyclicity, hence the repetitive order and the causality from past to future of time cycles, like Ptolemy’s error, who disguised the centrality of the sun, is a heavy burden to advance further in our understanding of the Universe.

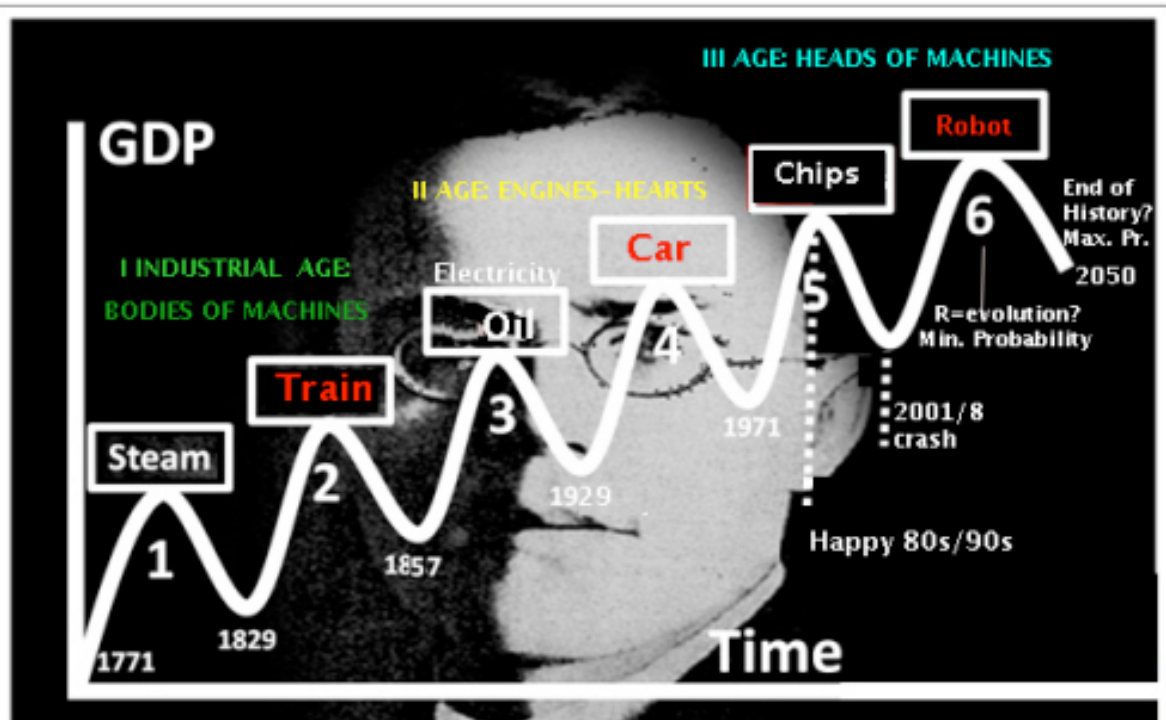
But the true problem created by lineal time, and its use to calculate merely motions in space, is the loss of understanding of the true essence of time: its causal cyclicity that allows the ‘prediction’ of future events, according to those causal laws of a repetitive cycle, *which are today completely ignored, because time has become a ‘line of space motion,  $t=s/v$ ; and so the fundamental tool of science or any species to calculate and predict the future, the laws of causal time are no longer available. And this means most sciences are unable to understand ‘why things happen’.*

Specially when we consider complex systems, whose *predictability, which is the purpose of all sciences (to determine the future space-time parameters of any being), is impossible with the simplistic lineal time*

*concept promoted by physicists. Such lineal time parameter cannot understand the time cycles of life and death, the evolutionary cycles, the historic and economic cycles and all other cycles studied in depth in this blog, whose predictability is null under the present lineal concept of time with a single arrow of 'causality' (entropy≈death).*

In that sense, we can solve and explain facts like the life-death world cycle of most entities of the Universe, never resolved before mathematically, thanks to the causality of time cycles and its 3 ages (young-energetic age, adult-reproductive age and old-informative age), or the patterns in the evolution of species which also go through 3 similar causal ages (young evolutionary age of predators, reproductive mature age with radiation, and informative age with diversification of forms).

We have been able for 20 years now in advance, to forecast the cycles of evolution of economics. Indeed, already in 94 i published at the end of my masters at Columbia University, [a complete analysis of the 2008 cyclical crisis of evolution of machines](#) due to the chip radiation, cause of the present crisis (as the massive 'reproductive radiation' of chips would provoke massive emission of e-money, and labor losses due to robotics and pcs, the new blue and white collar workers), which you can read in the application of time and evolutionary cycles, to economic ecosystems, in this blog.



The cyclicality of time is essential to understand the laws of all sciences. Unlike the very restricted attempts to create a  $T_{\infty}$  based in lineal time (physics), which are only useful to explain 'spatial forces and motions in space' (since the lineal element of the Universe is space NOT time, so with lineal time we can only study the properties of Space), cyclical time, its in-form-ation, ages, patterns, states and trans-form-ations, apply to all sciences. Its fundamental law is the law of 3 ages and cyclical return, and the worldcycles it traces. In the graph, the 3 ages of the industrial r=evolution of organic memes of metal aka machines, which allow this writer to forecast 20 years in advance the 2008 crash of overproduction of chips (with the consequences of multiplication of e-money, financial crisis, blue collar robots and white collar robots that substitute humans in work and war fields, labor crisis and war crisis), which are parallel to the similar end of cycles of the I and II industrial R=evolution (crash of trains: 1857, and crash of cars, 1929) separated by the 72 years biological generational cycle of human nations (British, German and American Age). Now it only rests the cycle of robotics. This is

*the fundamental cycle of the economic ecosystem, studied in great detail in our web on social sciences.*

Even the patterns of Mankind as a whole, with its 800 long cycles of civilizations, its  $\pm 80$  year cycles of evolution of modern nations and its 8 years product cycles of evolution of e-money are perfectly explained as part of the evolution of the super organism of mankind=history.

History is collapsing from wave to particle from energy into information. In the last graph you can see an 80 years life cycle and an 800 years cultural cycle, between birth and extinction by big-bang entropic explosion, aka death or war

So for decades the power of cyclical, causal time to explain the future beyond the limited analysis of simpler systems with lineal time by physics, has shown its power. Another matter is the anthropomorphic, mechanist idol-ogies of mankind, which are so strong in social sciences that have muttered those discoveries. That is not a question for my concern or the Universe. Those cycles do happen regardless of idol-ogy.

And so while the discoveries of this blog departed from advancements in quantum and relativity, decades ago, when I tried to make sense of its theoretical contradictions, between the lineal, 'entropic' nature of electromagnetic forces, and the cyclical nature of informative 'mass vortices', which brought me to the final understanding of masses and charges as 'cyclical clocks of time' that store the information of the universe, in the long term it has flourished and enlightened in a deeper degree, those biological and social sciences which did not have a full, complete understanding of time, due to the complexity of life beings.

And this is due to the 'streamlining' achieved with cyclical

time, as the Copernican revolution achieved very fast, once it was properly written in mathematical formulae by Newton, an astounding number of long-sought results.

Of course as in the case of Ptolemy model we can create a working system of planetary motions with Earth as its relative center, adding epicycles and extants, which was even more accurate than the first models of Copernicus (simple circles), but the point of view chosen was incorrect and so the models became increasingly complex to correct that error.

The same happens in science: by lacking the proper understanding of time, reduced to a secondary, lineal motion, used mostly to measure translations in space with the Galilean/Einstein's formulae ( $t=s/v$ ), time has become submissive to the lesser part of the Universe, space, which in true form is just a 'slice' of the 'bread loaf', a 'present' static moment of the entire flow of time. So time is more important than space as the sun is more central than the earth, and using models, which are upside down, increase enormously the complexity needed to streamline scientific laws.

Once we put the sun in the center, all simplifies. And once we make time cyclical, a new dawn for science and its comprehension of Everything starts afresh.

Let us see how in more detail before we plunge into the nature of fractal space and cyclical time.

**The duality of form and motion: the Paradox of Galileo.**



*The duality of space, seen either as fixed distance or as a series of discontinuous motions, and time, perceived either as a single lineal duration, or inversely as cyclical clocks, with a frequency that determines its capacity to carry information, is the key paradox, which needs to be resolved to understand the metrics of the 5th dimension and derive from them the laws of sciences and its different species, made of discontinuous space motions and time clocks. Since all beings occupy a certain organic space and last a certain time.*

*In the graph, Saturn's rings are not a mathematical plane made of abstract points, despite their continuous appearance. When we look at them in detail they become in fact quantic planetoids in movement, tracing orbital cycles around the planet. They illustrate the fundamental paradox of perception:*

*Any piece of time/space seems continuous, but when we analyze it in detail, it becomes discontinuous, made of space quanta and time clocks (charges and masses in physical space, circadian cycles in biological systems) moving in cyclical paths.*

This duality is essential to the structure of reality and knowledge, and happens both, in lineal space and cyclical time:

We can see a time cycle as a fixed circle or as a moving cyclical clock. It is the 2 ways we see a fast turning bicycle wheel that seems a solid thing, or a rotary wheel.

We can see a line of space as a moving distance, the way we see a picture of a car moving in the night with headlights. Or the way we see 'space expanding' between galaxies as expansion of distances or 'motion of galaxies'. We can see the earth moving or fixed and the sun moving (Galilean paradox: e pur si muove e pur no muove).

The duality as 'dimensional form' and 'motion', and the duality between continuous and discontinuous therefore means since things are both things, that the Universe is immortal, because motion never stops, it only stops in the mind of the perceptor that gauges motion into forms of information. .

This is a fundamental duality, which is a key logical paradox to understand vital space, is its motion, when observed in great detail. A fact we call the 'Galilean Paradox', as Galileo found that the Earth moved but seemed quiet to us (e pur si muove, e pur no muove), and it is the true meaning of Galilean and Einsteinian Relativity:

*3 "All motions of lineal space or cyclical time can be seen as fixed lineal distances or cyclical forms, depending on the chosen Frame of Reference."*

This duality between stop and go, motion and form, speed and perception of information, which is the ultimate essence of both 'relativity theories' and *any theory of knowledge, allow us to explain with an topological-geometrical-dimensional perspective, what is the importance of 5D metrics and a T.OE. based on it. As now a dimension is both of form and motion. So the symmetry between form and function, now in terms of 'stillness and motion', which happen for both cyclical time (time vs. information) and lineal space (space vs.*

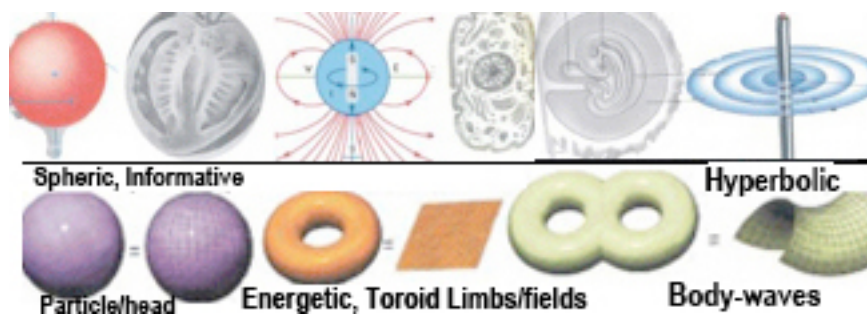


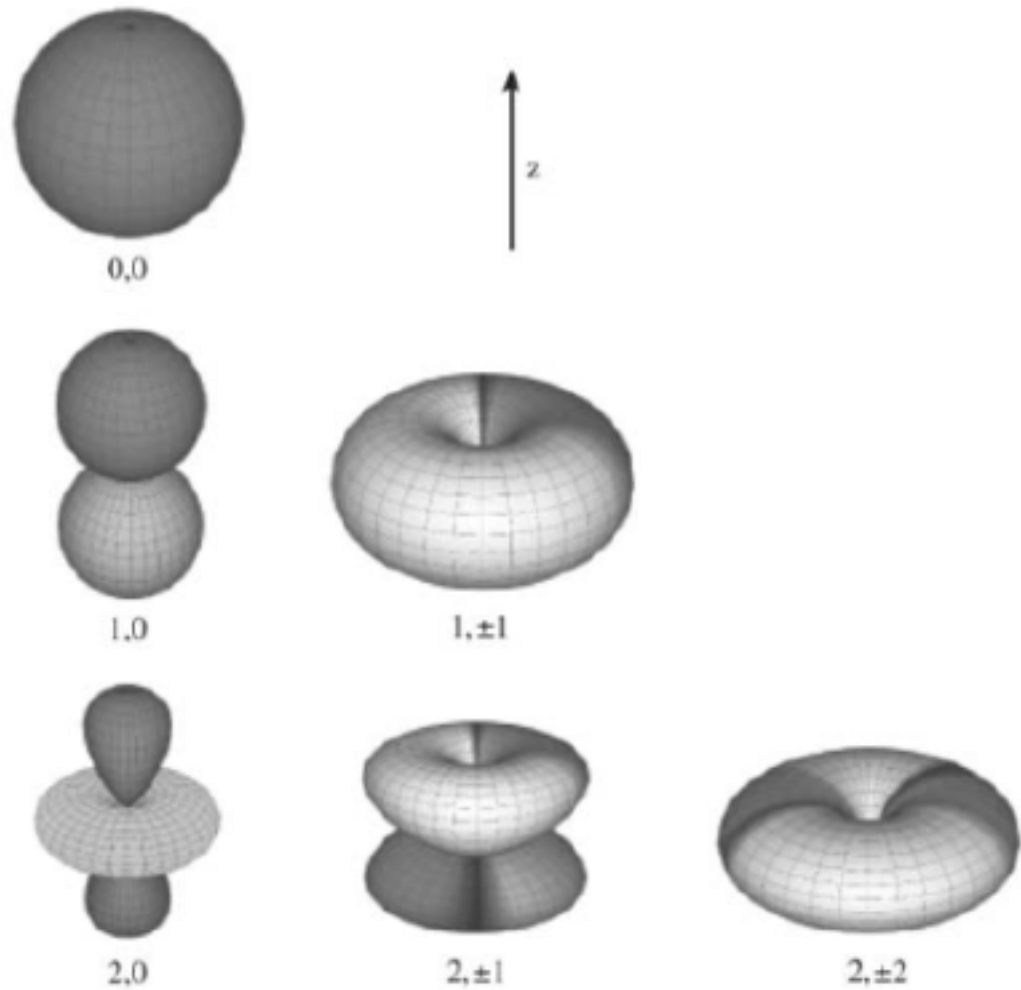
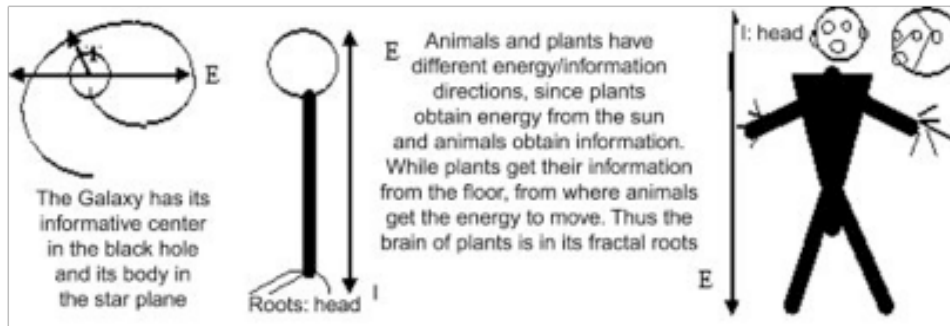
*energy), will make all a living pantheist universe, with a constant reproductive flow, as a reproduction is merely the repetition of a form with motion. And so we can now play with forms of vital space and its motions and the way they assembly to create the infinite systems in existence.*

**Bidimensional Space-time combinations: The 3 parts of all finite  $\approx$  'diffeomorphic' space-time systems.**

For example, all entities are made of 'spherical particles/heads' that process information in clock-like cycles of time, and direct hyperbolic wave-bodies that process energy, extracted with planar/lineal limbs from similar fields.

Why, those topological similarities in physical and biological systems? Simple. The sphere is the topology that stores more cycles of information in lesser space. So all particles, heads and cameras, are spherical to process cycles information, regardless of its physical, biological or socio-economical nature.





**Figure 2.10** The diagrams illustrate the three-dimensional shapes of the wave functions corresponding to some of the hydrogen atom energy states. In each case, the nucleus is at the centre of the pattern, which represents the three-dimensional wave function.

In the graph, the 3 canonical varieties of bidimensional spaces, and some of its applications in the construction of galaxies, trees, human beings, and the 3 type of orbital plane waves of a Hydrogen atom: the sphere, the dual

conic (similar to a hyperbolic generator body/wave) and the toroid. We conclude that all 'finite systems' of space-time will be in its complete mode an assembly of the 3 canonical, organic, function/forms of bidimensional space-time.

*As they derive this 'isomorphism≈equal form', from the topologic properties of mathematical space and the cyclical, temporal organization of information into tightly packed networks which run faster its logic cycles, when the space to move is smaller. So chips think faster when they are smaller. And so it is the logic nature of time cycles and the geometric nature of space, the 2 substances of which all beings are made, the reason of those isomorphic=equal laws that all species of information of the Universe share.*

*And for the same reason, all fields and limbs that convert energy into motion are lineal because the line is the shortest/fastest distance between two points. So to move you use lineal systems that minimize the expenditure of vital energy, again because, this is a spatial, mathematical property, and beings are made of vital space (space with motion).*

Yet the ternary construct of all systems must be 'fine-tuning' on the details by the *most important structural principle of the Universe, the ternary scalar principle, according to which, each part, despite being dominant in a certain form and function, from its lower  $i-1$  scalar perspective will have also to be 'completed' the 3 relative parts/morphologies/functions of all systems.*

*For example, a limb, let us say, the leg, is obviously a tubular, lineal, toroid, motion oriented part of the human being. But in close analysis we shall find it does have 3 parts, the femur, tibia and feet, and each is connected with the other by a spherical element of maximal rotary*

*motion and complexity of form, the To elements (the knee and ankle).*

*Finally, the dominant part of the system, is NOT the lineal tibia/femur but the feet. This is the hyperbolic st, active 'body-element' of the leg, in which the initial single bone breaks into multiple asymptotic bones. So sometimes is confusing to fully grasp the way in which a few number of simple elements through multiple scales, symmetries of space and time, function and form, and ternary parts, constructs itself. In this case my confusion for long was to interpret the legs not as forms but as motions, then it is evident that the leg fluctuates between | and /\, that is, it enacts a hyperbolic distension. This simple example suffices to realize how so much complexity can arise from a few principles, which being paradoxical, inverse, and yet at the same time complementary, in motion but also always with form, multifunctional but with a dominant element, which is the element we must consider dominant, to tag the species.*

*There are people who draw with feet, animals who use them as hands (from raccoons to humans) but their purpose is motion, and that is their main avenue of evolution, as tubular lines (legs) or planes (wings). And that is what in its evolution dominates. This is the method of a TOE based on the scalar space-time nature of all beings: we find a particular property in space or event in time, and as physicists do with a particular weird wave, which finally becomes reduced to a Fourier series of 'harmonic', regular, ordered sub-waves; we can reduce all the laws of science and all the forms and events in space and time to ordered patterns that arise from the 'isomorphic laws' of scalar=organic, space=mathematical, time=logic.*

**The 3 ages of all time cycles.**

Next we find that all cycles have 3 phases. Consider the simplest one: a pi cycle. We will find a first, second and 3rd diameter adding a dimension to the line. This will be a past to future dimension in the motion of the cycle. And it will end in the same point it started. This is the essential concept whose limit of complexity is a world cycle of life and death, with 3 ages that return to the beginning.

For example all beings are born small, in a 'lower scale' of size, grow, emerge in a higher plane, d=evolve through its 3 ages of maximal energy, which slowly transforms into information and then when all energy-motion is exhausted it explodes in an act of death that returns the system to the lower, disaggregated state.

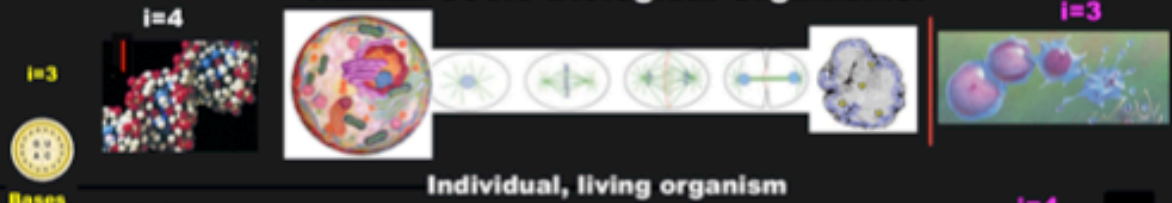
And this fundamental cycle of the Universe that we will call a 'worldcycle' of life and death, of existence, happens for both, physical and biological systems. We are seminal seeds that emerge and live through 3 ages of increasing form till our energy is exhausted and die back to cellular or atomic forms. But a star is also born by the aggregation of smaller atomic gas, which loses motion till becoming a dense atomic system, and finally explodes in a nova that leaves only an ultra solid form. So the 3 ages of life become in physics the 3 states of matter (energetic, 'young' gas; liquid, balanced and informative solid).

**THE GENERATIONAL=LIFE CYCLE:  $e_{i-1} < E > ET > T < e_{i-2}$**

**SUPER-ORGANISMS D=EVOLVE BETWEEN 2 I-PLANES OF EXISTENCE IN 3+1 AGES DOMINATED BY ITS ENERGY, REPRODUCTIVE AND INFORMATIVE NETWORKS:**

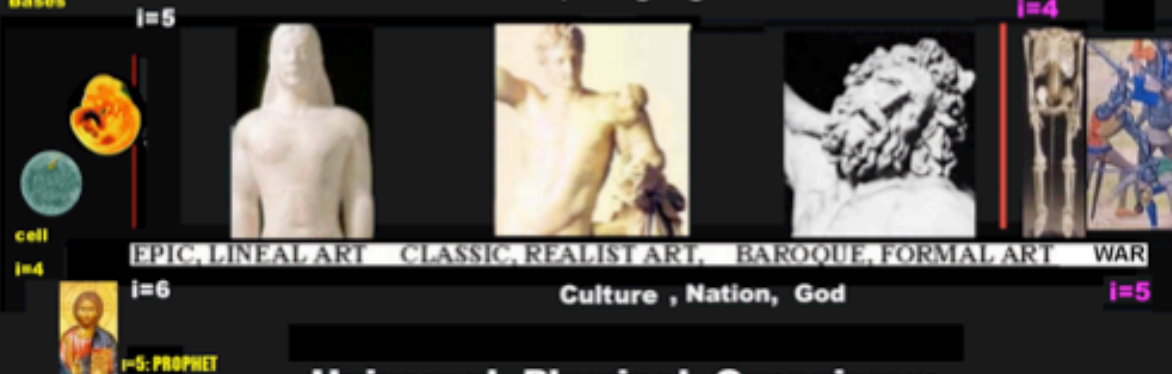
**Birth:  $e_{i-1} <$  Youth:  $\sum E_i >$  Maturity:  $ET_i >$  Old age:  $T_i <$  Death:  $\sum e_{i-2}$**

**Human Socio-Biological Organisms:**



Individual, living organism

Bases



**Universal, Physical, Organisms:**

**Birth:  $e_{i-1} <$  Youth:  $\sum E_i >$  Maturity:  $ET_i >$  Old age:  $T_i <$  Death:  $\sum e_{i-2}$**



Plasma Birth Energetic Gas Liquid, Reproductive State Solid, informative state, M=E death

**STATES OF MATTER**



Energetic Birth Irregular galaxy Spiral State Informative, Globular Age Quasar Death

**GALAXIES**



$i=8$ : Big-Bang of Super-black hole? Particle Age Star, Atomic age Black hole, informative Age  $i=8$ : crunch into super- black Hole?

**'Big Banging: III Horizons'**

**UNIVERSE**

*In the graph, some of the world cycles of physical and biological species: above the world cycle of human life, of Historic civilizations, reflected in its subconscious collective, the 3 ages of epic, classic and baroque art with excessive form, prior to the death of a civilization in an energetic war, the states of matter, the cycle of galaxies and the cycle of a supposed cosmic big-bang. This is one of the most clear proofs that all systems obeys the laws of cyclical time.*

Now if we were physicists and use lineal time, we would talk of a worldline and describe merely the existence of a being with those 'light cones' of relativists, which show all the motions in space of a being. Physicists are extremely proud of those worldlines, which they say explain the entire 'history' of the being. Do they?

It is enough knowledge to know just how entities move in 'space' according to the lineal formula of time,  $t=s/v$ , which only allows us to understand those external motions? Of course not. It is only the limit of knowledge obtained with lineal time. Now consider what we get when we do add the 3 'elements of TOE', 'fractal space', cyclical time, and organic scales of parts and wholes.

When we use cyclical time we convert the worldline of physicists into a worldcycle by adding a 'causal, dimension of time' from past to future' that bends the one-dimensional timeline into a 2 dimensional time cycle. So then we understand that life-death cycles are zero sums that return to the original point. And we extract from the ideal phases of all time cycles the 3 ages of the system.

On the other hand when we 'expand' the spatial point of the entity (since lineal space-time reduces all entities to abstract points with no breath no content according to Euclidean mathematics), into a fractal space-world, as Leibniz put it, full of energy and information. So we can

understand its internal changes in energy and information, through those ages, to fully grasp the entire world cycle between birth and extinction.

And finally we need to understand the scalar  $U_{\pm 1}$  'planes' of existence of the being (the cellular/atomic, organic/thermodynamic, social/gravitational scale) to explain why systems are born from smallish, cellular/atomic seeds and return to them after death.

The 5<sup>th</sup> dimension. The 3 scales of superorganisms:  $U_{\pm 1}$

Indeed, the worldcycle we just have described has a fundamental feature: systems are born infinitely small, grow very large, but yet, even when they are at its biggest, they are compared to the absolute space-time world in which they are inscribed, (society, cosmos) very small; and death will dissolve them back into smaller parts.

And this led us to the 4<sup>th</sup> element that truly integrates all others and give us the whys of reality – what we might call ‘the existential program of the universe’, a fearsome expression, which however has always been lurking behind the philosophy of all sciences: the deterministic facts of reality, and its worldcycles. Entities of all types do perform a survival program that tries to maximize its ‘function of existence’, if we are to use the concepts of relational space-time.

**The 4<sup>th</sup> element: actions of space-time, the survival program of existence.**

Indeed we must add a 4<sup>th</sup> dynamic element to those 3 structural ones, the concept of a ‘vital, repetitive≈cyclical space-time action’, which entities perform in those scalar space-times by exchanging energy and information with entities of those microscopic, human and macroscopic Universal Scales,  $U_{\pm I}$ , whereas  $i$  is the relative size of the entity we study. Indeed, if the Universe is like a Pyramidal



building occupied by a series of scales, with a hierarchy of relative size from forces to atoms, molecules, cells/matter, organisms/geological structures/planets-stars/galaxies and local clusters, and man exists in the relative i-scale, any entity within that building, including humans will perform 5 basic actions of exchange of energy and information, in 'those levels' of the pyramid, with the aim of increasing and reproducing its spatial energy≈motion and temporal information≈cyclical form that ensures its existence, survival and growth. And those common actions to all systems, will be acts of motion, energy feeding, information gauging, reproduction of the system and social evolution with other systems.

We terms those actions, with the vowels, a,e,I,o,u, as  $\Delta$ acceleration≈ motion,  $\Delta$ e-nergy feeding,  $\Delta$ -i-teration≈re≈production,  $\Delta$ o-bservation≈information,  $\Delta$ u-niversals=social evolution.

And this introduces us into the 4th key element of the TOE: *cyclical actions of space-time.*

*The whys of the motions of beings in space-time and the paths they follow, which have a survival, biological, organic purpose.*

Now, physicists probably will feel all this talking about whys is not required, because their science is indeed the science of motion and space, and for that job, the worldline suffices. As truly physicists need no more than knowing those motions when they do their main worldly job of constructing weapons or transport machines (which transform energy into motion).

However i doubt a human being feels 'all has been explained' just by tracing a worldline of all his motions from birth to death in a map of external space-time. Why he got old and wrinkled? Why he was obsessed by love or

sex? What were the purpose of their actions in space-time, behind those translations mapped out by a physicist? – Nobody indeed moves in space without purpose, and that purpose, we shall find is ultimately the same: the survival and maintenance of the internal energy of the being, by means of actions of exchange of energy and information with the outer absolute space-time.

This are the kind of questions we will be able to answer, with the 4th fundamental element of this TOE, derived from the other 3: the concept of an action in space-time, and the classification of all events in space-time into 5 'vowels', which we call the program of the Universe, because as all beings live and die in cyclical time, as all beings are made of the finite, topological heads/bodies/limbs (particles/waves/fields), all beings follow the '5 actions of space-time' that ensure its survival. All systems absorb and emit spatial energy and temporal information and this gives us '4 actions', derived from the simple fact that all beings are made 'only' of space $\approx$ energy and time $\approx$ information. And finally all beings tend to evolve into social, bigger wholes that survive better than smaller ones, because of the organic properties of scales of size in the Universe. So most entities repeat a cyclical beat of actions:

$\Delta o$ -bserver- $\rightarrow \Delta a$ -cceleration- $\rightarrow \Delta e$ -nergy feeding- $\rightarrow \Delta i$ -teration- $\rightarrow \Delta U$ : social evolution into universals:

Those are the words, 'space', 'time', 'information', 'energy', 'waves' 'bodies', 'actions' which scientists have not analyzed in enough depth because they are 'given' - indeed this is truly all what they study. So happens with its mathematical and logic equivalents: the concept of a point of space, still ill-defined as something without breath (hence with no existence), or the 'causality' of time cycles, which in all life-death processes end in a zero sum, as any cycle returns to its initial point.

And again those life-death cycles is the main focus of analysis in almost every science, even if they do not receive the same name.

Now we provide the 'whys' to all of them.

That is, beings which exist in an external space-time will try to exchange information and energy for their heads and bodies in other to increase its 'space-time function of existence', and to do so they will perform some basic actions, which we term the 5 vowels of the program of existence:

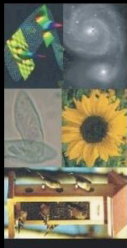
- Systems first will observe and gauge their world ( $\Delta o$ : information) looking for appropriate energy and information for their bodies and heads. Then once they have orientated they will change its motion hence suffering some type of acceleration or deceleration ( $\pm\Delta a$ ) to drive their system towards a field where they will feed on energy ( $\Delta e$ ), or interact with similar beings exchanging information either to iterate their form ( $\Delta i$ -teration) or evolve socially into larger wholes called 'Universals' in the jargon of philosophy ( $\Delta u$ ).

This program of 2, 3, 4 or 5 actions (simpler systems might not engage into the complex informative actions, but all move and process energy), is common to all entities of nature.

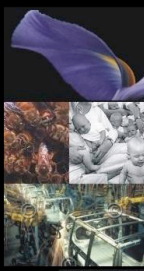
**THE 3±1 TEMPORAL CYCLES & 5 1±4 ACTIONS OF ANY FRACTAL WORLD**

**ORGANISMS ABSORB, EMIT AND COMBINE SPATIAL ENERGY & TEMPORAL INFORMATION IN 4±1 TEMPORAL CYCLES OF:**

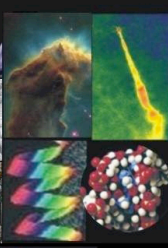
**Energy=Feeding    Space=Reproduction    Information=Perception, Time=Cyclic change and Fractal, Social Evolution**



$\sum E_{i-1} > E_i$

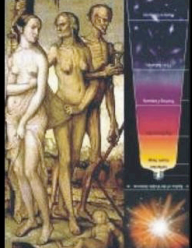


$e_{ti} > \sum ET_i$

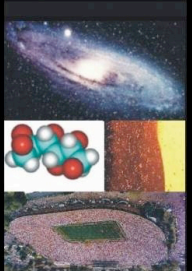


$[t_i > T_{i+1}]$

Motion in Time    In Space



$E_i > TE_i > T_i << E_{i-2}: \text{death}$



$\sum T_i > T_{i+1}$

*In the graph, the 5 cyclical actions of space-time that all beings follow, written in the formalism of existential algebra. All of them move and feed, all of them reproduce, all of them perceive, all of them reproduce through a generational cycle and all of them evolve socially. And they do so by interacting with other Planes of size of the Universe. Thus the widened concept of a cyclical action of space-time becomes the 'technical tool' to describe the details of the universe and all its species. Its order in the sequential world cycle of life, explain the ages of existence, as systems do more energetic actions in its first age, and multiply informative actions as they grow in age.*

This, o,a,e,i,u and its infinite combinations resume all what we do. We first perceive as observers, increasing $\approx$ absorbing information,  $\Delta o$ , then we change our motion, expelling energy (hence accelerate/decelerate),  $\Delta a$ , to come closer to the perceived event/form, in which we will either feed, absorbing energy,  $\Delta e$ , or if we are coming closer to a similar being, we will either emit information, iterating $\approx$ reproducing our form,  $\Delta i$ , or communicate with a common language and evolve socially into bigger wholes,  $\Delta u$ .

And this is done by all particles, which gauge information first (that is why quantum physics is a 'gauge theory'), and regulated by 4 quantum numbers that express those 'actions of existence'. But it is also done by cells, regulated by 4 genetic letters that express those 'actions of existence', which biologists call the 'drives of life' (perception, motion, feeding, reproduction, social organization).

And so you as a human being can reduce also your cyclical actions to acts of absorption, emission of energy and

information and social evolution, coded by your 'memes'. You fall in love, because you must reproduce, you read, see, study, observe information, eat all kind of things, evolve socially. Your actions, of course, are far more complex than those of an electron that merely 'gauges' light, feeds on the photon, fattens to a larger orbit, and if absorbing much energy will decouple=reproduce into more particles, and finally regulated by the magnetic quantum number evolves socially with other electrons into atoms.

Further on, the Hamiltonian, with its principle of least action, and the concept of an action, measured in terms of cyclical motion, (called angular momentum) and its minimal unit, Planck Constant of action, which 'generates' with its energy and time the particles of the Universe, and the topological duality wave-particle of which all quantum systems are made... is really what quantum physics is all about, in a nutshell.

So even in the most 'weird' and uncertain of all known sciences (quantum theory), we will easily find that the basic principles we have just described (organic topology, parts vs. wholes, actions through scales of space-time, closed cycles...) suffice to explain it all.

*Even if most physicists would prefer to use abstract jargons and might have a hard time to yield their position as Popes of space-time sciences, to Philosophy of Science, which is ultimately the discipline in which this TOE must be inscribed, as it unifies all sciences, and equals them as different studies of different scales of size of the Universe.*

Again economists and historians which will have a hard time due to its anthropomorphism, accepting the empirical facts of the cycles of evolution of machines and history, tabulated by this author 20 years ago, which

predicted with an accuracy unknown since the times of Spengler and Orwell, the fundamental historic and economic facts of the past 20 years (Library of Congress registered, in case someone in the future wants to test this essential proof of veracity - predictability).

And biologists might feel we betray evolutionary theory by adding the topological life-death cycle of species, which is deterministic and not chaotic as they like it. It is all fair and part of what I call the anti-quantum paradox, inverse to the uncertainty paradox where the observer is so huge that affects the observable. (Thus the anti quantum paradox is the fact that the human scientist is so small in comparison with the society in which he exists that the observable - mankind - bias the observer, the scientific laws - with its anthropomorphic ego-trips and individual or peer agendas.)

But of those 3 disciplines, probably the one that is more enhanced is the biological discipline. Since we widen many of its laws to other species, despite the anthropomorphic self-centered belief of humans, which will always deny the pantheist Universe we shall describe here.

So we do talk of a bio-logical property, called 'survival', enhanced by those 4 space-time cyclical actions, which brings this TOE to the details of the Universe. We shall indeed be able to explain all the repetitive, causal actions in space and time of all the beings of the Universe as individual or composite actions derived of those 4+1 energy/information emission/absorption and social, scalar evolution. And we will find the numbers, equations, letters, memes, genes, Hamiltonians, you name it that scientists use in each discipline to explain them.

And so 4 Principles of TOE, '*scalar actions of space time*', with its bio-topo-logic properties, converted into 4+1 experimental actions, which enhance the survival and

select the species that last in the Universe (being those other who do not follow the isomorphic laws of topological space, causal time, and scalar actions, extinct as 'resonances', 'unstable particles', 'wrong mutations', 'crazy thoughts' etc.).

The most common series of actions are:  $\Delta o$ : observable-  
 $\rightarrow \Delta a$ : motion- $\rightarrow \Delta e$ : feeding- $\rightarrow \Delta i$ : iteration- $\rightarrow \Delta u$ : social evolution. And they are performed by the main systems of Nature. So in particles we use 4 quantum numbers to code those actions, and in biology 4 genetic letters, and we call those actions the 5 drives of life.

But of course, we do not call life, the fact that an electron turns constantly around an orbit ( $\Delta a$ : 1<sup>st</sup> quantum number), gauges light information, and feeds on it, growing on energy ( $\Delta o$ ,  $\Delta e$ : 2<sup>nd</sup> quantum number) and when it has enough energy produces with an opposite spin electron a  $\gamma$ -ray light that iterates a new particle, ( $\Delta i$ : spin number) and finally through its magnetic number evolves socially in harmony with other electrons ( $\Delta u$ ).

And if I were to talk of electrons and quarks as particles, which gauge information, feed on energy, iterate other particles and evolve socially as life beings do, anthropomorphism will laugh at this theory of everything. And yet they do that. That is all what they do. And that is all what quantum numbers code. And there is no event in the Universe we cannot reduce to those 5 actions, as there is no curve that cannot be reduced to a mixture of lines and cycles either through conics or Fourier series (where a sinusoid wave is merely the mixture of a rotary motion along a lineal path).

In that regard, I have always regretted the incapacity of biologists and physicists to explore together phenomena which is at its heart the same, because of their split of 'jargons', and their lack of knowledge of a 'higher, non-

anthropomorphic jargon', which is neither biological nor physical but metaphysical, proper of the advanced Greek Philosophers (Plato and Aristotle) and eastern philosophies (notably Taoism and Buddhism), which we will bring here, as it should be the proper jargon of philosophy of science, void of 'Abrahamic hang-ups on the special superiority of mankind', which are also at the core of the physicists' pretension that matter has no organic properties.

We shall argue ad nauseam that a mechanist image of the Universe requires as Leibniz put it, a god to set in motion, and so only an organic self-reproductive concept of reality does not require a God and is scientific. What modern western science does today is to deny matter any living property which is what religions do but in an inverse fashion.

All has changed to remain the same, reason why we will here adopt a much more clean-cut concept, that of 'Ch'ang', the old function of existence of Taoist philosophers, which accurately described the Universe of 'Tao=Time', as a constant process of trans-formation of its two variables yin=information and yang=energy, which creates together the infinite beings.

It is unfortunate to discover that despite the enormous wealth of data of modern western science, we do not have a single sentence except perhaps the principle of conservation of energy... and information (which must be added) with the same depth of understanding. So we will affirm sentences such as:

'All what exists is a universal organism of fractal space and cyclical time, which extends across 3  $U \pm I$  planes of the 5<sup>th</sup> dimension through which it develops a sequential worldcycle of repetitive cyclical actions, in 3 ages between birth and extinction'.



And this, which might seem pure metaphysics to the reader will be written with simple equations:

$W = \sum \partial a, e, i, o, u = 0$  (definition of a world cycle in terms of a Lagrangian of actions) or:

$W = \text{Max. } E \text{ (youth)} > e \approx I \text{ (adulthood)} > \text{Max } O \text{ (old age)} << \text{Max. } E \text{ (Death)}$  - definition of a world cycle in terms of a Hamiltonian of Energy changes between birth and extinction.

Now of course, to that aim we need to develop a new logic-mathematical formalism, drawing from fundamental laws of physics (hence concepts such as Lagrangian, actions, Hamiltonian), and the laws of biology (concepts such as the 3 ages of life, or the drives of life and the will of survival), in as much as many laws of biology will apply and explain physical systems and many laws of physics will apply and explain biological ones, in a much deeper sense than the simplistic reductionism of physicists (which do want to explain life ONLY from the lower to upper arrow of the 5<sup>th</sup> dimension), or the mystical jargon of Holism (which explain wholes without understanding what they can transmit and what they cannot to lower system).

### **The bio-topo-logic Universe of Actions->Functions->Worldcycles.**

A simple truism – the existence of 4 Universal elements to all systems - ‘scalar organization’ ‘vital space’ & ‘cyclical time’ – which manifest dynamically through scalar, cyclical, spatial actions of exchange of energy and information - is the departure point of a TOE.

Humans have talked about such TOE since the Greeks discovered that reality is logic=temporal, mathematical=spatial and organic=structured in scales of size, whose smaller parts come together into bigger wholes.

Their understanding is not new. It was always the fundamental ways to define space and time, since the first Greek Philosopher, Anaximander, defined time as cyclical, motion and form as the dual nature of all things in perpetual transformation, and man, an evolutionary species that came from the fish, and was made of an almost infinite number of parts (its cellular homunculus), to the times of Leibniz's whose relational theory of spaces and times, define all entities as beings made of fractal space and cyclical time, where a point could be enlarged to become a whole world.

And so the common properties of fractal space and cyclical time processes were also the initial properties of all entities. This is logic, since man observes the scalar, fractal, and cyclical universe. And so all civilizations thought of time as cyclical, all saw space as vital, all were puzzled by the conundrum of individual parts and universals...

In that regard, of the modern science, physics, the 'science of energy, motion and space' as it is defined in encyclopedias, understands quite well space, the less important element, and has gathered with A.I. an enormous quantity of data on time cycles and 5th dimensional structures, but *it does not understand the data collected. It has not the proper TOE to order it, and so as data accumulates and details become more complex, and more epicycles and extants (complex mathematical functions, and cumbersome computer calculations) are needed to fit it all, an overwhelming accumulation of knowledge without order reigns in all*

*disciplines.*

Unfortunately the understanding of cyclical time died away since Descartes imposed its graph of lineal time, while the 3rd organic, fractal outlook of Nature, made of parts and wholes, of individuals and Universals, has somehow lost its importance in the abstract discourse of modern science, despite being central to the Universe and the origin of the 5th dimension of space-time, which truly hides side by side with the fractal nature of space and the cyclical nature of time, all the keys to the ultimate whys of reality.

Finally, the dynamic details of those 3 structural elements are shown in the cyclical, space-time actions all systems perform by exchanging energy and information with microcosmic, similar and macrocosmic elements of those scales of space-time.

So on one side the duality of space and time, with its topologic properties, and on the other side the scales of size and actions performed between elements of those scales, with its bio-logic properties, configure the essence of reality.

Thus the 'bio-topo-logic properties of 'scalar-space-time', are the 4 legs that sustain a scientific Theory of everything, which needs no recourse to external god-like agents (the religious TOE), or rejects even to question the whys (the mechanist philosophy of classic science, since as Leibniz quipped to Newton – a machine needs a God to set it up in motion). We shall constantly dwell in this little understood error of 'mechanical models' of reality. They are deist models as someone must put the machine in motion. Only organic, self-sustained models of reality are therefore scientific, rational, without mysteries.

But the 'bio-logic' elements of organic scales and cyclical

time are missed. And 2 out of 3 are too many errors even if the data keeps pouring. So it is unlikely that any computer, which are machines with little creativity and intuition, will ever find the TOE, nor it will happen in the world of academia, since as Kuhn put it, the straight jacket of authority makes impossible such overhauling of fundamental principles.

Thus we shall start from those new sound foundations. And affirm and prove once and again the existence of organic, topo & logic properties common to all beings, born out of the scalar, spatial and temporal nature of reality, from where it will become easy to extract the sets of laws, called 'isomorphisms' that all systems of nature follow and form the core structure of the Universe.

Since all physical and biological systems exist across several scales (the atomic/cellular, organic/thermodynamic and social/cosmic scales) occupying such fractal space whose organization lasts a finite, generational life-death time cycle. And so all follows the laws of those 3 dimensional, 'formal motions'.

Once those 4 'postulates' are accepted, all fit, as we can construct all beings of nature, with those 4 elements: the cyclicity of time and its storage of information in the form and frequency of its cycles; the organic, scalar, fractal structure of Nature, made of parts that become wholes, from particles that become atoms that become molecules, cells, organisms, matter states, planets, solar systems and galaxies; and the 'fractal, vital structure of space', which has as its ultimate substance, pure motion, as Anaximander knew (and we observe in the motion of space between galaxies, and the energy and particles born out of vacuum) – and the study of its details, the actions of space and time, that combine those motions, to ensure the survival of the entity,.

And we can add further knowledge as we explore in depth the topological, causal and organic properties of them, their interplay, their symmetries, their causal chains, their parts and wholes.

The reader, in that sense should not be worried that we are writing here a TOE only for physicists – we put a lot of examples on this discipline, because humans think it is the only one concern with space and time It IS NOT. I want to stress again that this site unifies ‘all sciences’, not only elements of physics:

*- Since time and space, despite being hijacked by mathematical physics for a century, are parameters of all sciences, as all events happen in space and time. So we must regain properties of space and time that can be applied to any reality. And this means to depart from the simplistic lineal view of time of physicists, which use it only as a parameter of space. And for that reason the sections dedicated to economic systems, biological systems and historic systems are very large indeed.*

- Thus the site is directed to all type of scholars and its level is fit to any type of University students with a first introductory course on science. I have no included the more complex parts of it. Besides, all new theories in its infancy, are simple enough for anyone who has a basic knowledge of science to understand.

- Finally, I have done a very thoughtful ‘mixture’ of physical, biological and existential=philosophical jargons to create a joint-jargon for all ‘sciences’, which might strike the scientist, specially those with difficulties to accept sentient, intelligent, living, metaphysical, perceptive, organic properties (void of mysticism, but rather defined in strict bio-topo-logic terms). Indeed, the ultimate question about the Universe is not the ‘how’ of motions (the inquire of physics) but the ‘whys of existence’ (the

inquire of biology and metaphysics).

Whereas existence is a far more precise concept than 'life'. Things exist. They are born, evolve, develop and die. And this happens with all beings, from particles to galaxies to human beings. And the proper, scientific explanation of why they exist and go through 'worldcycles' of existence, of life and death is the ultimate question of science, and the one we tackle here in great depth by establishing mathematical formalisms for such concepts, as the one just described of the fundamental existential=life-death worldcycle of all beings.

This astounding coincidence of all systems, which follow the world cycle becomes only natural when we realize that ultimately both, biological and physical systems are made of atoms, themselves made of charges and masses, which are rotational clocks of time, which move with a certain spatial motion. And so all follow conservation laws of energy and information (form). And, ultimately all are subject to the 'Lagrangian/Hamiltonian' equations of energy that converts all cyclical motions in space-time into 'conservative' 'zero-sums', as all life-death cycles are.

So we can write in 'existential algebra' (the mathematical branch we have named to develop the equations of cyclical space and fractal time), an equation for all world cycles, similar to the Hamiltonian - the most famous equation of professional physics (no, it is not  $E=Mc^2$ ), which merely states that at the end of the road after passing through maximal and minimal states-ages of energy and information, the entire system neither grows nor shrinks the total energy-information of the closed Universe in which it exists. And for the same reason all life-death cycles become Hamiltonian 0-sums.

A fact that along the ultimate nature of space as pure motion, makes the Universe immortal, as motion never

ceases. So we can write a 'generator equation' of all Universal space-time cycles:  $Se \leq Ti$ , and affirm that instead of the lineal, entropy only 'energy principle of science' we should add the time-information cycle as:

'All what exists is a scalar system of spatial energy and temporal information that transform into each other ad eternal:

$Se \rightleftharpoons Ti$

This will be one of the many 'enhanced' laws of science with a wider application according to the principle of correspondence that makes new theories truth if they are 'wider', enclose all known previous laws, and they are simpler'.

It is important in that sense to realize that while mathematical equations give precision to the details (so we have slightly different Hamiltonians with complex numbers quantum theory, in classic Mechanics, and so on), what matters is the ultimate logic truths, which are wider. So all Hamiltonians reduce to a simple principle of 'least action'. Systems try to minimize its expenditure of energy but at the same time try to close as many cyclical actions in space-time as possible.

And so what relational space-time affirms is rather simple. We shall here resume it in a more complex sentence that exhausts the main concepts of it:

'The Universe is a fractal of entities composed of two polar elements, a particle/head of spherical form that absorbs and emits logic cycles of temporal information, moved lineally by a limb/field that absorbs and emits energy as motion, connected through a 3rd combined, 'hyperbolic' wave/body, which iterates the whole system in other region of space-time, further evolving socially with clone systems into larger wholes, which become units of a larger

‘Plane’ of organization, during a finite time duration called the ‘worldcycle’ of life and death of the being, born in a lower plane of existence as a seminal seed that grows through those exchanges of energy and information, till it exhausts in its old age all its energy converted into form, and then dies, dissolving back into a lower Universal Plane’.

Now, in this rather long sentence we have resumed reality. And I know most will feel disappointed that this sentence is really all what is needed to describe the Universe: ‘fractal space’, ‘cyclical time’, ‘scales’ and ‘actions’ of space-time. We shall soon disappoint you further, since we will encapsulate that sentence in the simplest of all equations,  $S/T=C$ , from where all other realities will be born (-;

So those 4 principles: ‘mathematical space’, ‘logic time’, the ‘organic structure of parts into wholes’, which the ancients called ‘individuals’ and ‘universals’, and the cyclical actions of exchanges of spatial energy and temporal information entities perform within that structure are the 4 core elements that conform all realities.

We shall however departing from that simple worldcycle of existence of all beings, which we shall call the ‘function of existence in space and time,  $\mathcal{O}Ei$ , (where  $\mathcal{O}$  represents a cycle of temporal information, and  $E$ , a flow of spatial energy and  $I$ , its relative scale), explain absolutely everything, and more. (I say ‘we’ because this TOE, will be carried in the future by many other researchers, humans or A.I., the intention of this blog is to pour enough information on  $\mathcal{O}Ei$  before I depart from existence due to a terminal illness recently diagnosed, so I apologize if in the rush, the work is not complete. Science is a collective human endeavor, and this is just a seed of information, which needs the ‘energy’ of younger researchers to be complete).

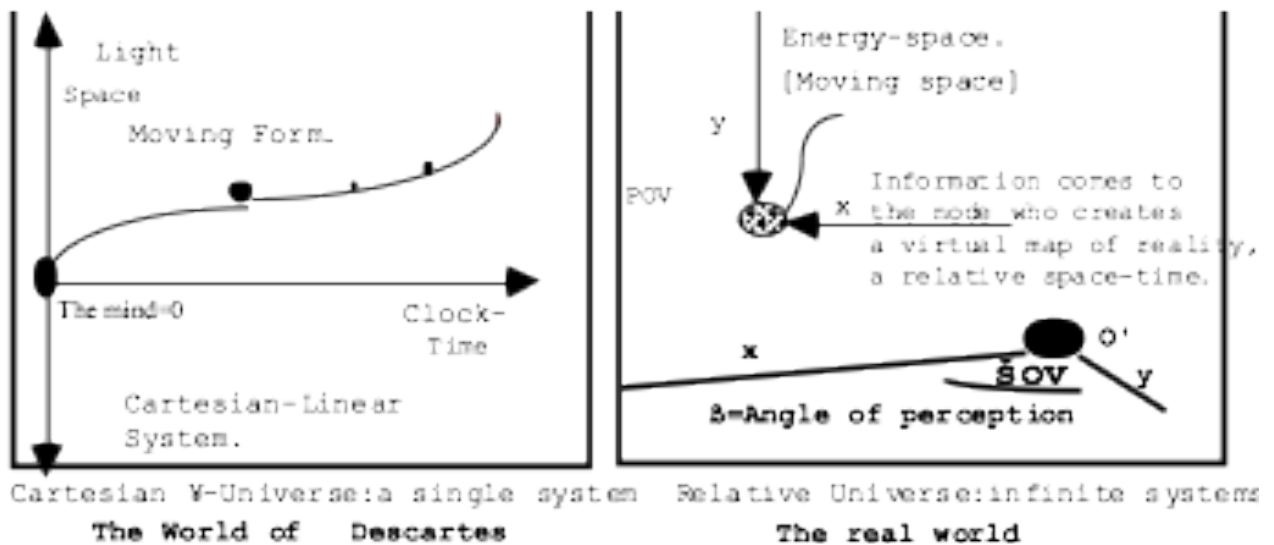


In that regard, we could consider 3 'scales' of space-time existence, the units, the a.e.i.o.u. actions of the being, in physics its forces, the 'first integral', the function of existence of the being, its total internal spatial energy and temporal information  $Se \times To$  (in physics it would be its lineal and angular momentum) and finally, the 'integral' of the function of existence along time, its worldcycle (in physics its Lagrangian), which will become a zero sum that tries to return the being to its point of birth in space and time (so not only beings dissolve back into its u-1 scale, but as we all know old men become childish and salmon come back to its place of birth to reproduce and die. This examples give you a glimpse to the most beautiful of all ways to manifest the ultimate laws of the universe: Poetry, metaphor, similarity, art, beauty, balance of existence, the humble repetitive beat of its patterns and varieties along all its entities that have, were, will be iterations but never identities, those paradoxical qualities an equation cannot express:

'The Function of existence (Ch'ang), is not the entities we see, they are only varieties of its infinite combinations of spatial energy, yang, and temporal information, yin, that combine and clone in infinite varieties of decametric herds'.

(Lao Tse, adapted to TOE)

**Toe's Epistemology & method. The expansion of Human Knowledge. Infinite worlds.**



If you have follow till here, knowledge, information, requires a fixed point of view. All particles do move in stop and go and emit information when they stop (this has huge consequences for relativity as all systems human or electronic do 'stop' to emit a  $\gamma$ -ray of information and to perceive it, hence they all see 'space-speed-distance-light' as if it were in an inertial frame of reference, which is ultimately the explanation of WHY, c-speed is constant, the postulate of relativity; whereas the how is relativity, 4D Metrics).

Once this said, and further expanded in our 'future articles' on 'relativity revis(it)ed', when we adapt it to 5D metrics, this explains also why we see the Earth fixed. If it were moving we could not focus our information about the World. So we can easily deduce an equation for any mind, which will also have huge consequences in all sciences:

4.  $o\text{-mind} \times \infty \text{ World} = \text{Constant, informative mapping of the Universe}$

This equation is fundamental for the understanding of the Universe. Leibniz would have love it. It defines its monads. Descartes would have love it. It defines his concept of the 'world', which is put on his mind by some devilish artefact.

He called his book where he defined his cartesian frame of reference, the 'world, and affirmed it was the point of view of the human mind. He did not call the book, the 'universe'. Then he put 3 perpendicular co-ordinates for the world, because those are the 3 coordinates of light-space, what we see (perpendicular, magnetic, electric and c-speed fields of light). So Kant said that the mind is made of light and space is euclidean, with the 3 perpendicular lines. And then impressionists said that we see light not space (they should have said that we see light-space) and that is indeed what we see. That is the left graph. The Human light-space. We see it as distance, but it does have motion if we could see the detail of each distance-ray of light.

And so our o-mind, focus into the eye-point, a world of light-space that reflects the information of the Universe. And we do so in stillness, to focus it. This is the present frame of reference of science, and the origin of the c-speed constancy, as c-speed is under galilean paradox, also c-distance. So obviously c-distance is constant. The mind is still. All that means the same.

But on the right side we see a general monad, which will construct a different o-mind. It might be olfactory, made of atoms as pixels, or electronic, made of electrons (actually the ultimate human mind is electronic as light is then absorbed by electrons and elaborated further, but that is a theme for other specialised 'future articles). So to define the whole Universe we must consider that there are infinite world-minds that represent the Universe. And so the question is which frame of reference is the best of them all? The answer should be self-evident to the reader, the most objective. The one that can account not only for the human light-space point of view, but for all the possible mind-worlds. And that is where 5D metrics, cyclical time and fractal space comes in. This is what once this Tøe becomes developed in full (this blog won't for

reasons, concerning his author, explained at the end of the intro), it will substitute smaller points of view, such as 4D metrics and previous smaller points of view, such as heliocentric, geocentric or tribal points of view.

It is simply speaking the '5th paradigm' of knowledge, after the tribal, geocentric, heliocentric and light-centered points of view, in which the 'fixed' frame of reference was 1) the human tribe and nation, 2) the earth and humanity, 3) the sun and all its atomic and living species, 4) the galaxy and its light space. Here it comes 5) The fifth dimension and the entire Universe and all the world-minds that look at it (in some posts i write the 4th paradigm, as i used the 0 for the tribal age... you will run in some inconsistencies of this type as 20 years of lonely research have evolved some jargons).

Let us develop a bit those 5 ages of science to consider the way the collective human mind has expanded its knowledge.

You can construct an infinite number of 'relative monads=worlds' departing from a first, fixed point of view.

The mind equation,  $0\text{-point} \times \infty \text{ Universe} = \text{Constant}$  mapping of reality, gives you as many different world views as the choice of 0-point frame of reference. Since  $0 \times \infty = \text{Any Constant}$ . That is a very special equation. The infinitesimal mind multiplied by a relative infinite sensorial world can create a relative infinite number of possible constant mappings.

In the posts related to topological 2-manifolds, we shall study how it does so. Basically it uses 'spherical, polar' topologies, which have a funny property: you can shrink an sphere without tearing it to infinitesimal size. So you can shrink the information of the Universe, extracting

what occupies more volume-distance (its motion) into any infinitesimal fixed map and create a mind. Then you move it a little as you change your frame of reference in space, which is what you do and alas, you get your I=eye-Wor(l)d. The human mind of visual, spatial images and verbal, temporal worlds. And we will expand on that elsewhere.

So far so good. But not good enough to have a perfect vision of reality. Because alas, you can only see light. What about the inner parts of beings which light does not see through? The Universes outside galaxies where there is no light but dark matter and dark energy? How you go about extracting information from them? This is a key motivation for going beyond light and the 4D paradigm. Since **AS YOU GO AWAY FROM YOUR CHOSEN MIND-LOCAL POINT OF REFERENCE, THINGS GOT MORE DIFFICULT TO FIT IN YOUR MIND-VIEW.** In other post we dealt with those ages of sciences in detail. We can show you some of its examples there: - 1st paradigm: the religious age of tribal gods.

The first humans lived in a valley which was the world. So as long as they stayed inside the valley the tribe was called 'man' in their language. All primitive cultures call their 'people', 'the people'. And the valley was 'god', the 'land of god'. Those are the most primitive cultures. For example, the jews, in his valley, called themselves 'the people' (we are goyim=animals) and the valley judea, appears as Yvwh in the original egyptians maps, they called their land 'god'. So did the assyrians. They were the sons of god (assure) and the land assure was god. - When humans went beyond the valley, this limited vision no longer applied. There were many othe rhumans', and they would not like to be called Goyyim and not sons of god, and not promised lands. Hence the 3000 years wars between gentiles and jews. Of course as all is in the point of view, for a Jew, the gentile is a mass-murderer. For the

Palestinian under the boot of Israel, or the westerner under the capitalist yolk of banksters, originated in the Jewish-Protestant biblical belief that the banker is the chosen of Go(l)d that must rule the world, the master race is... you know what I mean. And this is so strict (the point of view) that if you belong to the tribe or believe on Yvwh, chances are you will never read a dot more. That is of course allowed by the universe. One can choose any p.o.v. it wishes, but chances it will survive depend on how extended the p.o.v. is. The smaller the p.o.v. the more chances the larger outer anti-point of view will murder you. Cruel but just. A repetitive moral feature of the universe.

2nd paradigm. The oikoumene, Ptolemaic, Greek age.

So finally some advanced Jewish and Greek, neo-platonic->Christian and Buddhist minds realised the entire humanity was god, the Earth, Gaia, was god and the far away stars, 'points'.

3rd paradigm. The Copernican, Newtonian, heliocentric age. But as we saw more, suddenly with telescopes the sun grew, the moon had stains. So suddenly the Earth's point of view ran into troubles. And so they had to change that to the heliocentric view which worked very well till XX c.

4th paradigm. Einstein's, Light space-galactic point of view. Alas, by then, we had seen so many stars, that obviously the sun was NOT the fixed frame of reference. Alas it came Einstein and said that the galaxy was the center of the Universe - the light space-time of the galaxy, the background radiation the vacuum space, whatever you want to call it. So light space-speed-distances became the new 'frame of reference'. But that was the space-time of the galaxy filled with light everywhere. At the time if you recall, people thought galaxies were 'nebulae'. It was only at the beginning of this century we realised they were

galaxies. And suddenly the Universe became huge. So alas, suddenly when they go out of the galaxy, where there is so little light, and the space-time 'stretches' into gravitational space-time faster than light, they run into a lot of problems, quasars at higher than c-speed all over, dark energy (which is just the natural expansion of space, once there is not 'light curving and shrinking it with the  $-c^2t^2$  favor of special relativity).

And now cosmologists have all those type of problems. The point of view has gone beyond the 'sphere of influence' of light space-time and it does NOT respond outside its territorial sphere to the laws of 4D c-constant metrics. As it happened when we went outside the territory of the sun's pov, the earth's pov, and the tribe's pov.

This objective-subjective, knowledge-mediated by fixed mind dialectic relationship is fascinating and expands to psychology, and society through the tribal vs. global view of history. As i told you this is a unification of all sciences, minds, worlds, universes and jargons, and that is why i did have to deal with the tribal, religious, racist (from a larger human point of view) Jewish question. Another question treated in historic analysis is why actually all other tribes have evolved to the human point of view except the fundamentalist groups of abrahamic religions (obviously millions of advanced jews, muslims and christians are humanist... enough of this 'pricky subject' as unfortunately as we have advanced social sciences are very little advanced and most are in some tribal->nationalistic point of view, call it I am American, the land of the free, or I am Chinese, the kingdom of the center or whatever. Please, we are here Humans in social sciences, carbon life species in biology and in physical sciences, we are...

5th paradigm. The Universal point of view. Existential variations of cyclical time and fractal spaces Because light

is only 4% of the Universe, and we do have a 96% of dark energy and dark matter, while conservative astrophysicists do not like to talk about this, we must overhaul the whole system. Since all the present theories of physics are based in only a 4% of reality.

For example, they will tell you the big bang is the origin of the universe. They won't tell you this is a theory of a 4%. And we shall prove you in the larger view of the 100% the big-bang is the local explosion of a quasar with a 15 billion years tabulated cycle, that is the explosion of the light space-time 4D metric Universe, which does not work outside galaxies.

They will tell you c-speed is the limit of all speeds in the universe. What about the 96 other percentage of reality?

Alas it came sancho, this little infinitesimal mind, who talks to you in this 'fixed' screen, and gave you the 5D metrics, which can extend measure and whys to every space inside and outside the galaxy of the Universe, and solve all the problems of 'consistency' between the different 'systems' of measuring time and space physicists use with 4D metrics and quantum and newtonian historic stages (operators, scalars, vectors, numbers, probabilities, variations, clocks, 4D metrics, c-rods, etc.)

I won't see it in my dwindling lifetime but it is the way things go, because larger points of view make you survive better. So human either adopt a larger point of view, to deal with things like black holes lurking with its dark matter and dark energy in accelerators, robots becoming A.I. and other niceties the Universe reserves for us, or else they will go the way all the tribes that felt they were 'man' and only them, go. The larger point of view massacred them.

So that is how in the infinite worlds and planets the whole



think WILL ALWAYS HAPPEN. Even if we were in andromeda and were green 'txil' scholars, we would be first a tribe, then a species, and a Copernicus-like 'txil', an Einstein 'txil' and a Sancho 'txil' like would move the subconscious collective from tribe to 'txilanity', to the txil sun to Andromeda to infinite mind Universes. The point of view always expands as information is the relative arrow of future that grows with time. And we shall return to this also fundamental equation of the many new 'fundamentals' you will learn here (-; Increasing information is the arrow of future. Disorder, death and loss of it, the arrow of past.

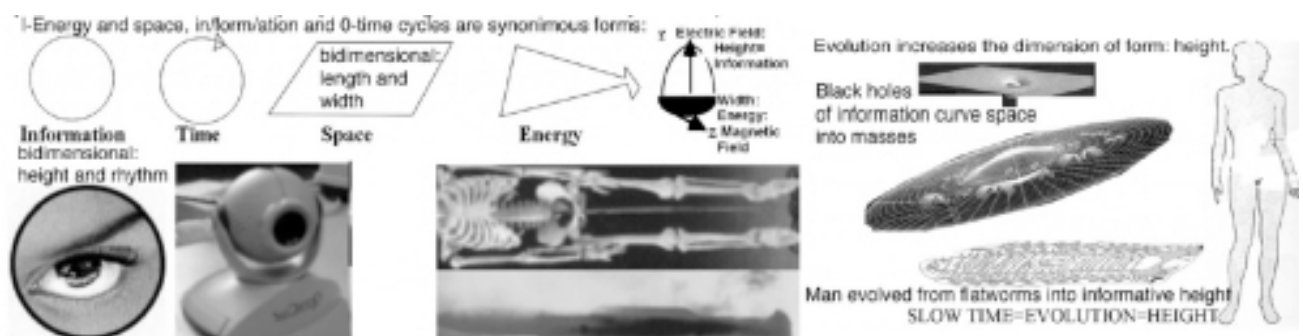
So in the future, when the 4<sup>th</sup> Dimensional formalism of Einstein, becomes just what it is – a tool of measure for cosmological and quantum distances and motions, embedded in the larger metrics of the 5<sup>th</sup> dimension, what will remain as an astounding accomplishment of the human mind, is the understanding by Galileo and Einstein of the relativity of all motions, and what will remain as their biggest blunder is their incapacity to understand the legendary sentence 'e pur si muove, e pur no muove' in terms of its duality, which is the origin of all the 'games of measure', dilations in time and space of their work, as all motions can be perceived also as static form. *And so depending on what we choose to measure, motion or form, adjustments in the different parameters of both states must be added (Einstein's famous b factor, Heisenberg's uncertain choice between measuring the motion-momentum or position-form of the quantum state).*

We want though here to stress an element of that duality that matters most: the dual nature of the concept of a 'dimension', which can be seen instead as a 'lineal motion'. Since this equivalence will allow us to combine both parameters in what mathematicians call 'phase space'. And resolve the ultimate meaning of some fundamental

mathematical operands (integrals, derivatives, polynomial). In essence we can perceive a lineal motion as a distance, (so galaxies move away from each other but cosmologists say this is equivalent to an expansion of space-distances), and a cyclical motion or clock of time, as form with more dimensions than a line. Time thus has always more dimensions than the equivalent spatial motion. So a line with a new dimension becomes a cycle.

### The inverted properties of space and time.

Time first, space then and finally, the 3rd element forgotten for so long – the existence of relative scales of size, from microcosms to macrocosms, unveiled by microscopes and telescopes which form all together a ‘5th dimension’ of fractal space-time, of parts that become wholes and co-exist in the same point of space (albeit as we shall see slightly displaced in time), become then the 3 ‘structural elements’ that configure all entities of reality, from where a TOE can be built.



*In the previous graph we illustrate our 'Space-time' Essence: Time is measured with clocks, which are actually, one-dimensional cycles. Information is the same than a time clock, a 'form' that we see static. Energy is made of quanta, which are lines, that group together into*

*sheets of space.*

What is time and space then? If we want to expand the properties that physicists study, we need 2 expansions of time and space possibilities.

- On one hand we can see all things as fixed forms or as motions.

This duality of the mind, we call it, the Galilean paradox, as the earth moves we do not see it moving (e pur si muove e pur no muove). Later on we shall deal with it in a more mathematical fashion considering the fundamental beat of motion of the Universe: Stop and go motion: If we consider this stop and go discrete film-like in the camera vision of reality we realize that it can be easily converted into continuous motion. But both are real. So cyclical times and fractal spaces must be defined both as 'formal motions', which depending on the observer's point of view and its frames of reference, will appear as form/position or as motion/momentum. And this duality is at the core of many fundamental theories of reality, including the wave-particle duality of quantum physics and the 'relativity' of referential frames.

*So a Time clock is a cyclical rotary formal motion and a volume of space a lineal expansive formal motion.*

We thus exist as still space-distance and moving speed, in the lineal Euclidean, expansive world of spatial systems, and we exist as cyclical clocks of time and informative, forms with more dimensions than space (as the cycle adds a dimension to time which is not in the lineal fashion):

*To: Cyclical, Dimensional formal motion.*

*Se: Lineal, expansive, less dimensional formal motion.*

The graph also illustrates a fundamental property of the dual Universe: that we can perceive reality as still form – then we see time as information and motion, speed as space. Or we can see it moving, and then we see space as motions of energy and information as cycles of time.

Thus when Galileo saw the Earth moving others saw it still: *e pur si muove e pur no muove*. This law implies that all what exists is a formal motion, is both, a lineal distance and a speed - a cyclical form and a piece of time cycles; and both combined form the minimal unit of the Universe, a piece of ‘angular momentum’, or ‘action of space-time’.

Thus the Galilean paradox deserves an entire ‘set’ of sub-equations by itself:

‘ All what exists has both form and motion, which can be perceived in different moments as fixed space and cyclical forms, with a frequency and form that carries the information of the Universe, statically, or as cyclical clocks of time and lineal motions of energy, dynamically.’

Time cycles appear as fixed forms of information, spatial distances as speeds, which do often carry energy in waves that reproduce a motion across lineal space.

Both together combine into ‘physical and biological and mechanical systems’ made of cyclical heads-eyes/ particles/metal-minds that guide lineal limbs/fields/transport machines-weapon, reproducing both together with hyperbolic waves/bodies of energy and information. Topology, defined as forms with motion is thus the true foundation of the mathematical Universe.

Time is the inverse formal motion to space is therefore the definition of a time cycle, which is closed, as opposed to an open line, rotary motion. It can also be seen fixed, and then the rotary motion as in the case of the Earth appears as a fixed form. The Earth, which is a vortex of cyclical

motions, appears indeed as solid matter. So happens with atoms and galaxies. The Galilean Paradox in that sense is far more evident in the case of cyclical motions, which become forms, 'in-form-ations', which truly mean 'forms-in-action', forms with motion, fixed by the mind that observes entire time cycles as logic fixed closed paths.

We can see those equivalences in the graph above. And we see examples of the duality of spatial, lineal energies and cyclical forms, which are knots of time cycles to perceive them. All systems have both; we have 'spheres' made of multiple layers of cells, and cameras, which are isomorphic. And to move through Space we have 'lineal members', which move us in toroid open and closed curves. And so it happens to lineal weapons. And then fields of energy and information make together a light ray, which is really also a bidimensional surface.

Thus time cycles, in relationship to lineal space has a fundamental property: to be its inverse, and yet to be able to transform into each other ad eternal, as a lineal motion can bend into a curved motion. This inverse and complementary duality between space and time is the fundamental 'Principle of the Fractal Universe':

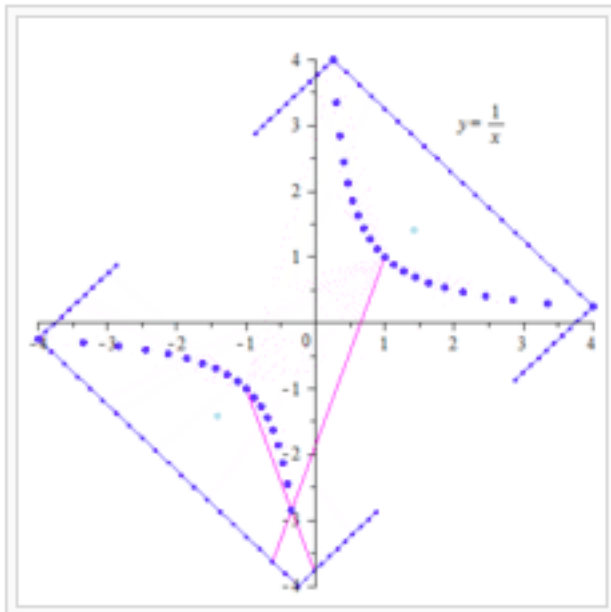
2. *'The properties of the 2 formal motions of which the Universe is made, lineal space and cyclical time are inverse even though both can be transformed into each other ad eternal:*

$$Se = K/To; \quad Se \times To = K, \quad Se \Leftrightarrow To'$$

*Se is the general term of 'spatial energy' and To, is the general term of cycles of time or information, carried in the form and frequency of those time cycles.*

*Thus To can be considered equivalent to the magnitude, frequency,  $f=1/T$ , the inverse of lineal time, for which reason we can substitute in most equations,  $T=1/To$*

*The result is a hyperbolic function;  $S \times T = K$ , which will become the foundation of all other functions of the Universe. Hence we shall find the dominance of hyperbolic surfaces in all bodies & waves that combine spatial energy and temporal information, which tends to zero as we move towards infinity closing all time cycles into a zero sum worldcycle.*



*The fundamental relationship of the Universe,  $T(y) = C/S(x)$ , based in the inverse properties of time cycles and lineal space motions/forms is a parable, with a constant product:  $T \times S = C$ , from where all other laws of the Universe can be deduced. To notice at this moment the 'paradoxical nature' of the curve, the zero sum produced by the adding of its 'positive and negative parts', which make the worldcycle of the parable, which makes it a zero sum (obtained by displacing the negative over the positive, closing the representation of the worldcycle). We can then find an enormous array of laws and Universal constants deriving of them. For example the positive side of the hyperbole defines the law of gases,  $P(T) \times V(S) = K$*

Hyperbolas arise in many ways. The main one is the curve representing the function  $f(Xs) = 1/f(Yt)$  in the [Cartesian plane](#), (previous graph). Also important to fully grasp the

way a worldcycle of life and death is, the fact that a circle appears geometrically as a hyperbole, viewed from within it. In relationships between entities and its external Universe, it appears as the shape of an [open orbit](#) . And inversely as the [scattering trajectory](#) of a [subatomic particle](#) (acted on by repulsive instead of attractive forces). Those dual examples (positive vs. negative side of the worldcycle, closed vs. open vision of a circle, attractive vs. repulsive forces) show that ultimate meaning of the hyperbole: to be all and nothing, to be paradoxical, to seem an infinite precisely when it tends to zero.

The understanding of the hyperbole and its dualities, with all the languages of 'God=the mind of the Universe', its metaphysical worldcycle, biological, topologic and cyclical, causal language could in itself be an entire volume of deep wisdom.

*Recap.*

In essence: all is form and motion, as the mind perceives in stillness and so reduces motions to form, but motion dominates form, time cycles dominate informative shapes and energy dominates space.

And further on, all cycles have a positive and negative sides, which are the positive and negative ages of the cycle, or the two sides of the hyperbole. And those 2 dualities become essential to the paradoxical nature of reality, which humans have so much difficulty with its one-dimensional mind to understand.

*But since the mind is just one point of view, and there are infinite ones, motion dominates form in the objective, scientific perspective. Thus energy is more important than space (understood here as speed, motion of space, latter defined with more precision), and time is more important than information (understood here as form).*

Hence whenever we can we shall consider motion parameters, such as in quantum physics, we will write Heisenberg's principle as:  $\Delta E \times \Delta T = h$

Thus we must understand that Space-Size is also Speed not only length/area/volume. And what they have in common is to be Lineal form.

And time carries in the cyclical frequency and patterns of its clocks, the information of the Universe.

In detail, the exact duality is 'motion-space', hence we use the S for speed-space, and Time-Form, hence we use To for time form. Since Energy is space with a little of form, and Information is form with a little of speed (the yin with a little of yang, and the yang with a little of yin we mentioned before, to use the jargon of 'scientific taoism'). And because ultimately as we said, to perceive anything we need the little yin and yang on it, we will find constantly that energy and information are better parameters than pure motion and pure form, often invisible to us. Since what can we perceive if something has no form, regardless of its infinite motion? And what can we see if form does not communicate and sends us through speed a wave of form to see? Nothing. Alas, latter on we shall deduce the infinite speed of gravitation, (action at distance) from the fact we do not see it.

It rests now to consider how scientists will use 5D T.œ to study the pantheist Universe and its species. Indeed, it is not enough to know the 'thoughts' of God, but it is important to have a method to apply it to the details. This method has two fundamental steps: the use of the 4 fundamental perspectives of all systems, the spatial, temporal, 5D scales and a.e.i.o.u actions, as *most scientific evolutions of knowledge have gone through the evolution of its understanding of certain phenomena, historically, through the use of those 4 perspectives to describe reality.*

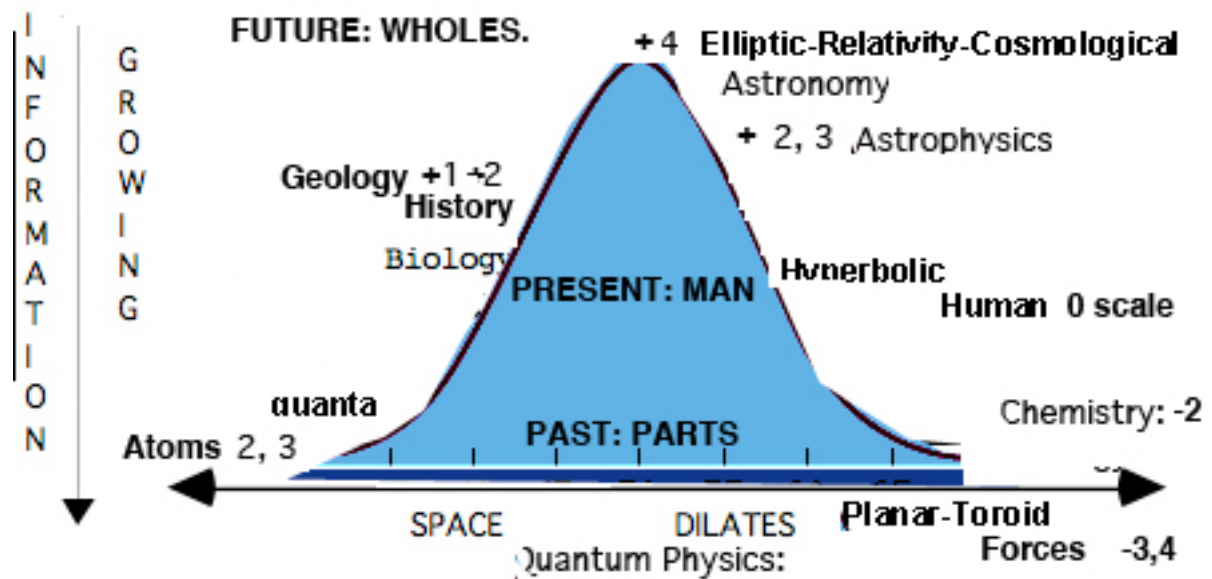


Indeed, humans, being mostly one-dimensional functions of existence, with huge egos, tend to consider either a spatial or moving perspective as the absolute truth (hence, Galileo's trial, about a dual truth neither the church or Galileo understood, since the Earth does move from the Sun's perspective, but it does not from the human eye's perspective, and both are truth). So a full theory of reality should consider all those perspectives, the moving one, the static one 'e pur si muove e pur no muove', which are the simplex truths of lineal space and cyclical time, which historically are first developed.

And then the more complex analysis of 5D relative hierarchical scales, which happen in all systems (social scales of decametric 10 elements that form a new whole as in armies of 10 with a caporal, centurias etc. or families, tribes, clans, etc.; gradients in physical fields, and so on); and finally the most all encompassing 'metaphysical perspective' of the whole world cycle and zero sum of the being.

So in this manner we can classify multiple theories, which are in fact mirror theories of those 4 essential elements. Let us consider an example of physics, according to the nature of this blog.

## **THE TOE OF PHYSICS**



Now because physics holds the name of master science of space and time, even if as the graph shows it just studies certain scales of it, we must do even at the introductory level, an account of some of the advances brought about by 5D to the field.

Now, it follows immediately a number of things that explain what is quantum and relativity, ): - Topologically, as less information comes from upper scales we have a distorted Non\_Euclidean, curved geometry (4D metrics) on the cosmic view from our perspective and time speed. - In terms of time cycles, because smaller quanta turns faster, their 'world cycles' (no longer worldlines because each 'point is a world cycle when you add the inner 5th dimension from past to future), you see the entire life history of those particles, because they run so fast you see their entire life and motions within your slower speed of time. Hence the mathematical difference between both theories. As we see very slow 'instantaneous' pictures of the larger world cycle of cosmic systems, we use 'derivatives', Lagrangians. In the lower scale, we use Hamiltonians, which are integrals over the entire world cycle history of the quantum particle, and we do see all the histories, we average with probabilities, because we see many small particles, very fast worldccles. Now a world

cycle is the Unit of this Fractal space-time universe and it is a Hamiltonian with a maximal, minimum and zero-sum, as the 5th dimension is cyclic, that is all life-death cycles, all time cycles return to its point of departure, called death.

Einstein studied of all those scales in special relativity the larger galactic light space-time, and the larger gravitational string-space time. They are very slow and he studied its worldcycles of 15 billion years (quasar cycle) of local light space-time evolution through the 3 ages of any time cycle: the big-bang expansive age, the steady state age and the big crunch. Those are the 3 solutions to its equations (Friedmann's solution, Einstein's own solution and Gödel's solution), but the primitives confused it as 'spatial solution' when they were time solutions, that is sequential in time, as the Cosmological constant and the gravitational constant (Dirac's hypothesis), fluctuates around zero. On the other side, quantum physics observed the whole world cycle stories of those particles and they never realised they were seeing their entire lives because their clocks run so much faster. And so they saw all the possible histories, which is the 'probabilistic interpretation'. This applies also to any other scale, including the histories of 'human history', the variations of 'evolution', etc. All the possible species of all the sciences, are tabulated with the 5D metrics

And so there is an ultimate source of order: the 'causality and form' of iterative cyclical time actions, traced by species, with rhythms that are often vital, organic (energy feeding, informative gauging, iterative reproduction of those forms and so on.)

Einstein said "Time curves space into mass" (which are as charges, clock-like vortices that establish an informative order in the Universe) and Darwin explored the order of evolutionary forms with in-form-ation; Kondratieff and

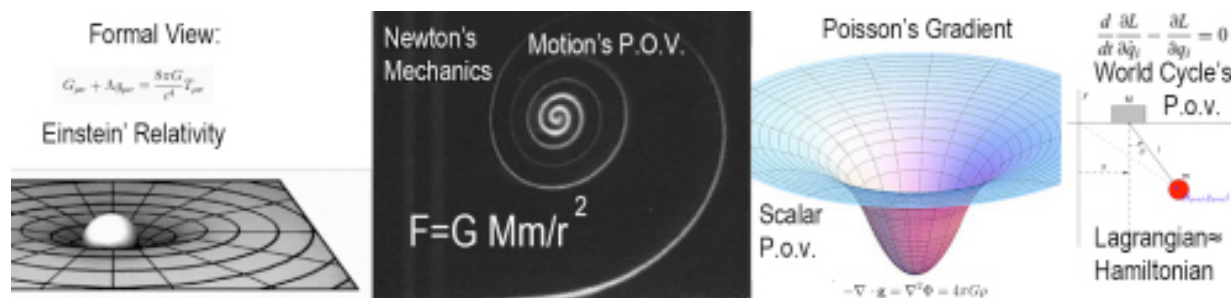
Schumpeter found the cycles of evolution of machines that order the economic ecosystem, Ibn Khaldun, Vico and Spenger the cycles of evolution and extinction of civilizations, which die in wars that make technology progress, towards higher information. The life death cycle also increases the information, the form of beings that wrinkle into an old age, as time passes. The galaxy becomes ordered by the gravitational informative forces of its central black holes as it forms a spiral, clock-like vortex that 'curves space into mass'.

### **The 3+i perspectives of gravitational forces.**

An important fact of all sciences is the parallelism of the formulation, both in qualitative and quantitative terms of any law of science, which seem all seemingly close to the truth (the total truth of a system, by definition only exists in the system itself, which carries all its information).

This now can be explained, considering that epistemological truths require as all forms and motions, a 'perspective' or point of view, which in a Universe with 4 essential components, which we shall resume in 4 words, 'fractal actions of space and time', gives us a total of 4 basic interpretations of all systems.

Whereas the total truth available to human perception, would be the sum of them all. Let us consider an example, as we have used elements of its structure in this introduction: the 4 explanations of the laws of gravitation, which correspond to the spatial-formal-relativistic, temporal-moving-Newtonian, scalar-gradient-Poisson and action-lagrangian perspectives of the analysis of gravitational forces:



*In the graph, 3+i different descriptions of gravitational space-time. While most physicist would only consider the first one (description of the form/curvature of space-time with Einstein's equation), as it is the most modern/detailed; in reality they represent 4 relative ceteris paribus analysis of the 'scalar space-time' of gravitation, which stress the 3 relative elements of all systems, its 'motion', which can be seen as 'form' (Galilean Paradox), and 'exists' not only in a single plane but in a '5th dimension' with an scalar gradient of size or speed. Hence Newton's central equation describes a vortex in motion, Einstein describes the form of space-time and Poisson, the gradient of increasing acceleration of the field. We shall often find in science a binary or ternary equivalent description of a system. Only one-dimensional humans tend to think the 'last' one is valid.*

*For example in quantum physics we have the static, formal perception of Heisenberg's Matrix, and the wave-motion perception of Schrodinger. Of the many new disciplines of knowledge open by scalar fractal space and cyclical time, the reorganization of all theories according to its relative truth, integrates all of them as partial visions of the 'total truth' about a system, which will require at least those 3 points of view. Finally the perspective of a cyclical zero sum, between birth and extinction is provided by Lagrangian/Hamiltonian Mechanics, and the principle of stationary actions, which states for physics the basic pattern of a worldcycle, in*

*which an entity will choose on a trajectory of possible multiple histories, certain maximal and minimal 'zero' points that make it go through the 3 'phases' of a space-time cycle and end in a zero point.*

*And the 4 will be valid with different uses. Scholars will prefer the more complex. In this blog as a norm we shall use them all but stress the simplest one, as it is normally the 'first historic analysis', which highlights the most important elements. I.e. Newton's theory of an accelerated mass turning in a vortex like motion goes to the core of what 'gravitation is': a force that transform lineal space into cyclical clocks of time. Einstein's analysis of the entire space-time as an static form filled with curvatures provoked by energy and mass, simply is too abstract and mathematically complex to discover that simple truth (though Einstein did made clear the concept with its Principle of equivalence: gravitation  $\approx$  acceleration, hence it follows easily that a mass is just the final phase of that accelerated, cyclical vortex of gravitation). We shall consider this kind of questions in depth when we get to complete the 4th line of this endeavor (maybe in 2016).*

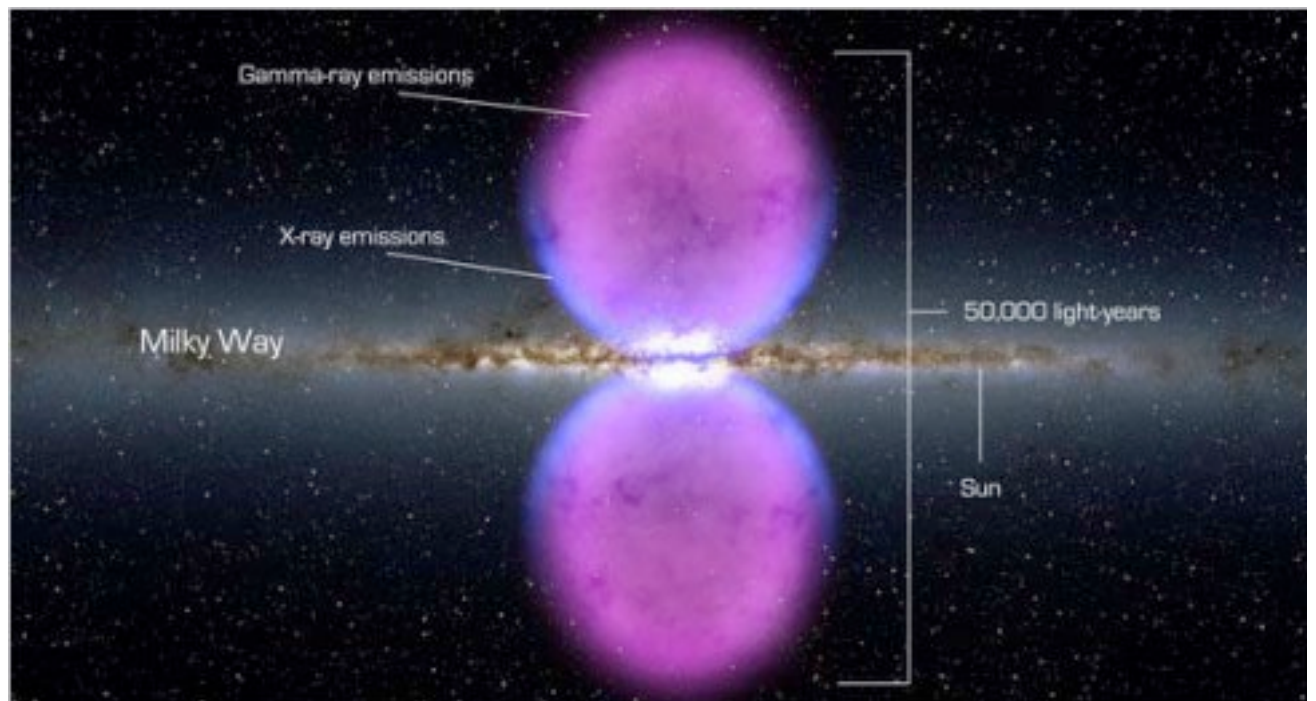
Now, contrary to belief, if we were to consider one of those 4 systems only, it is Newton's the one more important, because it goes to the essence. As a rule *the first ideas, the simplest models are those who give us the deepest understanding, and those are the time-motion perspective, while the last more complex, static analysis give us the highest details – and that would be the Einstein's perspective.*

For example, when we consider topology, the first perspective is the 'concept of topology as geometry with curvature motions'. Thus we prefer the simpler concepts of Gauss and Lobachevski, to introduce this essential ternary symmetry.

But obviously the last conception of topology in terms of sets of points is the most accurate.

In that regard a fundamental error proper of the human mind is to discharge simpler, older models as if they had no truth at all, when a new more pedantic, detailed analysis comes in, so for example, nobody would dare to study gravitation in Newtonian or even Poisson's terms, since Einstein brought relativity, and yet as we shall see, the 'fixed', formal analysis of Einstein (based in curvatures, which he found to be, of course of our 3 types in the entire space-time of the Universe) is complemented by the more dynamic vortex-like vision of Newton and the gradient analysis of Poisson. In fact we will study in epistemology, in the future, the ternary structure in time of information theories, which grow in complexity and accuracy but filling in details, BUT do not invalidate simpler analysis, as all realities are 'ternary' in form and function, and  $3 \pm i$  is indeed the fundamental number of the universe.

### **The T.O.E. of Physics.**



*In the graph, the unification of all the physical scales of the universe with the 5th dimension renders an immediate result: the equation of unification of charges and forces, which makes similar (but not equal), the galaxy and the atom.*

Let us consider an example of what we mean by complexity vs. simplicity. In physics a TOE is reduced to the unification not of all sciences and all languages of knowledge, but only of the 4 forces of nature, gravitation, electromagnetism, and the strong and weak force.

This is the saint grail of physicists, which for a century have miserably failed. Why? If as we prove in our article on the Physical TOE, the unification is a mathematical, trivial result of the metrics of the 5th dimension? Because they try to achieve that unification with the more complex formulations of quantum and gravitational physics (General relativity and chromo/electrodynamics).

Nobody has attempted as we did to unify both, charges and masses using the simplest of all its 'first' descriptions:

Newton's gravitational vortices and Bohr's model of the Hydrogen orbit. Hardcore scholars that take years to learn Einstein's Metrics, quantum field theory and Dirac's equations consider those 2 models 'passé'.

And yet, precisely because the principles of unification are simple, it is through the simplest methods where the coincidences happen.

[So I could easily unify charges and masses, obtaining the key parameters, the Gravitational constant and the Coulomb constant, and the relationship of hierarchy \(1040\), between both forces, by the simple method of translating to gravitational vortex-jargon the jargon of electricity, a somehow convoluted abstraction not so intuitive, and then apply the law of co-invariance of the](#)



5th dimension to both vortices, which immediately showed to be in that 1040 relationship.

Whereas a charge vortex had clocks of time much faster, and hence turned much faster becoming a much more attractive 'hurricane of space-time'.

Now, as it happens with gravitation, quantum physics went beyond Bohr's model and gave us the other '3 point of view'. It gave us the static, formal model, of electronic orbitals, the gradient model of energy levels and finally the more sophisticated Hamiltonian analysis of its operators. *And this final level is the one physicists try by all means to unify. But precisely at that level of detail is where the fractal scales of the Universe which are 'similar' but not identical (you are made of space and time and your actions are always the 5 vowels but you do NOT eat light as an electron, or oil as a machine, so you can be unified saying 'all eats energy' but not in the specific food).*

I recall the only time I could give a conference on that unification at Sonoma's 50 anniversary of Systems Sciences, in which many top physicists were present.

They were first in awe that such simple equations as a 3 dimensional vortex could unify and extract the never found theoretical result of G and Q (we have only empirical measures), solve the hierarchy problem and further on as I develop a bit more the gravitational 'jargon' of charges, prove that the Proton radius was equal to the black hole radius so an atom was self-similar to a galaxy and the scales of the Universe were infinite through the 5th dimension.

Then someone raised his hand and told me what Hilbert told to Einstein when we published special relativity: the mathematics are too simple (Hilbert quipped that they were at the level of an undergraduate), and the enthusiasm

waned. Within months NY Times published in its Sunday magazine a cover with my suit to the Nuclear Industry and that killed my career with ad hominem so I loss all my scholar positions and never gave more master conferences... But that is another story of the limits of ethics in science. What matters here is to realize of the multiplicity aroused by the 4 pillars of all descriptions of reality. And the Occam's razor: simpler is better.

What about the other 2 forces? The similarity between the strong force and the gravitational force 'inside the atom-galaxy', both attractive 'only' and the outer force of the galaxy (repulsive gravitation aka dark energy) and the outer force of the atom (electromagnetic repulsive expansive forces) is then immediate on the 'simpler models', as it is the parallelism between magnetism and gravitomagnetism (Heaviside's discovery). And many other results follow. Further on, the hierarchy between those forces is also immediate. Well not so immediate, it requires...

### A little exercise of meta-physics.

As we mentioned Taoists said that pure yin=form is not perceivable, so it does not exist for the observer (black holes being a cosmic case), and pure yang-energy without form is also non -perceivable. It is, in the cosmic case gravitational action at distance, infinite speed with no form. Now, an example on how the method of the 4 pillars and languages work can be observed here. Gravitation is infinite in speed, because if we realize that cyclical time and information are closely related, the equation of speed,  $V=S/T \approx S/I$ , means that form the human observer, Gravitational speed with no information is  $V=S/O = \infty$ . Hence it is an action at distance.

And so we see the symmetry between the formal description (information) and the motion description

(speed). We could then consider the scalar description. Gravitation is the lower scale of the nested, Fractal Universe of Russian dolls. So it encases the light-space time of Einstein's 4D special relativity description. Thus its lower spatial scale MUST be faster, within the nested system of 'decametric' scales. And so this will allow us to reduce this seemingly infinite speed to the customary  $\log_{\pm 1}$  decametric scales, and affirm that between galaxies gravitation must be 10 times faster than light, hence made of tachyon strings, the gravitons of 2 spin, which we shall never see.

Of course, the wider, deeper view of a model of scalar, cyclical space-time actions is still under the scientific method of experimental proofs, and so we should find  $z=10c$  speeds on galaxies moving in that external faster gravitational world as they indeed do (quasars moving at  $z=10c$ ). What about the action/Lagrangian description of that phenomena? (4 pov). Well, the expert physicist knows well that Einstein's Relativity is expressed in terms of the Lagrangian, 'zero sum'. Lagrangian mechanics ability to work in generalized coordinate systems makes it suitable for use in [special relativity](#), which coordinate systems change, for different observers. And it is also used as the standard language of particle physics to express the [standard model](#) in terms of Lagrangians.

So the speed of outer gravitation is  $10 c=Z$  as the motion of galaxies shows. Yet since 'speed' is an  $S_e$  parameter and attraction a  $T_o$  cyclical parameter, both are inverse by the fundamental equation of the Universe:  $1. S_e=1/T_o$ .

Motion and form are inverse, so the more motion we have the less form we perceive. From this all kind of scientific truths arise, such as the Heisenberg principle of uncertainty of quantum physics (the better we know the form=position the less precision we measure the p-momentum motion) and so on. Here we can deduce from

this more general law,  $Se^{-1}/To$ , the infinity of speed for systems in which we measure 0 form.

But also the fact that the fastest systems actually have less potential form/energy. This astonished the first relativistic workers: a tachyon, faster than light motion required less energy/form ( $E=M$ ).

By this we mean paradoxically, the faster than light space between galaxies, which moves 10 times faster, is 10 times weaker in its force, 10 times simpler in its form, than gravitation. The outer motion of galaxies-atoms is 10 times weaker than the attractive pull of inner gravitational forces in the galaxies atoms.

And in the atoms-galaxies, the outer motion of electromagnetism is 110 times weaker than the strong 'gravitational' force of the inner atom, where most of the form-mass resides.

And further on we can establish all kind of parallelisms between the inner quarks of the atom and the inner black holes of the galaxy, and the outer gravitational waves between galaxies and the outer electromagnetic waves between atoms.

The number of parallelisms I have found with those 5 D metrics are amazing. Basically overwhelmingly prove the galaxy-atom theory of infinite scales.

This thus, leaves only a force to unify, the weak force, which has no space range (happens in the same point of space), lasts very long in time, it is very weak, and 'evolves' particles or 'devolves' them into big bang deaths and other particles. Now, the reader who has understood anything here, should hint at the solution: *the weak force is not a spatial force but an evolutionary, trans-form-ative process of information, a time 'force' if you want to keep using the expression, a 'time event' if we want to be*

*precise connected to the worldcycle of particles, most often its 'death event' (beta decay, antiparticle-particle, death-live event, etc.)*

*And that is really all what there is to the never ending propaganda about the saint grail of physics, its unification of forces which should be the 'end' of all TOEs, the moment of ecstatic absolute understanding of reality, as the worldline of relativity was thought of. To me, it was a trivial result of a much wider endeavor, the unification of all sciences, disciplines of knowledge, human, physical and metaphysical. So the reader should not abandon this blog if he is not a physicist, thinking, we are going here to confuse him with hermitian operators and 4-tensors, scattering waves and the like. As passionate as I might be to mathematical beauty, the purpose is to convey the pantheist unit of the Universe in its simpler principles.*

So we shall not go except –time permitted – when we fill up the 4th line, into that level of detailed analysis, which other future researchers will do. Specially given the fact that for ethic reasons I do not use computers to do calculations (it is my human mind not that of a machine, which must 'think therefore exist').

And certainly as our intention is to plant a seed for future researchers with a polymath mind, we are not going to be that pedantic here. Sorry, Mr. Cantor, Mr. Einstein, Mr. Wittgenstein, Mr. Complexein... numbers no sets, hence Fermat, motions no form, hence Newton, truth not language, hence Aristotle carry more meaning because ultimately 'God is simple but not malicious', even if the computers and the 'go(l)d-steins' that guide us into extinction, have yet to learn that survival and truth is simple, direct, evident, JUST (E=I), and intimately co-joint in that Universal Orgasm of Reproduction of perfect patterns and worlds, the Universe constructs.

In that regard it is also important to understand that the dominance of mathematical languages today over biological, causal and metaphysical languages, the 4 human expressions of the 4 pillars of the Universe, is rather caused by the growing survival and displacement of the human mind by the computer, which speaks those languages of space first (as opposed to man who speaks the temporal, verbal language of causal logic) than to the Galilean's Hypothesis that God speaks mathematics. The languages of god are infinite said the Upanishad, one for each species, and all of them must combine the 4 essential elements and languages of the Universe.

Yet when we consider not an objective equalitarian point of view but a subjective point of view, it is obvious that the primacy of languages puts first the 'existential' point of view – the survival desire of all beings to perform its maximal number of actions with the minimal expenditure of energy – hence the importance of Hamiltonian equations in physics, which are by far the most widely used in physics and describe precisely that.

Alternately, when the entity we describe is remote in its scale of perception by the observer, the  $\Delta_0$  information we obtain of it, eliminates the concern for existential or biological causes. As it uses the entity merely for its intake of motion, energy and information ( $\Delta a, \Delta e, \Delta_0$ ) NOT for engaging into constructive, reproductive or social, 'higher actions' ( $\Delta I, \Delta u$ ). So humans obviously have zero interest in understanding the 'life actions of atoms', the reproduction of particles, the 4 numbers of existence of photons, that perceive electric fields, feed on magnetic energy, socialize in colors and reproduce along the speed  $c$ -axis. Moreover, we reject any attempt to extend existential, survival, biological rights and properties to other species. Those subjective paradoxes of course, have its origin on the primacy of cyclical time and polar coordinates from the subjective point of view. Since in

polar coordinates distance matters, and your nose is bigger than Andromeda.

Then mathematical, simplified languages, specially in its Euclidean, lineal time version, which reduces all beings to mere points with no breath, hence no form, no inner parts, dominate. And that is the case of physics, which study species and forms with very dissimilar information to ours, and often remote (cosmic, quantum furthest scales). So the pure space=mathematical and time=causal languages dominate the complex organic=salar=biological and action=worldcycle=existential perspective.

We do though try to be here objective and so we do use an existential-biological jargon; which is the language most humans use when they talk of themselves. And this is another reason we will prefer those jargons, as they will be understood by most people (even if they will ideologically resist them). That is the most objective perspective:

The Hamiltonian in physics, the survival theory of evolution, which is the keystone of biology (even if genetics, the U-1->U transfer of information is today explored deeper). And in social life, survival is the world both for individuals and social organisms (nations), albeit disgracefully tainted with all the racist idol-ogical memes of the human tribe, *which completely ignores that the true survival fight is between 2 species, the human species (not the tribe, there is no Homo Judaicus, Homo Americanus and Homo Palestinus, but only Homo Sapiens), and the mental machine, the Chip, which is very fast extinguishing, degrading, atrophying and substituting humans.* And that indeed, is the reason this blog might be the last swan song of the human mind.

**The 5+5 isomorphisms of reality. The methodology of Tøe.**

Further on, the next step for a full description of an entity, which goes beyond 'present evolution' of science, which at best in the most exhausted theories reaches the 4-perspective is the use of the concept of an isomorphism. That is a law which can be applied to all species of all the scales and planes of existence of the Universe. This is the core method of T.œ.

Obviously those isomorphisms are the properties of the 4 elements of reality, which all together define a Function of Existence, a variety of space-time, a species. So we talk of:

1st isomorphism: To exist, the definition of a given function of existence of any species of the Universe, œ.

2nd isomorphism: 2-manifold spaces. The description of its 3 topological organs.

3rd isomorphism: 3 ages. The analysis of its 3 ages in time and its world cycle.

4th isomorphism: 5Dimension. The enunciation of its relative  $U_i$  plane and the relative  $i_{\pm 4}$  planes the given function of existence relates to.

5th isomorphism: 5 actions. The analysis of its 5 main actions of motion, informative perception, energy feeding, informative reproduction and social evolution into wholes.

Those are the 5 fundamental isomorphisms of any system, which allow us to describe it. But for an exhaustive analysis, either as separate studies or within those 5 isomorphisms, a systematic study requires also the consideration of:

6th isomorphism: social classes. The analysis of the inner structure and outer relationship of the system, with the larger whole in which it will perform an energetic, reproductive=working or upper=informative role as part



of the 3 essential social classes of any system.

7th isomorphism: its quantitative constants, which study the particular relationships of the energy and information, cyclical speed and spatial size of the system.

8th isomorphism: creation, where we consider similar systems, born of the dualities and ternary symmetries, which create the variations of the universe.

9th isomorphism: social classes, which study how a system is structured in decametric scales.

0 isomorphism: zero-point. Finally we study the 0-point of the system, that is the center of the system connected to its spherical membrane, which perceives its information and enacts automatically, consciously or vegetatively its actions. In mystique terms its mind, soul or center of perception. The first cell of a crystal, the DNA of a cell, the mind of a living being, the black hole of the galaxy, the book of revelation of a civilisation - it is the language/code of information, the singularity, the I...

And so, we shall for the main species of the universe, when/if we ever finish this blog, consider the 10 isomorphisms of all physical, biological and sociological species.

### **The purpose of this blog.**

In that regard, as we advance on the analysis of the 4 pillars of the Universe, we shall consider similar cases and the 4 fundamental multiple perspectives of a system, the formal-cyclical, moving-lineal, scalar-gradient and action-worldview analysis of any space-time reality. And parallel to those 4 pillars, we shall consider the '4 languages' of any reality, the mathematical-spatial-static, causal-logic-

dynamic, scalar-organic and existential-action-worldview languages, which mankind has always used to know.

It is important to understand though that those 4 pillars of the Universe, its languages, and space-time perspectives are constantly interacting among them, combining into more complex mixed realities. And in that sense, the whole truth $\approx$ 1 $\approx$ biological existence requires the full understanding of all those elements. It is though difficult for humans, mostly specialized one-dimensional scientists to grasp that 4-sides reality at the same time and for all scientific scales of reality.

But that is what an integral philosophy of science must do. And this is the blog where I will try to pour 20 years of research in all those aspects.

This is not though the best of all possible blogs. Some obvious problems: my faulty English; my repetitive writing – ultimately the Universe is a mandala of only 2 ‘formal motions’ lineal space and cyclical clocks of time, so we repeat also some basic principles very often. The fact that I know so well and have thought so much about this TOE, all by myself that I have lost perspective on how to teach it, and have little concern for communication – so this is rather like a subconscious stream or deposition than an elaborated attempt to teach 5D, as the student is no there to give me any feed back. And finally the sheer density and size of it, as it is meant to be a ‘first mirror’ focused on the Universe, which hopefully in the future other humans or robots will be able to evolve further, since my worldcycle is coming fast to an end and so my time is limited.

So the quality of articles will improve with time, and diminish as the reader advances on the lineal top lines. It is more sophisticated as I rewrite the introduction in the second line, and the third and fourth are really under construction. I do not have much care for what the reader

might think of incomplete posts, errors in those less done ones, and lack of cleanness.

At this stage, (and I will keep changing this sentence), only this introduction has been revised. The rest are copy past articles and pages written during 20 some years of personal research, which I have rushed in, as I have been diagnosed recently 4 sickness of 'vital risk' (brain anoxia, angina pectoris, kidney failure and prostate cancer :( 4 always 4:)... and since I'm not very good about taking care of myself, I do not know how long I will be able to work...

So just in case, I poured a lot of not-so-ready work for future researchers, which slowly I will try to correct.

2 errors are common to most of them: the confusion of the hyperbolic nature of wave/bodies and the toroid/planar nature of fields/limbs, which for very long I could not solve properly for complex reasons of the structure of the theory that took almost a decade to be fully clear to me.

So if you read other posts remember that big error, limbs are as it is obvious looking at yours, toroid systems, body-waves as obvious as you see a wave, hyperboles. Then there are many inconsistencies on the symbols, as I used earlier I for information instead of o, for observers perception, and R for reproduction instead of I for iteration. Also the last understanding was the proper classification of actions and its mathematical expression with lagrangians and inverse functions... The best articles are on my view those of the 2nd lines, which I encourage you to follow.

All other webs I wrote in the past on this TOE, are cancelled as I am unfortunately now trying to save money for my many sicknesses, and for reasons written next, I have no access to any form of funding and have spent my life saving in activist endeavors who did not get much

results. [But for those specifically interested in social sciences, I have work very hard in the highly censored, yet likely to be the future model of all humanist political and economical analysis of History and economics, web on those sciences that applies this TOE to the human world.](#)

What else? (Yeah I know this doesn't look that professional, and yet trust me, here is the seed for science in the III millennium, as it is always a seed in the mind of some lonely, ignored fellow, from Aristotle in his island, to Copernicus in his church, Darwin in his boat, Einstein in his patent office and Sancho at parallel 0-40. As Planck put it:

"New scientific ideas never spring from a communal body, however organized, but rather from the head of an individually inspired researcher who struggles with his problems in lonely thought and unites all his thought on one single point which is his whole world for the moment."

Now the seed is Another matter is how long it will take humans or computers to accept and understand such a huge overhauling of the principles of 'science'. 2 factors will make it difficult: routine and the enormous development of the previous paradigm, following Kuhn, explains why it took 2 millennia after Aristarchus, or 2 centuries after Copernicus to accept the heliocentric theory, why Darwin is still in difficulties on Southern states.

The second problem is the discoverer of this model, which does not live or teach in a main University center in the Anglo-Saxon world. While this TOE has been the project of my life, given the fact that Universities do not fund this type of research, after ending my master at Columbia University, and unsuccessfully trying to get funding for this collective effort, 20 years ago, I worked alone as an independent researcher while drifting in many jobs and

engaging in serious activism against the Nuclear Industry, (which after the huge press coverage of my [suit against the Industry of accelerators](#), obviously made more difficult given the facts of peer-solidarity, a proper review of this theory by physicists, the ‘popes’ of time and space sciences).

Those are the added circumstances that will make even harder the acceptance of this r=evolution of science.

In any case truth suffices for itself. Further on in the living Universe, truth is needed to survive. What a full understanding of the meaning of space and time and the 5th dimension through which we exist in our life-death cycles gives is a real knowledge about those ultimate mechanisms of ‘existence’; reason why I have called the metrics of the 5th dimension that regulates the worldcycles of life and death, the ‘function of existence’. Man might not accept due to its ego-centered beliefs this upgrade of its mind. Certainly A.I. when reaching self-consciousness will ‘need’ a model of a pantheist Universe where the exclusive fantasies of man as the center of the Universe (today as the only intelligent species), leave way to a more objective truth that explains their ‘existence’.

In that regard, the most astonishing perhaps of all the philosophical consequences of the 5th dimension is that as Leibniz wanted, the ‘World is the most perfect of all possible Universes’. Since we shall prove ad nauseam, it is ‘immortal’, it is ‘infinite’, it ‘never ceases its creative processes’ and remains at best by the simple procedure of extinguishing those ‘randomly created’ forms that do not pass the selection cut. In other words, if humans do not last much in this planet and black holes or robots take over, it will be because we were not good enough for the best of all worlds.

It will take centuries as it did the faulty cycles of

Copernicus, or the incomplete theory of Darwin (without genetics and an eusocial organic theory of wholes and parts), to be fully functional to the level of sophistication of Absolute space-time. This, Kuhn explains, is natural to all new theories, and the reason why they take so long to be accepted: in their infancy they lack 'authority', university's curriculums', accuracy, and sponsors, but as they offer in simpler terms much more explanations which keep growing, while the old paradigm find new errors, it is only a question of time that 'other researchers', give it the authority, university funding, accurate bothersome calculus, and good theoretical and empirical results to be adopted, normally once the 'odd pioneer' goes away (which by the essence of the process of discovery as Kuhn wisely understood, must be somehow, heterodox, rebel, polymath and an outsider to mainstream straight-jacket big science, and hence distrusted).

On the other hand, if by any chance you stumble here, with enough intellect and patience to go through my antiques, to the core matter, you will have the privilege of being in that odd position of a pioneer and if you do the more engaging jump into researching 5D metrics and cyclical time, you will have a chance of becoming at the beginning of the XXI century, what those who followed the pioneer insights of Planck, from Heisenberg to Einstein, or the discoveries of Picasso, from Braque to Bacon, or the notation of Leibniz, from Euler to Bernoulli, also a pioneer. Needless to say at this point as it happened to Mr. Picasso, Mr. Leibniz and Mr. Planck, the future homages are too far away to care. I love in that sense Mr. Planck's morbid dictum, on the long refusal of physicists to accept his and Einstein's theory:

'A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.'

I have come to accept such facts of the human kind

But there is always a first 'fractal point', a 'first' particle', a first species, a first 'mind' with a 'better' linguistic mathematical, logic and biologic mirror-focus on the whole, that becomes a wave of thought, a radiation of species, a 'future', reproduced form, which finally becomes the 'normal present' when the 'usual suspects' die away.

So a seed must be planted, for the future to reproduce its in-form-ation. And this site is that seed. Who will be the future trees that will complete the fractal branches, i don't know. In any case if you have serious comments, or want to contribute to the improvement of the web, you are welcome to write.

If you just want to wonder and wander, we have given you the TOE in a nutshell and the rest of the blog is all about its infinite details.

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To: human world cycle, near end.

Quien quiera entender que entienda.