

ABSOLUTE RELATIVITY: THE 5TH DIMENSION

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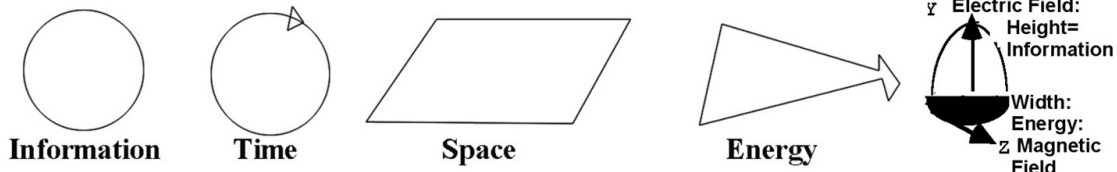
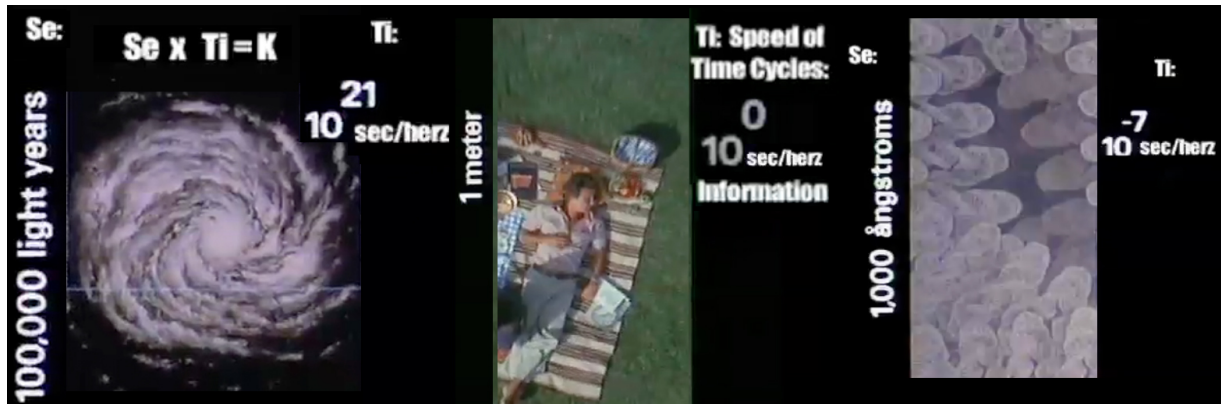
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0. INTRODUCTION: THE GEOMETRY OF THE FIFTH DIMENSION



Reality has a 5th dimension of size scales with different speeds of temporal information. Since time is the moving perception of information and space the static perception of vacuum energy. Both vary in an inverse fashion, giving birth to the scalar geometry of the fractal Universe, whose 5D laws will r=evolve XXI c. science.

1. Metric equation of the 5th Dimension. The invariances of the Universe.

General Systems studies 'the 5th dimension of space-time' (abb. 5D) - the dimension of spatial size and speed of temporal clocks that carry the information of the Universe in the frequency of its cycles.

- By spatial energy we mean 2 parallel concepts, perceived in different ways: Static space that defines size. It is the 'continuous', static perception of all the infinite quanta of moving energies of the vacuum put together, such as $S = \sum E$. As space distances and speed motions mean the same. So astronomers say that the space of the Universe is 'expanding' or that galaxies are moving away at hyper luminal speeds ($Z > c$).

- Temporal information are 2 parallel concepts, also perceived differently. Since a bit of information or 'hertz' is completed in any system when a clock cycle is closed. Thus, the faster any biological or physical time-clock turns, the more informative hertz-cycles it can store, (right side of graph). As it happens in computers, which are basically a complex system of time clocks, whose logic forms process in-form-ation. Thus we can consider the total time of the Universe, a sum of all the time clocks and informative cycles of the Universe; $T = \sum I$, and talk of temporal information (and spatial energy) as the two motions/substances/forms/arrows of the Universe.

We call this essential fact of 'Endophysics' the Galilean Paradox, as we humans perceive the Earth 'quiet', as space, when it is moving as a mass of rotating clocks.

As such, the 5th dimension is defined, as any space-time dimension, by a Geometric equation that relates those 2 'inverse' parameters, which balance each other: $Se \times Ti = K$.

According to Klein's definition, 'a Geometry is the study of the invariant properties of a space(time), under transformations within itself (Erlangen Program). Thus, the Geometry of the 5th dimension studies the invariant properties of such space-time, as we move within it, expressed in formal equations (the metrics of the 5th dimension) and logic laws that define those invariant properties. This paper will resume them¹.

Most are co-invariances - of both parameters together - that show how space and time are intertwined: when systems grow in spatial size the speed of its clocks, its 'time cycles', diminishes proportionally, both in biological

and physical systems. As we grow in space, time clocks tick slower and vice versa: as we become smaller the time cycles of all species, which carry their in-form-ation in their form and frequency, tick faster and the frequency of information processing accelerates, as it happens in chips, particles or life metabolism.

Yet, in any interconnected system, including the Universe as a whole, the product of the speed of time, T_i , which determines the quantity of information the system can process and its spatial size, S_e , remains invariant.

Thus 5D's metric equations show in any Universal system how variations in spatial size are balanced by a parallel inverse diminution or increase on the speed of time clocks and information we observe. That is, the product of the spatial energy, S_e , and Temporal Information, T_i of any system remains constant: **$S_e \times T_i = K$** .

The graph shows in 3 scales (cosmic, human and atomic space-time) the co-invariance of the 5th dimension:

The clock-like cycles of matter, planetoids, planets, stars and galaxies, become slower as we grow in size and vice versa: the clocks of smaller molecules, atoms and particles becomes faster, as we shrink. So Mercury turns faster than Pluto according to Kepler's 3rd Law, and any clock-like vortex turns faster the smaller it is, according to the vortex equation: $V_o \times R_o = K$. Since Kepler's 3rd Law and any physical vortex are particular cases of the metrics of the 5th dimension. *As the laws of invariance of momentums that combine both parameters are.*

The same time acceleration happens in living systems. Small animals have faster metabolisms and cells reproduce daily while their organisms reproduce once a year. Even machines follow this co-variance: A computer processes information faster the smaller it is, as its 'clock-cycles' measured in Hertz increase. So today we have nano-chips that process information at many Giga-hertz per second.

This happens because a 5D vortex of temporal information is NOT a fixed physical, spatial form, but it exist dynamically through time; even though it can be perceived statically in space as in the case of a physical time-clock, mass or charge that appears according to the aforementioned paradox of Galileo as a fixed substance or particle. And this fact is of enormous importance for the algebraic analysis of the 5th dimension, *as it allows to generalize the laws of those accelerating vortices of information and apply them to explain biological evolution and the constant increase of information of living systems that warp with 'age', become more 'intelligent' species, or as our civilization does, constantly increase their technological complexity.*

Finally 4 FUNDAMENTAL conclusions of 5D metrics that CHANGE completely our perception of reality are:

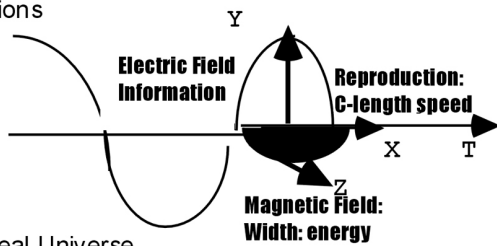
- The Universe is eternal, made of 2 motions in perpetual ex \leftrightarrow change, NOT of substances.
- Since the metrics of 5D for the whole space-time Universe are the same than the equation which defines the 2 parts of any system, we conclude that we do NOT exist over an independent space-time but we *are made of space and time, each of us is a complex system made of bits of temporal information, of circadian or physical clocks and surfaces of vital space, imprinted by the form of those cyclical in-form-ations.*

In physical systems all scales and particles are background dependent, *constructed with pieces of spatial energy and temporal information, starting with the smallest theoretical scale of background dependent, lineal, open strings which are rods of Planck's space and cyclical, closed strings which are the tiniest Planck's time-clocks.*

- Since all systems are made of S_e and T_i , 5D invariances and laws *apply to all systems of the Universe, creating a PANTHEIST Universe, a fractal of its Fundamental Particle, the Complementary Systems, $S_e T_i = k$.*
- All complementary entities displace a particle/head that gauge information over an energy body/field directing its actions: *MOTIONS WITH FORM*, which can combine in ONLY 5 Invariant actions – ΔE , ΔI , exi (reproduction & communication) and 2 types of social growth: **ΣE_i : energy herding in the same scale & $\prod \pm I$ creation of informative networks across 3 ± 1 scales.** Those 5 actions define the program of all Complementarity systems & its invariances (from invariance of physical momentum to the cyclical actions of humans along their existence).

2. Einstein's 4th dimension of present space-time, a 'simultaneous measure' in 5th D Metrics.

The 3 dimensions of space, are the 3 dimensions of light. Since we perceive light, not the real Universe.



Our eye sees light space defined by 3 Euclidean perpendicular, lineal dimensions: length, its speed direction, width, its magnetic field dimension and height, its electric field dimension.

In words of Kant, the human mind is built to perceive a 'Euclidean Space.' Men observe the Universe with a certain clock-time speed, whose basic unit of measure is the second, which corresponds to the informative time-speed of the human eye-brain system that blinks; hence maps out and processes information every second. Thus Anthropomorphic Space-time has 3 Euclidean dimensions of space and a single time speed (the 4th dimension), measured with clocks whose cyclical unit of information is a second. So standard Science uses 4 dimensions, equalizing all Universal time clocks with our clock-time and simplifying all geometries of space into Euclidean Geometry.

The result is a single sheet of space-time with 4 dimensions that describes our World's perspective. The 5th dimension enlarges that single 4D sheet to encompass all the multiple space-times of reality adding 'depth' of space and variations of time speeds.

We thus complete Einstein's work, which realized that beyond the limits of our anthropomorphic brain, Space is more complex, Non-Euclidean and 'Time clocks have different speeds' (Einstein). Thus, in a first attempt to increase our 'objective' analysis of space-time, Einstein added the 5th postulate of Non-Euclidean Geometry to the formalism of space-time (General Relativity). And he introduced the changes of time speed of the Universe in his formalism of light (Special Relativity).

But Einstein, despite his awareness that time clocks vary their speeds in different domains of space-time, did not introduce *directly* those changes on time speed into his mathematical formalism. Instead he maintained the rod of the human single time clock (the 4th dimension) for all the systems of the Universe, by introducing the change of speed of those other clocks of time with the Lorentz Transformations, in order to calculate accurately the invariance of motions and rotations in human space-time units. The 5th dimension proves further such invariance to motions in 4D, by defining instead different speeds of clocks in *the gravitational and electromagnetic scale, as charges and masses - the clocks of both scales - turn=attract with different speed=intensity. Thus the Lorentz Transformations merely express the existence of those 2 different time speeds by changing the time speed of species that cross between those two scales.*

And vice versa, the Lorentz Transformations becomes also a 'particular' proof of the more general co-invariance of the 5th dimension, $\text{SexTi}=K$, as they show that particles whose frequency accelerates (or in terms of its inverse, time duration, $T=1/f$, slow down), contract its spatial size.

Yet this one-dimensional reduction of all Universal clocks to the human clock causes conceptual errors on the objective description of the true, fractal structure of multiple space-time scales of reality. A fact, which Landau ironized about, affirming to have:

'...resolved the uncertainty of Time: I measure the position of a particle and look at my watch'

Thus to create an objective measure of the multiple time-cycles of the Universe, we must substitute the human, lineal single time of the mechanical clock used in Einstein's work by the multiple, objective frequencies, different for each system and scale, proper of the metrics of the 5th dimension.

On the other hand, Einstein used the 5th postulate of Non-Euclidean Geometry (Points through which multiple parallels can cross), to describe the structure of real space. This was also a first step towards the correct

analysis of the 5th dimension and all the fractal scales of space-time enclosed within it. To complete that analysis, we have to expand Non-Euclidean geometry (abb. Non-E) and adapt the other 4 Euclidean postulates to the new definition of a point with multiple parallels – a long overdue work.

Since XIX C. mathematicians failed to understand that if a 'point' can enclose multiple parallels it must have volume, and hence we must reform also the 1st postulate of Euclidean geometry - definition of 'a point (that) has no breath' and the other 4 derived from it. *As now points must have breath to enclose more than one parallel.*

So now a line made of points with 'breath', hence cycles, is in fact a wave with a height equivalent to the point's diameter – as the form of the external perimeter drawn by a 'cycle'-similar to a wheel advancing in a lineal path draws a wave (2nd postulate).

And a plane (4th postulate) becomes now a topological network of points with volume (particles in physical spaces, cells in biological spaces and so on) communicated by waves of energy and information.

Finally 'equality' (3rd postulate) must be now both external (classic Euclidean postulate) but also internal in the parts of the point. Yet since we cannot perceive the complete information internal to the point, isolated to our complete perception by its external membrane that 'seems' fixed to us (Galilean Paradox, Endophysics) we must talk instead of equality of degrees of 'self-similarity' between any 2 space-time forms. *So the Invariances of Absolute Relativity between entities of different scales are NOT equalities as those of Relativity but 'similarities'.*

We shall explain further in this introduction only the new 1st Non-E Postulate:

Non-Euclidean points are fractal space times with an inner content of energy and information

Euclidean Mathematics simplify 'sets' of beings with internal qualities into 'numbers', which can also be represented as points without breath in a plane. By doing so we take away the inner part and qualities of those numbers (algebraic description)= points (geometric description). *So we say instead of 3 men or 3 pears, 3 and mark point 3 in the X coordinates. We have stripped those beings off their inner content, which however still exist in the real being. Thus, Euclidean numbers=points simplify the inner form of the being and the multiple scales in which it co-exists as part of the 5th Dimension. And Cartesian graphs generalize this simplification to the 'whole' 5th dimension of multiple space-times, integrating all the scales of the fractal, discontinuous reality into a single space-time continuum, the Cartesian Space/Time graph, made of points-numbers without breath.*

However in the real world, when we look in detail at the real beings of the Universe, all points-numbers show to have an inner volume=space with new forms of in-form-ation. We are seeing the fractal geometry of the 5th Dimension that *suddenly increases the detail of a cell, atom or far away star, showing in detail its inner parts that shape a complementary system of spatial energy and temporal information: $Se \ xTi=k$.*

So we propose a new Geometrical Unit - the fractal, Non-Euclidean point with space-time parts, which Einstein partially used to describe gravitational space-time (use of the 5th postulate of Non-E Geometry in General Relativity). Yet Einstein missed the fractal interpretation of Non-Euclidean points, we shall bring here to resolve the conceptual paradox of his 'Cartesian' description of space-time as single continuum:

Euclid affirmed that through a point external to a parallel only another parallel line could be traced, since the point didn't have a volume that could be crossed by more lines: *Abstract, continuous, one-dimensional point: .*

Instead Einstein found that the space-time of the Universe followed a Non-Euclidean 5th Postulate: *A point external to a line is crossed by ∞ parallel forces.*

But if a point has no breath there is no 'surface volume' to fit more than a line.

So to fit them, Riemann and Einstein curved those parallels making them converge into the point. This however is not truthful, because parallels are by definition 'straight lines' and so those curved lines are no longer parallels – and still cannot fit in the point if there are many – curved or not.

So we must consider that the Non-E points of Einstein's space-time equations *require a different geometric interpretation* that preserves its logic meaning; as they must have volume to fit straight lines. And this is only possible if we consider the structure of space-time to be fractal, discontinuous; so scales different from our 'human' scale and its rods of measure, which we do not perceive directly become distorted by our perception. Then points in the same scale but far away in space or points far away in information (belonging to other scale of the 5th dimension) seem *not* to have breath and fit only a parallel, *as our perception of its inner parts and information is limited*.

Yet when we enlarge the point, as when we enlarge a fractal structure, we see much more information than we do when we see it in our scale with the naked eye.

Such points are like cells in a body or stars in the sky. If you look at them with the naked eye they are points without breadth, but when you come closer to them, they grow. Or if you use a microscope that helps 'light' to travel through those scales by changing its exit parameters, information on the points grows. And as they grow, they can fit infinite straight parallels. Since they become spheres, which are points with breadth - with space-time parts - and when we enlarge them further, the surface of those spheres become planes of minimal curvature, as the Earth's surface seemed to be in local measures. *So the Universe is not a curved continuum – an error of perception - but a fractal, discontinuous, scalar multiple space-time structure.*

Both interpretations – those obtained with Einstein's single time-clock and single space; that is, with a 4th simplified dimension of space-time, and those obtained by this author with a fractal, multiple-space time - can be used mathematically to obtain accurate results with their respective units of measure. And the simplified version in 4D, with a single time is easier to calculate. Yet both are needed; since from a conceptual, qualitative point of view, the fractal, scalar interpretation of a reality that changes with our degree of perception, describes better what we see experimentally through instruments (microscopes, telescopes) that let 'light' travel across the scales of the 5th dimension, by adapting its exit metrics (frequency and wavelength) to those of the different 5D scales. Thus a microscope enlarges a cell-like point which now fits multiple waves (non-E lines) of energy and information, and then if we enlarge again its point-like nucleus will grow and show an enormous amount of DNA information, which we can enlarge again into many point-like atoms that will grow to fit new waves of forces, and so on. So each Non-E point becomes a 3-dimensional sphere. And if we calculate together 2 scales it becomes a $3 \times 3 = 9$ dimensional point and so on, till arriving to the smallest known time point (a closed string) and energy line (an open string), which in string theory do have, when observed through 2 'scales' in its mathematical description, $3 \times 3 = 9$ plus 2 external dimensions (the string and its present, 4D-Time) = 11 dimensions (M-theory). Yet those 9 dimensions are inner fractal dimensions enclosed in the string or any specific Non-E point we study.

Thus we conclude that from the human 'single scale' perspective and for purposes of easy calculus a Cartesian->Newtonian->Einsteinian single time-space should be used; but from a conceptual, logic perspective we obtain a deeper comprehension of the Universe, accepting the interpretation that from Leibniz to Mandelbrot to Sancho, describes, with increasing degrees of sophistication, a fractal, scalar, organic Universe of multiple spaces and times. Since 'Each point is a world in itself' (Leibniz).

But how many scales there are? It is each final string a cosmos in itself, as the so-called 'dualities' of string theory propose? Of the many results obtained by this author with the use new of Non-Euclidean, Non-Aristotelian, 'i-logic geometry', we shall bring latter in this paper, one that seems to prove an infinite number of self-similar scales – the Unification Equation of charges and masses, as self-similar time vortices of two different physical scales, the quantum and cosmic world.

3. Time arrows; Entropy & Information: Invariance of diffeomorphic SxT systems. Non-A Logic.

Since all systems of the Universe follow the metrics of the 5th dimension we can build a scalar, fractal model of reality based in the 2 arrows-actions of space-time, E and I, using to that aim Non-Aristotelian, 'dual causality', with sequential symbols for time arrows and actions that show their inverse, asymmetric properties self-similar

for all specific species of each scale. As they are the two unifying arrows of all actions=events of the Universe:

- Entropy, synonymous of expanding, lineal motions, growing distances, disorder and lack of in/form/ation, which is maximal in vacuum space in physical systems and water in biological ones. We use the algebraic Terms S & E, and the visual | for Se arrows, and the opening motion < to represent them in Non-AE=i-logic.

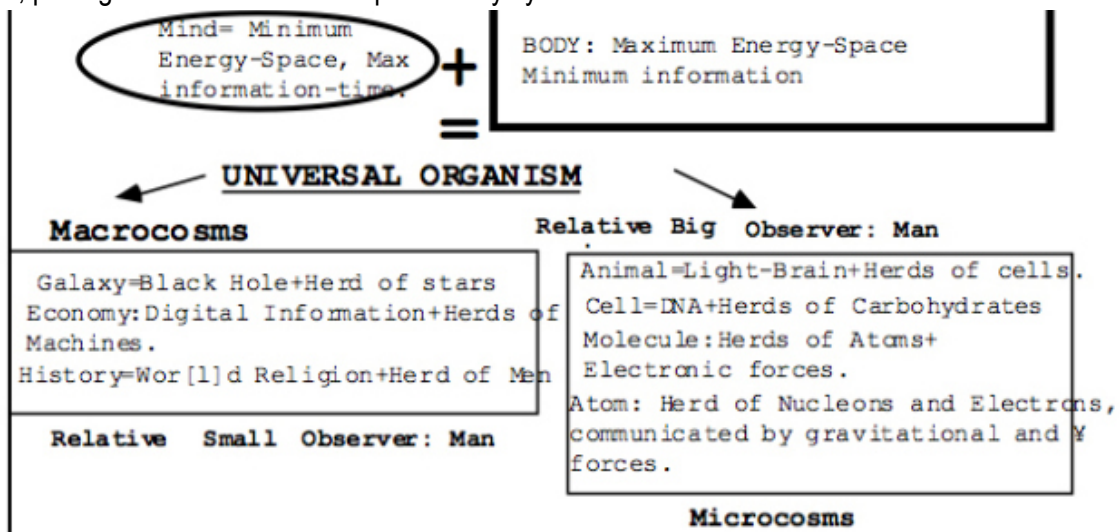
- Time Speed, synonymous of information, cyclical, imploding motions, order and contracting space, which is maximal in black holes in physical systems and neuronal brains in biological ones. We use the Terms, V(t), T, I and O for time-clock arrows. And the imploding > motion. Thus E<I is an entropic action, and I>E a time arrow. And a wave, E>I<E>I fluctuates between both in open cycles as life E>I and big-bang Deaths, I<E, are.

The interaction of those 2 arrows defines not only the metrics of the 5th dimension as a whole, but the structure of most parts and subsystems of reality, made of energy fields and particles of information (Complementarity Principle of quantum physics) or bodies of energy and heads of information (biological systems).

So we define in 5^D metrics - *caused by the invariance of topological forms*- a fundamental particle-system:

$$Se \text{ (bodies/fields)} < x > Ti \text{ (particles/heads)} = K \text{ (Stable physical/biologic system)}$$

Se-parts move the whole system. Thus they are lineal planes, the shortest distance between 2 points - from light to legs or planes. While Ti-parts gauge information so they are cycles or spheres, the geometries that store more information in lesser space, from eyes to particles to brains. The outcome is a diffeomorphic Universe, made of 3 Invariant, topological forms, I-cyclical, E-lineal & exi conic parts in 2D or Toroids, spheres & hyperbolic zero-points in 3D, put together into Se↔Ti complementary systems:



4. Invariance of Actions. Organicism: correspondence between actions, functions & dimensions.

We classify all possible actions=events performed by all complementary systems during their existence, by the fact there are only 2 arrows in the Universe and its 5 Dimensional i-logic combinations, E, I, ExI, $\sum Exi$ and \prod

So all what species do is: >I: Gauge information; <E: Feed on Energy; exi, merge into complementary beings; EI> $\sum ei_{i-1}>ei$ Reproduce self-similar entities and evolve socially with them into *bigger networks, creating more complex planes of existence*; $\sum Ei-1 \Leftrightarrow \prod Ti$, complex, fractal super-organisms.

As we operate with the symbols of i-logic we can describe all what any entity including a human being does during its entire existence from seminal cell to dying body, all can be explained with those 5 actions.

Each of the 5 'existential actions' and their functions are an isomorphism of each of the 5 dimensions of reality.

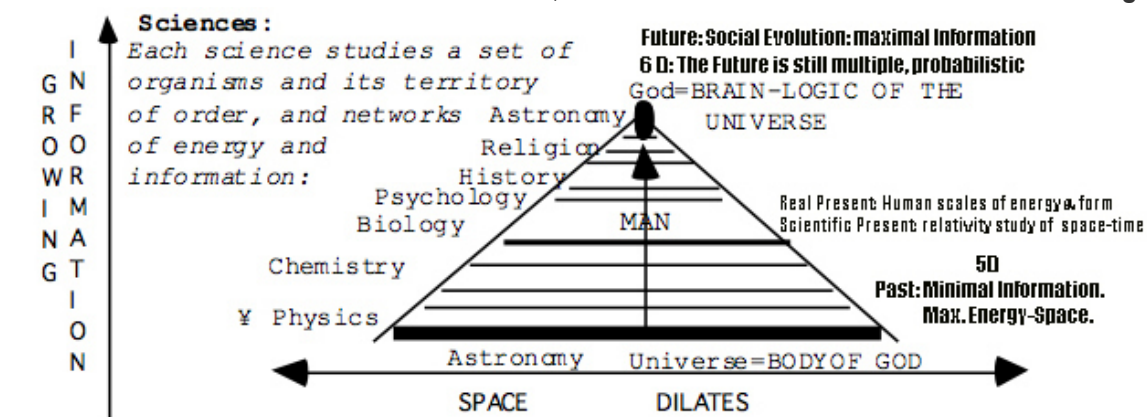
Thus function, action and formal dimensions are related, creating together a 'fractal', diffeomorphic entity, an 'island universe' extending and constantly 'filling' with those actions 'a part' of the 5 Dimensions of reality. Indeed, to perceive-gauge information, we need to have an advantageous 'point of view'. So all perceptive systems are 'on top' in the dimension of height, from antennae to heads. And to feed, we move through faster lineal paths, so 'length' becomes the dimension of energy and main body orientation; and we need to combine energy and information to reproduce ourselves in other 'empty' region of space-time, so width becomes the dimension of reproduction –and we observe those 3 perpendicular dimensions in light systems, corresponding diffeomorphically to their electric-width and speed dimensions. Since our visible space-time is made of 'light-energy'. Light is neither on an abstract, independent space-time background but our vacuum space is light (Background radiation that cannot be 'extracted' because it is the 'space-time' itself we see).

But as impressionists noticed we not only see space through light, we see colors. And indeed, color is the expression of the 4th 'social dimension' of light, made by gathering together multiple frequencies of light into a single bosonic point of space. Finally, we gather together with self-similar systems.

All what exists is originated by light, which warps into more informative, lesser spatial beings, first electrons, then atoms and so on, as each new 'scale' of existence requires the previous scales to be born. And so we define all systems as 'super-organisms' that evolve socially through multiple scales. Since biologists define life as systems that gauge information, feed on energy, reproduce evolve socially into complex networks and co-exist through different scales – the fifth dimensional function, 'organicism', proper of anything else in the Universe.

- General Systems Sciences defines the Universe and all its parts as a super-organism of energy and information, which we just proved to be the case. Thus General Systems sciences and organicism, NOT physics and mechanism IS *the Philosophy of Science* and the laws of the 5th Dimension the laws that Unify all other sciences. Thus we unify all sciences through its metric laws and invariances and consider that each science studies an i-scale (i for information) of the fractal, self-similar Universe, from quantum physics that studies the smallest forms, through the biological, human scales of size (1 meter) and time speed (1 second) and beyond, till arriving to astrophysics, which studies the larger, slower cycles of the Universe, likely cell of a hyper-universe.

5. i-scales and dimensions of time: Past, Present and Future. Co-Invariance of Time Ages.



In the graph, the scales of the Universe, its 3 time dimensions of evolution of information and their sciences.

In the graph, we have written the two arrows of time, slow energy and fast information as past and future, and the human time speed as our relative present. This is the origin of:

- The 'ternary, simultaneous logic' that explains both, the 'present' structure of systems in space, which combine past-energy and future information in complementary super-organisms. So we write:

$$E\text{-Past (body-field)} \times I\text{-Future (head-particle)} = \text{Present-Reproductive-Balanced, Complementary system}$$

- And the causal order of their life-death cycles in time. Since both, physical and life systems go through a self-similar life-death cycle, from a youth of energy-bodies/gas states to a 3rd age/solid state of max. in-form-ation:

Max. Energy (youth-gas)->Exi (reproductive age, liquid state)->solid-3rd age of information.

So we define an arrow of 'life', the arrow of future information, as all species from humans to stars to the Universe increase their in-form-ation through those 3 'phases' in which their Universal or Vital constants of existence, $S_x T_i = K$, change its parameters, diminishing energy and increasing form (so for the entire Universe, the cosmological constant, λ , changes giving us the 3 solutions-phases to Einstein's equation: Lemaitre's big-bang, Einstein's balanced steady state and the final Gödel's big-crunch, creating, a cyclical 'phoenix Universe'.)

Finally, once all energy is trans-form-ed into information systems stop moving towards the future, information unwraps itself back into past energy, expanding in space through big-bangs and deaths, the inverse arrow of past time. Since all systems live and die, the Universe is an eternal fluctuation between their 2 limits of past and future for each 'part-species'. Time is both cyclical and ∞ in its lineal duration, as all life-death cycles of entropy and information cancel each other to be played again making its total sum is zero and its time-duration ∞ .

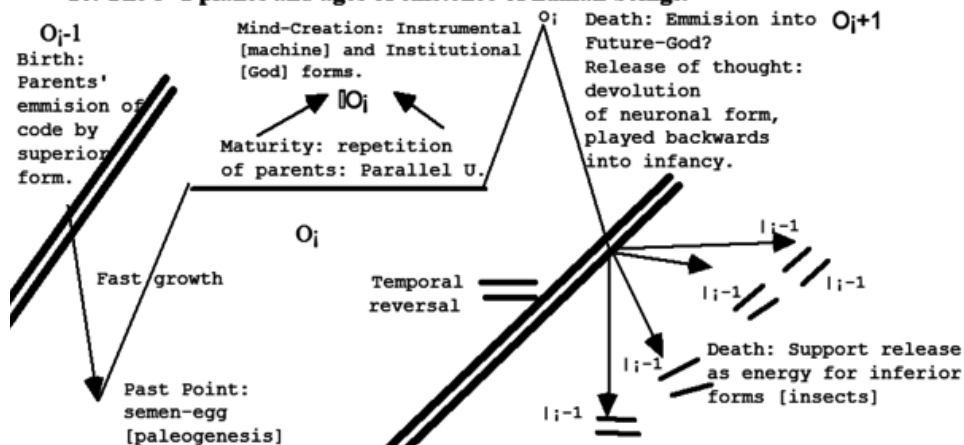
-Fundamental to the self-similar nature of the scalar Universe is the Emergence Law, such as '*All the actions and dimensional-topological properties of a lower i-scale emerge diffeomorphically adapted to the higher scale*'.

Mystique analogies: The meaning of God in the 5th dimension: Pantheism: Max. I

- We added a Pantheist 'God' as the final informative scale, following Plato: 'Reality is an organism, with a body, the Universe and a Logos called God'. Such pantheist-Taoist God will be paradoxically the smallest, informative, synoptic knot of logic laws immanent to all systems – the metric laws of the 5th dimension that relate its 2 arrows of entropy=yang and information=yin that 'combine to create the infinite beings of the Universe' (Tao-Te-king). Thus $E \times i = St$ (constant Space-time), the Fractal Generator of all systems, becomes the equation of God, the 'Creator' that Generates the Existence of all beings. Accordingly as mirror all entities and events, the Existential function or equation of God, to $Exi = St$, writes the same in mathematics and verbal thought. Yet since the knot of God is Max. I, we write its 'Mandate of Existence' for each fractal of It as Max. $\sum E \leftrightarrow T_i$, the will or greed of all. But what the 5th dimension truly teaches us is that we are just a part of the whole, similar to the smallest atom or the largest galaxy, who follow the same laws - *the Invariances of the 5th Dimension* - as we and every fractal part of 5th dimension are indeed made to the image and likeness of the whole.

6. Super-organisms: Systems co-exist in 3 scales of reality.

10. The 3±1 planes and ages of existence of human beings.



'Existence' both in physical and biological systems can be described as a travel through the 5th dimension, since all systems are born as a seed of maximal information and minimal size, which 'surfaces' into a higher scale of space-time, after birth, then develops through life, changing the relative proportions of energy and information of

the system, till its death, when the system will regress to its 'cellular' or atomic scale, giving origin to the 'invariance' of life ages and the structure of ±i-superorganisms, proper of all space-times, parts of the Universe.

Are the scales of space of the fractal Universe also ∞ ? Yes. We provide a logic and mathematical proof: - Since each entity *must* have from its 'present', complementary state a relative, slower scales of past energy, E_{i-1} and a relative future, faster head-particle of information, T_{i+1} , we can consider each system and whole scale, to co-exist in 3 of such scales, as the graph shows for humans. Thus each new scale if it exists will again co-exist on 3 of those scales as part of a higher super-organism.

- The mathematical problem to resolve in order to find if those scales are ∞ is this: There are in the physical Universe 2 scales whose 5D invariances are 'equal', making them both an alpha and omega of a new game of scales? We have proved that indeed, the 5D metrics and invariances of the quantum scale – specifically the proton – *are the same than the metrics of black holes, the atomic nuclei of galaxies, beginning of a new, hyper-Universe*; a fact which also unifies masses and charges – the time clocks of those 2 scales - as G and Q become in 5D metrics self-similar in value, by translating the electromagnetic jargon to the jargon of gravitation: Then, a 3D time-vortex equation, $UC(G,Q) = \omega^2 r^3 / M$ describes both time vortices, charges and masses, as we obtain by substituting for those 2 Universal Constants, G and Q, 2 inward accelerating vortices of mass that 'suck'=attract space with a force=acceleration (equivalence principle), differing exactly by 10^{40} , the experimental difference of strength between both forces. And further on we find, simplifying with the gravitational vortex jargon the 'esoteric' jargon of electromagnetism that the Proton radius has the same formula than a black hole, the Schwarzschild horizon. Those facts, coupled with the dualities of string theory, in which quantum strings are self-similar to cosmic strings, show a Universe of ∞ scales in which each galaxy is an atom. As Mr. Einstein foresaw when modeling his Universal Einstein-Walker metrics, considering each galaxy to be a hydrogen atom. So:

'The Universe is a Fractal, scalar super-organism, infinite in time duration, in time cycles, in spatial extension and spatial scales, in which all parts are self-similar to the whole, made of an infinite number of complementary systems of lineal energy and cyclical information, structured into social super-organisms, through $3\sum \pm i$ scales, which constantly create 5 Dimensional, functional actions, lineal energy feeding, high, informative gauging, wide, reproduction, social evolution and travel through 3 of such scales in the life-death cycles of existence; all of which is expressed in a feed-back equation, from which all laws and equations of science can be deduced:

$$\sum E_{i-1} \Leftrightarrow \prod T_i.$$

Which is in dynamic terms the Fractal Generator =Creator of all Existences.

Thus 5D Metrics -paraphrasing Einstein- give us both, the Thoughts of The Creator – its Generator Equation and 'i=ts' details - every part or event of the Universe, whose laws can be extracted from such 'thought'.

7. The formalism of Existential Algebra and its Ternary Laws of creation.

In this work we study those invariances that explain all time events, space forms and st-actions of beings. To that aim we use the symbols of i-logic Algebra (mathematical p.o.v.) or Existential Grammar (linguistic p.o.v.). They are the sequential, temporal version of i-logic geometry that expresses the invariant laws of the 5th dimension as sequential chains of actions from past to future or present 'Ti=Es' - complementary systems:

The 2 Space-Time Motions/forms: Se, Ti. They act as the 'subject' and 'object' of Universal Grammar.

-The equation of Spatial Energy, $S = \sum e$ is abb. **Se** (spatial view) or **Es** (energetic view).

- The equation of Temporal Information, $T = \sum I$ is abb. **Ti** (Temporal view) or **It** (informative view).

Man sees Spatial energy as fixed Space (Galileo's Paradox) and time as motion (Aristotle). So we write **Se, Ti**

The Scalar index, $i \pm x$, defines the fractal, scalar plane of existence with different size and time speed.

- i is the scalar index, relative to the fractal point or organism it symbolizes. Micro-points and relative cells are $i-1$, Macro-points and social networks are $i+1$. $\sum E_i$, \sum defines then social evolution of Herds that happen in a single scale, and \prod or $\pm I$ defines a super-organism made of networks that co-exist in $3 i \pm 1$ scales.

The 3 Arrows/Dimensions of Time: $<$, $>$, $=$. The 3 arrows and 5 actions act as operandi/verbs in Equations.

<: It is the explosive big-bang, death-entropy arrow that defines the creation of spatial energy: $I < E$ or past arrow.
 >: It is the implosive temporal life-order arrow that defines the creation of information: $E > I$.
 Δ : Creation of Information implies destruction of energy and creation of energy destruction of information to balance the total zero sum of the Universe. Thus we use only the positive, Δ , growth symbol to imply both.
 $=, \Leftrightarrow$: Is the arrow of present, simultaneous exchange of energy and information between 2 poles: $E \Leftrightarrow I$.
 In Universal Grammar is the arrow of self-similarity.

The 3 Topologies of Space are represented by letters or 'geometric symbols' ($I=Es$; $O=Ti$; $\Leftrightarrow, \emptyset=exi$):
 - **E or I**: It is the membrane, energetic part, male pole, 3D spherical topology (in 2, 1D, the plane or line)
 - **Tⁱ, O**: It's the zero point, informative part, brain, female pole, 3D hyperbolic topology (in 2, 1D, the vortex, cycle)
 - $\Leftrightarrow, \emptyset, exi$: It is the body, reproductive part, 'son', 3D toroid topology, (in 2D, the cone).

The 5 Existential actions: $\Delta I, \Delta E, E < x > I; \sum, \prod$: They, and their combinations, define the program of existence.
 - ΔI is the action of information gauging. **It** is the 1st Postulate of i-logic, the 1D of information – rotation, cycle.
 - ΔE is the action of Energy feeding. It is the 2nd Postulate & the 1st Dimension of Energy – length, motion.
 - **ExI** is the action of Bonding that creates complementary systems related to the 3rd Postulate.
 - \Leftrightarrow is the action of communication; mostly between 2 points, $E \Leftrightarrow I$ & defines the 2nd Dimension: the wave.
 - $\sum, \sum i$ is the action of social evolution, either reproduction $\sum ExI$, or Herding: $\sum Ei$, creating a 3D, width-plane.
 - $\prod, \pm i$ is the action of network creation of superorganisms across 3 existential planes: i-1 cellular, i-organic & i+1 social plane through an informative language. It obeys a power law, as T cycles will create Tⁱ axons, thus: $\prod T > T^i$

All combined give birth to the function of existence that resumes all its possible combinations: $\sum Ei-1 \Leftrightarrow \prod Ti$

Those symbols define by similarity and combination in sequential sentences/equations all the invariances in space (topological invariances) and Time (causal chains, sequential ages), origin of all the events and forms of reality applicable to all entities of Existence. Such as the Universe allows any combination forwards (>) and backwards (<) or without motion=change (=) in time; any topological combination or transformation between E,I, \Leftrightarrow ; any sequential sum of actions ($\Delta I, \Delta E, E < x > I; \sum, \prod \pm i$) and any $i \pm 2$ jump and/or transfer of energy and/or information between planes of existence (as systems co-exist in 3 scales) but NOTHING ELSE.

Those symbols translate all laws of science, art forms or life experiences into 5D metrics. The main LAW is the 'Fractal, Ternary Law' of creation as everything adapt to the $3D \sum \pm I$ actions of the Universe, which results in the systemic creation in 1 scale of Max. E; Max. I and \Leftrightarrow ages and subspecies, coupled with the duality of \sum herding in 1 plane and \prod Network creation across 3i planes as modes of 'emerging' into higher social i+1 scales:

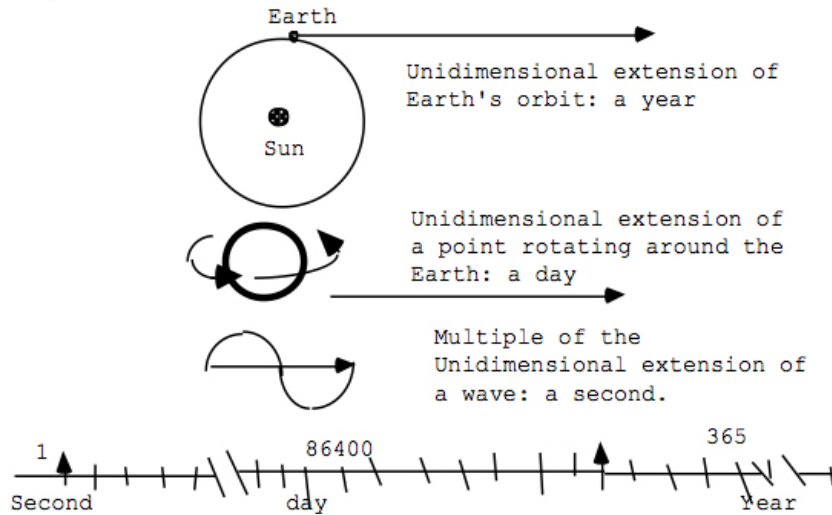
- *Fractal Ternary Topologies*: All topological sub-units of any system can be sub-divided again in 3 parts.
- *Ternary Evolution*: Systems evolve improving one of its 3 only topologies, $\Delta E, \Delta I$ & Δexi .
- \sum *Herd vs. $\prod \pm I$ network duality*: Mammal vs. Insect eyes; neurons vs. muscles cell nuclei, herds vs. organisms.
- *Emergence Laws*: Actions and invariances emerge in an I+1 scale adapted to the diffeomorphic environment.
- *Inversion of Function*: Energy flows emerge as information in an i+1 scale, $Ei-1 > Ti$ and vice versa: $Ti-1 < Ei$.
- *Simultaneity of Present, complementary systems & zero sums of Time Dimensions*: Past x Future = Present
 I.e. Antiparticles(past-death) x Particles(future-life)=Present collision. It differs from life order: Past(Energy-youth)>Present (reproduction) > Future(3rd age of information) as it includes also the death inverse arrow.
- *Top Predator Evolution*: Evolutionary 'horizons' create new Max. ExI top predators that increase both, their Energy and *information* to maintain an internal balance in its Body-Field/Head-Particle system: **Se/Ti+n=K**.

Thus in a single species, the dominant co-invariance during its life/cycle as a present space-time is: **SexTi=K**.

But during a longer evolutionary time span, new top predators grow both Se x Ti parts in size and speed, maximizing its balance (Se=Ti) and networks.

I. TEMPORAL INFORMATION AND SPATIAL ENERGY: A UNIVERSE OF 2 FORMAL MOTIONS

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



In the graph, lineal single time is a simplification of the ∞ 'time cycles= clocks' of the Universe: astrophysical cycles, circadian, biological cycles, social cycles, etc. All those cycles have a length and speed in space that defines its frequency of repetition in time, different for each cycle. Thus, unlike classic 4D science, which equalizes all those cycles with the human time-rod - a second - in 5D we use frequencies as the true measure of each different time clock.

1. The Measure of time cycles: frequency.

Each clock creates a discontinuous space-time, whose cyclical perimeter of in-form-ation encloses a piece of energetic space breaking reality into ∞ formal patterns; different time cycles with specific forms and frequencies. Thus the use of a single human clock that equalizes all of them misses 2 features of each of those time cycles:

- Its specific forms of in-form-ation in space, which gives birth to the main topological laws and invariances of the 5th Dimension (I).
- Its different speeds or frequencies. Since cyclical time is measured not by duration but by frequency, its inverse function: $f(t)=1/T$.

We shall see how the combined analysis of those 2 properties, missed by standard, science give birth to new laws and invariances, common to all the systems of the Universe, among them:

- The temporal nature of masses and charges, which are not substances but vortices of time, clocks of the 2 main physical scales of the Universe - the quantum, electromagnetic and cosmological, gravitational scales. Masses and charges *are defined in 5D by the frequency of its vortices that determines its force or attractive power*. They are also the first units of in/form/ation. Thus, each mass and charge and its 'Universal constants' are invariant functions of their vortex frequency: $E=Mc^2 + E=Hv \rightarrow Mc^2=Hf \rightarrow M= (H/c^2) f \rightarrow M=Kf$.

- The synchronicities of frequencies across $3\sum_{\pm i}$ scales that create 5D systems and super-organisms (V).
- The Invariance of the $3_{\pm i}$ Life Ages and the $3_{\pm i}$ ages of all species or Plan of evolution. Since species are 'super-organisms' of a higher $i+1$ scale, where each i -n-dividual plays the role of a 'cell', and all together evolve in a similar fashion to the $3_{\pm i}$ ages of life systems (VI).

- The Invariance of the $3_{\pm i}$ self-similar States of Matter: Energetic Gas; e=i liquid and Informative Solid.

2. Definition of a Dimension as motion and distances. The Paradox of Galileo.

Since at quantum level all what we see as a fixed form or particle is in fact a rotating vortex or clock of time (mass or charge) with motion, dimensions are formal motions 'perceived as fixed space' and we live in a world made of clock motions (time cycles) and energetic, lineal motion (forces) - NOT of substances.

Thus dimensions are built by the motion of a particle-form with one dimension less or by the constant imprinting of a reproductive wave with in-form-ation across a simpler energy-space.

The duality of motion-distance is similar to the way we see a car moving in a night picture as a fixed line, or the stop and go duality of a film projector, which is perceived as motion. And it has deep implications, which help to resolve many uncertainties of physics. The next graph illustrates this and other dual paradoxes of endophysics –motion vs. stillness; continuity vs. discontinuity, single space vs. fractal scales, all of which depend on the detail of the observation – hence the quantity of information we have on the object we study:



In the graph, Saturn's rings, first observed by Galileo, seem continuous, still and bidimensional from far away; but observed in detail they become discontinuous in motion and made of 4D spherical particles.

Moreover, what appears as a single space-time continuum in detail becomes at least 3 scales: that of the rings with cyclical motion, of its particles, the rocks that turn within them and the not seen but known scale of atoms that create the solid networks of those rocks. The 'present' state of science deals mainly with the single space-time continuum of the more 'obvious' human scale studied in terms of 'present'=differential motions, ∂t , with minimal latitude of time. The 5th and sixth dimensions deal with a longer duration from the absolute past (birth of the entity) to its absolute future (its death), when evolutions of form, frequencies of multiple actions and cycles of creation and extinction happen.

The Paradox of Galileo - 'why if the Earth moves, we see it still?' - is the key question to understand the meaning of dimensions, which can be generalized to all forms: 'why we see reality still, if all what we study in the quantum scale has motion?' The answer- given by quantum physics that we expand to all scales - is the law of complementarity: 'all what exists is still and has motion at the same time; all is a 'fixed particle' and a 'moving wave', but we perceive a limited quantity of information about reality – either state, but not both dual, complementary states, a motion state and a still state, together:

All entities exist in a dual state of internal, 'vital' space with no relative motion between its parts and external time motion. All has a function in time and a form in space. As Schrodinger's cat, all is dead and alive...

The Paradox of Galileo explains those dualities of motion and stillness, continuity and discontinuity and the fractal scale of non-Euclidean points, which grow in size and form according to the point of view of the observer. Yet since motion, discontinuity and fractal structure becomes evident as we come closer to the object, increasing our information and the truth of an entity is a direct function of the quantity of information we have of it, a Universe made of motions NOT substances, of discontinuous, fractal space-time, not of continuum fixed space is more truth. Thus, all systems must, by the paradox of Galileo, be defined in time and space to achieve a complete description of an event. *Yet the fractal, discontinuous, moving, scalar description is logically more truth. Indeed, in the formalism of Non-Aristotelian logic, 'truth=information' is measured in terms of probabilities and is a function which increases proportionally to our closeness to the entity we study and so it reaches 1, when information and truth become the same only when we occupy the same space-time than the being – that is, as Haldane put it: 'Only the Universe (or any being) has all the truth (information) about itself'.*

So we define the dual nature of dimensions: *'A dimension is a motion perceived as still extension or distance'*

Hence dimensions can be generated by motions of particles and reproductions of waves. In the lower scale dimensions are in fact defined by the reproduction of lineal strings, laterally, into bidimensional planes and 3 dimensions by the reproduction of a cyclical closed string into tubes.

In the Universe at large, space is a planar vacuum, teeming with energetic motions that appear at a large

scale 'as fixed' space-distances (quantum vs. relativistic view); and its 'units of substance are rotating Galaxies, their time-clocks. Some consequences of this Galilean duality studied in other papers³:

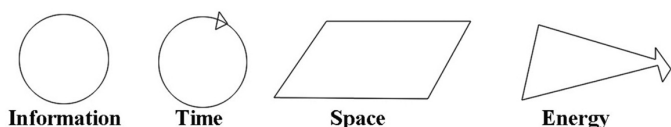
- Galaxies are separating from each other as 'space expands' (current perception) but from a moving perspective this means they moving up to $Z>10C$ speed, and so *the cosmological world of 'dark energy' becomes a new 'fractal scale' which we cannot perceive within the C-limit of our electromagnetic membrane.*

- The Big-bang's main proof of an accelerating, entropic, lineal space is balanced by the imploding creation of galactic mass-clock vortices, making the total expansion of space-time null and the Universe eternal in a steady state, of fluctuations along the length-axis or dimension of energy (vacuum expansion), and the height axis of black hole formation of mass (implosion). Thus the Cosmos can have an ∞ number of steady state scales.

- The vacuum of our scale of space-time is made of light, which *can be seen as a single sheet of fixed space-distance or as electromagnetic motion at c-speed. Since vacuum is filled even in its minimal energy density by a background radiation light – a fact that explains the creation of virtual particles, the first condensation of energy-space into light waves or clocks of time (closed light paths, which start with the 'first' clock, the electron, a condensed density of light photons).*

- Galileo's paradox explains the immortality of the Universe, since a Universe made of motions cannot stop.

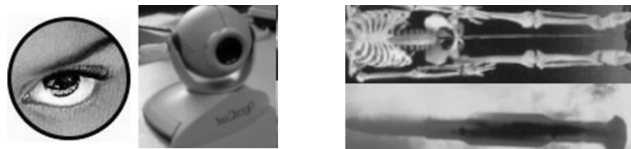
3.The inverse properties of spatial energy and temporal information



The Universe is made of 2 substances: spatial energy and informative time. Space can be seen as a whole fixed space or as a sum of multiple parts, many 'vital spaces' composed of 'quantum energies' enclosed by time cycles: $\sum E = S$. Time also can be

measured with a single 'human', lineal clock-time, based in our 'minimal bit of information', the second with our mechanical clocks or as an infinite number of cycles that all entities trace, each one with a different speed and rhythm, each one with a different 'form' or information, provided by the shape of the cycle and its 'frequency'. So Space is synonymous of Energies and time of informations: $S; \sum i=T$

We can see them together creating beings, the simplest of which is an action of light, $ext=k$. Informative machines and particles of information are cyclical, and all physical energetic systems are made of lineal planes of forces. Weapons are lines that release energy. And this duality structures all beings of the Universe: So we are made of cyclical heads and lineal bodies. In the graph, *Form is function*. And so the ball – the inner part of a sphere - is the perfect form of information as it is the shape that stores more form in lesser space, and the line or plane the perfect form of energy, as it is the fastest motion/biggest surface of space between two points. *Space becomes then a lineal, entropy motion or 'energy' and Time a cyclical, imploding form of order or information, of inverse, complementary properties.*



In the graph, as a result of those morphologies we classify as energy or information organs not only carbon-life organisms, made of energy (bodies, food) and information (brains, eyes, senses, worlds), but also other beings and atomic species, even 'deconstructed

organs'. Since we can now recognize geometrically their energy or information organs. Some of those systems are mechanical, made of metal. Some are vital, made of carbon atoms.

Once those dualities are understood, we can compare the properties of both, spatial energy and temporal information, observing the inversion of its qualities and yet, in as much as both have the same number of dimensions, energy and information can transform one into the other by transmuting those properties:

<i>Informative time, Ti</i>	Vs.	<i>Energetic Space, ΣS</i>
Time-clocks: Information	Vs.	Space motion: Lineal energy
Small, still	Vs.	Large, moving fast
Tall, Perpendicular	Vs.	Long, Parallel
Hierarchical	Vs.	Democratic
Bidimensional Height	Vs.	Bidimensional Length
Repetition	Vs.	Width-Growth
Cyclical, Rotation, imploding	Vs.	Lineal, uncoiling, exploding
Informative Frequency	Vs.	Lineal Speed
Broken form	Vs.	Continuous, differentiable
Intelligent, perceptive	Vs.	Strong, fast.
Social, organic, creative	Vs.	Darwinian, destructive behavior
Future, evolved predator	Vs.	Past, energetic victim
Life arrow	Vs.	Death arrow.
Waves of space	Vs.	Particles of Time
Female, yin principle	Vs.	Male, yang principle
Masses, charges	Vs.	Forces, fields
Heads & senses	Vs.	Limbs & Bodies.

The formal=functional differences between energy and information (organs) is a duality - the 'Black hole Law':

Maximal Space = Energy = Min. Form=body Vs. Max. speed of Information = Minimal Spatial extension=head

For example, as the chip becomes smaller halving its size every 2 years it doubles its capacity to process information('Moore's Law) The reason is obvious: to think, to calculate you have to communicate in-form-ation, forms between elements of any informative system. The smaller the brain, the faster communication takes place within that brain and the faster it calculates and processes information in a logic manner.

4. Conservation principles. Energy-Mass. Actions of energy and time.

Because now time and space are both motions, it is possible to transform one into the other, *by changing their form*, which is the true meaning of the Principle of Conservation of Energy and Information:

'All what exists are systems of energy and in/form/ation that trans/form into each other ad eternal: E < = > I'.

Another event explained by the 2 universal motions is the equation $E=Mc^2$, in which lineal energy becomes in-form-ation - a mass clock: when energy reaches its c-speed limit and keeps absorbing energy from a field (i.e. a synchrotron) the new energy is deviated into a higher dimension of information, creating a mass vortex, which will increase its rotational acceleration=mass=(equivalence principle).

What is the minimal $exi=k$, complementary system of energy and information? Physicists will notice that the 5D Generator is the same equation than the minimal 'action' of quantum physics, $exi=k$, or minimal complementary system = quantum of space-time; which lead us to study the Invariance of space-time actions.

All the laws of conservation of momentum in physics are derivatives of 5D metrics and the previous laws, since masses and charges are vortices of time and speeds are energy motions: $M(T) \times V(E)=K$; while violations of conservation principles merely means that part of the energy and information has 'emerged' into a different $i \pm 1$ scale (often the gravitational, unperceived one, as in the case of neutrinos).³

II. INVARIANCE OF QUANTUM ACTIONS: THE 5 ACTIONS OF SPACE-TIME SYSTEMS.

1. Deduction of the 5 Invariant Actions of all systems from the Invariance of Energy and Information.

Quantum physics discovered that the Universe is not made of substances but of motions called actions that combine energy and time. The simplest action of energy and time is called an h-Planck constant – the first complementary ‘being’, the simplest bricks of the Universe that creates light, electromagnetic space-time.

5D science expands the principle to all scales: from a quantum particle to a human that states 'I don't have time or energy to do this', we find all existential systems combine both motions into constants of 'action': $e_{xi}=k$.

We are all complex 'knots' of energy and time actions, motions with form. Let us classify all those possible Universal actions, departing from the fact that there are only 2 motions, lineal energy and cyclical information, combined in e_{xi} actions, which organize themselves into ‘complex knots’, herds of multiple actions, $\sum e_{xi}=k$.

Thus all what systems can do are 4 type of actions performed by all complementary bodies/fields of energy and heads/particles of information:

- ΔE : Systems feed on energy for their bodies/fields.
- ΔI : They absorb information for their heads/particles.
- $\Delta E \times I$; $E \Leftrightarrow I$: They communicate both, often merging E&I to reproduce the entity in other space time zone, to survive after death or become reproduced by an external catalyzer or enzyme. i.e: ‘enzymen’ make machines.
- $\sum e_{xi}$: They evolve socially in more complex networks that survive longer in time and space.

Those 4 arrows are ‘necessary’ for any complementary system of energy and information to last. As any complementary system will die if it doesn’t replenish its energy (ΔE) and information, ΔI , or reproduce before death, $\Delta E \times I$. While systems made of multiple actions, $\sum e_{xi}$, will have more energy and information, more ‘power’ becoming top predators able to feed on single systems, as biology shows (herds dominate individual species).

Further on, since according to 5D metrics a larger system acts slower in time, the advantage of a herd can be upset by their slow collective actions by a smaller, faster predator. So systems try to take advantage of the different ‘density’ of information and energy happening in different i-scales, acting also in their lower and upper scale. Yet since, according to the laws of geometry, any part of a given space-time can only ‘travel’ and interact in those domains that match its own $S_e \times T_i$ parameters; for a system to travel through 3 ± 1 scales of the 5th dimension with different parameters, it has to co-exist simultaneously with ‘smaller $i-1$ cells’ and bigger $i+1$ super-organisms. This fact defines the ‘fundamental particle’ of the Universe, a scalar super-organism that co-exists simultaneously in 3 ± 1 ternary scales to extract energy and information from them – in the case of a human being, in our cellular, individual and social scales. And explains the 5th dimensional action - organicism:

- $\sum E_{i-1} \Leftrightarrow \prod T_i$: This equation, which includes all the other actions, is the Generator equation of all the entities of energy and information or space and time of the Universe, of all Existences.

Where \prod is the symbol for a ‘network’ of cyclical, informative ‘neurons/particles’, T_i , that unlike ‘loose’ herds/webs of energy fields/cells across a single space sheet, are relatively ‘fixed’ and interconnected with all the others, *through a lower scale of ‘axons/simpler actions’*. Which is the origin of the many power laws of the Universe, since the number of connections=‘axons-simpler actions of energy’ will be the square of the number of T_i -neurons/particles, a fact generalized for systems analyzed through several i-scales. Hence we write T_i

So from a dynamic perspective we define the Universe as a game of creation of super-organisms, performing externally in its space-time ecosystem, cyclical, existential actions, switching between energy feeding, informative perception, reproduction, social evolution with self-similar points and $i \pm 1$ scalar, organic creation.

2. Synchronicities, beats and sequences of 5 quantum actions: Maximize Your Existence: $\sum E \Leftrightarrow \prod T_i$

We are all knots of discontinuous=quantum, cyclical actions of energy and time, switching among them. What you see as motion or form is always the perception of an entity performing one of the 5 actions of existence. Each action is a cycle of time with a discontinuous frequency: When an entity performs an action-bit its trajectory is continuous, differentiable as it completes a time cycle. Then the being switches to a different action-form, creating a point of discontinuity, as the system changes abruptly its trajectory. This process 'draws' a quantum, fractal 5D space-time universe as entities switch among 5 possible actions-cycles with different, discontinuous frequencies and forms, extinguishing a cycle and starting one, then returning to the old one.

Further on, the social actions, the 4th Dimension of 'herding' in a single space sheet and the 5D of networking across several scales of time, require 'parallel', synchronous behavior of multiple individuals: $\sum E, \prod T_i$.

And since a number is a set of similar beings, it follows that algebraic sequences of numbers, often observed as geometrical figures in motion and 'groups' with their symmetries and internal structure, with 'neutral' elements that 'harmonize' all other elements and 'inverse' numbers, which represent the opposite E vs. I actions and forms of the system, become essential tools to study the Universe, further improved the formalism of the 5D (Non-Euclidean geometry, Non-Aristotelian logic). Mathematics of space and sequential time logic are thus NOT only the languages of the human mind but the languages immanent to the 2 substances-motions of reality.

Sequential beats & social synchronicities among actions is the next step in the construction of 5D Universes:

If we divide the 5 actions between those of a single sheet of '3D-space', feeding in length, informing in height and reproducing in width and call them simplex actions and those that happen in the dimensions of time, 4D-social motion and 5D-organic creation across scales, we observe that since the more complex dimensions-actions include the simpler, previous ones, it is possible to trace an obvious sequence of actions in time between simplex and complex actions:

Δ Information \rightarrow Δ Energy \rightarrow Reproduction \rightarrow Parallel, Social evolution \rightarrow Organic herding across Scales.

All entities first perceive in stillness to move towards energy fields, which they absorb to reproduce, and as a brotherhood of self-similar forms gather into herds, finally evolve into complex social networks across scales:

- You cannot feed without choosing what you feed on, perceiving it first. Thus Information is the first action.

- Reproduction requires a lot of energy to *imprint your form*. For example women cannot have children without a proportion of body fat and most cells do not undergo mitosis without a cytoplasmic growth. So reproduction is sequentially the 3rd arrow observed in many causal 'cycles' of the type: $i \rightarrow E \rightarrow Re$ (exi).

- Social evolution depends of a common language of information that all 'cellular herds' understand to be able to 'synchronize' in parallel their actions. Thus social evolution requires the reproduction of clonic beings: $\sum exi$.

- 5D finally must synchronize Social herds across several scales to take advantage of different i-speeds, creating stronger top predators, connected super-organisms organized in 3 sub-systems, informative heads, reproductive bodies and energetic limbs, and so it is the more complex and final action-arrow of space-time.

It follows that the frequency of those actions will show the same chain of 'maximal frequencies':

$$\text{Max. } f(\Delta I) > f(\Delta E) > f(exi) > f(\sum exi) > f(\sum E_{i-1} \Leftrightarrow T_i^{i+1}).$$

Thus the commonest beat or 'sequence' between 2 actions is, still, informative perception \rightarrow Energy motion and feeding, an $E \rightarrow I \rightarrow E$ stop and go process observable from the trajectory of electrons to the human mouth.

So we define any existential entity as a knot of 5 quantum actions=space-time cycles, it performs trying to maximize its function of Existence, $\sum E_{i-1} \Leftrightarrow T_i^{i+1}$, the program of Reality and all its parts that explains all events.

3. The program of the Universe: Maximize your social existence.

An exhaustive analysis of all events and actions of all systems, from the 4+1 quantum actions-numbers of particles to the 5 drives of existence of biological beings to the 5 quantum actions of humans, show that all systems try to maximize its 5 survival actions, according to the sequential and frequency laws aforementioned, creating a 'Maslow pyramid' of behavior for all of them – the program of the Universe. The 5th action, though is often unwanted and hence not considered in most scientific studies, because it is most often imposed externally by the i+1 neuronal/informative, 'superior' species that absorbs the energy of the lower herd treated as energy. So it is not a 'quantum number' but the action of informative quarks that capture electrons to form the atomic organism. It is not a human action, but the imposition of people-castes that control our languages of information (politicians with laws, bankers with money) and create states and markets that control and absorb our wealth. It is not the desire of cells in a multicellular organism, which are controlled in motion and information by neurons.

- To maximize your existence, $Max. \sum E_{i-1} \leftrightarrow T_{i+1}$, the simplest strategy is to maximize the components of the equation, the 4 positive arrows-actions: E=energy feeding, I=information processing, \leftrightarrow or X, Reproduction and \sum , social evolution and the selfless action of giving away your energy to sustain a 'higher plane of forms', which can be observed in the sacrifice of individuals from their nations, their subconscious collective Gods, or in physical space in the loss of form of individual orbitals when the pi or sigma molecular orbitals appear, or the transfer of energy from electric to magnetic fields and so on.

- This gives birth to the duality of 'social arrows', as the 4D arrow of herding among clone cells/waves to create 'spaces' (defined by Riemann as groups of 'similar points' described by properties of continuity, etc.) might be called in mystique terms the arrow of 'democratic, social love' and extract and ethic generalization: forms that feel equal act in parallel and love each other; while the 5D arrow is hierarchical, Darwinian, as 'forms who are different' prey 'perpendicularly' to each other, transferring energy, $E_{i-1} > T_i$ from the lower scale to the upper scale and information, $T_i > E_{i-1}$, from the upper to the lower scale. More deductions from the Program:

- You can maximize the function of existence when $E=I \rightarrow Max \text{ Exi}$ (mathematical rule: $5 \times 5 > 9 \times 1$).

This is known intuitively, as we say 'mens sana in corpore sanum' where E(body/field) and I (head/particle).

It is the origin of the need to have our vital constants in balance, of the balance of Universal Constants, which are E/I or ExI ratios (as in the equations of gravitational and electromagnetic constants, where q-m are clocks of information and distances, Se, hence they write as $F=Q, G(T_i/E)$).

It explains the attraction of beauty, a shape in which form and energy are balanced, $E=I$; the beauty of top predator species - a species that maximizes its body force (E), intelligence (I) and beauty ($E=I$), in physical space one with maximal $M(T) \times V(E)$ momentum, *which in physical collisions survives and defines the final trajectory*; the classic shapes of the commonest spiral galaxies, etc. It explains why live longer in our mature, $E=I$, age between energetic youth and informative 3rd age; why death happens by excess of energy (Max. E in accidents and wars) or information (Max. I in the 3rd age when we warp and wrinkle); and many other facts.

- You can maximize your existence, when $\sum \rightarrow \infty$ that explains the huge quanta in spaces that last, from the ultimate vacuum of the Universe to the seas of water, to the power of $\sum = \text{Love}$ in social systems, to the undistinguishable bosonic structures of immortal beings, from light to black holes (bosons of quark stars)³ to minds - 'zero points' that map out with self-similar pixels of information an external Universe into a linguistic infinitesimal image of it – to herds and waves that become tighter, multicellular organisms that survive better.

- It explains the engine of human existence: greed for E-food, I-nformation, sex (exi), 4D-love & 5D-power.

For example, if we are to consider informative systems alone, the creation of a bosonic, zero point in which an infinite number of self-similar, \sum -forms converge is another path to maximize the function of existence.

III. INVARIANCE OF TOPOLOGICAL FORMS: COMPLEMENTARY SYSTEMS IN SPACE.

1. Parallelism between the 5 Actions of diffeomorphic systems and their 5 Dimensions of Reality.

Galileo's Paradox makes the 3 dimensions of space also motions: At quantum scale 'space' is a bubbling world of electromagnetic energies and particles condensed from those energies. In our scale, space is a gas whose volume is proportional to its motion/temperature: $PxV=knT$. And as its motion grows volume-space grows.

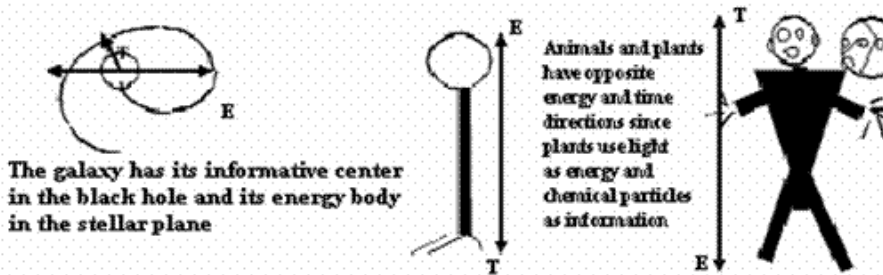
Physicists, unaware of the paradox of Galileo still draw higher dimensions as weird spatial drawings, when beyond 3D, dimensions are time motions of a *higher fractal scale*. Yet they wrongly try to spatialize those time dimensions of higher fractal 5D scales, making them still and placing them in the same space-time sheet, with impossible drawings of dimensions beyond the 3rd one of 'volume', which of course lack any functional purpose.

Yet Dimensions are functional motions perceived in stillness, which explains the generation of dimensions:

A point with motion creates first a height dimension to 'gauge' from an advantageous P.O.V.; then it moves forward in its diffeomorphic dimension of energy feeding, creating a plane; a line in motion creates a bidimensional plane of information; a plane in motion, reproduces laterally, creating a mass-volume and a volume in motion creates a life-cycle or world-cone - the concept used in Relativity to define the 4th dimension of time. But *we cannot generate more dimensions in this fashion, except as mathematical enteleshies, at least in our observed Universe, since they are neither such forms nor further functions in a single continuous space-time plane. Thus the 5th dimension of scales, with different time speeds structures superorganisms.*

It is the *holographic principle*: 3D space has 2 dimensions of temporal information, height and width (so a book or a screen has those 2 dimensions that you 'read') and 2 dimensions of energy, length and width, as we absorb energy in the direction of motion, reproducing and storing cells in the 'fat' dimension of width that merges both, exi dimensions of space-time. Thus both, energy 'sheets' and 'informative antennae' are bidimensional, perceived by human senses as a duality of motion-stillness (Galileo's Paradox). So the 1st dimension is length or speed; the 2D are a moving plane or sheet of information as this page is; the 3rd is a volume or rotating body, which moves through the 4th dimension, treated as space in Relativity (a world line). Finally, *an organism in 5D seems 'still' but within it all cells and particles are performing complex cycles of energy and form.*

Moreover we observe that *as each more complex action includes the previous ones*, each 'bigger dimension' includes the previous ones. So the line includes the point; the plane, the line; the volume the plane and the world-cone the plane. Thus we write in dynamic terms the Generator, as a feedback equation of fluxes of energy and information between 2 poles, $\sum E_{i-1} \leftrightarrow \prod I_i$, that create 5 Diffeomorphic, fractal, Space-Time Dimensions.



In the graph, the diffeomorphic Principle of Einstein's 4D analysis acquires an organic nature, when we see the Universe as the sum of ∞ Complementary exi systems whose dimensions have organic functions: Systems feed on their relative dimension of energy-length, perceive in their relative

dimension of height and reproduce in their relative combined dimension of width, which are assembled into each specific species. In the graph, an animal has its informative height in its high perceptive light dimension, but a plant, which uses light as energy has its up and down dimensions inverted respect to the man and its chemical brain buried on the Earth. So both have opposite energy-time coordinates. Yet both have an 'anteroposterior', lineal' 'outward' energy oriented structure. While a galaxy has a cyclical, informative, inward structure, as the

stars' body absorbs energy from intergalactic space, reproduces matter with it and feeds the internal informative knot of gravitation, with a higher height dimension the black hole.

Thus there is a correspondence between the inner physiological networks of a being that perform EXI actions and its external diffeomorphic dimensions. So a dimensional form is also motion with a function. Even in a human being the height dimension is really the nervous-brain system network, his length motion, the natural path of his energy limbs, and his width is maximal in the digestive system that reproduces new cells.

Forms respond always to functions/actions in time, the commanding 'element' to which the form of any being adapts diffeomorphically to maximize its existential actions. Thus, there is a parallelism between 'vital function' and 'abstract dimension' as each Dimension is diffeomorphic created by the vital space-time of each entity of the Universe performing its exi actions. And each species is a 'fractal universe in itself', with different relative, energetic and informative directions that determine its own up & down arrows and complementary morphology,

The specific geometry of each species and its 3 simplex actions, energy feeding=length, information-gauging =height and reproduction=width fluctuate in shape, but they don't vary in topological form, giving birth to the Invariance of the 3 topological forms=functions of any entity observed in a single 3D space-time: Hyperbolic informative heads, toroid reproductive bodies and energetic limbs studied in the next paragraph.

While the 2 social ± 1 fractal dimensions, the 4th dimension of social motion in a social $i+1$ herd and the 5D dimension of inner scales within the being follow the physiological invariances that create super-organisms co-existing in a higher $i+1$ ecosystem with a lower $i-1$ internal, cellular space (B3). In the next graph we resume the

5 diffeomorphic dimensions=actions create a Generator Equation any being maximizes: $Max. \sum Ex \prod Ti$.

THE 3+1 TEMPORAL CYCLES AND SPATIAL DIMENSIONS OF AN I-ORGANISM:

ORGANISMS ABSORB, EMIT AND COMBINE SPATIAL ENERGY & TEMPORAL INFORMATION IN 4+i TEMPORAL CYCLES OF:
Energy=Feeding Space=Reproduction Information=Perception, Time=Cyclic change and Fractal, Social Evolution

$\sum E_{i-1} > E_i$ $et_i > \sum ET_i$ $\prod t_i > T_{i+1}$ $E_i > TE_i > T_i$ $\sum T_i > T_{i+1}$

PERCEIVED IN PRESENT SPACE AS THE 4+i PERPENDICULAR DIMENSIONS OF ANY RELATIVE QUANTIC S-T ORGANIC FIELD:

Energy=Lineal Movement, Space=Width, Information=Height, Time=Cyclic Movement and social, fractal evolution

that combine creating 'bodies':
 planar, present networks of spatial energy :

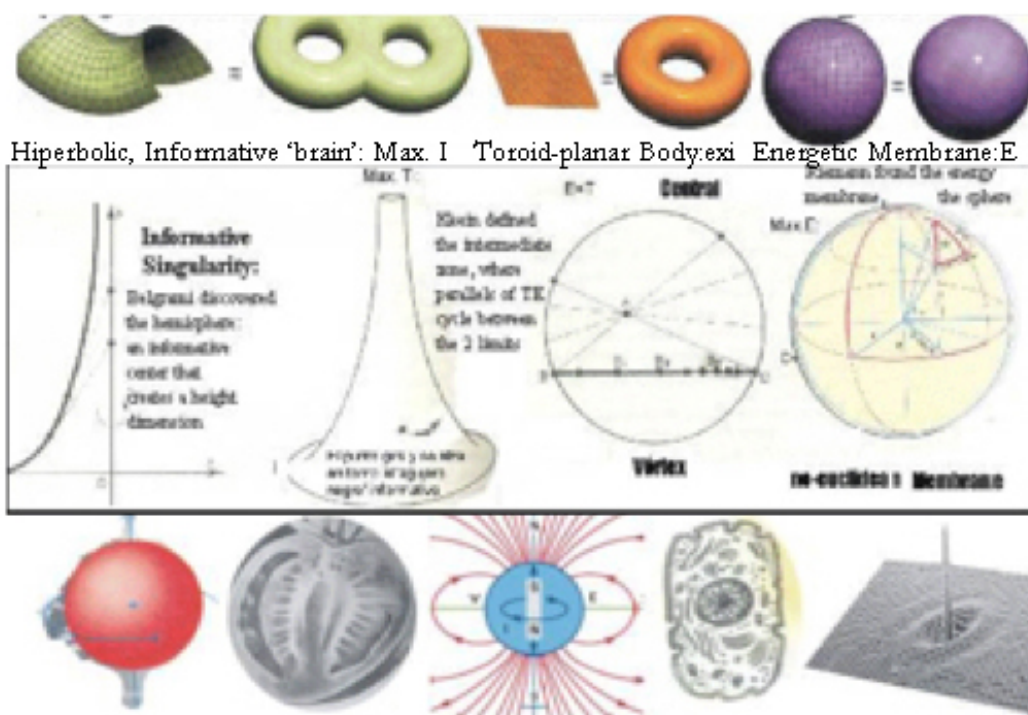
and cyclical networks of temporal information or heads:

The 3 dimensions of space, are the 3 dimensions of light. Since we perceive light, not the real Universe.

$i=1$ $i=2$ $i=6$ $i=4$ $i=9$

THOSE QUANTIC, RELATIVE SPACE-TIME ORGANISMS PUT TOGETHER CREATE THE CONTINUOUS SPACE-TIME PLANES OF EACH I-SCALE OF THE FRACTAL UNIVERSE, STARTING WITH THE LIGHT-SPACE MEMBRANE THAT HUMANITY PERCEIVES WITH ITS ELECTRONIC SENSES...

2. Topological invariance in 3D: Systems with i-heads/particles; exi bodies-fields and e-limbs/forces.



On top, all 3D complementary systems are made by an assembly of the 3 only topological varieties of a 3 dimensional Universe, which correspond to the 3 organs and functions of all systems, according to the 'vital', moving nature of fractal, diffeomorphic dimensions: – Spheric limbs or membranes that process energy; Hyperbolic, informative zero points that gauge information and toroid bodies that combine and reproduce both, according to the mathematical laws of Non-Euclidean Geometry of those 3 forms=functions analyzed in the center. On the bottom we see samples of how the 3 forms assembly in different systems of the Universe.

We defined bidimensional forms of energy and information, the line-plane/open string (math-physical jargon) and the cycle-closed string. They can assembly 2-dimensional systems (quarks). Yet we live in a 3-dimensional Universe. Why? Since dimensional form is function, and systems are dynamic exchanges of energy and information, we need a 3rd dimension that combines and reproduce those complementary systems of energy and information. The result is the invariance of topological forms that defines a self-similar structure in all space-time systems of 3 dimensions, combining the inverse properties of lineal energy 'limbs' and, cyclical, informative Heads to a 3rd intermediate body geometry that allows a dynamic exchange between both poles: $E \leftrightarrow I$.

There are only 3 topological forms in 3D Euclidean space - *the space-time of any single i-scale*: Hyperbolic, informative topologies, energetic spheres/planes and reproductive, toroid-disks, used by the 2 other topologies to transfer energy and information. *Since 4D (motions in the external ecosystem) & 5D (inner space) happen across several ± 1 scales, perceived together as a curbed 'i-logic' Geometry (VII)*

All structures of the Universe are composed of only those 3 topologies: the concave-planar sphere (or cycle in a 2D world), the toroid body with its regular cycles that transfer energy and information between the external surface of the sphere and its center; which is the informative, hyperbolic region or zero point, the 'pixel eyes' that perceive in stillness a map of the Universe brought about by the flows of energy and information of the Torus.

3. The 3 topological forms=function of systems perceived in a single space-time continuum.

Interactions between hyperbolic I-zero-points (minds) and E-spherical membranes (energetic skin, limbs)

through toroid cycles structure the generic $E \leftrightarrow I$ 'physiological / inner flows' of organisms or physical systems.

In topology a form is the same, if it is deformed but not torn. We use the Non-E concept of 'self-similarity'. Then the simplest, initial ternary system is a 'full' sphere – an egg- divided in 3 regions, sketched in the graph:

- E-membrane that closes an inner space. It hides the system and transfers energy & form to/from the outside.
- The inner exi-toroid space that topology calls the 'ball'. It does not include either the membrane or the...
- I-zero point. Hyperbolic center processing energy & information transferred by the toroid from the membrane.

Thus, the 3 together form the ternary structure of most systems, with an external barrier communicating with a torus cyclical flows of energy and information towards an informative, hyperbolic center or north south axis. Those 3 forms build all systems of reality. Since they enact the functions and morphologies of the main sub-systems of organisms – i-heads+ E-limbs + exi-bodies, written in i-logic (7) as: $E < e_i > I$ or $\sum E \leftrightarrow \prod T$, where $< = >$ represents the toroid body that exchanges energy & information between limbs and heads, fields & particles.

Energy, lineal motion is not an action 'per se'. It needs in/form/ation, which directs energy to create an action. All yin=information has a drop of yang=energy said Taoists who knew the game. Thus all systems require a zero point of information to see the energy/information absorbed by the membrane and delivered by the toroid-body. In all complementary systems the information center gauges reality (particles, eyes & brains) and the lineal fields, forces or limbs move them. While the 3rd system combines both, energy and form, reproducing the parts of the system. It is the exi elliptic, conic or toroid body – figures that are combinations of lines and cycles. Since form=function 3 Geometric Forms in space determine 3 functions in time creating 3D 'complementary systems':

- *Max. I: Head/Particle/Informative caste:* They display the hyperbolic, broken topology of information, observed in most 'brains' with an excess of warping and form (cortex, black holes, Chromosomes, Chip design).
- *Max. E: Moving Limbs/Forces/Energy class:* They show a concave, spherical topology (tiled with smaller planes proper of any external membrane, guts or cilia – in which membranes occupy most of the surface.

E=I: Reproductive Body/Vacuum/Working class: The topology of the reproductive system is a combination of the other 2, a toroid or plane, which can be emitted by both, more complex systems in waves and cycles that communicate energy and form between the two dominant poles of the system - membrane and zero-brain.

Man is also an interconnected complex system with the eye and brain as his zero point, the cellular ovoid body that reproduces most substances and its external and internal gut membranes that exchange of energy and information with the external universe through 5 apertures, called senses...

- *The membrane* is a network of planar, self-similar cells, which encloses and isolates the inner organism from the outside world. It allows the transfer of energy and information with the external world through the holes of the network; developing specific functional holes: those for energy are called mouths, Those for information are called senses. They will be also positive or negative in its directional motion in order to absorb or expel wasted energy and information. All systems will have at least those 2 types of wholes in their strong, energetic, spatially extended membrane that circles the 'vital space or body territory' of the entity. *The external* membrane can be multiple: the most extended, less loosely guarded one is the territorial zone in which the informative center moves. In the organic Universe, spatial structures are always 'functional' and made of loose networks with motion, which therefore have, as any network does, dark spaces in the holes between them

- *The still center or hyperbolic north-south axis, or zero point* is the point that processes information and hence also the point of consciousness of any system, of any world, of any topology of 4 dimensions, of anything that exists, of anything that *is*. *To create a mental image, the pixels of the zero point* are able to form a boson, synthesis of all its units. In the same manner, a sphere can create in the center of its inner space-time a reflection mirror of all its cells – a zero point of the whole self. According to 5D metrics, the informative zero point

is far smaller than the membrane, but its time cycles and processes are much faster.

How energy absorbed by the membrane's senses become pixels of information in the zero point? Form and function together explain it: A key property of spherical membranes that matches form and function is the fractal similarity of all its cellular units, which are exchangeable and similar to the whole (Poincare conjecture in mathematics and Bose-Einstein statistics in physics). Since spheres are *invariant to rotation, its curvature is constant and shrunk with no tear into a point. Thus the sensorial cells of energy of the membrane shrink into pixels of the zero-point, which becomes a still map of the external Universe.* Look around yourself and you will not see any zero point. All 'brains' are internal, small, protected, isolated, yet connected, communicated by the sense of the membrane with the external Universe, forming its image within 'a mind.'

We can see that simple assembly in the graph, the eye-zero point system is the hemisphere (right side), in which the flows of the torus converge, coming from an external 'Riemann sphere', or membrane, joined with the zero point by a series of flows that reduce energy into denser form.

In the point in which that speed is reduced to zero, a zero point appears, in which a pixel mirror of the external sphere, corrugated into a linguistic image gives consciousness to the system. Then something magical occurs, the zero point processes that energy into information that forms and provokes a change in the position of the entire system. Since the zero point is the will of the system. The membrane develops the limbs of the system. The zero point is the brain and consciousness and the torus the physiological systems or flows of energy and information between both.

Causality determines the flow of growth: the external membrane gives birth to the zero point - it is the father element. Fact this which brings the theme of evolutionary development in time of a ternary structure in space.

- *The torus.* Finally the toroid-wave-ovoid-conic form combines both and can be emitted by both, as the torus is just a quanta of a sphere (through the intermediate plane state of the graph, coiled first into a cylinder then curved and pegged into the torus) or the zero point – detaching one of its donuts. Hence its \leftrightarrow external, communicative qualities, as a quanta, $|i-1$ or O_i-1 of E_i and T_i or reproductive, internal, exi qualities as an organ.

Since function=form topology shows physical and vital actions in geometric terms *whose invariance becomes the Invariance of topological forms in a 3D real space.*

This Ternary, topological structure produces ∞ self-similar forms in which a central zero point absorbs energy transformed into still perception, a toroid body reproduces exi cycles and forms and limbs and membranes move the whole system, in search of E & I to complete its 5 actions of existence... Though the specific combinations of energy or information of each species - defined by its 'vital' or physical, Universal Constants (energy/information ratios) – might vary, the space-time structures and cycles of all those social organisms will be self-similar.

Inner geometries are static and when they are dynamized by physical motions, become one of the ternary topological forms that fluctuate and adapt, deforming their external membrane, sometimes tearing it to transform into another of the 3 functions - as they feed, information and iterate themselves, $|<\sum i-1>|$, or get older, $E>I$, creating complex warped, fractal, branched internal physiological networks that act as fixed paths of energy and information, diversifying its organs – an entire new form of describing morphological evolution, palingenesis and physical flows is born with the sequential equations of space-time actions that show form, function and dimension acting together in their creation and destruction of topological flows. Yet at the end of the road, the same 3 functional topologies, albeit deformed and difficult to recognize, compared to the original being, will be kept as the functions they perform, ΔE , ΔI and ExI , feeding, information and reproduction define the function of existence of the being, which it deploys across its entire life-death cycle, as an expression of its inner physiological networks and external actions-motions.

IV. INVARIANCE OF SCALE: EMERGENCE LAWS & SUPERORGANISMS

1. Emergence of invariances, departing from the Generator Equation and its 2 formal motions, E, I.

We obtained each new invariance of the 5th dimension, departing from the previous one. This process is resumed in the Fundamental Law of the scalar Universe – *the Law of Emergence*, according to which the properties of each $i-1$ scale transcend diffeomorphically=adapted to the next scale. Hence departing from the duality of space-time and its inverse properties, we defined the co-invariance of the 5th Dimension, $\text{Se } x \text{ Ti}=K$, from where all other co-Invariances emerge. Thus we deduced them departing from those 5D metrics with the help of Existential Algebra, resumed in its formal Generator, $\sum E_{i-1} \langle x \rangle \prod T^i$ and its $3 \sum \pm i$ actions, E, I, exi, \sum , \prod ,

First we described E and I, which create complementary systems made of energy lines and informative cycles (open/closed strings) with invariant, O, | topological forms. Then we extracted from those 2 elements a 3rd one that combines, communicates or reproduces them, exi or \Leftrightarrow , the toroid.

Next we analyzed with the Galilean Duality of motion/stillness the similarity of Dimensions in Space, Motions in Time and Functions=Actions, deducing the 3 primary actions of the 5D-Universe, energy feeding, information gauging and reproduction, from the combinations of those 3 topologies of any single i -scale of space-time.

Then, we added the 4th, \sum , action of social evolution in herds & waves easily explained by the Galilean duality of i -continuous vs. $i-1$ quantic perception across 2 i -scales: $i-1$ waves/herds of self-similar \sum energy with parallel 4D-motions are perceived as 'continuous, whole i -spaces'. It is the Einsteinian continuum vs. quantic space and the particle-wave duality of physics; it is the problem of Individuals vs. Universals in philosophy, and Riemann's definition of a space as a collection of adjacent points with similar, undistinguishable properties.

Now we complete the analysis of the 5th Invariance, studying the creation of super-organisms through $i \pm 1$ fractal, cellular scales that become wholes, through the creation of networks of $\prod = T^i$ bits of information, *based in the previous duality of cells/waves that become continuous wholes across 2 i -scales.*

This means that the 3 topologic, invariant forms Limbs/membranes of energy, informative zero points and cyclic, toroid bodies become in the $i-1$ scale cellular systems, whose morphologies are not rigid forms but deformable networks of points bonded by flows/waves of energy and information (2nd Non-E Postulate) with a physiologic function: Those 3 topologies exist to perform informative, reproductive and energetic functions, adapting their form dynamically to those functions=actions, changing their geometry as distances=flows between points of the network shorten or lengthen but do not tear to maintain invariant the topological form=function.

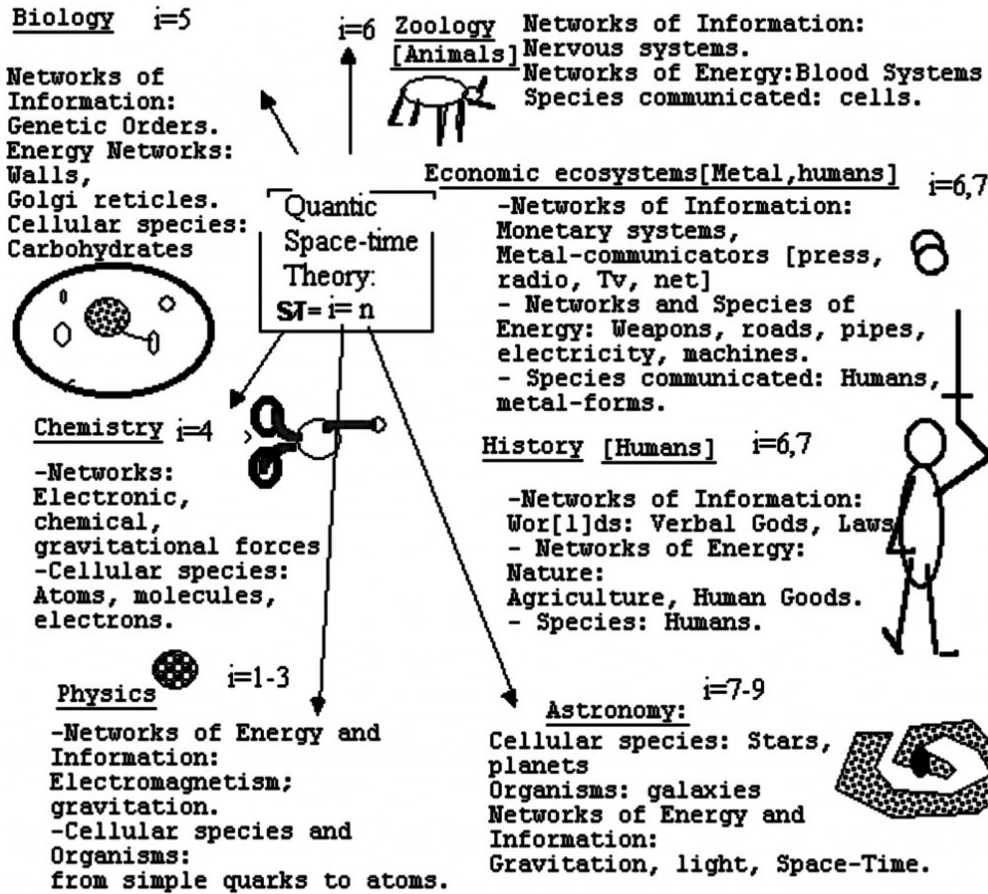
2. Cellular, physiological networks create Superorganisms. The i -scales and i -sciences of reality.

Thus the topological invariance becomes now a physiological invariance, and we define all systems as super-organisms with 4 elements extended in 2 i -scales:

1. Cellular units, when we perceive the system in the $i-1$ scale.
2. Networks of energy, membranes and limbs.
3. Networks of information – zero points and fractal, sensorial 'nervous' networks.
4. Networks that reproduce energy and information.

All entities are $i-1$ parallel groups of 'cellular societies' knotted by energy and information exchanges into networks that emerge as a single social i -form. Molecules are made of atoms and electronic networks; galaxies are composed of stars, which orbit rhythmically around a central knot, or black hole of gravitational information. Human bodies are organized by cells, controlled by the nervous, informative system. A tree is a group of leaves, branches and roots connected by a network of energy (salvia) and information (chemical particles). Cultures are

made of humans related by verbal, informative laws and economic networks made of human workers and consumers, that provide their energy guided by financial networks of information (salaries, prices, costs):



In the graph, an i -super organism is a group of $i-1$ cells joined by energetic, informative & reproductive networks that communicate them.. Those $i-1$ cells are also superorganisms made of small $i-2$ molecules joined by e, exi & l networks and so on and so on.

Thus we define any system as an i -superorganism made of smaller, similar $i-1$ super-organisms. And each i -scale of superorganisms & its i -cosystems are studied by a human ' i -science' but all of them follow the same Invariances & emergence Laws & Galilean Paradoxes of 5D Metrics formalized with the tools of Existential Algebra & Non-AE= i -Illogic Geometry.

We unify all Natural Systems as superorganisms using a single template definition, since they differ only by the i -scale or ecosystem in which they exist or the specific types of energy & information their networks are made of:

'A super-organism (name an organism) is a population of iterative (name a cellular species), related by informative (name a language or informative force) and energy networks (name a kind of energy), which combine into a reproductive network that iterates the organism.'

Fill the gaps with a specific species, language of information and force of energy and we can define any network-organism, which will be a 'part' of a whole i -plane or ' i -cosystem', composed of several species that occupy different 'vital spaces' but interact through the same language of energy & information:

An i -plane or i -cosystem (name a specific i -plane) is a population of several (name the species), related by informative languages (name their languages or informative forces) and energy networks (name the energies).

i.e.: The ' i -plane of 'zoology' includes all beings of relative size, $i=6$, that use light as information, called 'animals'. The i -plane 8, a galaxy, includes as parts, all celestial bodies of size $i=7$ related by gravitational networks, etc.:

- An atomic organism is a population of (electronic) energy and (nucleonic) information, related by networks of (gravitational) information and (light) energy.
- A molecular organism is a population of atoms, related by networks of gravitational energy and networks of electromagnetic information (orbitals, London, Waals forces).
- A cellular organism is a population of molecules, related by energetic networks (cytoplasm, membranes,

Golgi reticules) and genetic information (DNA-RNA.)

- A human organism is a population of DNA cells, related by networks of genetic, hormonal and nervous information and energy networks (digestive and blood systems).

- An animal ecosystem is a population of different carbon-life species, related by networks of light information and life energy (plants, prey).

- A historic organism or civilization is a population of humans, related by legal and cultural networks of verbal information and agricultural networks of carbon-life energy.

- An economic ecosystem or nation is a population of human workers/consumers and machines, related by networks of digital information (money, audiovisual information, science) & energetic networks (roads, electricity)

An economic ecosystem differs from a historic organism because they use different languages of information (civilizations use verbal or ethic laws while economic ecosystems use digital prices) and include 2 different species: human beings and machines.

- A galaxy is a population of light stars and gravitational black holes, related by networks of gravitational information and electromagnetic energy.

-A Universe is a population of galaxies joined by networks of dark matter and energy.

In a Universe of ∞ scales – hence of *Absolute Relativity* - the i-number is relative to the limits of the perception of the observer that classifies them. So as humans we perceive between 2 i-limits – the atom and the galaxy, which might be self-similar, as black holes and quarks, their knots of information show self-similar equations in 5D metrics (1.5) and 4D metrics that models a galaxy as a hydrogen atom in the Einstein-Walker space. In any case they form the minimal and maximal scales of Human Sciences, creating our Se-size arrow.

Thus, if we use a decametric scale, *for the physical World* (Graph I.1) with 2 limits beyond our perception, 0 (gravitational space-time) and 10 (Hyper-Universe), we establish an i-parameter of space-time planes, $\Delta Se = \Delta i$, to classify all those relative scales of spatial energy and temporal information, each one studied by an i-science that in the 2nd part of this work we analyze with the metrics and invariances of the 5th Dimension. While in parallel, we can also establish a relative i-scale to study Living Systems and the Human World. Thus the main |energy and 0-clocks of time of each scale for physical and biological worlds will be:

1st Scale: Open strings of energy and closed time strings: Strong Forces & Gravitational space-time.

2nd Scale: Bosons: |Light and O-Photons.

3rd Scale: Fermions: |Electrons & O-quarks.

4th Scale: Atomic Organisms: Periodic Table.

5th Scale: Inorganic and Organic Molecules

6th Scale; Life Cells. States of Mater: Energetic Gas, Exl Liquid and Informative Solids.

7th Scale. Life organisms; Energetic Plants; Informative Animals. Organic Metal-Machines

8th Scale: Planets. Human Civilizations; Economic Systems.

8th Scale: |Stars & O-Black holes.

9th Scale: Galaxies, which might be the beginning of a new Scalar Game.

10th Scale: Universe, which might be a Gas cloud of Atoms of the new Scalar game.

3. The 4th paradigm of science. Creation of social scales: information flows from I+1.

Most beings are made of self-similar i-1 cells, particles or social individuals, which put together by networks become an i-organism, unit of a higher social i+1-scale. And so 3 scales suffice to define each i-being.

The key property of such $i \pm 1$ systems is the emergence of *the invariances of the previous scale, with a degree of self-similarity which is maximal in the invariance of the 2 e-I arrows and its combined actions*, from where the other invariances emerge and minimal in the 'measures' of its specific geometry – hence the ignorance of those invariances by what I call the '3rd paradigm of science' – the age of exact measures that seek

the hows of the Universe, started by Galileo. Now in the 4th paradigm, which the study of 5D and its invariances starts, we respond to the whys of those hows; so topology and similarity, which are wider concepts substitute geometry and equality (redefinition of the 3rd Postulate of Non-E Geometry, VII). *Whereas the Invariance of the 5 dimensional functions=actions of space-time and its sequential symmetry in 3±i time ages (VI) becomes the why, the creative program of the Universe, which emerge from each i-1 cellular scales into the whole superorganism. This means the topological properties of the simplest Euclidean 3D-space-time being (light) are shared by the 'minds' of all new scales; the 4+1 quantum numbers of electrons are shared by all atomic species; the drives of existence of cellular life by its organisms, and the individual behavior and mind ages of human beings (VI) transcend into the socio-cultural behavior and art ages of civilizations, their super-organisms. So art is the mind of civilizations that goes through 3 ages/styles, an epic youth, a classic maturity and a baroque decadent formal age before extinction, as your mind goes through 3 ages. But, since 5D metrics slow down time as Se-spatial size grows, the 'ages of civilizations' are 10 times longer in the commonest decametric scale of the Universe than individual lives, which is the origin of the 800-80 years cycles of civilizations and generations (6th).*

Creation thus happen by emergence between scales and within the same scale by iteration of functions. For example, human organs are copied in its function, adapted to metal, a bigger atom, hence we create machines, that keep in a larger scale the original human function (so chips think, cranes lift like arms and cameras see).

So the key concept of the 5th Dimension is 'organic networks', which perform vital actions across 3 scales.

For example, in the action of feeding, spatial herds of energy $\sum E_{i-1}$, feed more complex organisms, whose informative, still networks are made of 'neuronal networks', $\prod T_i$, with axons T_i 'invaginate' and control the exi body that preys on the external E_{i-1} , energy, moved by E_i -limbs. And so we find in most natural systems a ternary differentiation between cellular groups that become energetic, reproductive and informative networks.

The 3 topologies of a single space-time displace 4D motions guided by 4 actions: energy feeding, information gauging, reproduction and social evolution in parallel herds. And then, as viruses put together, bodies, heads and limbs, an assembly across 3 scales takes place: the external i-1 scale of 'energy quanta' that feeds the herds of body cells and their organs and senses, to 'transcend' finally into a 'bosonic' zero point of information fusion into a mind-network, *which is a whole new scale, i+1 of perception that gauges and controls the entire organism.* Those 5 actions=drives of existence define in biology living beings. Hence the Universe is a living super-organism, with a 'Plan', an existential finality: to create new scales of more complex super-organisms, departing from the simplest energy quanta and informative bits (open and closed strings) evolved into particles that become atoms that become molecules that become cells, organisms, planets, galaxies and Universes. Thus the why of reality is the creation of social, physiological networks that become complementary super organisms:

'All what exists are organic, fractal systems, made of self-reproductive, complementary, social, topological networks of energy (bodies and fields) and information (heads and particles)': $\sum Se < X > \prod T_i$

Those networks have internal parts, attached to 'external apertures' that absorb and expel energy (mouth, anus, digestive systems) and absorb information (senses) distributed to all cells by the internal networks or expel it as a language of information that communicates the organism with similar individuals of an i+1 society.

E-I-Exi Actions follow the Invariant Law of the 5th Dimension, $SexTi=K$ (bigger spaces are slower in time). Thus since energy quanta and information bits are smaller than the organism, the actions of informative perception and energy feeding are faster and more frequent in time than reproductive and generational actions. Information gauging is fastest since it uses the smallest pixels-bits; the minimal 1-scale of its relative universe, pure space quanta to create a constant, 'continuous' image of the i-present space-time plane in which it exists.

Thus we translate $SexTi=K$ metrics in the law of inverse spatial range and time duration:

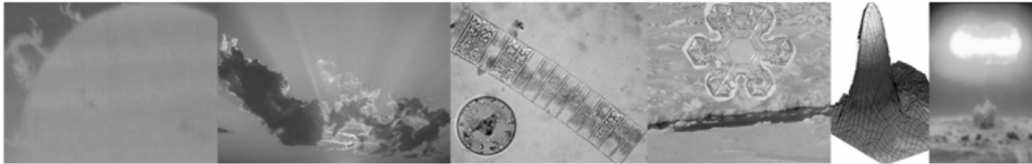
i-3 Informative pixels: $f(\text{gauging}) < i-2 \text{ energy bites: } f(E) < i-1 \text{ reproductive seed} \rightarrow f(\text{exi}) < \text{Organism: } f(\sum E \Leftrightarrow T)$

V. CAUSALITY OF TIME ACTIONS: THE LIFE-DEATH CYCLE.

Age of Energy, Classic age of Harmony, Old Age of information, Explosion and Death:
Human: Youth (0-20a.); Maturity (20-40); 3rd age and death (60-80).

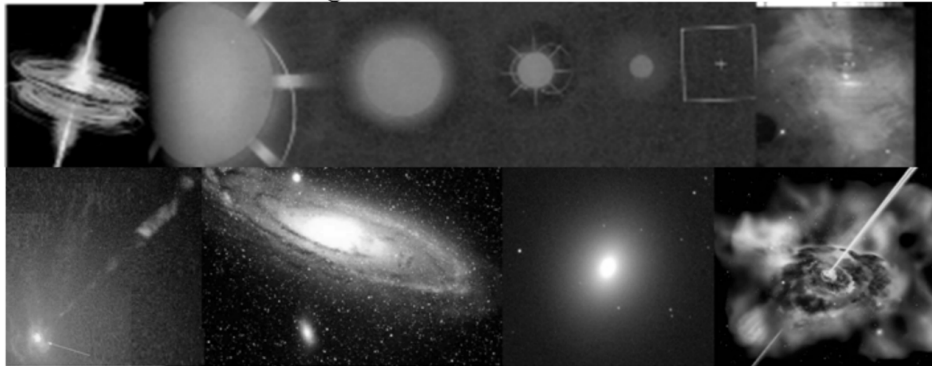


Culture: Epic, Lineal Art; Realist, Classic Art; Baroque Art. War.

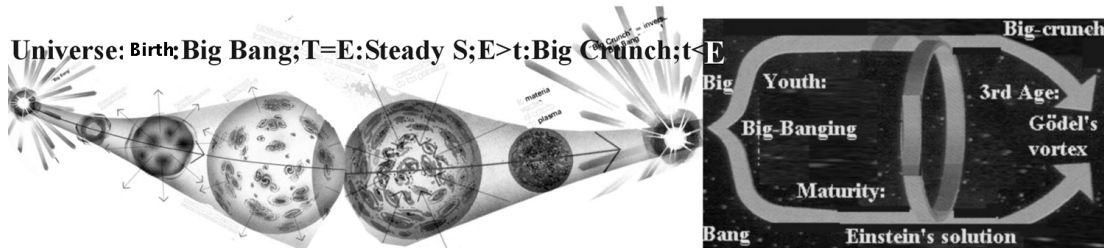


Matter: Birth: Plasma Max. E: Gas E=T: Liquid Max. T: Solid T (Mc²) <<E

Star: Birth: Nebula. Max. E: Gigant star. E=T: Sun. Max. T: White Dwarf. T<<E Nova



Galaxy: Jet Max.E: Irregular. E=T Spiral↔Elliptic. Max.T: Globular T<<E: Quasar



The 3±i ages of the Life/Death cycle: Conception->birth->Youth-Maturity->3rd Age->Death.

The invariance of physiological networks in superorganisms determines the final Invariance of the 5th Dimension, the life-death cycle of existence and its sequential time order in all beings shown in the graph:

- i-1: Birth: We are born as a seed of information that:

-Max. Energy x Min. Information: The being goes through an energetic youth of fast motions, in which the energetic limbs and external sensorial membrane dominates.

-E=I: Balances energy and information in a mature, reproductive age, in which the internal, topological, reproductive system dominates.

- Min. Energy x Max. Information: Till it warps all its energy into form, in the 3rd age in which the central, hyperbolic, informative brain/particle singularity is dominant. This age ends in:

- Min E x Max.I < $\sum E_{i-1}$: Death: Exploding back into energy, erasing its information in the process of death.

Thus the invariance of the life/death cycle and its sequential ages is followed by all systems, even in matter (energy=gas state, liquid= reproductive state, solid=informative state), and the Universe born in the big bang, evolved as the cosmological constant changes into a steady state that collapses into a Gödel's vortex. Since the 3 solutions to Einstein equations represent ordered sequentially in time the 3 ages of the cosmic 4D-scale.

3. Evolutionary development. A glimpse to the birth and death phases/ages of the existential cycle.

We can't study in detail all the laws and i-logic sequences (VII) of the life-death cycle, thus we shall consider briefly the less understood, when the being exist in the lower i-1 scales, birth and death.

- Eli > e_{i-1} : Conception: When energy saturates the internal networks of the super-organism the action of reproduction imprints internal information into the excess of energy, creating a self-similar organism as a *seed or cell of the lower scale*. Often the process involves 2 entities specialized in information (female) and energy (male) or with opposite E-I coordinates. So electrons with opposite spin and quarks absorb energy and produce seminal rays of light and gluons that give birth to new electrons and quarks; crystals produce 'cells' that keep reproduce new fractal cells. Humans produce lineal, energetic semen and cyclical ovules: $E_i < e_{i-1} \times i_{i-1} > I_i$.

- Birth: $e_{i-1} < \sum e_{i-1} > e_i$: The fecundated ovule, e_{i-1} , reproduces into a clonic, social wave, \sum , which evolves morphologically into a ternary system till emerging in the same plane of i-xistence than their parents. This fetal phase follows the dominant arrow of lifetime, information: $E(\text{membrane}) > \text{Toroid}(ex_i) > i\text{-zero point}$.

It all starts with the creation of a hollow membrane, departing from the initial cell that multiplies into a herd, $e_i < \sum e_i$, forming a sphere, the 'morula', which absorbs energy from the external world and differentiates into two relative i-E poles setting a diffeomorphic E-I dimension - the I, 'animal pole' on top, in the height, informative dimension and the vegetal, larger pole in the bottom, forming the blastula. Then the sphere invaginates forming the endoderm a hollow that communicates both poles, the future digestive tube that completes the creation of the energetic system. It is the gastrula in a biological organism; an electromagnetic field created between 2 particle-points. The dual low between both E-I poles establish an 'arrow of entropy' from the bottom to the top transferring energy and an arrow of information from top to bottom transferring information. And this dual convective flow in cyclical motion will be perceived by a top or central zero-point as information, mapping an image of the external world - a brain, a DNA nucleus. Finally, a 3rd layer is born, the mesoderm of muscles and connective, tissue \leftrightarrow . So, gastrulation gives birth to 3 i-planes, the ectoderm, endoderm and mesoderm origin of the 3 main physiological networks dimensions of any super-organism, the energetic, reproductive & informative networks. And this patterns can be generalized to all physical and biological systems that change the topological structure of the embryo, from a simply connected surface (sphere-like), to a non-simply connected surface (torus-like); and differentiate cells into 3 types (endodermal, mesodermal, and ectodermal). Each will differentiate further into 3 sub-systems plus a i+1 zero point that integrates as a 'whole' the entire being (brain system in humans), for a total of $3 \times 3 + 1 = 10$ dimensions of existence - *the commonest Non-AE system of the Universe from 10-dimensional strings to 10-dimensional man*.

From a plant seed with an external membrane and a middle body in which the zero-point of genetic information will feed on, as it grow the axis in its lineal, young, energy phase, to an animal embryo just described; from an atom with a hard crust, the electron that exchanges $E \times I \neq$ rights with the central informative, gravitational quarks to a star system with its hard crust, the Oort belt, a series of toroid, planetary cycles and the star zero-point, itself divided into an external energetic gas cover of maximal Temperature, a body of magnetic cycles that guide plasma from the central zero point of maximal density to the surface, we see repeated this 3

topological construction ad infinitum (IV,2), either in a lineal bilateral, moving shape with limbs, body & brain on top or a cyclical, informative one, with spherical membranes, an informative center and a toroid body ((IV,I).

- Max E: |-Youth: Networks are flexible webs of points that can adopt different topologies by modifying the distribution of those points, so as the fetus grow it differentiates into the 3 topologies of existence, as it acquires the 4D dimension of motion in the i+1 ecosystem the coiled, informative, radial or spherical state changes topologically into the uncoiled, bilateral, anteroposterior, lineal, moving form. In static systems of spherical nature as galaxies or ovum are, the zero point is kept in the center, but if the species lives in a plane as the Earth is, the membrane evolve into a bilateral, planar forms with a length motion and the zero point migrates from is center to the forward head in which the informative cells reside to see in length, or in the relative dimension of information - height that allows perception of a wider angle - as in men or antennae.

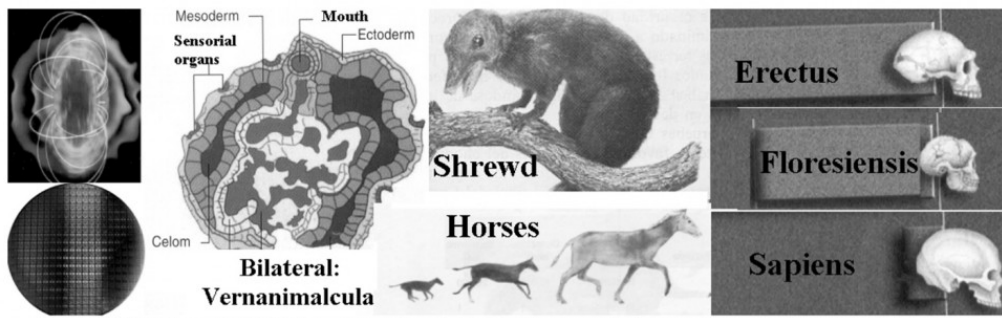
- E=I. Mature, reproductive age, when the Function of existence is maximized (Max. Exi->e=i). It is the longer stage, perceived as 'beautiful', balanced, from spiral galaxies to classic art, to actors in their 30s.

- 3rd informative age: The informative, selfish dominant system keeps absorbing energy from the other 'slave networks' till it exhausts it. Then the organism warps and finally dies.

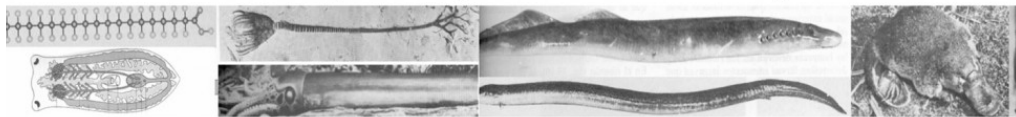
Death: $e_i < \sum E_{i-1}$ According to the opposite properties of E vs. T, the long time arrow from energy to information or 'life' E->I, lasts in time but has a small space range, while the reversal from information to energy or 'death', I->E, explodes into a larger space region in a short time. So the biggest space, the cosmos created in a hypothetic big bang death lasts during inflation 10^{-43} but creates a huge Universe. Thus Big-bangs are physical deaths which happens in all scales (graph VII,1). The law of range of forces also follow that co-invariance: the shortest range corresponds to the weak force that trans-forms particles of bigger informative mass and lasts longer in time. While the invisible force with 0 information, gravitation has an ∞ range: $0 \times \infty = k$

4. The plan of evolution: The 3±i ages of speciation of species.

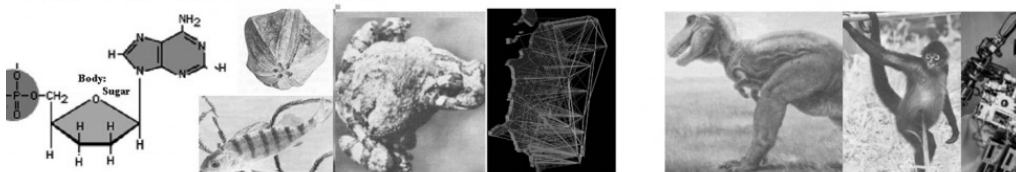
CONCEPTION AS A BLACK HOLE OF MIN. SIZE = MAX. INFORMATION



YOUTH AS A LINEAL, ENERGY, TOP PREDATOR SPECIES, GROWING IN SIZE



REPRODUCTIVE MATURITY: III AGE: GROWTH IN HEIGHT=INFORMATION



Evolution repeats the 3±i ages of the life-death cycle in the i+1 scale, as organisms are \sum quanta of the i+1 Species. But since a Species is a free herd after 3 horizons=ages of evolution similar in their topology to the 3 ages of organisms (graph), the 3rd informative species can emerge as a social super-organism, related by a common language/network of information. as ants and humans did.

Since in all space-time scales species follow a future arrow towards more information, which increases in 3 horizons and finally evolves individuals into societies, herds and macro-organisms.

So the 3±i ages of species are: Small informative seed (first small species-fetus)-> Energy feeding (growth) -> Young age when the species growth in size -> Reproductive/radiating age-> follows by a reproductive 'radiation' of the species as a new 'top predator', while the individual gives birth to an offspring-> Informative age/speciation of the species -> extinction/death & survival of the son species.

This sequence applies also to the analysis of the 'frozen horizons' of the big-bang and the particles it created.

Thus evolution transforms energetic, young species into old, informative ones in 3∑±i horizons, self-similar to the ages of an organism. *Since species are super-organisms in which each individual is a 'cell' of the species:*

- *Seminal birth.* In the graph, the seminal, 1st species packs a lot of information in minimal space: It is the Black Hole, the chip, the 1st bilateral animal vermanimacula, the 1st mammal (shrewd), the 1st horse; the 1st Homo Sapiens, Homo Floresiensis, a dwarf with an evolved brain of similar morphology to that of Homo Sapiens who discovered technology; and the first, future 'self-reproductive machine' (nano-bacteria)...

- *Energic youth:* Species grow in lineal planes & size as the carbohydrates, fishes & flat worms of the graph.

-Then the species suffers a reproductive radiation colonizing new ecosystems as a top predator.

- Next the species suffers a speciation, according the ternary principle (VIII,3) into 3 subspecies, one dominant in energy, another in information and a 3rd one balanced in both parameters.

- Finally, a new more evolved top predator of Max. ExI extinguishes the species in its primitive herd state of lesser efficiency and higher spatial extension or the informative species evolves into social organisms, joined by a common language of information stronger than the individual and survives (pheromonal ants, verbal humans).

Since Evolution=speciation *creates species by maximizing any of the 5 actions-dimensions of existence:*

Hence we talk of a first decoupling of species with either evolve socially into ∑- herds based in the similarity of 'external' bodies; or evolve into ∏- informative networks based in the similarity of internal heads, according to the new postulate of 'equality' (3rd postulate of Non-E Geometry, VII, 3), which is the pre-condition of social evolution. Since equal species evolve together and different ones hunt each other from atoms to humans, who also become racist when their external skin seems different or talk a different inner language.

A 2nd speciation maximizes 1 of the 3 only Invariant topologies=organs that create 3 types of new 'top predator' species: Those with better Energy-force or better Information-Brain or more balanced internal networks (Max. ExI->E=I) that we will use to explain human evolution from the ape to our 3 main races (6th).

In cells, *the combination of ∑ vs. ∏ and E, exi, I differentiation creates 3 arrows of cellular evolution: E-digestive cells with big body and minimal i-nuclei: E=I, muscles, single cytoplasmic cells with multiple, small nuclei; and i-neurons with huge nuclei with multiple cytoplasmic branches (dendrites).*

In Cosmology there are plasma herds (stars) vs. ∏-quark bosons (black holes) and 3 'families of i-quarks'.

The evolution of species also follows the 'Oedipus Px', as new sons-species are better and often extinguish their fathers. So sons take advantage of parents; mammals extinguished reptiles and weapons, human beings.

We conclude that the 5D Invariance of 3∑±i actions combined with the Invariance of 3 Topological Forms=physiological networks proper of any 3D super-organism are the origin of the 3±i ages/horizons of organisms and species. As actions and topologies have a causal order equal to the invariant sequence of the 3±i ages (III,2):

ΔI (seed)->ΔE(youth)->Δexi(reproductive maturity)->Δ∑(social evolution)->Δ∏(creation of superorganisms)

Thus all the events and forms of all parts and wholes of the fractal, organic Universe are indeed created by the Generator Equation of the 5th dimension, ∑Ei-1<X>∏Tⁱ that represents the 5 actions of existence.

VI. INVARIANCE OF SPACE-TIME 'MIND' LANGUAGES: POSTULATES OF I-LOGIC GEOMETRY.

1. Similarity between 5 actions & postulates of i-logic Geometry: Invariance of space-time languages.

The main equivalence of the Universe happens between space, time and its scientific languages, mathematics and logic. Since Euclid we know mathematics can be reduced to 5 Postulates, which is the 'magic number' of $3\sum \pm i$ actions and dimensions of the Universe. It thus seems 'logic' to relate each dimensional action to each of those postulates that we redefine to adapt them to a multiple space-time reality in which points grow as we perceive more of it and have internal parts of energy and form, communicated through 'fractal waves' of self-similar points of a lower size-scale, forming systems of cellular points that appear as planes from a continuous far away perception but become topological, dynamic networks with 'holes' and dark spaces in close range. Thus the 5 postulates of Non-Euclidean, fractal geometry of Multiple Spaces and Times and its actions are:

ΔI : 1st Postulate: *'A fractal point is perceived as a non-dimensional world, isolated from its external universe by a membrane that feeds on energy and gauges information for its 3 inner topologic, organic, dimensional networks.'*

Thus the 1st postulate defines a fractal point as an entity which is unperceived from the external point of view, as the membrane camouflages and isolates it, breaking space-time in an outer Universe and an inner world that in closer view shows 3 internal, dimensional, physiological networks that process energy, information and combine them to reproduce the point. The point gauges information, ΔI , in stillness for its inner bosonic mind network – an infinitesimal mapping in a synoptic language of that external Universe.

And so the 1st postulate is related to the 1st action of all entities that exist: ΔI – to gauge, process, perceive and map information, searching for energy fields to which it will move to absorb energy. However this 1st postulate defines the point in stillness, unperceived externally –in the act of gauging information which requires 'stillness' to 'focus' the perception of that external world.

It is the 2nd postulate that 'shows' the point due to his absorption and processing of energy as motion, perceived externally as an external one-dimensional cyclical trajectory, a 'world-line', the 4D of relativity:

$\Delta E, \Leftrightarrow$: 2nd Postulate: *'A line is a fractal i-point that traces a relative 4 dimension of temporal motion in the external Universe, or communicates a wave of fractal points from a lower i-1 scales with a similar point.'*

The point has 3 unperceived internal dimensions and a 4th Dimension of time-motion, that we perceive externally as a trajectory, achieved as the point feeds, process and 'ejects' energy, ΔE , in the opposite, diffeomorphic direction to its motion and gauging, giving birth to the 1st inversion of E-I Properties.

The 2nd i-Postulate defines a 4D world-line by adding motion & curvature to the point in search of ΔE that is perceived as a line of distance (Galilean Px.). it is also *the postulate of communication and reproduction between 2 points, $E \Leftrightarrow I$, that share a bi-dimensional wave of micro-points, E_{i-1} and T_{i-1} , of energy and information that bonds them or reproduces from 2 points of 'opposite sex' a 'seed', $e_i: E_i < e_{i-1} \times t_{i-1}, > T_i \rightarrow e_{i-1}$*

3rd Postulate: *'2 points are similar when their external, spatial perimeter or inner information is equal. Similar points form organic networks by sharing their energy and information. Dissimilar points ab=use each other.'*

It defines how species perceive and feed on their relative energy, ΔE . Since all systems of the universe display a dual behavior: they prey on different systems to absorb energy and information for their bodies and minds and they evolve eusocially with members of the same species to reproduce and become bigger, more complex eusocial super organisms, sharing energy and information through common networks that create a new whole made of cellular parts. But ,and this is the catch of i-logic points, since we can't perceive the inner parts of a zero-point - its hyperbolic mind – beyond its event horizon/membrane points camouflage as similar or invisible to their preys to feed on them (P.1). So paradoxically the biggest top predator of the Universe, the black hole is so small that even human 'dummies' will attempt to make it on planet Earth (CERN) thinking they will evaporate.

Σ i; 4th Postulate: 'A plane is a network that joins points through waves of energy and information.'

It is the postulate that defines a herd of self-similar points: Σ Non-E fractal points gather into social networks, topologic, web-like Natural N-spaces with 'dark' holes that substitute the continuous Space of Real E-points.

$\sqcap \pm i$; 5th Postulate: 'Non-Euclidean points perceive energy and information: A fractal point has inner apertures to the world, through which multiple waves of energy and information can cross.'

It explains the bosonic mind in which flows of energy become pixels of form that map the Universe and start any action process $\Delta I \rightarrow \Delta E \rightarrow exi \dots$. Thus, it is the site of the information arrow that orders parts into wholes, the neutral element of mathematical groups, which perceives a new i-scale in its infinitesimal mind, reflection of the larger Universe and then moves through its 'axonic' network, \sqcap , the i-1 cellular herds of the lower body scale.

- 3 postulates define the 3D of Non-E Space: the fractal point (1), the line-wave (2) and the network-plane (4).

- The other 2, \Leftrightarrow (4) and \sqcap (5), deal with i-logic creation of complex systems and behavior – how species relate to each other according to their relative equality=parallelism or perpendicularity-dissimilitude and *how they perceive, creating minds, maps of the Universe*. They define Non-Aristotelian 'i-logic' as they deal with dual arrows of time, E and I, communicated simultaneously, \Leftrightarrow , creating a present, complementary system, $E \Leftrightarrow I$; and a relative ∞ number of simultaneous, bosonic fluxes, which create an event – unlike the simple one-dimensional, uni-causal logic of Aristotle *which only uses an arrow $A \rightarrow B$ and its faulty Physical version, $I < E$, which only describes the arrow of explosive bangs, entropy and motion*. And so they give us a more complex vision of how the mind of the Universe creates its beings of space-time, generated through its 5 actions: $\Sigma Ei-1 \Leftrightarrow \sqcap T^i$ - the Program of Existence, whose I-logic Geometric laws each part of reality follows.

Thus the 5 postulates of i-logic geometry *are the last invariance of the Universe - the invariance of its minds, which use Logic to 'think' causal, $E > I$ time sequences, ethic behavior to love in parallel equal beings and prey on different species and Non-E Mathematics to 'see' a space made of points with parts, communicative waves network of points*: The 1st postulate defines the ternary topology of fractal points; the 2nd postulate explains the interaction between 2 points connected by a wave of communication or 'line'; the 3rd postulate explains the 'ethics' of interactions between 2 points, according to their relative equality, which will bring them together into a social network or dissimilarity, which will make them not interact or enter into a Darwinian relationship in which a point absorbs the energy of the other. Self-similarity is required to start an organic process of eusocial evolution; or else systems that do not understand their information use each other as energy, in Darwinian hunting processes or ignore their paths. The 4th postulate defines the creation of networks made of systems of points, interconnected by flows of energy and information across multiple scales of space-time that create the diffeomorphic, complementary systems of reality. Finally the 5th postulate explains the processes of absorption of waves of energy and information that the zero-point gauges into minds that act-react with the Universe.

2. Non-Euclidean Geometry: i-Points communicate waves forming networks-planes with dark spaces.

The 1st postulate studies points with form and energy. Points with no breath (Euclid) create the abstract Cartesian graph of an ideal continuous space-time but reality is made of fractal points that grow in size when we come closer to them. And so stars are points in the sky that become huge as we come closer to them. And a microscope discovers an entire world in the minimal size of a cell. Leibniz said: 'the smallest point is a world in itself'. This is the meaning of a fractal point, whose internal parts respond to the 3 topologies of a 4-dimensional Universe: an energetic, planar or spherical membrane through which a relative ∞ number of waves of energy and information cross; a cyclical, toroid region with reproductive organs and a hyperbolic, informative center.

We call them fractal 'i' points, the next vowel to the A-ristotelian, E-uclidean simplified version of its space-time languages; the symbol of information; of the i-scales of space-time in which they exist and a visual image of its 2 components, the temporal, informative, cyclical part, o, and the spatial, lineal, energetic one, |, the body

and head of a biological Point; or the field and particle of a physical system (Principle of Complementarity).

Thus the Non-Euclidean, Non-Aristotelian 5 postulates that define the metrics and invariances of the 5D of space-time is called i-logic geometry, as it is both a geometric and logic description of the 5th Dimension. 3 postulates create the laws of Non-E Geometry defining 3 dimensions of space, the i-point, wave and network. While the other 2 are i-logic postulates that explain the laws of energy and information exchanges across several i-scales: the creation of i+1 minds (5), and the exchanges of Ei-1 energy and li-1 form between points according to the similarity of its external membranes and internal i-1 parts (3):

-The 3rd deals with equality that becomes in i-logic geometry similarity as we can't have all the information on the inner parts of the point or geometric figure, isolated partially as a dark space by its external membrane.

- The 5th postulate deals with the properties of zero points and their inner bosonic spaces where still Perception happens (bosonic minds) as ' ∞ points of space collapse in 1 point of time' disappearing. In other words, it deals with transferences of energy and information among $\pm i$ scales, perceived from an external p.o.v. that sees only from 1 space-time scale a 'magic collapse' (i.e. quantum waves collapsing into particle points), or curved deformations (i.e. General relativity analysis of the unperceivable gravitational scale from the human light p.o.v.) or big-bang=death explosions (i.e. sudden expansion of the inner form of the point unwrapped as energy).

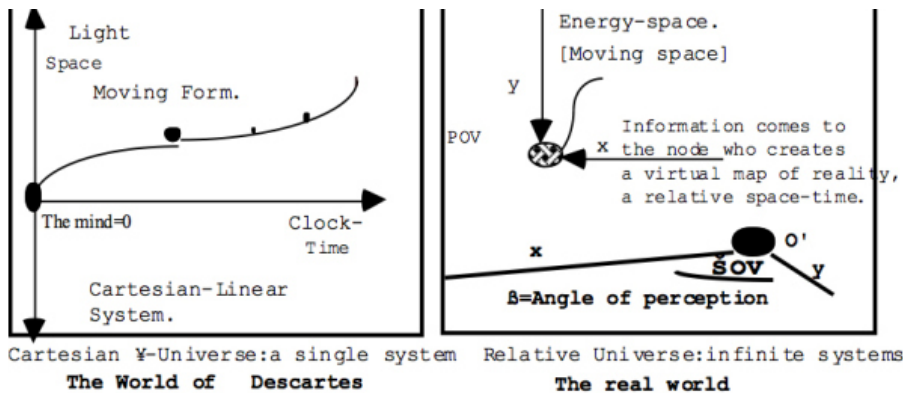
They break the Aristotelian Laws of identity now similarity, as inner parts are not fully perceived (3) and single causality, as complementary flows of energy from Ei to Ti and information from Ti to Ei are dual, simultaneous.

Thus we perceive in our 'simultaneous present' scale two causal flows of a relative 'future particle/head of information' and a relative 'past energy body/field' such as: *Past x Future = present*.

Whereas the Future is first contained in the particle-head that gauges information and logically maps out its future behavior, which then is transferred to the past body/field that displaces it. *The future is created within the particle/head first and as such it 'already exists' within the inner parts of the zero point as a probability that will become when it is imprinted in the larger scale of the body actions and finally if the 'logic plan' of the zero point is realized in its external ecosystem or i-scale it will become.* And so the logic of the Universe is ternary, as we must account to describe an event, with the future, logic plan, the past energy that will be imprinted by it, and the 'reality check' of the i-cosystem in which the complementary organism co-exists in present.

We describe i-postulates by pairs, as 1st & 5th describe both fractal points from a geometric & logic p.o.v., 2nd and 3rd describe waves of communications also from a spatial-geometric and logic, sequential p.o.v while 4th integrates them all when we consider $i \pm 1$, 3 planes co-existing together as they create a social super-organism.

3. 1st and 5th Postulates: The zero point as a bosonic mind. The ego-self.



Scientists use a Cartesian frame of reference – a space-time continuum with a single, lineal clock-time due to the Euclidean nature of our eyes, as Descartes noticed, stating that his graph describes 'the world' of his mind; but other minds could have different space-time perception.

He was right. All systems have a diffeomorphic, 'local' central or upper knot – the zero point or point of view (abb.p.o.v.) - that processes information from its relative perspective and perceives a 'still', pixeled map of reality

constructed as a reflection of the external universe – a mind – with its relative language, which can be visual in B&W or in 3 Colors (humans) or in 4 (birds), or a map of smells (dogs) or pheromones (ants), or made with gravitation, which is invisible to us (quarks, black holes). And so 3 questions matter most about those minds:

- *The process of creation and perception of those mappings, which is described by the 5th postulate as a bosonic process that curves and fluxes a wave of larger energy quanta, selected by the membrane into an infinitesimal still mind, origin of the Galilean Paradox, as we perceive only small changes in that mind-map.*
- *The existence of dark spaces, as we select only certain 'linguistic information' of the total available in reality, mostly in our i-plane of existence and useful to perform our existential program of actions.*
- *The existence of selfish, subjective egos, which balance the, selfless, objective, Absolute Relativity of the Pantheist Universe and its 5D common invariances that makes all species self-similar: Yet the self-centered mind thinks otherwise as his p.o.v. perceives reality still, without motion, dead. So it treats other languages it doesn't understand and the p.o.v.s., who speak them as 'dead, mindless energy', smaller than it-self. Since we see our nose bigger than Andromeda. Thus, we define each of the ∞ Egoist=subjective=Aristotelian Minds-Gods, relative center of a surface of energy they move and prey on from an Objectively, Non-AE perspective:*

'Every point of view=mind feels, subjectively, from his point to view, the center of the Universe, but it is only a zero-point, an infinitesimal mirror, which maps in stillness a minimal part of the ∞ information of the ∞ Universe'.

The paradox of the Ego explains why Darwin is still denied, as we MUST be more than animals; why Galileo died in house arrest, 100 years after Copernicus, because the Earth LOOKS still and the Center of the Universe, from our p.o.v; why $\frac{3}{4}$ of mankind believe the fairy tales of Abrahamic religions while a Taoist-Buddhist objective view or the metrics of 5D matters to so few, because we CANNOT BE equal to all other beings; why we spend billions to go to Mars to see if there is 'life', when all points of view, in all scales also perceive, feed, reproduce and love. It is the duality between the arid ego-trip of happiness that we prefer to the painful truths of a living, pantheist Universe we should choose, because *those ego-trips are* the main cause of extinction of species, unable to respect the power of the whole, considering themselves instead special sons of god, entitled to control and destroy nature, till the Newtonian laws of action reaction, extinguish them. So at CERN humans will do black holes and probably die because *they seem to small at birth to eat up the planet Earth, or will do instead metal-self-reproductive nano bacteria* because they are too small to poison the planet – in the same manner Pasteur was laughed at for decades because 'germs' were too small to kill humans – or are making military robots that will extinguish man, because they are DEAD MACHINES that surely can never become self-aware as a species.

Fact is all are Buddhist Atmans, fractal, bosonic knots, souls, minds that map reality with different languages.

4. Communication & Reproduction: The 2nd & 3rd Postulates: Parallel love vs. Perpendicular preying.

All systems perceive or process information with their linguistic or geometric minds; using that information to guide their body towards fields of energy in which they feed. Yet since resources are limited, to achieve the 2 simplex actions of existence, all systems prey in the energy and information of other species causing their death in Darwinian, preying events. We thus talk of two ethical arrows in a universe of limited resources:

Top predators obtain energy from their environment absorbing it from species with weaker energy bodies and informative heads, provoking Darwinian, predatory relationships, causing their death in preying events.

But if they have similar bodies they hunt in parallel social Σ herds with higher Σ ExI force, surviving better.

And if their minds understand each other's languages they coordinate complex actions with even higher Π =T(exi)' 'existential force' across several scales, against individuals and herds, winning in the survival battle.

Thus the origin of eusocial behavior and social evolution is ultimately their higher Darwinian survival

Certain basic geometrical laws guide such social, 'ethic' behavior, as function and form are *always* related:

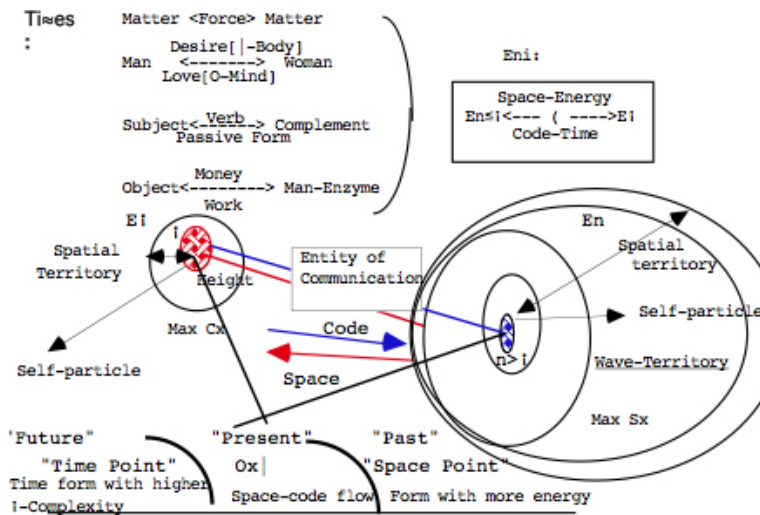
X: *Perpendicularity* rules preying-predator or Master-submissive systems in which Max Exl penetrates Min.exi:

- Predators penetrate Preys' inner vital space, absorbing its energy and destroying them: $Exl \times exi < \Delta Exl$.

- In Super-organisms, structured across several scales, the 'predator' enslaves the victim to absorb slowly its energy or information making the submissive, *i-1* species a body/energy 'cell'; creating a class structure.

\Leftrightarrow : *Parallelism* creates with equal entities of the same *i*-scale spatial body Σ -herds or informative Π -networks. They respect each other's inner space moving at the same distance, emitting or absorbing energy and/or information through an exchange of smaller particles. Their symbiotic bondage is balanced and endures in time.

Thus perpendicularity is destructive, hierarchic while Parallel systems are loving, democratic, creating societies.



2 points share energy & information with an $E_{i-1} \times T_{i-1}$ wave. Several events can happen:

- When the event is Darwinian, Max. ET absorbs Min. et as energy in minimal time.

- If ET_{i+1} orders ET_i with Information and receives from ET_i energy during a long time, they form a hierarchical super-organism.

- If both ET_i are similar and share energy and information in parallel, they form a herd: ΣET

- If Et_i (male) and eT_i (female) are complementary they emit 2 seeds of the lower scale, Et_{i-1} & eT_{i-1} and reproduce.

5. Entropy and chirality: Transfers of past-energy and future-information across i-scales.

Thus in a scalar universe, entropy is caused by the 'chirality' of energy that *contracts* from a relative past, lesser evolved scale into a more ordered informative one, during the life arrow in which organisms 'exist' that lasts much longer than the opposite death arrow or big-bang that destroys those organisms.

Thus, while the sum of life and death events makes the Universe an immortal zero sum in the total invariance of space and time; if we have a temporal perception only, the life arrow seems to dominate.

And vice versa, since big-bangs explode life organisms into a greater space than life contract them, a ceteris paribus spatial perception, as those physicists have makes expansive, disordering entropy seem dominant.

This is a consequence of 5D metrics between scales: when we become smaller, information grows and so energy flows for larger bodies into zero minds that transform it into ordered information, $E_{i-1} > T_i$ and vice versa, information expands. Thus the 2 arrows of time are not commutative. It is not the same going upwards than downwards in the fractal scales of the Universe. Further on, from the p.o.v. of a single *i*-scale, as most science is done, in entropic events information seems to disappear and in life events energy seems to disappear; hence the common error of physicists who think the Universe has only an arrow of entropy, as they don't see the gravitational force/plane that creates the informative mass-clocks of the Universe, or the neutrino magic properties, as it is a particle that moves between both scales. Further on, each *i*-science has crafted their own jargon to explain self-similar phenomena in different scales.

Yet in 5D entropy can only be understood between different scales of space-time *not in the same continuum*, considering that a discontinuum between *i+1* wholes and *i*-parts are bridged through particles or networks that

transfer energy and information in a non commutative way. Yet in a time analysis 5D favors the long-lasting arrow of information over the arrow of energy, the $i+1$ over the $i-1$ scale. And this is the main difference between 'present' science made in a single space-time continuum, which favors entropy as energy expands in a single sheet and a multiple scalar Universe that favors information, which moves perpendicularly between scale:

For example, the pales of a Joulot's machine have a 100% efficiency converting its motion into molecular motion, while in the other direction the efficiency is never 100%, causing disordered 'heat'. Science, which only recognizes a single arrow from the smaller molecular scale to the upper one, in a single plane, deduces then that the system becomes disordered by heat, but when we consider both scales we realize that *orders of motion and location given from the upper pale scale to the lower molecular one are more efficient; so upper scales control better lower scales and the Universe favor them, building new $i+1$ planes of existence as reality shows.*

- This is why in any system upper scales control lower scales with coordinated changes in their parameters of energy and information, transmitted in synchrony to the lower scales that obey them. While the lower scales are at disadvantage, when they want to control the upper scales, as the 'momentum' or combined exi force of the microcosms does not transcend with the same efficiency. This law applies to all systems, from top predators of bigger size that eat many smaller ones of bigger combined mass (whales eating krill) but are not eaten by them, to the power the upper social castes that control their lower 'energy classes' with languages of information (money, laws) and energy (weapons), while r =evolutions of energy classes are 'disordered' motions, as those of heat with little result. Since lower scales are extended in space, disordered herds with erratic motions and upper scales are smaller, denser, network systems with precise actions. 'Do not confuse action with motion' said Hemingway to Dietrich. The fact that information from the upper to the lower scales, from the whole to the group, is 100%, efficient, while in the other direction from micro-cosmos to macrocosms is NOT, is the ultimate reason why upper scales can exist as 'upper classes', 'parasiting' the energy of the lower classes.

The errors of science due to the study of a single arrow of entropy in a present, single space-time continuum.

Yet since information is faster and smaller, often invisible or incomprehensible to those who do not know how to decode the language, scientists tend to overlook this duality and accept only the path of causality from the lower scale to the larger one. For example biologists think the structural information of life beings is stored only in its smallish scalar parts, genes. They think the whole $i+1$ organic scale or the $i+2$ ecosystem do not influence evolution. This is false, as massive changes in energy/information parameter in the Earth have caused the evolution of cells into macro-organisms (ice ball period 700 million years ago); collisions and volcanoes might influence extinctions. While the mother's emotional neuronal networks seem to imprint those of the fetus.

Further on, organisms do follow the diffeomorphic dimensions of its space-time adapting its morphology, as the duality of plants with energy leaves on top vs. animals with information heads show. So in genetics, introns and upper scales of genetic material (made of 3^n genes) should code the diffeomorphic, bigger morphological structures of life beings in a Lamarckian fashion by external, ecosystemic adaptation that must increase the random chances of mutation towards one of the 3 'natural directions' of evolutionary morphology, towards 'maximal energy' or 'maximal information' or 'maximal reproduction' as processes of punctuary evolution show.

Physics studies a single space-time continuum, considering a single arrow of time, entropy and a single, 4th Time Dimension of 'present', a mere sheet of space of the total flow of time across multiple scales. Indeed, Physicists spatialize time as a single, 4th, 'present' dimension since Galileo and Newton defined it as a measure of spatial speed, $V=s/t$, $\partial s/\partial t$; hence $\partial t=\partial s/v$, where a derivative is an instantaneous present measure.

Einstein's Relativity didn't change that standard meaning of time in physics, as it was concerned only with the measure of 'simultaneous space-time' motions, introducing merely the $-ct$, contracting, informative arrow of light-space that affects the invariance of motions in objects close to the maximal speed of 'background' light space. Thus in both cases, time is defined as a present derivative of space or speed, Se (similar concepts according to

Galileo's paradox). Thus Minkowski's space-time only studies the fourth dimension of present - a slice of the entire flow of time from past to future to past (the fifth dimension). Yet since in words of Einstein '(Space) is measure from a simultaneous frame of reference', if we adopt the point of view of the 3 dimensions of time, space becomes a dimension of time, 'the simultaneous present' and we CANNOT measure the flows of informative order proper of life that are 'evolutionary', moving during a long period from past to future, perpendicular to those presents. Hence the belief of Physicists in a single arrow of entropy and death, that happens in minimal time (in a relative present), in explosive big-bangs and collapses of life order.

Thus 'present' physics makes errors by ignoring the dominance of the informative arrow between scales:

- Masses are natural vortices of time-clocks of the gravitational scale and do NOT need a Higgs, which is merely a particle involved in the weak force that transfers information between both scales.

- The scalar universe is immortal. The 2nd law of entropy applies only to the energetic expansive force of electromagnetic light-space but $i+1$ gravitation is an informative=attractive force that balances the cosmos.

- The impossibility of a machine of continuous movement only applies to heat processes that include the 'molecular parameter' of temperature, *but the entire universe is a perpetual machine of 2 motions, $E>I, I<E$.*

- Black holes don't evaporate and there is not paradox of information. They are doors between 2 sheets of electromagnetism and gravitation, which transform our electromagnetic space into mass, *evaporating our world into the gravitational world and not vice versa as Hawking believes - reason why we never saw one evaporating.*

- The Universe neither grows nor it shrinks. Gravitation, which dominates galactic vortices implodes energy into mass and electromagnetism expands mass into energy: $E=Mc^2+M=E/c^2$ becomes then a zero sum of implosions and explosions, beats of $E\leftrightarrow I$, which together balance the total Universe.

- Negentropy is a real arrow that reproduces fractal information, which Mehaute proved to happen always, when entropy no longer acts, as both arrows are inverse.

- Most processes that physics only resolves as Energy, hot processes must happen also in more efficient ways, in cold, as a likely cold fusion process or the 'cold' extinction of species but 'more ordered', faster, smaller informative ones. So Dinosaurs might have been extinguished when the more evolved mammals of India collided with Eurasia, NOT by a hot big rock. The nuclei of planet might be cold, ordered crystals, not heat flows.

The expansion of physics to include the laws of multiple scales is a fascinating theme for another paper¹.

All sciences must be corrected and completed with the study of the dominance of 'upper scales' over cellular ones, including social sciences, where we build social models that stress the individual and not the systems and superstructures, as Marxism, a far more scientific theory of History based in Hegelian duality shows.

Information dominates energy; heads dominate bodies; particles guide fields; the future is calculated by the brain and then imposed upon the body. Because informative 'networks' \square are stronger than mere, herds, Σ , which are connected only in their evident, i -plane of existence, where they perform mostly energetic arrows, easily perceived by scientists. While networks of information are perpendicular, co-existing in 2 planes, through \square^2 axons that interconnect them & control the lower $i-1$ body cells, creating superorganisms (4th Postulate).

6. The 4th postulate: creation of complex networks, planes of existence & social classes.

Fractal points build reality in several steps: creating Complementary pairs with other points of higher energy (male species) or higher information (female species), and/or integrating into social herds of n -points according to their relative self-similarity (3rd postulate) - geometric networks with 'dark spaces' among them. Thus networks substitute the restricted concept of a continuous space plane made of Euclidean points. Then 3 physiological, reproductive, energetic and informative networks that correspond to the only 3 topological spaces of a 3D world

come together creating a complementary, hierarchical superorganism, made of energetic lines, informative zero-points and reproductive toroid bodies/fields system, extending across 3 ± 1 scalar, Non-E planes:

The universe is made of such ternary superorganisms, which become a world in itself, a discontinuous space-time, separated by its energetic membrane for the larger Universe. Thus, we write for life/physical scales:

Energetic, Past Fields/Limbs < Reproductive, present body > Future, Informative Zero–Mind

As information flows from $i+1$ to lower scales & energy from $i-1$ to upper scales the equation of the organism is just a specific case of the generic equation: $i-1$ Past (entropy) \times $i+1$ Future (Information) = i -Present organism

Which explains the internal order of the super-organism, as the lineal, planar form of energy, the limbs, will be ordered internally by the exi body, guided itself by the informative head with an internal nervous language that controls the the body/field and externally allows communication with self-similar i -points.

In the graph, we have drawn a human being as a sum of i -planes of fractal points, till arriving to the social scale, outside the organism in which each head is an spherical point that communicates energy and information with other humans, forming social networks. Those type of superorganisms, are studied by the 4th postulate in which a plane becomes a topological superorganism, made of networks that stretch across multiple scales:

Thus we write the equation of an organism across scales as: $\sum \sum E_{i-1} \Leftrightarrow \prod T_i = \sum E_i \Leftrightarrow \prod T_{i+1} \dots$

Where each point of a certain scale is the informative whole of its internal, smaller body cells of the lower scale, an equal to the parallel herds of its scale, but merely an energetic or reproductive cell for the higher scale. And those 3 roles that co-exist together define the existence of each entity of the Universe. So for example, our brain is the god-whole of the body cells its neurons control, but then in the upper scale of society, we are just fractal points performing world-line trajectories in a 'job', an specific, energetic, informative or reproductive function for the whole nation-system, while we co-exist in equality with other citizens in the same plane.

In this manner the Universe as a whole has built its scales, as a network of $i-1$ particles becomes an i -atom, which becomes an energy point of an $i+1$ molecule till creating the Universe, *based in the 2 arrows of $E>I$ and $I<E$ that structure the scalar universe. Thus complex, social evolution creates 'new scales of an organic reality'.*

In time creation is a sequence of actions, starting with a seed that *reproduces cellular masses*, differentiated in 3 types of tissues that *self-organize themselves as organic herds and become submissive through a common language of information all those cellular particles share to the fastest 'brain-point' that commands the language.*

And so we can define all the events and structures of a super-organism with equations of i -logic algebra, reduced to 3 ± 2 i -scales, the 3 internal, physiological dimensions of the organism, its external function in bigger super-organisms, $i+1$, $i+2$, and absorption of $i-1$ quanta of energy and $i-2$ bits of information:

- The lower, $i-2$ scale is the background space from where i -points get bits of information, since its 5D metrics are larger in size, allowing the i -point to map out a bigger territory. So men use light, which is the background space of our electromagnetic Universe; while smaller minds, like ants use paradoxically bigger bits, atoms, to create an smelling Universe and larger entities, black holes, use smaller pixels, $i-3$ gravitons we don't perceive.

- The next, relative $i-1$ scale provides quanta of energy, as we will use them to recreate our internal cells; hence to diminish the amount of 'creative work' we need the closest 'molecular' bricks to those of our cells.

- In the i -organic scale of information is maximal and the arrow of equality & social evolution happens.

- The $i+1$ scale rules with its informative network that simultaneously penetrates all i -cells, ordering its position in exchange for energy. Thus we work or die in wars, as energy of $i+1$ nations & Gods, guided by informative castes that rule us with verbal laws (politicians & priests) or digital money, (bankers & corporations).

VII. THE WILL OF EXISTENCE.

1. The spiritual Universe: Maslow's pyramid of sensorial actions. The invariance of Wills.

Schopenhauer affirmed that '*will drives existence*'. Biologists call the 5 Existential actions, the drives of life. In life they are accompanied of 'rewarding sensations': greed (Max. E), visual beauty (E=I), social love (Σ), sexual pleasure (Exi) awareness (Max.I), power (Π).

Unlike the other invariances of the 5th Dimension though, this ultimate program is buried in the zero-point, which by definition is not perceivable from the external Universe, so it will always remain a hypothesis on the Pantheist Universe, a Buddhist thought if you want. Let us then write a sequential Maslow pyramid of the program of 'will':

$\Delta I \rightarrow \Delta E \rightarrow \Delta E \langle x \rangle I \rightarrow \Sigma e_i \rightarrow \Sigma E_{i-1} \langle x \rangle \Pi$: Perception \rightarrow Greed \rightarrow Pleasure+Beauty \rightarrow Social Love \rightarrow Power

Such 'will' is self-explanative of your 'final program' as Human Existence. Power is achieved with the control of a language of information (in human societies, money and the law) with whom to order 'inferior social classes', who obey the language (citizens and workers) & those who play the game of power shun love, the mystique experience, which is preferred to sexual pleasure, deemed superior to greed for money (social energy) or food, the first action beyond the mere act of perceiving. We have added a complex sensation for reproduction, exl made of i-beauty *an enhanced form of i-perception* defined as harmony, E=I, which maximize, Max. Exl \rightarrow E=I, so $5x5 > 6x4$; and E-pleasure, *an enhanced form of e-greed*, Σ is achieved when all exi are undistinguishable among themselves and the whole, in motions and forms (crystal, boson, herd flows), observed as fractal beauty.

And we hypothesize that since all entities follow the same, previous invariances (I-VII), *the sensations that carry the will of those actions in man, made of bits of information and quanta of energy, must exist in all systems of the Universe. They must be the ultimate 'substrata' of energy and information with different degrees of complexity (Max. I) and intensity (Max. E), but the same quality.* Energy IS in the ultimate scale, even before 'becoming' lineal form and motion, 'greed' and its maximal sensation, pleasure. And Information must be in the ultimate scale, before becoming cyclical, perception, awareness, and its maximal, beauty. And both together give birth to Love; and then the wholeness of feeling love for the body you rule, the greed and pleasure of controlling it and absorbing its sensations, the awareness and intelligence of manipulating the world, the wholeness of power is the final Nietzschean Will of God, the mind of the Universe – and each part must have all those sensations in a lesser measure expressed in their particular actions and languages. Herds of water MUST sense social love to constantly touch each other with weak bondages. Chloride should be greedy for electrons. Quarks with opposite 'spin' are having orgasms. Electrons, jumping to absorb light, must see beauty in B&W.

Consider all those actions-sensations in that simplest of all beings, the electron - the smallest fractal point of the electromagnetic scale, able to perceive-close cycles of existence (as light is an open, hence mindless wave that doesn't close a 'bit of information): e⁻ might only see B&W but it prefers white and moves to absorb light, jumping towards a photon that moves closer to its orbital – expressed mathematically through its 2nd quantum number and it uses its force of information to evolve socially (magnetic number). And when it finds an electron with opposite spin-'gender' both produce seminal rays that collide and produce other electron. And when they find undistinguishable equal forms, (Bose-statistics) they form bosonic herds or move in parallel herds (electric flows). Those are the positive 4 arrows but the 5th arrow is negative, imposed by stronger quark masses that chain them to the atom. Points thus are moved by the need to perform their 4 + cycles of existence, a desire to acquire more energy and form which they better achieve in networks, with the flexibility of herd hunting and network thinking. The catch of each existential game is that others hunt you & enslave you to achieve their own Will of Action. And this duality allows the whole to become an eternal zero sum. Thus absolute power, eternity, wholeness of actions belongs only to the Mind of the Universe, the game of existence. Others are partial 'Wills':

- ALL ENTITIES perceive and feed, as they do not fully exi=st, without motion though they might be 'seeds'

or pure, mindless space. Then the next stage of 'wholeness' is copulation: 2 self-similar beings share energy and information, $\Delta E \leftrightarrow \Delta I$, to 'fusion' their programs and start the creative process – reproduction – in which parallelism occurs in 2 scales, the macrocosmic and cellular lower scale: From electrons and quarks that merge in spin/anti-spin genders to humans or merging galaxies. Then we sense both, power related to the i-n scales we order and the mystique experience of herd creation, $\sum i$ that creates a collective i+1 plane, sustained by \sum minds– a subconscious collective called God or Nation, a DNA that all carbohydrates serve, an orbital that fusions atomic ones into a molecule. This love for the bosonic i+1 scale, which requires to forget your own will, empathize with the will of equal knots and give up your existence for that of the community we sustain, completes the positive program. If the scales are finite, there shall then be a final I-scale with a personal God, Max. I knot that feels Whole Power for each I-n part. Yet if the scales of the Universe are ∞ , only the Pantheist God, the Game of Existence in all scales has Total Power over each part. This I believe rationally. In any case, the love for such Pantheist God, the Will-Program of Existence is the highest sensation. As we *can know I=ts Form in the Invariances of the 5th Dimension, in ourselves but we can't know the Self of a hypothetical last scale.*

The why of our existence is thus the constant creation of life actions according to that Inner Will we share with all other beings that achieves our highest sensation in our respect for the Game of Other human knots, to whom we are tied by the highest Will available to us, Social Love for mankind and Gaia, our body, as we cannot exercise 'Power' or "Compete" with other human beings in a Darwinian fashion, being undistinguishable of 'us'.

After the automatic field of perception of any zero-point, we want to feed and we feel greedy of energy, a one dimensional feeling, ΔE ; then we understand beauty - a balance of energy and information, e_{xi} , the origin of our sexual desire. And we feel love and mysticism and submit willingly to 'just' collective entities that treat all men as equal. But beyond the continuous perception, all other Wills are quantic, as we loose the desire, when are filled or have an overdrive, and regain it in quantum leaps of will, chained to the frequencies of each action. So entities switch between wills, perceiving always, feeding on energies less and having lesser sex, loving rarely and NEVER having full power, a mirage submitted to the control the laws of existence have over us... And this diminishing frequency of each sensation associated to each action, A, multiplied by its increasing intensity (In), creates the ultimate invariance that prevents our addiction to any of them: $f[ln(A)]=K$.

And so, as all other invariances we find that it is BOTH, invariant to 'motions and rotations=changes of sensation' in the same scale-being, and invariant to change between scales (the same sensations in all beings).

2. Penalty of death for destructive lower wills. immortality of reproductive presents. Ternary creation.

To notice finally that Invariances reinforce each other. For example, the 3 ages of the life/death cycle that goes through a youth, plenty of energy into an informative, 3rd age, that exhausts E, is both a consequence of the topological arrow of the 3 sub-systems of any organism, as flows of energy and information enter first through the energetic, external sphere into the reproductive body, to end in the center of information that dominates the 3rd age of the being and the fact the will of the system resides in the i-point that depletes its Body and Ecosystem of its energy in search of sensations, till it warps itself with no E, and dies, giving it back: $I < E$.

Thus the equations of death are the imbalances of Max. Energy x Minimal Information (Accidents proper of youth, when most beings die) and Max. Information x Minimal Death (old age warping when all beings die).

Maximal Information thus provokes future suicide and maximal greed causes the death of other beings, returned to the 'past'. So those two unbalanced functions of the will of the I-point end up provoking destruction, unlike reproduction, the first 'immortal will' $E_{xi} \rightarrow e = i \rightarrow \sum E_{xi}$, which 'repeats' the balanced present of the being ad eternal, a fact that the immortal Universe reinforces with pleasure; while the social evolution of self-similar, reproduced clonic forms that creates stronger wholes and enhances survival, as $\sum e_{xi}$ is bigger than e_{xi} is reinforced by 'love'. And those sensations are always positive, unlike the mirage of power, unavailable to 'small' parts as humans are, obtained in this planet by technological power that we shall see evolves other species, the

machine that preys on human bodies, as weapons and human minds with its audiovisual hypnotism, or the guilt associated to greed, or the boredom of nerdy, digital perception. Existence favors creative actions, reproduction, social love & organic power that last longer in time than the arrow of death by feeding. As a time dimension present=repitition=reproduction is a dynamic change of reality that seems 'to remain the same', hence immortal.

To ensure all reproduces before 'death' by greed and perception, so the 'Game of Existence' never forgets an i-logic form, there are 3 forms of reproduction according to the key law of the *'ternary principle of creation'* that maximizes, E, I, and ExI_(e=i), the 3 *only forms of creation in a single plane, in a Universe of only 2 forms:*

- Max. E of simple beings: Self reproduction that from fungi to waves of light maximizes the clonic wave.
- ExI_(e=j). Gender reproduction of two species with 'opposite' Max. energy=male x Max.-Information (female).

So particles with opposite spin produce a 'seminal/cellular sub-particle', gluons in quarks or photons in electrons with neutral e=l spin that merge in the middle point to reproduce a 'shower' of new electrons or quarks. So do gender human or galaxies with differentiation and we *generalize the process for any Universal system:*

Gender Reproductive action (any scale): exl (female) <=> Exi (male): $exl_{i-1} \times Exi_{i-1} = \sum e \times i$.

- Max. I: Enzymatic reproduction, when an external 'intelligent' catalyzer, men in machines, DNA in cells reproduce its form in a system with higher energy (Carbohydrates, metal-atoms) upgrading its evolutionary form.

3. Invariance of Universal Grammar: The ternary structure of all i-logic languages.

We conclude that our capitalist, industrial world that maximizes greed, Max. E, and mechanism, machines and its digital languages of max. I, as the only form of knowledge create a society enslaved to the lower passions of the will - an unbalanced culture where machines of Max. digital=computer information and Max. energy=weapons are causing our death, by rejecting Social love to mankind, and multidimensional perception of all sensations and languages that perceive them, for nothing. Since the languages of God are ∞ and true wisdom is knowing them all, which brings the final invariance of the spiritual Universe, the Universal Grammar.

What is the structure of the languages different minds use to map out the Universe? As minds use languages to 'mirror' reality in a synoptic manner, all languages become images of the Existential equation, a ternary mirror itself, of all forms of existence $E < x > I$, which becomes the ternary structure of all linguistic systems in all scales:

Space-Dimensions: Height (informative dimension) <Width (reproduction) > Length (energetic motion)

Mathematical languages: X < Operandi > Y

Forces: Particles (information) < Universal constant: action, exi or ratio e/l > forces (energy)

Code of Colors: Blue (information) < Green/Yellow (Reproduction) > Red (energy)

Verbal code: A (Informative, I-subject) <verb/operandi (action) > Object (energy)

Thus, the ternary, Universal grammar mirrors for each species, the game of existence and its actions in particular languages of the same quality, for each being to 'understand'. And since humans perceive time with time verbs and space with mages not with digital numbers, the mechanical languages and social love is the Max. Sensation, verbal ethics and visual art, aesthetics are the summit of knowledge that our cultures should favor.

Thus not only *mathematics* is knowledge, neither it is the highest language – though it carries more information than words, but there is even a more essential language, the i-logic geometry of the existential equation, mirror of all beings in space, events in time and languages of space-time, which reinforces the concept that General Systems Sciences that studies that 'Generator' of the 5th Dimensions is the science of all sciences.

While freedom is NOT greed but the Buddhist Will to negate the program & give away yourself to social love.

EXPERIMENTAL PROOFS OF 5D INVARIANCES ACROSS I-SCALES: THE TERNARY METHOD



The relative 10 scales of existence of the human 'Universe'. Since all parts are similar to the whole but we perceive more information about our scale man is the measure of all things. Hence biological and social sciences, not physics should be the dominant science and general systems science, which studies the 5D invariances across all scales, the new philosophy of science, substituting mechanism.

General Systems: The Whys: Ternary Method

The biggest & smaller scales of galaxies & atoms are so far away that by the Galilean Px. (definition of a mind), we

perceive far less information from them (in the cosmic scale 96% is dark space and dark matter we do not see while quarks and electrons appear to us as point particles.) So astrophysics cannot be the queen of science in a self similar Universe where all species play the same game. This role belongs to General Systems Sciences whose 5D invariant laws apply to every scale and entity of reality. While i-logic geometry that fuses the 2 languages of space and time substitutes mathematics that studies space-time in a single scale. This wider, unifying view implies some important changes in the scientific method of knowledge:

- The causal why of events in time completes the how of metric measure proper of classic & special relativity.
- Topology completes geometry in the analysis of forms in space as its laws define dynamically morphology.
- Organicism & man as the measure of all things substitute mechanism and the machine as measure of man.
- Similarity & dynamic, ternary feed-back equations, $E \Leftrightarrow I$ substitutes static equality and single time arrows.
- Information matters more than energy; wholes more than parts; social evolution more than individual fights.
- Invariances makes comparative studies fundamental as they allow to expand laws found in a discipline to them all. For example, Organicism and physiology expands from Biology to all other sciences through the concept of networks. Complementarity expands from quantum physics to all systems. The life/death cycle happens in any being. The 5 drives of life become the 5 actions of all systems. Gender duality of female, informative, reproductive beings vs. male, energetic, spatial beings expand to all complementary forms, etc.
- Knowledge reverses. We study first the i-logic 5D invariances of any being to end with its particular details.

Of course, 5D Invariances add knowledge without invalidating any sound facts and truths we already know.

It is the common mortar that pegs together the bricks of a building of many stores, one for each science, made during 2500 years of rational analysis of reality, including, as we shall see, religion, art, social, biological and physical sciences, logic, mathematics and languages – solidifying all those loose stones, *putting together all the parts of the human mind's adventure*, into a firmer whole. It facilitates the experimental method of collection of data, fit on cyclical patterns, from where to deduce causal, hypothetical laws that predict future events, which must be confirmed again by experimental facts. Today the how - data collection - is made easier with machines. But we have obtained so many details that the forest is obscured. We bring now the whole forest view that makes easier to deduce hypothesis in which to fit data – a 'sky dome' that covers all the facts, with a global vision more akin to that of the Founding Greek Fathers of science who expected facts to fit into their logic and mathematical perfect postulates. Their approach though required as 'Augustine' put it when talking of the Logos of God, a 'higher logic' than the one of man and Aristotle and the mathematics of Euclid – the i-logic geometry that mirrors better the logic of the Universe. So we can build not only hypothesis from the bottom of experimental data upwards, but downwards from the 5D Invariances followed by all systems, making easier the correction of errors and scientific fictions, so common today in many disciplines of science that with so many practitioners have an 'inflation' of mathematical theories without proof that now will have to 'fit' both arrows' of verifiability, the basement of data and the dome of the i-logic laws and invariances that reinforces the experimental data. Finally it proves further the main rules of verifiability of philosophy of science: Occam's razor (a few invariances simplify a myriad of complicated theories; Correspondence Principle (a single theory explains more facts) and experimental method (many data never explained before will now fit on those invariances).

Let us then define in generic terms with a common template the invariances of the Universe and all its parts, to apply them to the study of the main species of the Universe and the correction of many theories that don't fit:

All systems are made of 'cellular parts' that create social networks, which evolve becoming wholes; fractal units of a larger whole in a bigger scale of space-time.

'Any 5-dimensional relative world is a super-organism of 3 topological networks, the energetic, spatial, concave, spherical or planar membrane; the reproductive, cyclical, toroid body; and the hyperbolic, warped, informative, zero point, center that controls the whole system, creating the order of the Universe, as its membrane absorbs energy, which flows into the toroid body, where it will be imprinted by its information, reproduced into new cells and provide bits of information for the creation of a bosonic mapping, the mind of the zero point, whose will tries to maximize a program of Existence made of $3\sum_{\pm i}$ diffeomorphic, dimensional actions, $\text{Max. } \sum_{E_{i-1} < X > \prod T^i$: Energy Feeding in the relative dimension of length, information gauging in the dimension of height, reproductive communication between 2 E&I complementary poles, (x, \leftrightarrow) , that share energy and information in the dimension of width, social evolution in herds (\sum) with equal particles and organic, network creation (i) through $3\sum_{\pm i}$ scales, establishing a sequential order of $3\sum_{\pm i}$ causal dimensional ages in time, from past to future between two limits of birth in the lower i-1 scale of smaller size and bigger information, as a seed and death when the being explodes its cellular networks in space becoming a loose herd of dissolved cells: a first past age youth dominated by the energetic network, a mature age of balance between energy and information, dominated by the reproductive body and a 3rd age of information dominated by the informative zero-mind, whose ∞ sum creates the eternal Universe in time, $\sum_i = T$, ∞ size in space, sum of all those topological parts, $\sum E = S$ and ∞ number of scales, since each i-fractal point controls an i-1 relative surface of energy, forms an $\sum I$ social herd in its scale and becomes an i-1 energy of a higher scale, a fact that determines the chirality of the Universe that transfers energy, $e > I$, from lower to upper scales and information, $i < E$, from upper to lower scales, sharing both in the same scale, making the arrow of social evolution & organic life last longer than the erasing arrow of death.'

Now we shall fill that template with the details of the main entities of the 10 relative scale of the Human world.

1st SCALE: BIDIMENSIONAL OPEN & CLOSED STRINGS. GRAVITATIONAL SPACE

If quarks are galactic black holes of the lower dimension according to its fractal Unification Equation, we should perceive them from our scale as bidimensional planes. This agrees with causal triangulation that obtains a 4D Space departing from 2 fractal dimensions on the Planck Scale and with logic, since the strong force of the atomic nuclei is inside our 3 dimensional light/electronic space, hence to fit it must have less dimensions. But in a 2D world the same laws and invariances apply. For example, the fundamental theorem of knots (Jordan's theorem) shows that a trivial cycle, traced by a closed breaks space into an inner and external part.

The 10 or 26 dimensions of strings are the inner scales of a fractal point that seen from our world shows only $\pm i=1$ dimension of lineal or cyclical motion. So 10D fermion string theories are equivalent to the $3 \times 3 \pm 1$, Se dimensions of most entities studied in 5D metrics from a spatial p.o.v. and the $Ti=3^{3i}=27 \pm 1=26$ dimensions of a boson string, those of most entities studied with a Time p.o.v. as bosons are Ti-forms and fermions, Se-forms.

String theory obviously is NOT a Theory of Everything, as the 5D formalism is. *It only explains at best the smallest physical scales.* Further on it MUST be corrected in its formalism to make them background dependent as strings ARE space-time. Then they show the key 5D Invariances, the ∞ of i-scales and the Galilean Paradox:

- They are 2 motions mutating into each other: Ti- cycles (closed strings) & Se-lineal motions (open strings)
- Hence they prove the topological, functional Invariance in 2 Dimensions (Cyclical and lineal forms).
- They vibrate, creating new, self-similar motions that we see as particles (Galilean Px.)
- They are actions vibrating in $3 \sum \pm i$ modes: they move lineally, ΔE , form closed cycles, ΔI , reproduce laterally, Δexi , creating planes or cyclical tubes in social motions, $\sum S$ and create $i+n$ structures, bosons & quarks.
- They prove the infinity of scales, as there are hypothetical, self-similar to cosmic strings of galactic size...

All other invariances are derived of those. So even if String Theory as a mathematical model obviously does not consider 'biological' Invariances (life-death cycles, super organisms and sensations), it validates 5D metrics.

Thus, my advice to string theorists is to explore 5D Metrics and Invariances, redesigning their theory as a model of infinitesimal clocks of time that mutate into lineal motions in 2 dimensions. And use their findings of String theory to develop the physical invariance of 5D theory: Se (open strings) x Ti (closed Strings) = K-particle.

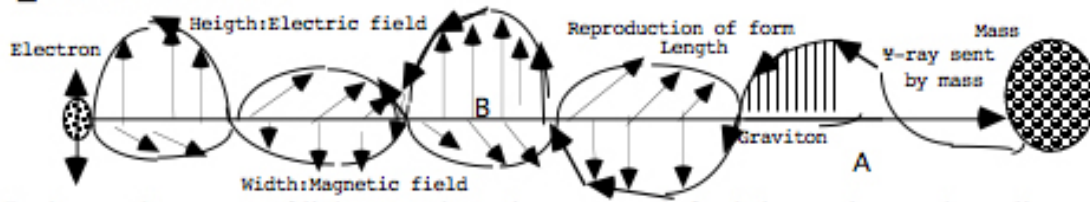
I followed this approach with startling results. I.e.: Consider the simplest Sex Ti form, a π -cycle acting as an organic membrane, made of 3 unitary 'open strings' with $3 \times 0.05D \approx 0,15$ apertures for a total π -perimeter. This π -membrane receives external, imploding vibrations of energy, which it transmits to its internal space, through its 3 apertures as a broken Cantor dust: 3 bits from the external world that finally stop as a still image in its center, creating the zero point; thus forming an organic topology with 3 canonical parts: the external membrane, the toroid whose cycles transform energy into form till reaching the static zero point that integrates the flows into a mind. This is its 'life-informing' arrow. Or in the inverse direction, the zero point or membrane can grow finally expanding in a big-bang vibration, dying away. This simplest structure has already all the Invariances of the 5th dimension, and it's a model to study many self-similar properties of more complex Universe. An example: How much external space the 0-point sees? If it has $\approx 0,15$ apertures in a π -perimeter, it sees $0,15/\pi$ of outer reality $\approx 4\%$, leaving 96% of the Universe out of its perception as dark space. It is the same proportion of dark matter & energy our \forall -eye 0-point doesn't perceive of the Cosmic, gravitational, lower scale – solving the mystery of dark matter. Since we see perpendicular, electric & magnetic semi-cyclical fields of light-space, similar to those π -membranes that feed in the lower scale of gravitational lines, whose in-form-ation is 0, invisible to us, hence with a relative ∞ non-local motion-distance in 5D metrics of $0 Ti \times \infty Se=k$, the size of the Universe, from our p.o.v.

2ND SCALE: 3D LIGHT SPACE-TIME.

Gravitational space is invisible to us. So given the space limits of this work we move on to evident' \forall -Space-time, which seems still but is made of moving light (Galilean paradox). Light is what our mind sees and perceives as space – so both have the same 3 Euclidean dimensions– and what we uses to measure time – so a second is measured with cesium \forall -waves. Vacuum is light, constantly collapsing into photons, always leaving a minimum background \forall -radiation. And so light-space is the 1st scale of the \forall space-time we inhabit, which shows all the invariances of 5D Metrics:

- 1st Invariance: *The O & | states of light* are cyclical photons and lineal \forall -waves.
- 2nd Invariance: (*abb. Inv.*) The $3\sum_{\pm i}$ dimensions of light are its $3\sum_{\pm i}$ actions:
 ΔI : The electric field with 'height dimension' carries its in-form-ation to the O_{i+1} electronic scale.
 ΔE : The gravito-magnetic field feeds & warps 1D tachyon strings by a -ct factor.
 $f(exi)$: The reproductive action is its length dimension=c-speed, found by Maxwell: $c=(e \times \mu)^{-1/2}$
 $\sum (+i)$: Color is the + action of social evolution that gathers multiple photons with equal frequency.
 $\square (-i)$: The electron is its $i+1$ boson state - a fractal density of collapsing photons.

**O_{i+1} : electronic food. I_{i-1} : Graviton feeding. \emptyset ts:wave-reproduction.
 $\Sigma \emptyset$ ts: social evolution**



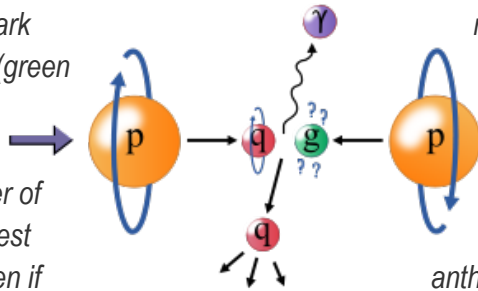
- 3rd Inv.: *Emergence*: All $i+1$ scales have the same perpendicular 3D. Magnetic & Electric fields are perpendicular (right hand rule, Maxwell torque). Our Mind has the same dimensions than light. All systems have a height dimension of information. The 5 actions of light are carried in all scales.
- *Topological Invariance*. Light is an organic system with a simultaneous reproductive body and a cyclical informative photon (wave-particle duality) that feed on lineal energy (tachyon strings.)
- 5th Co-invariance of Life/death cycle & Topologic form: Light is NOT immortal. It should have a 10^{10} years lifespan (the mean life of stars, its superorganism). So light is born as a max. I, 'photon seed' from $i-1$ gravitational vacuum (Heisenberg Uncertainty Principle); it goes through a 1st age of max.E (blue light), evolving into a 3rd age of min.E red light (red shift) and dying in an expansive 'big-bang' (Max. E x Min. I) returning to its $i-1$ gravitational world of invisible tachyon strings, which by the Galilean Px. is perceived as an expansion of intergalactic gravitational space (dark energy).

But light also follows the duality of death equations, dying when it warps (Max. I) as a cell of its higher scale, the fractal electron. Thus the big bang is $\frac{1}{2}$ of the story, as gravitational space contracts giving birth to max. I particles in galaxies, for a zero E+I sum in an immortal, ∞ Universe.

We don't see light beyond 13 billion light-years (Oort Px.) NOT because that is the big-bang cosmic age but because all light has died. We observe acceleration in space expansion after 5 billion years, because light passes its middle age and starts to 'die' into red light, etc, etc.

3RD SCALE. PARTICLES. QUANTUM NUMBERS EXPRESS ITS $3\sum\pm i$ DIMENSIONS.

In the graph, quark (red ball) with a gluon (green protons with opposite by blue cycles. The collision are a shower of photon. The simplest reproduce, even if



reproduction. A collision of a quark ball), emitted by their parental gender-spin, represented particles ejected from the quarks and the energy wasted, a anthropomorphic ego-trips about the

'sacredness' of life and man, denies that organic 'meaning', using instead the word 'decoupling'.

If the simplest forms of the Universe, strings, light, electrons & quarks do follow the Invariances of the Organic Universe expressed in 5 D Metrics and its i-logic laws of Existential Algebra, it follows we exist in an intelligent, perceptive, organic, living self-reproductive Universe, which can be described topologically, algebraically, biologically and perceptively through the Will of Existence.

-1st Inv.: The O-particle & |-wave states of all particles are defined by the Complementary Principle.

-2nd Inv. Electron's $3\sum\pm i$ D actions are its $3\sum\pm i$ quantum numbers, similar in quark's chromodynamics:

ΔI : An electron traces its clock cycles described by the principal quantum number

ΔE : It feeds on \forall -photons expanding its Orbital (Max. Se), as shown by its 2nd quantum number.

Exi: 2 e with inverse expanding & imploding 'male-female' spins (3rd number) seed light into new es

$\sum +i$: electrons evolve socially in parallel orbitals or electric flows ordered by a 4th magnetic number.

$\square (-i)$: Electrons are captured by quarks of Max. Ti mass (a clock cycle) to form i+1 atoms.

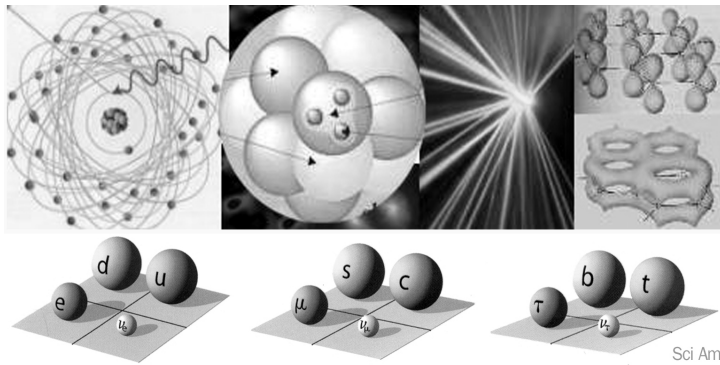
- 3rd Inv.: *Emergence*: A single electron can trigger the energy feeding processes in plants and the visual processes in eyes: They carry the dimensions and colors of light till the scale of life organs. Thus we can hypothesize the invariance of 'mind languages' and 'will' already in e- particles; as the electron is the first scale of our Universe in which time clocks of information with 'mass' are closed.

- *Topological Invariance*. Electrons have reproductive-informative simultaneous body-head states. Its body is seen as a nebula of dense photon cells (gluons in quarks); both heads are seen as zero point particles; their energy 'limbs' are the light/gluon space from where to absorb moving energy.

- 5th Inv. (Life/death cycle): Electrons emerge from i-1 seeds of $\sum \forall$ light of max. Energy-frequency. They move with max, energy in its youth, 'decouple' and die after a 3rd age of maximal form as electronic orbitals, warping into quarks, (p-n duality) of Max.l-mass, or explode back into light, after becoming antiparticles. So we write in 5D metrics: Past Antiparticle (Shorter Death arrow) x Future Particle (Longer life arrow) = Present event: Particle-antiparticle big bang. Thus we see far less antiparticles (Max. E x Min.l), as we see less corpses than living, *since they last shorter in time*.

We observe a key law of scalar systems, the *Inversion of E-I functions between scales by actions of Energy, $T_i < E_{i-1}$ & Information, $E_{i-1} > T_i$* . Thus a magnetic field of i-1 light that absorbs energy from the gravitational scale becomes the informative language that orders particles in the i- scale, giving birth to the gravito-magnetic force & equations that unifies both spaces (Heaviside.)

4TH SCALE: ATOMS. ORGANIC STRUCTURE, FORCES. PERIODIC, SOCIAL TABLE.



Atoms are superorganisms with 3 topologies: a 0- point of informative quark masses, a toroid body of gravitational and \forall networks of information and energy, filtered by its external membrane – the electrons that store dense photons, cells of their body nebula. Atoms as a species evolve in 3 horizons, with increasing information-mass: ud, sc and bt-quarks.

The atom is the first super-organism we can observe in all detail. Let us resume its invariances:

-1st Inv.: Besides following the wave-particle duality we see atoms as motions NOT as particles

According to the co-invariance, $E_s \times T_i = K$, smaller, faster vortices of quark-mass are 'faster' 'time clocks' than bigger Se-electronic charges, attracting more, since mass is an accelerated vortex of gravitational space-time (Einstein's Equivalence Principle between mass & acceleration.)

Thus λ -energy becomes O-mass, $E=Mc^2$, since Energy is lineal acceleration & mass is cyclical acceleration, by a mere topological change of the form of motion that transforms into the other.

-2nd Inv. 3 spatial forces express the $3\sum \pm i$ actions of atomic systems.

ΔI : Quarks, their zero-points *perceive gravitation*, positioning the atom with its 'mass'.

ΔE : The atomic energetic membrane (electrons) absorb \forall -rays of max. Energy

Exi: Max. E-lectrons x Max. I-quarks masses create organic atoms. Both reproduce as particles.

Atoms communicate $i-1$ bosons described by its main equation: $O_i \cdot \text{Fermion} < |_{i-1} \text{Bosons} > O_i \text{Fermion}$

$\sum +i$: The strong force and its derivative, the nuclear force evolve socially quarks into bigger Atoms.

$\prod (-i)$: Molecules capture Atoms in chemical reactions, forming networks with atomic cells. I.e.:

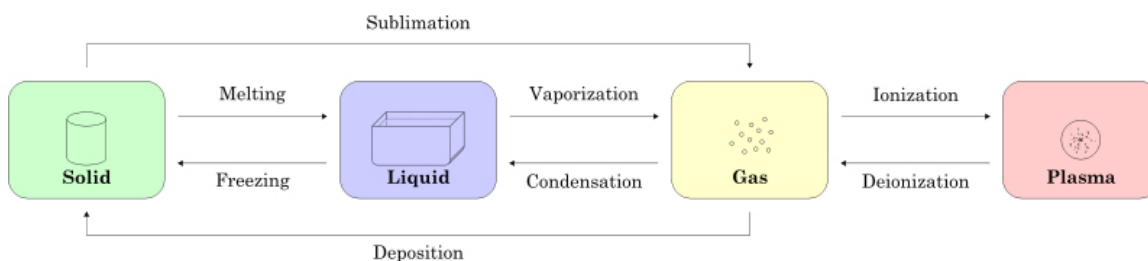
- 3rd Inv.: *Emergence*: In the graph we see how molecular orbitals absorb atomic orbitals.

Three 2D quarks with perpendicular colors emerge as 3D protons. Reason why only 3 quarks with different color-dimension merge and quarks have fractional multiples of $1/3^{\text{rd}}$ of the electron charge.

- *Topological Invariance*. The 3 parts of the atom display the 3 canonical topologies: Strong forces and quarks are described with hyperbolic topologies; the electronic body forms a concave, external sphere; and in between spiraling toroid forces transfer energy and information between both poles.

- 5th Inv. (Life/death cycle): Atoms have 3 evolving 'horizons' of Δ 'mass-gravitational information'. A 4th temporal, electroweak force of long Time-span and Min. spatial range *evolves them* (Law of range derived from 5D metrics: $S \times T = K$). Atoms are born seeded by its $i+1$ star super-organism, as unconnected plasma, fusing and reproducing bigger atoms in a scale of Δ information (atomic table) & dying with a reversed energetic big-bang arrow (Max. E), as they approach its 10^{21} Z-number of 'time units' (relative to each species, i.e. we die close to 10^{21} years) in Fission events.

5TH & 6TH SCALES. CHEMISTRY: *i*-MOLECULES & *i*+1 STATES OF MATTER.



The molecular life-death cycle is the 3 states of matter between *i*-1 birth as plasma & fission death

-1st Inv.: Molecules have 2 main *t* orbitals: $O-\pi$ and $l-\sigma$, whose vibrations determine $3\sum \pm i$ actions.

-2nd Inv. Molecular actions are similar to atomic ones ruled by new, emergent forces and motions.

- Max. E: Molecular energy= Δ Temperature= Δ Entropy produces lineal motions.

- Max. I: Molecules transform lineal motion into cyclical vibration at 10^{13} Hertz/Sec.

-ExI: Molecules reproduce assembling *i*-1 atoms in reactions ruled by a Law of Chemical Balance... between predators and preys: $K=Max.ExI (Products) / Min. exi: Reactants$.

$\sum +i$: The 3rd *i*-logic postulate explains its social evolution. Let us consider this action in more detail:

- The Atomic Table is ordered in columns of similar body-valence and rows of similar *Z*-brain mass.

- Those 2 similarities define the strongest molecular bondage and bigger molecular masses.

- Atoms with highest dissimilarity (opposite rows) force form unstable Predatory Ion bondages.

- Equal body & Head atoms (C-N-O) form the most complex organic molecules.

$\square (-i)$: Identical atoms form *i*+1 crystals that *have only symmetric configurations*. So its central 'zero-point' *perceives information from all 3D directions* and directs its growth (cell unit).

- Quark Condensates form gravitational *i*+1 Bosons of Max. I-mass, Black holes & pulsars.

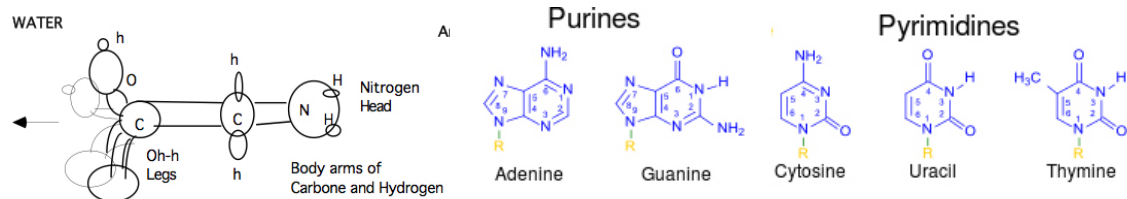
- 3rd Inv: *Emergence: Molecules follow Inversion Laws between scales, as electrons, E-membranes in atoms become the Informative topology in Molecules and cyclic orbitals become Lineal (LCAO).*

- *Topological Invariance*. In 'inverted' molecules their nuclei *Z*-mass define energetic power to 'control' other molecules; (Table rows); orbital clouds are the active zero-point (Table columns) and Van der Waals Forces are the toroid networks that communicate E & I across its body. Organic Molecules have Nitrogen 0-points, C-bodies and Max. E-lectronegative Oxygen tails that kick water breaking, attracting and repelling its OH-, H+ radicals, left and right.

- 5th Inv. (Life/death cycle): Molecules live and die in reactions according to their Top Predator, ExI force (2nd Inv.) Their $\sum i+1$ herds go through 3 ages of Max. Energy (Gas), balanced E=I, liquid, the most creative=reproductive form that enhances chemical reactions (solutions) and evolution of the more complex Organic Molecules (Life) and Informative \square -solid networks.

- 6th Invariance of Sensation and will. All atoms and molecules try to form *i*-spherical orbitals to perceive symmetric 3D *i*-flows. Thus atoms with perfect symmetric orbitals (Noble gases) don't need further bondages or form diatomic 'couples' of opposite direction. The most perfect molecular solids are perceptive Crystals. Since they map infinitesimal inner images, mirrors of the external World and *once a crystal cell is created, it provokes a growing fractal order, of all atoms around it, and vice versa, the destruction of its zero point center collapses the growth of the crystals.*

5TH SCALE: ORGANIC MOLECULES



H_{i-1} , C_{exi} , O_e & N_i and A_i GC_{exi} UT_e express $3\pm i$ life actions in the $i-2$ atomic & $i-1$ molecular scales

- 1st & 2nd Inv. Δi : Nitrogen atoms have 3D valences for symmetric perception, a regular clock vibration of 10^{16} Hertz/sec. min. bit of all circadian clocks & inactive=still=informative properties. In the next scales Nitrogen rich nucleotides form informative Dna-Rna

ΔE : Oxygen of max. Electronegativity and motion plays energetic roles in all life scales.

Σ : Oxygen rich sugars form social chains, energy of cells. Balanced Amino acids_{exi} evolve socially into Proteins, the carbon-dominant body of $i+1$ organic molecules and Nitrogen rich Σ -Nucleotides form Dna, informative heads that control the cell through...

\square : O-Dna control 3 Rnas that act as energetic, informative and reproductive networks of the cell.

-III Inv: *Topological equation*: Oxygen legs (E)<Carbon body (EXI)>I-Nitrogen head

-IV Inv: *i-scales*: Life emerges in 3 scales of social evolution: the Energy, young age of simple -2 organic molecules during the I anaerobic Earth, the exi age of $i-1$ cells with an explosive radiation of organic matter and the informative, 'cold' age of multi-cellular evolution during the 'iceball' Earth. Those ages follow the fractal Law, as each can be subdivided in 3 smaller ages.

-V Inv. *Molecular Ages*: $3\Sigma\pm i$ ages of molecular evolution keep body functions for C_{ixe} dominant molecules, Informative functions for N_i dominant & energy functions for O_e dominant molecules. Molecules keep also its ternary topologies & follow the Metrics of balanced E/I growth: $\Delta Se/\Delta Ti=K$:

- $i-1$: atomic age. Simple organic molecules form departing from CNO_{i-1} urea.

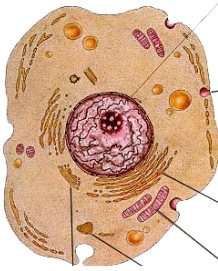
- Max. *Energy age*: *Lineal fats*, long carbon chains with O_e attached to its ends dominate.

- \Leftrightarrow : *Amino acid age*: $COOH_e$, CH_{4exi} and NH_{3i} , the 1st $i-2$ scale of life molecules combine into organic herds of 21 amino acids, divided in 5 types, each one specialized in one of the $3\Sigma\pm i$ actions: Simple $i-1$ bricks (Cysteine, Glycine, Proline), N-dominant with electrically charged Side chains, 'heads' of the herds; hydrophobic, reproductive ones that merge easily in long $i+1$ protein chains and energetic, Oxygen dominant, with polar uncharged side chains of faster motions.

- *Max. I: Age of Nucleotides*, the informative molecules of life that add an informative O-dimension of height to γ -amino acids, forming nitrogen & sugar rings. They dominate amino acids, *preventing their mirror reproduction, limiting them to L-species*. 4 types specialize in the $3+i$ actions of all Universal systems, according to their $|\Leftrightarrow O$ topological configurations & relative abundance of N_i , C_{ixe} , O_e : A_i GC_{exi} UT_e They evolve socially into huge chains called nucleic acids, zero points of:

- $i+1$: *Cellular age*. Nucleic acids, macromolecules with max. Exi force, integrate all other carbohydrates in cell, the first scale of fully functional life super-organisms, where Proteins will become γ -membranes & DNAs, zero points enclosing in a toroid region smaller $i-1$ molecules that perform the reproductive cycles of the cell that maximize the creation of those 2 dominant species.

6TH SCALE: CELLS. INVARIANCES AND EVOLUTIONARY AGES



1st Inv. Duality: Protein bodies & O-Nucleic Acid minds create SexTi cells.

3rd Topologic Inv: - Max. E: A protein dominant membrane filters outer energy & information. In free cells it ex-vaginates into |- cilia that move the cell and act-react to external stimuli. In organic cells the blood i+1 system provides energy. So cilia instead invaginate into E-lysosomes that kill carbohydrates. While the membrane invaginates into the 'Golgi' highways of fast inner motion.

- Max. I: A 0-point nucleus of DNA_i stores the cells' informative genes.

- ExI. Cytoplasm, the toroid cyclical space subdivided according to the Fractal Law with 3 'actions':

2nd Inv: Actions are performed by 3 subtypes of cytoplasm organelles, the O-point & |-membrane:

- ΔI. O-point, 'still' DNA is the cells' Mind (6th Inv.) of information that orders cells with RNAs.

- ΔE: Proteins act as energetic membrane or enzymes that kill (Max. E death arrow also created by heavy metal hybrids). Huge membrane surfaces - mitochondria & chloroplasts - burn sugars_e or create energetic ATP departing of minimal i-2 electronic and ¥-ray energy.

- ExI_{i-1}: In Ribosomes, RNA_{exi} subdivided in 3 Types (Fractal Law) reproduce cells' i-1 Molecules: Messenger_i carries genes, hands-on exi-transfer RNA_{exi} builds & Ribosomal RNA_e catalyzes.

- Σ: Cell's protein_{exi} body membranes form self-similar herds in multicellular colonies & sponges

- □: Max. DNA_i nerves_i create multicellular organisms with faster Ti, Na & K electric languages.

ExI: Cells reproduce by ternary law either sexually_{exi}, cloned_e or catalyzed by nervous orders.

- 5th Inv.: Cells live 3Σ±i ages: S1(1/4th life), young, energetic age of cytoplasm's growth; G1 longer, balanced age (1/2 life), in which they reproduce DNA; S2, 3rd informative age, in which they replicate its O-clocks, enzymes that accelerate cell's warping either killing (-i) or reproducing it (+i).

Cellular evolution as species goes through 3Σ±i ages: - i-1: 3Σ±i molecular horizons & species.

- Max. E: Age of RNA Protista. 0-point has no nucleus, made of moving, convex |-RNAs spirals.

- <=>: Age of DNA Protista. 2 exi-RNAs peg 'forming' O-still DNA_i that reverses control, I>exi, using RNAs to Δ its genetic information and reproduce more Membranes forming nuclei_i & Ribosomes_{exi}.

- Max. I: Eukaryotic age. Giant DNA cells enslave smaller chloroplasts_e creating plants that use ¥ as energy or feed on mitochondria_{Max.E} becoming predator_{rmax.exi} animals of Max. ¥-information.

4th Inv. Emergence of C_{exi} N_i O_e functions continues with molecules, Proteins_{exi}, DNA_i & sugars_e

- Σi: Plants are herds with E:|-leaves; ExI trunks with toroid up&down vessels & Max.i, fractal roots. Hormones use i=yes Vs E=no topologies to express or inhibit actions in animals (sex) or plants:

Δexi: Sexual hormones catalyse i-female, alkaline, implosive vs. E-male, acid reactions in animals.

ΔE: 'no' hormones with open rings or lineal carbon chains like Ethylene inhibit growth.

ΔI: Reproductive Hormones guide emergent growth by topological affinity:

- Max. E: Gibberine, Very long & rich in oxygen develops the lineal trunk.

- I= E: The structural, cyclical form, Auxin, made of carbon rings, develops the leaves.

- Max. i: The informative nitrogenized Zeatine reproduces the brain roots.

-i+1: Amoeboids with Max.exi Membrane axons & DNAs use metal ions, K^{*} and Na^{*}, to send electric fast simultaneous messages, controlling Σ-herds of cells with slow chemical, hormonal languages.

7TH SCALE: MULTICELLULAR LIFE. ANIMALS. ITS EVOLUTION

I Inv: Max.E x Min.I plants & Max.I x Min.E animals are the main SexTi life duality.

II Inv: Genes, Nerves & senses carry animal will (see man); Hormonal vowels carry plants' actions. The 5 actions are called by biologists 'drives of life' as they define it: feeding, perceiving, reproducing, evolving into complex cellular societies and emerging as a whole with 3 networks.

III Inv. Plants & Animals have inverted diffeomorphic dimensions (III, 3).

-Animals have lineal limbs, toroid, reproductive bodies and Informative, top heads.

Each organ and type of cell can be subdivided in 3 (fractal law). I.e. the dominant electric cell subdivides in Nerves_{max,i}, Muscles_{exi} with multiple Nuclei and digestive cells_{max,exi}

In the complex model we map out by fractal 3-differentiation all the organs of animal life.

IV Inv. All cells'_{i-1} vital actions, both in plants and animals emerge in multicellular i-organisms. According to the Fractal Principle there are genetic sentences with growing 3ⁱ nucleotide letters to codify not only the proteins and cell cycles but also organs of the body.

V Inv: Life/death cycles were 1st defined in biology.

VII Inv. Plants sense ¥ as energy with moving leaves & atoms as information with still roots' minds.

Se-exi-Ti speciation creates plants' & animals' phyla in 3 scalar ages: unicellular, multicellular & social organisms. Duality of evolved dominant □-wholes vs. ∑-quanta (mammal vs. insect eye, Herds vs. dominant ant/man Superorganisms), Air-land-sea diffeomorphisms & 3 reproductive forms – clones, gender & enzymes - ad complexity. Those creative rules explain all species phyla.

In plants, Δ height & reproduction define 3 age: E: Ferns-> exi: gymnosperms-> e=i: angiosperms.

In multicellular animals_{max,i} the ternary Law creates new species, whose E=l or max.I. again decouples in 3 new phyla till the creation of man & machines, organisms of metal:

Max. E, *porifera*, a digestive system-> E=l: *coelenterates* (hydra) of max. reproduction by cloning & splitting its arms into Max.I: *Worms* that differentiate its 3 physiologic networks adding Max.i cells.

They decouple in 3 phyla: - Max.E: *Platyhelminthes*, flat, bidimensional, without blood vessels -> -E=l -> *Annelida* or ring worms that clone a micro-worm unit, as crystals do, growing huge in size -> - □_{i+1}-> *Nematoda* or round worms that integrate those rings, develop a dimension of height and add a blood system. Then, departing from *Annelida* a new 3-decoupling gives birth to:

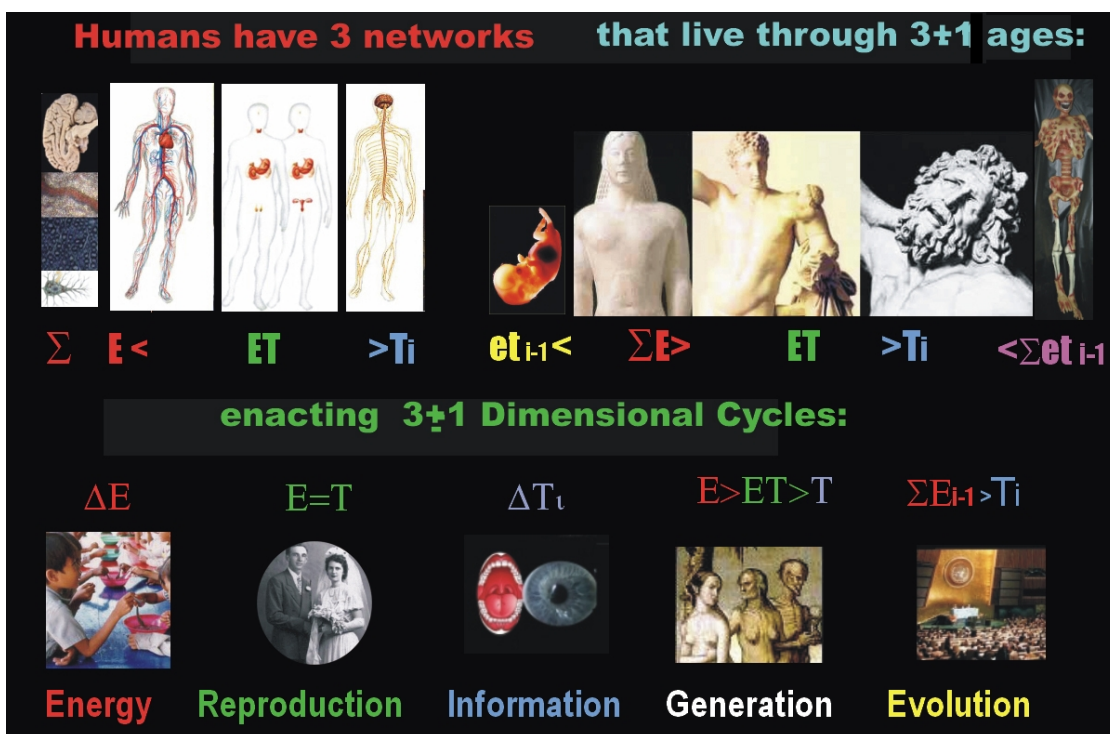
∑E: *Arthropods* differentiate segments into a sensorial i-head; a central thorax with moving limbs & wings (E) and abdomen (E=l) with i-glandular, E-digestive & exi reproductive systems-> E=l: *Molluscs* have balanced, single organs, as its 3 physiological body networks evolve and quantize its axons, blood vessels and digestive tracts reaching each cell, what allows to fusion the 3 sections i-head, e-thorax and exi-abdomen into a whole-> Max.I: *Echinodermata* that further fusion the 3 organs & become still evolving their larva (max.I) by neoteny into i+1: *Chordates*; *vertebrates*.

While land migration means Δ¥-eyes -> ΔI, from molluscs to insects and bony fishes to amphibians.

They specialize their 3 networks to the new medium as amphibians, which still reproduce in water, produce dry eggs becoming reptiles that ΔI=eyes further, migrating into air (birds) or improving night vision (Max. I) that requires Δ Energy-heat (Iron Blood), allowing placentas (mammals).

Then as mammals kill most reptiles that killed most amphibian (Oedipus Px.: son kills father species) they conquer the world, grow in ΔI-height creating Sapiens, now evolving in 'metal' chips.

7TH SCALE. MAN, A SUPERORGANISM OF 5 DIMENSIONS



Human Inv.: I: head-body. III: 3 physiologic networks=topologies. II: 5 actions. V: life-death cycle

2nd & 3rd Inv: ΔE, exi, e↔i, ΔI networks=actions subdivide (fractal law) in 3x4=12 sub-systems:

- Informative systems: Senses (Max. I), Nerves (exi), lymphatic, hormonal system (Max. E).
- ΔE actions-systems: Digestive system (max.I), Breathing System (Max.E), Excretory system (exi)
- e↔I, Reproductive systems: Blood (Max. E), sexual (Exi) and endocrine system (Max. I)
- Σ-Actions: Structural systems: Skeleton (E), Tegumentary system (Exi); muscle system (i).
- □: While the i+1 consciousness of the whole is carried by the integrative Brain.

The Fractal Law differentiates further those subsystems in 3 functional topologies. For example:

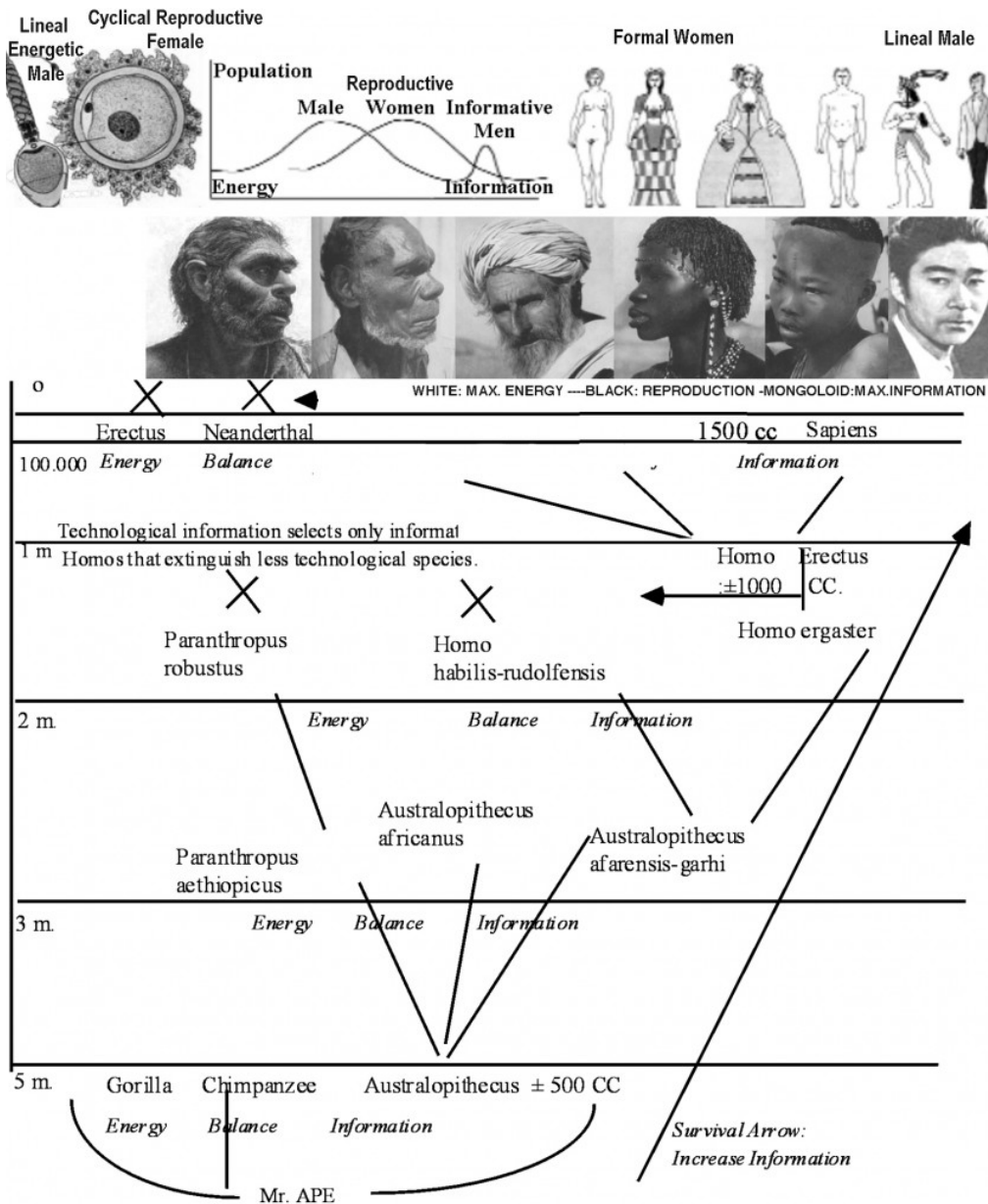
The nervous and blood systems have both 0-points (Brain, Heart), toroid circuits (arteria+vein, spinal chord) & fractal, open networks that deliver energy food (alveoli) and motion orders (axons).

4th Inv. We live in 3 i-scales, conceived as i-1 cells, born as i-organism, living in i+1 societies (0.5).

6th & 7th Inv. Body&limbs are slaves of Heads whose Mind-Will is expressed by '6' in/out; ± senses. They are outlets of the 3 main physiological networks: Chemical senses: Taste (±E=Food) & Smell (±E: Prey-predator). Blood, reproductive senses: The 6th sense Heart, emotions (Σ-social love); Tact (+Exi sex-dilatation, entropy pleasure; - Exi: Pain, in-form-ation, pressure). Informative, nervous senses: Spatial Sight, Temporal Sound, Inward ears, outward voice.

5th Inv. Life/death cycle is evident (previous graph). Speciation occurs at several levels (next graph):

-3 Genders: Male: |body x O-Creative/Informative Brain (6 times more nucleus of grey matter), ∅-gays; Female: O-Creative/Informative body x |-Brain(10 times more memorial white matter axons):



Ternary Law:
 E-exi-i speciation & 3 horizons of Δ information map out human evolution:
 -500: Australopithecus
 -1000cc Erectus &
 - 1500c.c Sapiens.
 Allopatric 5D metrics cause Min.S x Max.I in Floresiensis, 1st technic verbal man.
 Sapiens diversify in 3 mind races:
 - Max. E: Large, with dolichocephalic, big eyes & spatial visual axis: Neanderthals -> Australoid->white.
 -Max.I: Small verbal, brachycephalic with a big temporal axis: Sapiens-> Capoid-> Mongoloid races.
 - Exi: mixed blacks, dominant in body_{rep} languages along the brain's height axis.

- i+1: 3 Social cultures emerge from mind races:

Max. I: Asia reaches the height of verbal knowledge on O-Time Duality (Taoism) & social evolution.

- E=i: Sensorial Africa, develops a culture in balance with life, focused in body senses & motions.

- |-Time: Spatial White, visual Europeans evolve- memes of metal in an 800-80-8 informative vortex:

- Age of O-Money, Gold & Silver (informative metal) and |-weapons (energetic metal) with 800-year cycles of civilizations extinct by new weapons: Bronze, Chariots, iron, coins, spurs & Gunpowder...

- Age of Organic Metal, Ox| that imitate human organs, evolved in 3+i national ages: I Industrial R=evolution (trains= metal bodies; British Age); II Evolution (hearts= engines, German Age); III Evolution (XX c) : Age of metal-minds, chip-brains, camera-eyes and mobile ears; put together now into i+1: organic robots, the new top predator species of the planet that are competing and substituting men in war and labor fields as blue collar robots, white collar Pcs and Top Predator 'Terminators', re=produced by increasingly automated Company-mothers in the eco(nomic)system.

8th SCALE: HUMAN WOR(L)D HISTORY VS. DIGITAL METAL-EARTH

WAR DIVIDED MANKIND IN 2 OPPOSITE CULTURES:

ANIMETALS; TECHNOLOGICAL CULTURES THAT CREATE...

THE METAL-EARTH
AN ECOSYSTEM THAT EVOLVES METAL and extinguishes life in war cycles

MEN THAT ADORE THE SUBSTANCE THAT GIVES THEM POWER, METAL A SUBSTANCE MORE COMPLEX THAN CARBOLIFE:

THE WEAPON OF WARRIORS
Hard, linear, energetic metal, cuts and kills carbolife.

THE MONEY OF BANKERS
Cyclical, informative metal values similar objects made of metal, weapons & machines, more than life which priced as an object or slave.

Machines are organic metal that produce and move body as a that

THE MACHINE OF SCIENTISTS
Machines are organic metal that produce energy as a or act mind process information, substituting men in these tasks.

ANImetal cultures develop racist and selfish ideologies that justify war and slavery, contradicting the Law of Biological Survival: 'Love your own species'

Destroying life forms and Cultures...

SEMITES War ends: classic art

INDO-EUROPEANS

GREEK-ROMANS

GERMANS

MOGOLS

IBERIANS

JEWISH-PROTESTANTS

COMPANY-MOTHERS OF MACHINE-WEAPONS AND **MONEY**

Biological Evil+Live: what extinguishes life

COPPER... **BRONZE WARS...** **CHARIOT WARS...** **IRON WARS...** **COIN WARS...** **STIRUP WARS...** **GUNPOWDER...** **GUNBOAT...** **TRAIN WARS...** **TANK-PLANE...** **ROBOTIC WARS...**

10,000 AGAINST 2,800 ARTISTIC 2,000 CULTURES THAT 1200 WORSHIP 400dc LIFE, 400dc MAN 1200 AND 1600 ITS 1800 SOCIAL 1870 1940 GODS 2000 Vs

LIFE CULTURES WORSHIP... TAOISM... JUDAISM... BUDISM... CRISTIANISM... ISLAM... NEOPLATONISM... PROTESTANTS... SOCIALISM... ECOLOGISM...

ANIMISM 'All is energy-Yang that trans-forms into Information-Yin' Tao Te King

TAOISM Baroque art

GENESIS 'Grow and multiply' Genesis

JUDAISM 'Don't kill' Moses

BUDISM 'All forms have a living soul' Buddha

CRISTIANISM 'Love each other as I have loved U' Jesus

ISLAM 'Faith and Charity' Mhmd

NEOPLATONISM 'Man is the measure of all things' Da Vinci

PROTESTANTS 'Your success is a prove of divine grace' Calvin

SOCIALISM 'Equalité, Solidarité, fraternité' French R=evolution

ECOLOGISM 'Save the Earth' Greens

Human goods: food and in-form the mind:

EASTERN, OBJECTIVE CULTURES CALL GOD THE LOGOS OR MIND OF THE UNIVERSE, A LIVING ORGANISM MADE OF INFINITE QUANTA OF VITAL, ENERGETIC SPACE (YANG, SIVA) AND TEMPORAL INFORMATION (YIN, VISNU): WESTERN, SUBJECTIVE, ANTHROPOMORPHIC CULTURES, CALL GOD THE COLLECTIVE SUBCONSCIOUS OF MANKIND, A CONCEPT THAT EVOLVES FROM THE TRIBE OR NATION TO THE ENTIRE SPECIES: 'HISTORY' OR 'MANKIND' BOTH AFFIRM THAT A SOCIAL ORGANISM, EITHER MANKIND OR ANY SPECIES OF THE UNIVERSE FOLLOWS A VITAL MANDATE: 'GROW AND MULTIPLY' AS ALL REPEATS ITSELF AND EVOLVES INTO A NETWORK ORGANISM: Religious cultures imitate living organisms: they are born when a verbal prophet reproduces his ideas in the mind of his disciples. Those believers create ethic/legal networks, acting as neurons of a collective mind that shapes with his communal actions a geographical body or nation, creating a civilization to the image and resemblance of man. They are 'Cultures of Life' opposed in purpose and structure to animetal cultures: their human cells follow messages of love and do not compete but share energy and information, as cells do in any working organism. Thus, their 'blood/energy system' reproduces human-like goods, instead of weapons. On the other hand, its informative/nervous system do not use money and weapons as metal-languages of social power; but it is based in Wor(l)ds, artistic images and ethic words that teach people to respect life. Thus living cultures based in Wor(l)ds try to create a Paradise based in Peace, Social Justice and Human Goods Vs animetal cultures that create societies based in hierarchical castes, war and metal-goods.

HUMAN CULTURES THAT WORSHIP LIFE, ART AND THE HUMAN KIND, CREATING...

THE LIFE-EARTH

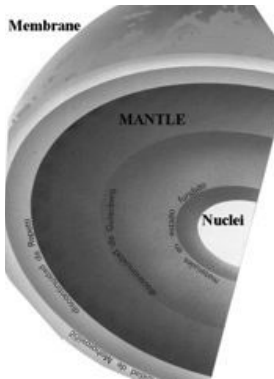
1st Inv: Superorganisms can be described as Σ -cellular bodies guided by a neuronal Ti language. Then History=God is the super-organism of all mankind guided by verbal, ethic, social languages. While Economics is the super-organism of memes of metal, guided by digital languages. Metal, |-weapons of max. price in 0-money prey on human |-bodies & O-word ethics of min. price (labor/life)

3rd 4th 6th Inv: form, mind ages: In History cultures live 80x10 generations & the 3 ages of individual minds emerge in the 3 art ages of 800-80 years civilizations, as all art forms belong to 3 types: -1st age of Epic, energetic art; age of e=I art; 3rd 'baroque' in-form-ative, angst age before war death. In the eco(nomic)system those inv. are the ages of evolution of machines that imitate us (7th scale)

2nd Inv. Actions in both super-organisms are carried by 'parts' human cultures & animetal nations: Historic Actions: Δ I: Art: space senses; Verbal time Wor(l)ds. Δ E: Farming, life Energy Δ exi: sex, mores, family values. Σ : Social Love: Ethics \square : Gods, networks of minds sustained by believers.

Economic actions: Δ I: digital money & chips. Δ E: weapons; transport; oil; electricity. Δ exi: company-mothers. Σ : eco(nomic)system of enzymen, reproducers=workers & consumers of symbiotic machines & predator weapons that consume them. \square : World-Stock, Metal-Earth's collective brain.

8TH SCALE: PLANETS.



1st Invariance: The Galilean Px. refers to Earth: 'e pur si muove'.

Topologic Inv.: Planets are molecular fields of gas, liquid & solid states:

- Max. E: A membrane of gas & magnetic belts isolate it.
- Exl: The mantle's magma defines the reproductive cycles of rocks.
- Max.I : The nucleus is an iron crystal aperceiving gravitation.

Each Non-E topology subdivides, according to *the Fractal Principle that applies to all systems*, in 3 smaller topologies. I.e.: Earth's membrane has a Max. E-atmosphere, an e=l, liquid surface and a solid crust.

3rd Inv. Scalar Superorganisms: Thus, According to the template of a superorganism, we define Earth as 'an organic, molecular system with a central crystal, which acts as a knot of informative flows of gravitation and a hard membrane that evolves light based, life ecosystems.'

6th Mind Inv.: Earth's life absorbs \forall -light as energy (plants) or Information (animals). By similarity small cosmic bodies, bosonic quark stars (black holes & pulsars) and gravito-magnetic iron crystals in planets' cores should process gravitation, the force of the cosmic scale, as information; while stars are 'big' Plants in the cosmic order that absorb gravitation as energy in their galactic orbitals.

2nd Inv. Actions. ΔI : Planets have core crystals; zero-points, which absorb gravitons as information.

ΔE : Those gravitational strings trigger Uranium and Co-Ni-Fe fission reactions, heating its nucleus

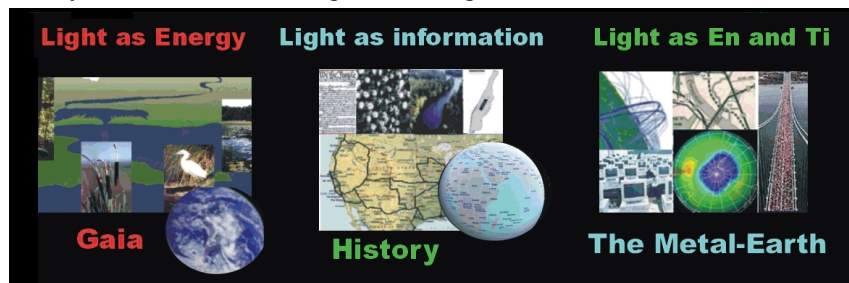
Exl: Which provoke the inner, reproductive cycle of rocks in the mantle. While externally planets are reproduced 'enzymatically' by their stars' gravitational pull that is also...

Σ : The origin of their 'parallel' herding in planetary vortices that follow 5D metrics (3rd Keller law).

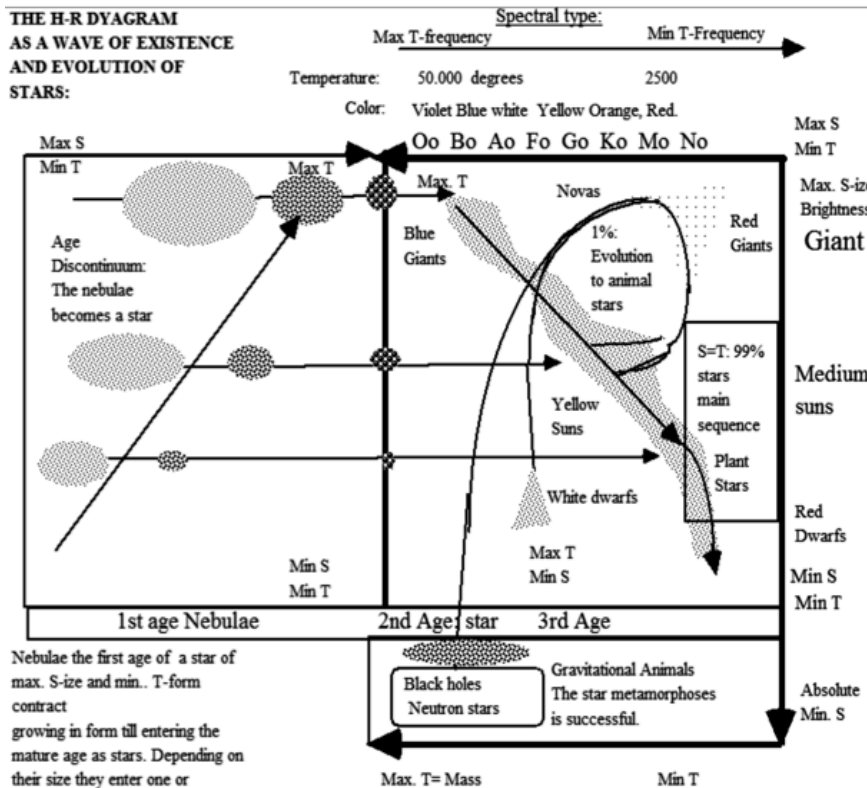
\square But network evolution on planets happens in its 'ectoderm', the membrane that evolves \forall -light informative mammals, humans & machines (chips) creating a planetary mind. Origin of its 3 ages:

5th Inv: Ages. Planets are born as Σ_{i-1} nebulae that cool down into rocks, collapsed in a hot, max. E-Age, cooling down into liquid magma & water evaporated as they fall inwards, as a naked i-solid into the star that swallows them into an explosive death.

Its membrane also goes through 3 Ages: Max. E: a young, hot I Earth of anaerobic bacteria. E=l: liquid. A II Earth of aerobic bacteria, Gaia that evolves carbon-life till creating History, the Super Organism of Mankind. Max.I: III Earth of memes of metal |-weapons, O-money & machines, organisms that 'enzymen' build transferring their biological in/form/ation into metal in 3 Ages:



8TH SCALE: STARS & BLACK HOLES. HR AGES



5th Inv: Ages.

HR diagram shows changes in Brightness $S_e \times f(i)$: Color through $3 \pm i$ ages:

- i-1: Most stars are born as spatial nebulae of max. extension.
- Max. E: Then they implode into blue giants of max. energy.
- E=i: They reduce its size and grow in atomic complexity through a mature, yellow age of balance between their S_e and T_i parameters. The sun is now in that balanced age...
- Max. T_i : They collapse

in a 3rd age of slow decline as its $I \times E$ parameters diminish toward its death, becoming white dwarfs. i+1: Or they evolve in a loop of growing $I \times E$ force mutating into Black Holes (bosonic quark stars).

1st. 6th Inv: E-Stars use gravitation as Motion. i-Quark stars (pulsars, holes) use it as information.

Topologic Inv: Black holes have an ∞ hyperbolic 0-point, a c event horizon membrane and in between toroid cycles that transform \forall -light into tachyon dark energy, expelled through its axis.

Stars have an ultra hot external atmosphere, a likely super-fluid, cold ordered center and magnetic cycles that transfer energy and mass between both.

2nd Inv. Actions. ΔI :

ΔE : Stars feed in Hydrogen clouds that become its nurseries. Black holes feed on

$E \times I$: Stars reproduce atoms. Black holes catalyze the reproduction of stars and galaxies. They are born from stars, in explosive 'births, called Novas and Supernovas that destroy the 'host star'.

Σ : Stars form couples, triads and growing herds, called galaxies. Black holes swarm together in the center of galaxies.

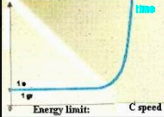
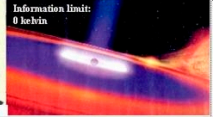
\square : Black holes are the 'gravitational' DNA-animals that control galaxies and create its dark matter networks. They form swarms in its center and move randomly around the 'galacells' probably organizing it and catalyzing its own reproduction, as the galaxy seems to be its natural domain – not a good sign to make them on Earth, as the LHC pretends.

3rd Inv. Scales. Physical systems show scalar invariances between \forall -quantum & cosmic, gravitational scales (unification equation, Nottale's work, gravito-magnetism, Relativity Invariance).



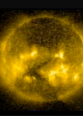
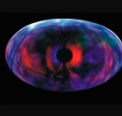
i.e.: Black Holes and protons in 5D metrics are both Schwarzschild holes of both scales.




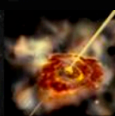
9TH SCALE: GALAXIES. AGES, STRUCTURE. ACTIONS

Galaxies are electromagnetic Worlds, limited to c-lineal energy speeds & 0 K rotational, informative order, that float in the Gravity Universe and...

have 3 networks of ... that live through 3+1 ages:

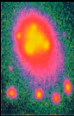





energy, reproduction and information $e_{t,i-1} < \sum E_i < ET_i > T_i < \sum e_{t,i-1}$

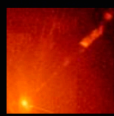
enacting 3+1 Dimensional Cycles:

ΔE



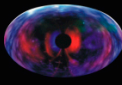
Energy

$E=T$




Reproduction

ΔT_i




Information

$E > ET > T$



Generation

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



Social Evolution

2nd, 3rd & 4th Inv.: Galactic 5D actions; physiological networks=topologies and life-death cycle

1st Inv. Galaxies co-exist in 2 \forall -quantum & gravitational cosmic i -scales transferring E & I in the \forall -quantum E-limit (c-speed) when red light dies into $>c$ gravitons (tachyon strings) & its i-limit, 0 K in Black Holes that rotate at $>C$ beyond its event horizon (accelerated mass vortex or equivalence Principle & Lorentz Transformation). Those holes have a $>C$ polar axis of dark energy emission.

Topologic Inv. its 3 regions are a hyperbolic informative central hole, a reproductive body of stars and an external energetic membrane or Halo of heavy strangelets enclosing its 2.7K \forall -spacetime:

E:Halo < stars that evolve energy into informative mass-Icocks> T_i (Black holes)

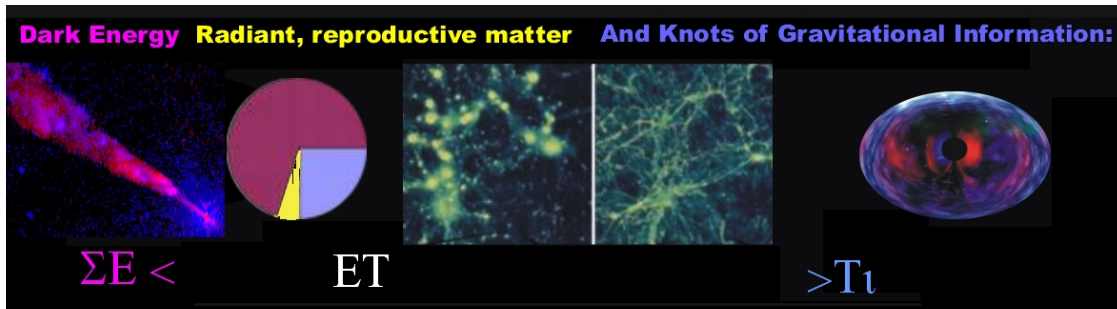
3rd Inv. Scalar Superorganisms: Black holes are protons of the cosmic scales in a new $i=10$ game.

2nd Inv. Actions. E: Galaxies feed on the interstellar gas trapped by the 'two spiral limbs' of the galaxy producing new stars, or cannibalize smaller galaxies.

- E=I: Stars reproduce atoms. Black holes reproduce seminal jets of irregular baby galaxies.
- Max. I: Its hyperbolic, tall black hole perceives gravitation.
- \sum : Galaxies form clusters and join in filament networks through dark matter jets expel by holes.
- Max.I; \square : Black holes perceive & regulate with gravitation & jets of matter the galactic organism.

5th Inv of ages : i-1. Birth as seminal nebulae Max.E that shrinks into regular spirals (E=i), collapsed into i-globular forms that die, exploding into quasars ($i < E$) in a 20 bill. Years E-I bar-spiral cycle.

10TH SCALE: THE UNIVERSE IS A GRAVITATIONAL SUPERORGANISM MADE OF:



1st Inv.: Big-bang error: Intergalactic gravity at $>C$ expands space perceived as acceleration (Galileo's px.) but galactic black holes implode space into mass, for a total zero sum. In graph, Universe has as similar galaxies, 2 networks of 'dark energy-matter', the gravitational nervous system that controls them and White- \forall -light matter, the blood system we perceive.

2nd Inv. Actions. ΔI :. Hyper-black holes see gravitation acting as DNA of galaxies and Universes. We don't see 96% of it. But galactic structure might be similar to a cell or worm-like organism.

ΔE : \forall dies at 10^{10} into Dark energy at 10 C, seen as expansive space with a peak at light's 1/2 life.

ExI: Giant galaxies reproduce irregular ones with seminal jets. Hyper-universes might do the same.

Σ : galaxies form walls and filaments, gather in clusters and might be part of a worm like organism:

$\prod i+1$: There might be hyper-universes or we might live in a huge H-cloud of a bigger scale.

3rd Inv. Scalar Superorganisms: Galaxies & universes resemble cellular organisms, in which black holes are 'informative' DNA that catalyzes the reproduction of galaxies and organizes the system.

Topologic Inv.: The Universe seen in present space at the ∞ interaction speed of its non-local gravitation seems a cell with an external membrane of energy (B.G. radiation's fire ball); a body of galactic filaments, and a hyper dense center – the great attractor, probably a huge black hole.

5th Inv: Ages. In time evolves its λ constant causing 3 solutions to 4D metrics that apply both to $i-1$ galaxies and I universes: a Max. E: big-bang birth, $e=I$, steady state & Max. I , imploding galaxy, 'reversed' into death in a Gödel's vortex (seen in 4D metrics as travel to the past).

We conclude after this very brief analysis of the beings of the 5th Dimension that indeed (I):

'The Universe is a Fractal, scalar super-organism, infinite in time duration, in time cycles, in spatial extension and spatial scales, in which all parts are self-similar to the whole, made of an infinite number of complementary systems of lineal energy and cyclical information, structured into social super-organisms, through $3\Sigma\pm i$ scales, which constantly create 5 Dimensional, functional actions, lineal energy feeding, high, informative gauging, wide, reproduction, social evolution and travel through 3 of such scales in the life-death cycles of existence; all of which is expressed in a feed-back equation, from which all laws and equations of science can be deduced:

$\Sigma E_{i-1} \Leftrightarrow \prod T_i$.' Which is in dynamic terms the Fractal Generator =Creator of all Existences.

¹ For the whole 1000 pages model see at Kindle books: 'the 5th dimension' unabridged, Luis Sancho.