

From the desk of Pierre Beaudry



WEAVING THE LONG MODULAR WAVES OF HISTORY

(Or, how to investigate what is not there)

by Pierre Beaudry, 6/18/2010.

In commemoration of the

70th anniversary of Charles de Gaulle’s call for resistance against fascism in France.



“What we must train ourselves to “see,” is not what we tend to regard as an object in physical space-time, but, rather, the cause of a shadow which is cast upon the mind as the experienced reality: a *singularity*, rather than a “real object.””

Lyndon LaRouche.

“Not only the Biosphere, but the totality of space that is accessible to the mind is penetrated by the rays of this immaterial medium. Unceasingly mingling together, these rays, whose waves vary between tenths of millions of millimeters to a few kilometers, propagate around and inside of us. The totality of space is filled with them.”

Vladimir Vernadsky.

“The history of astronomy is an essential part of the history of the human mind.”

Jean Sylvain Bailly

INTRODUCTION: ARE YOU COUNTING ON WHAT'S NOT THERE?

Today, after more than 3,000 years of imperial rule over human civilization is coming to an end, the time has come for ordinary citizens, from all around the world, to understand and to steer long waves of history, because the current universal crisis has made citizens the only ones receptive for “communicating and receiving intense and impassioned conceptions respecting man and nature.” (Shelley, *A Defense of Poetry*.) This means that not only do you have to pay attention to historical processes instead of events, as Lyn has been emphasizing, but you also have to pay attention to the fact that the universe is reaching a limit whereby it is not able to make the next anti-entropic step without the explicit intervention of the human mind in the cosmos. Therefore, it is humanity that must now take leadership and steer the anti-entropic course of the universe beyond its current finite limit. And, for this to happen, you must weave long waves of history. Although the nature of long waves of history can be manifested in many ways, they are always grasped through a special sort of mental activity that I would identify as *the creative practice of seeking and discovering what is not there*.

Vladimir Vernadsky, for instance, spoke of a small window of about 4 ½ octaves of cosmic waves, out of the entire electromagnetic spectrum, that penetrate constantly all living and thinking processes on Earth in pathways that range from fractions of nanometers to several kilometers in length. Those wave processes are unique in the sense that they are always conducted through the same intended least action pathways of sufficient reason as defined originally by Pierre de Fermat. Not only do those cosmic waves know where to go, but they also know how to get there. However, they may know but they don't have to decide which way to go. It is the natural process of the anti-entropy principle that “wills” them, so to speak, into their forms of least action.

Man, however, is capable of conceptualizing such wave intentions within the scope of inferential knowledge, and he is capable of willfully positioning himself into directing them in much larger waves than those contained in that electromagnetic spectrum, because his mind can relate to processes that spread for thousands, even billions of years, in the simultaneity of eternity. Although man might know the method of how to get there, he doesn't always know where he is going to end up. For example, in his writings on ancient astronomy, French scientist and political figure, Jean-Sylvain Bailly, discovered how an ancient People of the Seas, living in a pre-imperialist age, more than 6,000 years ago, had left traces of their having existed simultaneously in as far reaching places as Ancient China, Ancient India, and Ancient Egypt. That People of the Seas had established an astronomical calendar based on waves that extended for thousands of years into the future. But, that ancient people did not know if their knowledge of the universe would survive them. In fact, most of it did not, but a discoverer from among them decided to leave traces of their existence, and this is what Bailly rediscovered. In doing that, Bailly demonstrated that there was no limit to the power of the willful human mind to hypothesize the existence of what is not there, and to discover it by weaving long waves of history.

As Lyn has stressed many times, the discovery of what is not there is the most important thing to concentrate your attention on, because this is what may, one day, save your life. Therefore, since that day has now come, the time is now ripe for imparting the secrets of such a special form of cognitive activity to all of those who are willing to change history. In the following pages, I will demonstrate the fact that *what is not there* does not lie in objects of sense perception, but in the axiomatic singularities of the non-visible domain of principles. The best exercise that you can undertake to train your mind into steering the universe in the right direction for the unforeseeable future is to keep away from the fakery of sense-perception and investigate that which is not there.

1- THE PRINCIPLE OF PSYCHOPHYSICAL PARALLELISM.

“The point is not to show people
where to go, but how to get there.”
Dehors Debonneheure

The key to understanding things that are not there is found in the creative process of the human mind, and the lock this key fits into is the Leibnizian inferential knowledge of proportionality between reason and power. Such a process is very simple, but it is not easy to discover and sustain its dynamics, because human beings are always too easily overwhelmed by fallacies of composition that lead them to accept going along to get along, instead of going against the pricks and seek true knowledge.

For example, the reason why the domain of science is, today, ruled by chance as opposed to reason, comes from the fact that people have lazy minds and they prevent themselves from accessing the richest nutrients that inferential connections can offer for both their mental and physical developments. Their lazy minds rely on the appeals of sense certainty as opposed to looking for the more difficult truth that dwells in the interstices of their minds. As a result, they are easily convinced that sense certainty values can replace causal values and they end up using their brains instead of their minds.

On the other hand, paying attention to what is not there may sound crazy, but it is actually the only way that the mind can look for causality in the universe. Looking for what is not there is one of the most important exercises to involve your mind in, because you are not only investigating the boundary conditions of the known and the unknown, but you are also asserting that man is the only creature in the universe that is properly and functionally equipped to do that as a God-given privilege. As Cardinal Nicholas of Cusa would have said, when you are climbing the ramparts of learned ignorance, the limiting principle itself is no longer limited. This is the reason why the most exciting thing to discover is how much you don't know, because when you do that, you are looking into the window of the future, into what future knowledge must look like.

But, the question is: how do you create the knowledge that you don't know? The first thing that you must do is to project a long inferential stick that extends from the known to the unknown. Consider, for example, the following proportional relationship of psychophysical parallelism among the three Vernadsky universal phase-spaces of the Noosphere, the Biosphere, and the Lithosphere:

If the abiotic material of the Earth is a form of physical space-time found everywhere else in the universe, then the biotic material of the Earth must also be an integral part of the universe as a whole; and in the same proportion, the cognitive mind must also exist everywhere else in the universe in some form of consciousness.

If this proposition were to be proven right, then it would demonstrate that everything that exists is based, essentially, on a principle of psychophysical parallelism that informs everything in the universe as a whole. For instance, it has been demonstrated with advanced spectroscopy technology that the inorganic matter of our planet is found throughout in the cosmos. What we don't know, however, is if the same extension should apply to living and cognitive processes. What should be the characteristics of living and mental processes in the universe as a whole? Since we have no reason to be geocentric, but, we ought rather to be cosmocentric in principle, the implications of such an inferential hypothesis are twofold.

The first implication is that the hypothesis does not only mean that life and cognition also exist outside of our Earth, but most emphatically, that there is not one part of the universe where living and cognitive processes do not exist in some form. In other words, living and cognitive processes are not accidental epiphenomena in the universe, some sort of freak show unique to our planet, rather, they are integral parts of universal manifestations, which have existed together eternally throughout all of cosmic space and time. This means that life and cognition did not originate on earth, and that some form of cosmic radiation, carrying living and cognitive forms of inseminations, must have infected the Earth, more than a few billion years ago, and will continue to do so for all time to come. Thus, there is no reason to believe that all three phase-spaces of Cognitive, Biotic, and Abiotic domains do not coexist throughout the universe, in the immortal simultaneity of eternity. If this were the case, then the singularities that are represented by the axiomatic differences among those three phase spaces on Earth should also be found everywhere else in the universe as a whole.

The second implication is that the only way to discover the universal presence of the principles of living and cognitive processes in the universe at large is by projecting the shadows of their manifestations on the screen of our imagination, by means of the instrumentalities of our educated sense perception. However, this involves a task that the current so-called scientists, known as positivists, are incapable of accomplishing. This does not only require the creation of new artificial measuring instruments such as advanced spectrosopes, X-ray machines, or Computerized Axial Tomography Scanning machines (Cat scans), etc., that even positivists can use; this also means that the observation must also include the living observer in its observing process. This means

there isn't any truth in such shadows of perception in themselves; the point being that we must not be duped by what positivists see. What we see is not a perception. We see ourselves experiencing the change between the illusion of sense-perception and a correction of that illusion with respect to the real world. In other words, what we see is the measure of change between the brain and the mind, their in-betweenness. And the important thing is to understand that science is nothing else but an elaborated form of this measure of change that must be evaluated critically by the human mind, and only by the cognitive quality of the human mind.

2- VERNADSKY'S IDEA OF THE IMMATERIAL MEDIUM OF SPACE.

“Light reflects the mind in abiotic matter as bioluminescence reflects the mind in biotic matter.”

Dehors Debonneheure.

Let's concentrate, for a moment, on the introductory statement that Vernadsky made in his first section of the French edition of his *The Biosphere in the Cosmos*.

“Not only the Biosphere, but any space that can be accessible to the mind and be embraced by it is penetrated by the rays of this immaterial medium. Unceasingly mingling together, these rays, whose waves vary between tens of millions of millimeters to a few kilometers, propagate around and inside of us. The totality of space is filled with them. It is difficult, perhaps impossible for us to generate a clear picture of this *cosmic environment of the Universe* in which we live, and in which we learn to improve our investigative methods by differentiating and measuring constantly changing rays, at the same time and at the same place. The perpetual alternating of these rays which fill space identifies this cosmic environment as being completely different from the ideal space of geometry.” (Vladimir Vernadsky, *La Biosphère*, Collection Point, Editions du Seuil, 2002, p. 48.)

The very first phrase of Vernadsky's statement is the important concept that must be focussed on: « Non seulement la biosphère, mais tout espace pouvant être embrassé par la pensée et lui étant accessible est pénétré par les rayonnements de ce milieu immatériel. » This opening statement is important not to miss because Vernadsky is speaking specifically about a new conception of an “immaterial medium” that is not there as a perception, but exists as a substantial conception. This inferential proposition, therefore, forces the reader to discard the old notion of “ideal space” and discover a new conception of what is not there; that is, the necessity to internalize the fact that not only the Biosphere, but also the totality of our cognitive processes of the Noosphere are infected by cosmic rays that travel through an “immaterial medium.” If this is not

obvious, then put a dozen of long-tail cats in a closed room with moving rocking chairs, and just wait and listen.

This Vernadsky statement, however, not only forces the reader to make changes in his conception of physical space-time, but it also addresses the “immaterial” nature of the process, and the scope of studying Cosmic radiation by including the human observer in the process, “at the same time and the same place;” that is to say, as in the simultaneity of eternity of psychophysical parallelism. The revolutionary aspect of this statement should, therefore, not be underestimated, since it bears directly on the crucial role of man and of the singularities of the creative process.

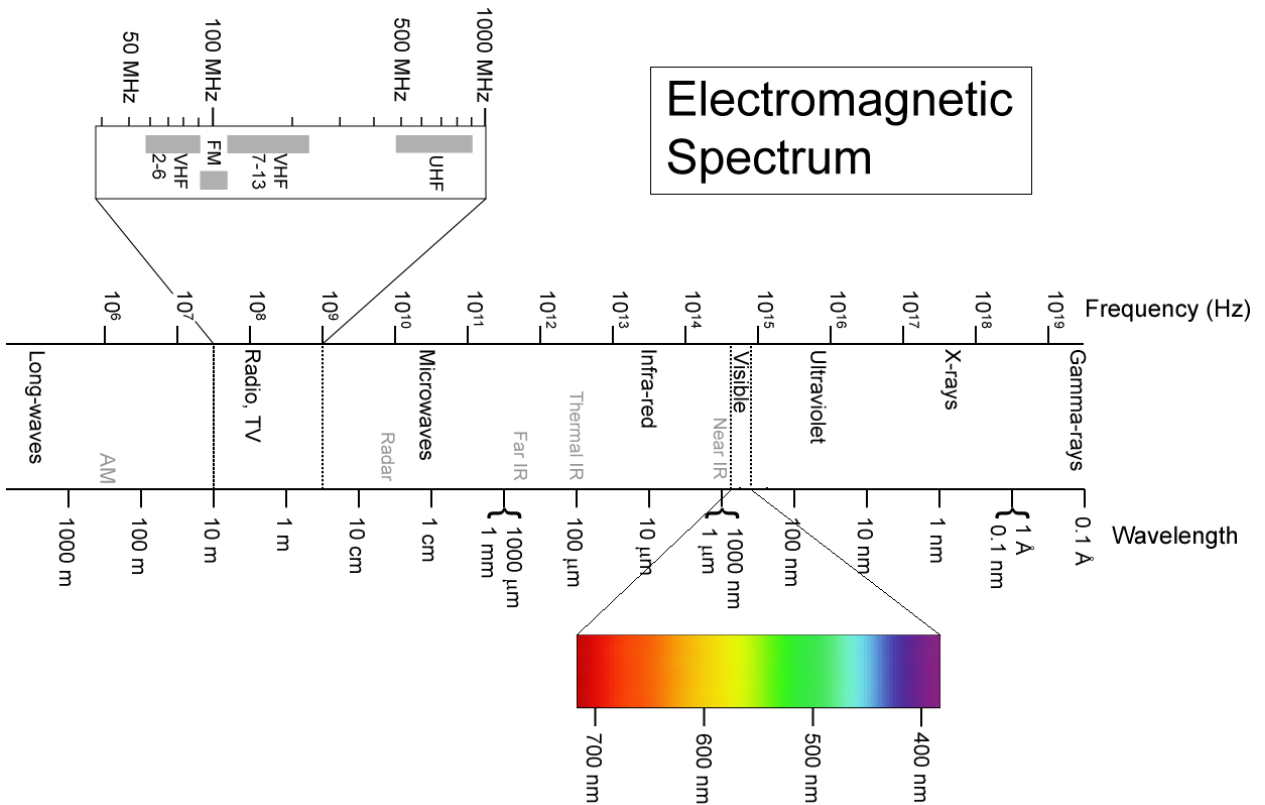


Figure 1. Electromagnetic spectrum.

For the purpose of limiting the scope of the object of observation, but not the scope of the mental observer, Vernadsky identified the existence of at least 40 octaves of cosmic radiation of which only 4 ½ sufficed to create the Biosphere. As he said: “From among the most well known cosmic radiations, we discern those from the Sun, one octave of light radiation, 3 octaves of heat radiations (infrared rays), and ½ octave of ultraviolet rays.” (Vernadsky, Op. Cit., p. 50.) According to Vernadsky, these are the 4½ octaves of “cosmic forces” that have created all living processes of the Biosphere, which then transformed them into “free energy” producing work all over the Earth. “Earthly creatures are the fruits of a long and complex cosmic process and they form an essential

part of the harmonious cosmic mechanism which, as we know, is not submitted to chance but to well-defined laws.” (Vernadsky, Op. Cit., p. 52)

In other words, the way to study the Biosphere is no longer as a geocentric piece of real estate, but as a “manifestation of the cosmic mechanism” of the thinking process, because the greatest part of the Biosphere is not of terrestrial origin. Though cosmic matter is to a great extent the same as the abiotic matter of the Earth, it is the transformation of cosmic radiation by the living processes of the Biosphere and by the cognitive processes of the Noosphere that is essential to concentrate on, in fact: *the singularity of the changing psychophysical process among the three.*

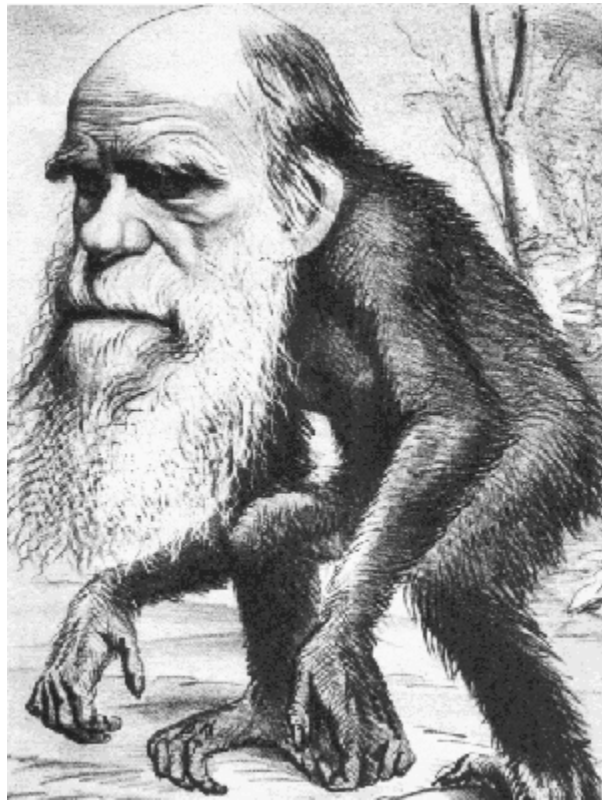


Figure 2. Darwin in his natural psychophysical costume.

Thus, since evolution on Earth is not “arising from blind and accidental interplay of matter and forces,” as the silly Darwin believed, geocentrism is finally discredited, and the Biosphere and Noosphere can be seriously studied as a true cosmic phenomenon. The exciting approach that Vernadsky proposed is a discovery of principle that lies entirely beyond the limits of the Earth and which requires us to travel even beyond the boundaries of our Solar System.

“We find in the composition of our planet, from its crust in particular, indications relating to the existence of phenomena which go beyond its limits. In

order to understand them, we must extend away from the phenomena of the earthly domain, from the planetary one, and direct our views on the composition of all cosmic matter, on its atoms and their modifications within cosmic processes. Several indications, which have barely spurred theoretical thought, are accumulating rapidly in that region of the mind. We are barely beginning to consider their importance.” (Vernadsky, Op. Cit., p. 55)

Yes, you read correctly, Vernadsky did not say “in that region of the Cosmos,” but instead, “in that region of the mind.” Thus, the singularity that Vernadsky is pointing to lies in the fundamental differences among the mind, the biotic, and the abiotic domains as demonstrated by Lyn’s work on anti-entropy during the last seventy years. This is probably the most profound change in the domain of ideas in the last 3,000 years of history. The current financial breakdown-crisis is nothing but the reflection of this axiomatic change in the universe, which is especially resonating in the domain of mathematics and finance. Vernadsky had the foreknowledge of this decisive event when he identified the changes that had begun to shake the axioms of mathematics at the beginning of the twentieth century with the advent of Einstein and Gödel. [See my report on *The Axiomatic Significance of Mathematical Singularities*, 4/17/2010.] This is how Vernadsky expressed his amazing forecast:

“The existence of a fundamental difference (which appears immutable) between living matter and non-living matter could be considered as an axiom that may one day become effectively established. We cannot assert this at the present time, but it is certain that this principle must be considered as one of the greatest generalizations in natural sciences.¹ 1. The change that is currently occurring in our ideas about mathematical axioms must reverberate on the interpretation of axioms in natural sciences, axioms that are not taken seriously enough by critical philosophy.” (Vernadsky, Op. Cit., p. 69).

The fact that Vernadsky forecasted the coming of Lyn’s idea of anti-entropic economics, as an “immutable” form of axiomatic change, is extremely significant and demonstrates the true power of the process of discontinuity in shaping the cosmic function of scientific ideas in the future by means, once again, of what is not there. No progress in any domain of universal principles can be achieved without the identification of such inferential knowledge as displayed by Vernadsky. The power of “generalization” that Vernadsky is referring to has a character of inference that is essential for understanding both physical and mental processes as universal cosmic phenomena. Inferential knowledge includes the function of hypotheses that the mere content of empirical evidence cannot contain. In other words, there is always more in the hypothesis than can be found in the empirical scientific data. As a result, Vernadsky added this crucial point:

“An empirical generalization can for a long time be part of the body of science, remain incomprehensible without any hypothesis to explain it, and yet have a beneficial and enormous influence on our understanding of natural phenomena.

But then, comes a moment where a new light suddenly shines on this generalization which becomes the domain of creative scientific hypotheses, it begins to transform our gestalts of the universe, and, in turn, itself also begins to be submitted to changes. Often then, we realize that an empirical generalization did not really contain what we had hypothesized or that its content was much more rich. A striking example of this is the history of the great generalization of D. J. Mendeleev (1869) and his periodical systems of chemical elements, which, after 1915 when J. Moseley made his discovery, became an extended field of active scientific hypotheses. [...] A scientific hypothesis always goes beyond (frequently far beyond) the facts upon which it is based.” (Vernadsky, *Op. Cit.*, p. 70-71)

Notably, British scientist, Henry Moseley, discovered through x-ray crystallography that the chemical elements of the Periodic table were not simply based on their atomic weights, but on the physical property of their wave motions. Moseley proved by x-ray diffraction what Mendeleev had predicted correctly without seeing it, that the atomic numbers of cobalt and nickel, respectively numbers 27 and 28 in the Periodic table, had to be inverted in accordance with their physical wave properties as opposed to a blindly assigned position in accordance with their atomic mass. This poetic inversion is of the greatest importance for scientific discoveries, and Moseley applied it in even further discoveries by forecasting the non-existence of elements in the empty interstices of the Periodic table at numbers 43, 61, 72, and 75, which were later discovered as the locations of completely new synthetic radioactive elements.

So-called “empty space” of the interplanetary domain must be investigated as the real substance of singularities. Therefore, what must be looked into is not the particles, but the spaces between the so-called “particles” of the periodic table. As Lyn put it:

“That will lead us into the point, where we can really start to think about space. We have to educate our young people who are qualified in the physics of cosmic radiation. We use the same periodic table, but we turn it around: instead of having particles, and assuming particles which are separated from one another by space, we are going to assume there are no spatial separations among particles: There are singularities, in which all kinds of things are interacting, in terms of the cosmic radiation. And we’re going to treat the problem of going from Earth to Mars, also, in that term, a domain of cosmic radiation. “It’s not empty space out there, buddy! This stuff is jam-full of cosmic radiation, and you want substance? Cosmic radiation is a substance.” ” (Lyndon LaRouche, *On European Conference Call, Monday, June 7, 2010.*)

Thus, the “substantial marrow” of things is what lies between particles that appear as shadows on the screen of sense-perception, but which is not visible to those reading instruments. The substance of cosmic radiation is located in the fractionating ratios of isotopic waves that carry their substance to their intended goals. But, so much for what is not there in the domain of chemistry. Let us now look briefly at the poetic source of this idea of cosmic “non-existent” substance.

3- PLATO'S VIEW OF COSMIC RADIATION.

In order to best understand the poetic implication of Vernadsky and Moseley's approach to discovering what is not there, note how Hesiod expressed in his *Homeric Hymn* the space-time birth of Aphrodite. Note, as well, Plato's comment on the same subject in his *Symposium* dialogue. Observe the poetic generative effect of cosmic radiation that this Greek Urn (Figure 3) displays for the birth of the goddess.



Figure 3. The Birth of Aphrodite, Greek Urn, c. 360 BC.

“I will sing of stately Aphrodite, gold-crowned and beautiful, whose dominion is the walled cities of all sea-set Cyprus. There the moist breath of the western wind wafted her over the waves of the loud-moaning sea in soft foam, and there the gold-filleted Hours welcomed her joyously. They clothed her with heavenly garments: on her head they put a fine, well-wrought crown of gold, and in her pierced ears they hung ornaments of orichalc and precious gold, and adorned her with golden necklaces over her soft neck and snow-white breasts, jewels which the gold-filleted Hours wear themselves whenever they go to their father's house to join the lovely dances of the gods. And when they had fully decked her, they brought her to the gods, who welcomed her when they saw her, giving her their hands. Each one of them

prayed that he might lead her home to be his wedded wife, so greatly were they amazed at the beauty of violet-crowned Cytherea.” (Hesiod, *Homeric Hymn VI*, (ll. 1-18). Trans. H.G. Evelyn-White.)

According to Plato, there were two goddesses identified as Aphrodite: the older one was Aphrodite Ourania (Heavenly), goddess of intellectual love of ideas, who was born of the cosmic winds of Ouranos (Heavens), and the other younger one, Aphrodite Pandemos (Common), who was the earthly daughter of Zeus and Dione, and who was the goddess of physical love. This first older Aphrodite Ourania is related to Platonic Love or to the love of the soul rather than to the love of the body. (Plato, *Symposium*, 180-181) It is also very interesting to note that this older myth relates to the birth of the goddess as expressing a generative process that brings the growth of life by mixing together cosmic winds and sea foam (aphrogenesis); thus, making the dynamics of the Greek legend coherent with present scientific evidence of the discoveries of the Pierre Auger Group in Argentina, and the discoveries of Alexander Gurwitsch on the effect that mitogenetic M-rays have on the process of mitosis. The point to be made has also been recently emphasized by Lyn when he located the human creative process of hypothesizing as an integral part of living and non-living processes of cosmic radiation:

“Now, once we take into account this idea of cosmic radiation as being this complex, with these three phase-space relationships, which are always interactive at all times, once we do that, then we have to say, “Wait a minute! We, human beings, our job is to try to deal with the universe, and it’s a universe which has these kinds of characteristics – it has other ones we don’t know yet, but it has these. Therefore, isn’t intelligence, human consciousness, shouldn’t be based on the understanding of this process?” And, by understanding this, shouldn’t we say, that we understand that our behavior, and human interactions, as well as other behavior in the universe, all should be an object, in a sense, of *our consciousness of the fact that this IS merely an object?* And that our action has to be, an action which is superimposed upon, and *controlling* these processes, that is, all three phase spaces.” (Lyndon LaRouche, *Leadership Meeting for Saturday, June 5, 2010.*)

Thus, when you look at such a complex domain that includes your own mind as participating in your study, you are looking at an object that is not distant from you; you are subjecting yourself to the scrutiny of a form that Lyn identified as a “pure metaphor,” that is a pure contradictory process of being at the same time two different and same things, the object of study and the subject studying it; and there is the effect of an ironic principle of change between the two. That investigation becomes a knowable object, but it is an unseen object. You can add to it as much as you want, like in the case of cosmic radiation, however, this metaphorical duality is completely different from any object of sense perception, because it expresses the direct experience of creativity, like the self-portraits of Rembrandt provoking the creative powers of the observer, for example. So, from that vantage point, let’s look at our minds as if through the looking glass of Leibniz in his *Specimen Dynamicum* of 1695.

4- THE DYNAMICS OF THE PRINCIPLE OF CONTINUITY.

“Don’t look in the thing, look in the thinker.”
Leibniz.

The creative characteristic of the universe as a whole, which implies that there must be a mind and an intention that guides the orientation of the anti-entropic vector of universal progress, is explicitly the function of man. The problem is: “What does that mean and how does such a creative mind work as a cosmic principle?” Of course, this means that everything that came into existence in the universe, human, organic, or inorganic, have all come under the universal process of anti-entropy, and that some specific harmonic ordering of the universal anti-entropic principle has given a form of existence to each, in a manner such that creativity should be reflected differently in each of the Cognitive, Biotic, and Abiotic domains. The most important one to consider at this time, is the human cognitive mode of functioning.

There was, in the late period of the French revolution, a powerful method of discovery that has been lost in the positivist chaos of the time, which stemmed from Leibniz who had first been introduced at the Ecole Polytechnique by Gaspard Monge and Lazare Carnot. After Cauchy and LaPlace had destroyed that school with their bowdlerization of the Leibniz calculus, the method of investigation survived and was reintroduced into the School of Applied Mechanics in Industrial Sciences in Metz, from 1815 to 1825, under the guiding spirit of one of the first Monge brigade leaders, Jean-Victor Poncelet (1788-1867).

The most important principle that Poncelet had adopted in his approach to the education of ordinary workers, came from the dynamics of Leibniz under the name of the *Principle of Continuity*. Poncelet had used that principle to elaborate a method of constructive geometry explicitly for the purpose of countering the destructive impact of the positivists, LaPlace and Cauchy, and his stated intention was to provoke his students into becoming creative individuals. (See Pierre Beaudry, *The Paradox of the Poncelet Vanishing Point*, The New Federalist, August 25, September 1, and October 20, 1997.)

Poncelet first applied the Leibniz principle to the projection of the perspective points at infinity, otherwise known as “vanishing points.” I will recall, here, the main argument that Poncelet developed in his pedagogical approach. I cannot stress enough the importance of this method for our purpose, and especially, the harmonic role of its proportional range finder.

Draw two finite straight lines and cross one over the other, as if to produce an overlapping intersection. (See Figure 4) The two lines appear to intersect at a real finite

point A. Next, separate slowly and continuously the two lines from each other, and notice how that point A is moving outward, away from you. Continue moving the two lines until they become separated. Where is point A located? Point A has become a non-existent point somewhere in finite space at the imaginary overlapping intersection of the non-existent extensions of your two lines. If you move the two lines until they become parallel, the non-existent point will be at infinity.

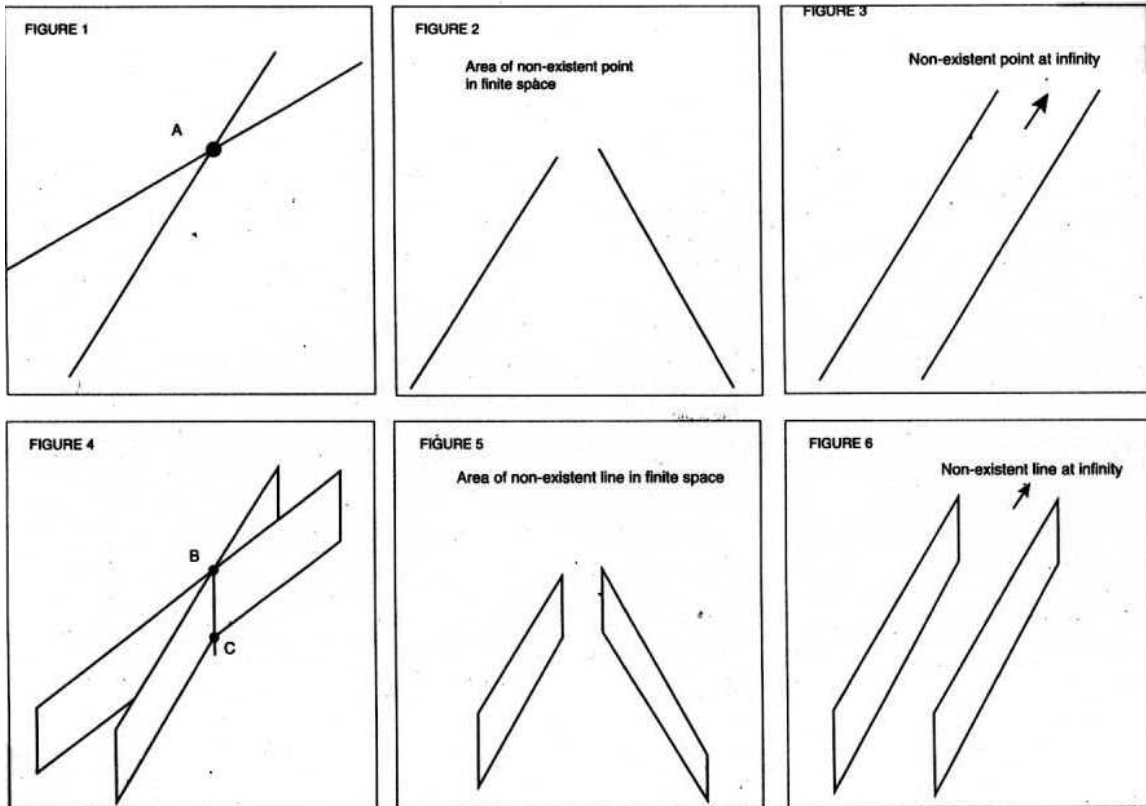


Figure 4. Projection of non-existent points and lines at infinity.

Rotate your position and generate a few more points at infinity in the same plane of projection. All of those non-existent points will be on the same infinite straight line. Then ask yourself: “How can I establish precisely where those points are located?” You cannot do it, because if you could, those points would no longer be at infinity. So, that causes a bit of a problem. How do you solve that paradox? How can you locate that infinite line as the determined locus of those non-existent points, and how can you locate points on it? The first thing that you must do is to examine the process that generates the problem. Don’t look into space, don’t look at particles, look into the wave process of your mind.

At first glance, it seems that the difficulty of determination might reside in the fact that you have reached infinity by making the two lines parallel, and as a consequence of that, you have concluded that you had reached an absolute limit. However, that is

false. What if you go beyond that apparent limit and continue to separate the two lines even further, beyond the parallel moment of your continuously changing motion. What effect does the process have on the non-existent point, then? The irony, here, is that the non-existent point will go halfway around the infinite straight line and come back from behind you! Thus, by this constant motion of two lines, the point went from existence to non-existence and back to existence again; that is, from you to infinity and from infinity back to you, in one continuous and uninterrupted motion. How can a non-existent point accomplish such an infinite circle? Are you crazy or what?

Do you see what the problem is? In order to answer that question, you must keep your mind at a safe distance from crazy people, and discover that the reason why the vanishing point in perspective located on an infinite straight line is not because the two lines are parallel. Parallelism is not the fundamental issue of perspective. Parallelism is not even an axiom. Parallelism is only a derivative of a higher projective principle of the human mind. As Poncelet put it, it is a property of your creative imagination.

The reason why the non-existent singularities at infinity are not locatable or determinable is because what is missing is the horizon principle. The only way you can locate a singularity at infinity is if you create, as Cusa had done, a circular horizon out of the infinite straight line. By doing that in your mind, you abandon the bad infinity you were in and you create the boundary conditions for a determined infinite. It is the closure of that horizon principle that determines the ideal intersections of parallel lines onto the segment of a “contracted infinite line,” to use the expression of Cusa. As a matter of fact, it is the process of timereversal causality which establishes the creation of a horizon as a boundary condition for a definite infinite; that is to say, a contracted infinite, because a horizon is always in the future. ***Unless you create a projection into the future and establish that as a horizon or an objective to be reached, an intention to accomplish some mission, and the hope that accompanies its realization, the non-existent points that you project will have no reason for their non-existence. That is how anti-entropic processes are initiated in the universe all the time. So, that is the non-existent necessary condition for validating the intention that gives direction to the cosmos. That process is otherwise known as generating a singularity.***

In fact, think of what happens when you discover an idea that did not exist before. How does it come about? The new idea comes from your generating an anti-entropic singularity through your cognitive process. You are first confronted by something like an irony, or some sort of anomaly, something that should not be there, and this irony causes a paradox to emerge at the boundary condition of your cognitive process. You experience a limit beyond which you cannot go. At that point, your mind goes into a state of perplexity, because you cannot solve the paradoxes that you encounter with the knowledge that you already have. You can only solve the paradoxes with knowledge you do not yet have. Therefore, you search and browse through the meandering pathways of your mind for a way to resolve the paradoxes until something comes up and first appears as an impossible solution. If you persist, suddenly, a new idea is born, as unexpected as a bolt of lightning in a cloudless sky, and the new idea comes out, all dressed up like Athena out of the head of Zeus. And then, you laugh at yourself and you say: “That is

impossible! Is that all it was?" Let me give you a specific example from Leibniz. Consider that ideas come from infinity and that this infinity is knowable in the manner that Leibniz defined it in the dynamics of a "principle of general order" as he called it, his *Principle of Continuity*:

“ This principle has its origin in the infinite and is absolutely necessary in geometry, but it is effective in physics as well, because the sovereign wisdom, the source of all things, acts as a perfect Geometer, observing a harmony to which nothing can be added. This is why the principle serves me as a test or criterion by which to reveal the error of an ill-conceived opinion at once and from the outside, even before a penetrating internal examination is begun. It can be formulated as follows. When the difference between two instances in a given series, or that which is presupposed, can be diminished until it becomes smaller than any given quantity whatever, the corresponding difference in what is sought, or in their results, must of necessity also be diminished, or become less than any given quantity whatever. Or, to put it more commonly (colloquially), when two instances or data approach each other continuously, so that one at last passes into the other, it is necessary for their consequences or results (or the unknown) to do so also. This depends on a more general principle: that, ***as the data are ordered, so the unknown are ordered also.***” (Gottfried Leibniz, *Philosophical Papers and Letters*, Kluwer Boston, 1989, Vol. 2, Article 8, *Nouvelles de la république des lettres*, July, 1687, p. 351.)

Let's examine this litmus test closely, because this is a challenge for our own minds with respect to dynamics in precisely the sense that Lyn constantly develops the idea in his writings with reference to Leibniz's discovery of the 1690's, notably, his crucial writing of 1695, called *Specimen Dynamicum*. In that paper, Leibniz devised this test as a "touchstone" for detecting the presence of a Cartesian mechanical mind among his friends and enemies alike. By carrying out this geometric test, Leibniz was able to show the failures of the Cartesian mechanistic rules of physical motion. How? By using the device as an anti-entropic test for a mental axiomatic change at the limit of a formal and logical system. The question was: Can a mechanical mind be transformed into a dynamical mind?" In other words, how do you discover the difference between your brain and your mind? How do you discover the difference between sense-perception and inferential knowledge, the difference between mathematical logic and creativity?

Imagine, then, the process of passing from a circle to an ellipse. When you rotate a plane through a cone, there is a physical continuity in the passing from one species of figure to another species of figure; however, there may be a logical discontinuity between two species of figures inside of the human mind. How do you deal with that singularity? The question that comes up is how can you transform a circle into an ellipse, an ellipse into a parabola, and a parabola into a hyperbola? What sort of singularity lies between those species of curves? When you test your mind, clinically, with this process, perplexity should immediately take you over because you cannot "see" how one figure becomes the other. Perception is left out of the process. There is a blind spot between any two types of figures, because the circle has only one center, while the ellipse has two

centers, for example, or the ellipse has two finite foci while the parabola has one of its foci at infinity. How do you overcome that sort of difficulty? How does one become two? That is a nice problem to consider when you deal with mitosis, for instance. That is a real anomaly; because a circle cannot be an ellipse, and *visa versa*, an ellipse cannot be a circle. This is the sort of problem that Cusa also had to confront when he developed his *Isoperimetric Principle*. How do you crack that nut?

The problem is that people believe that circular action can only generate circles. People believe that, by virtue of the principle of identity, a circle is a circle, and it cannot be anything else by virtue of the principle of non-contradiction. People stupidly believe in mechanics! So, how do you deal with such “mechanical” obstacles in science? Don’t forget that logic is a mechanical device that deals only with fixed axioms and that physical and thinking processes deal with constant change. That’s a big difference, and that is the difference that this Leibnizian litmus test intends to identify. So, the way to deal with the limit case of a change from one species into another species of geometric curve might be useful for considering changes occurring in cell mitosis, for instance. Let’s examine the Leibniz anomaly a little closer with that in mind.

What is key in the change between the circle and the ellipse is the jump between one center and two foci. How does a single-center figure become a two-foci figure, or *visa versa*? No amount of sliding or continuous rotating of a plane through a cone can make you experiment the logical gap that exists, here, between the circle and the ellipse, between the ellipse and the parabola, or between the parabola and the hyperbola. And, there are no such cognitive gaps in your mind either, because the mind is as continuous as the process described in Figure 5.

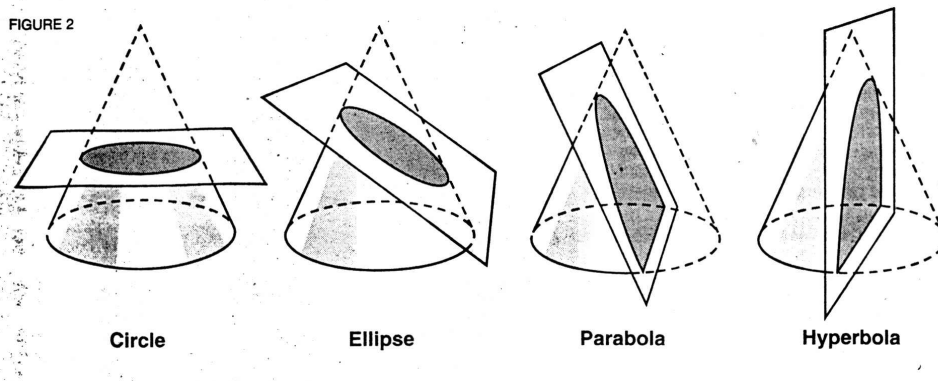


Figure 5. Rotating a plane continuously through a cone.

How do you get out of that predicament? Similarly, the universe as a whole is undergoing constant and continuous anti-entropic changes, and there are no leaps between those changes, no big explosive gaps. How do you deal with that? Here is the solution that Poncelet established in order to demonstrate how to deal with the generation of a singularity between a circle and an ellipse. He used the Leibniz *Principle of Continuity* to project a solution from infinity. I know this sounds outrageous, but if you say that the solution to the BP oil spill is to impeach Obama, that is also outrageous, yet,

that is nonetheless the right solution. But, how can you demonstrate that both are true? Here is how Poncelet saw it, in his mind:

“The Axiom that we are examining and considering is, from a certain point of view, nothing else but the principle of permanence, or of indefinite continuity of the mathematical laws of magnitudes that vary by imperceptible succession, a continuity which often subsists in a purely abstract and ideal manner for certain conditions of the same system. [...]

The principle of continuity, considered from the standpoint of geometry, means that, if you conceive of a given figure whose situation is in the process of changing, according to some progressive and continuous movement of its parts, without violating in any way whatever the dependence and the relation that was established initially between those parts, the relations or the metrical properties which relate to the figure in the initial situation remains applicable, in their general form, to all of the derivative figures, without any other change except the simple denomination of plus and minus which can intervene between them within their relationships. As for the purely graphic or descriptive relationships concerning the given primitive figure, they maintain their application to all of the derivative figures without any modification except for those which occurred in the respective situations of lines.

It is from the simple observation that in geometry, non-existent beings of reason can only be created from the willful extension of the law of continuity, even for the cases where the conjunction of lines is physically impossible, that I have come to establish the proper and distinct characters that belong to them, respectively. I have derived from the same examination different metaphysical notions which I consider new and important; as, for instance, the following: In space, all of the points at infinity must be considered, from the standpoint of continuity, as being distributed on a plane at infinity whose situation is indeterminate.” (Jean-Victor Poncelet, *Application d'analyse et de géométrie qui servent de principes pour un traité des propriétés projectives des figures*, Gauthier-Villars, Paris, 1864, pp. 533-534)

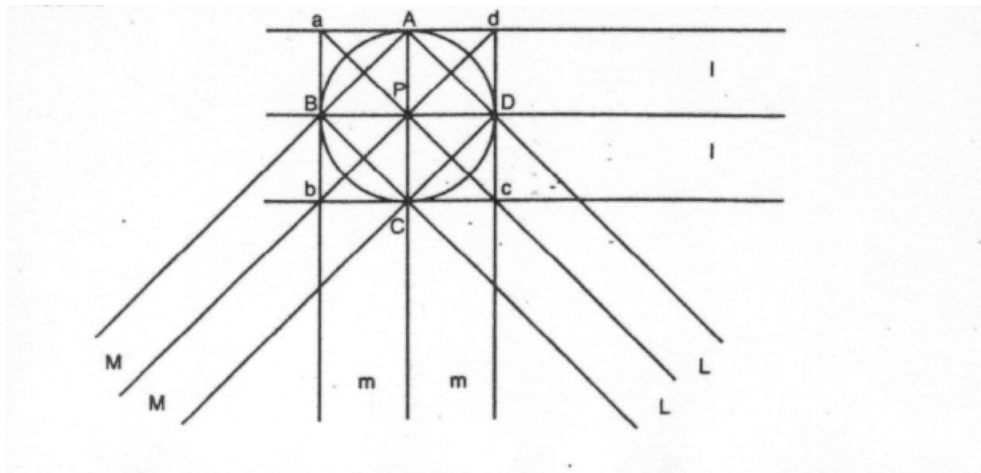


Figure 6. Projection of points M, m, l, and L on an undeterminate plane at infinity.

Following this Poncelet test of the Leibniz principle of continuity, note that it is the boundary conditions of the circle that are projected at infinity, not the figure. It is the projection of those non-existent lines at infinity that will cause you to discover the solution of passing from the circle to the ellipse by means of a harmonic singularity, which itself is not visible, but which is what gives order and harmony to the visible. That is the crux of the Leibniz *Specimen Dynamicum*.

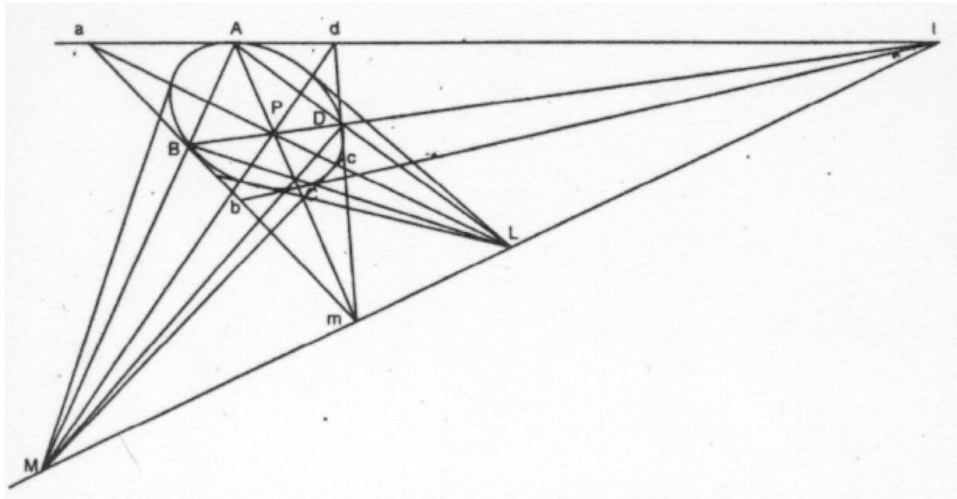


Figure 7. Transformation of a circle into an ellipse: Projection of non-existent points onto a circular horizon at infinity and contracted onto the finite segment of a straight line whose harmonic range is, $ML : Ll :: ML : mL$.

Next, apply this Poncelet conception to any form of axiomatic change inside of the same system, that is, inside of your own mind, for example. In all cases, your mind will be able to consider bringing a species of this system to its limit by accessing the infinite as a “bridgeable” means of going from one species to another, as if you were passing from a catenary to a tractrix. And, this happens only when such species touch each other in a continuous manner. Since the Cognitive, Biotic, and Abiotic domains exist in the same universal system and touch each other continuously, the same sort of non-existent singularity will be required to change from one domain to the other.

The key, however, is to identify how the dynamics of the Leibniz *Principle of Continuity* leads to such a discontinuity function. As Leibniz put it in proceeding from the infinite: “It is also in agreement with this *law of continuity*, which excludes a leap from change, that the case of rest can be considered a special case of motion, namely, the case of a disappearing of a minimal motion, and that the case of equality can be held for a case of disappearing inequality.” (Ibidem.)

5- THE LEIBNIZ FUNCTION OF THE *SPECIMEN DYNAMICUM*.

“As the data are ordered, the
unknowns are also ordered.”
Gottfried Leibniz

I have just demonstrated how Poncelet was able to pass from the circle to the ellipse by bridging an apparent gap of discontinuity at infinity with the use of the Leibniz *Principle of Continuity*. Everyone should recognize that there exists a blind spot, here. Regardless, we have to embrace it as being God given. Poncelet showed the result of the change, but not the cause of it. How can a system of parallel lines projecting to infinity be transformed into a system of concurrent lines of finite magnitudes? How can something infinite be changed into something finite? Isn't this an impossible thing to do? Yet, Poncelet did it! What is the characteristic of the blind spot between the two magnitudes? This is a true discontinuity between two incommensurable domains that requires some attention and concentration. Bear with me one more time; the exercise will be worth you while.

By constructing the harmonic range of M,m,L,l (Figure 7), Poncelet willfully decided to define the horizon of the infinite straight line as a determinable non-existent reality, and, as did Cusa and Leibniz before him, he decided to transfer its infinite indeterminacy into a finite and measurable domain. ***This had to be done by way of sufficient reason, because, otherwise, non-existent points at infinity would not make any sense.*** The infinite straight line that was impossible to determine before can now be considered as the horizon of a contracted infinite. However, while we were solving one paradox of transforming a circle into an ellipse, another paradox had been rearing its head. It appeared that the passing of the circular system into the elliptical system was generated from the contraction of parallel lines into converging lines onto four conical projective apexes falling on the same straight line. How can four undeterminable non-existent points at infinity become harmonically conjugated on a segment of straight line in the finite domain? Here, the harmonic ordering must come to the rescue of the visible domain. In other words, how can a finite harmonic proportionality be generated from an undetermined infinite?

First of all, we must observe as an actual *tour de force* the fact that Poncelet actually did transform the infinite non-existent straight line at infinity (Figure 6) into a contracted infinite in the form of a finite harmonic range which is $ML : Ll :: Mm : mL$ (Figure 7). As a result, this contracted infinite harmonic range produced the following four finite harmonic ranges:

1. $Am : Cm :: AC : PC$
2. $Bl : Dl :: BD : PD$
3. $aL : cL :: ac : Pc$

4. $dM : bM :: db : Pb$

There should be no difficulty, here, in understanding that it is infinity that generates the harmonics of the contracted infinite, and not the other way around. But how was this done? Here is Leibniz's answer to that question:

“I first published this new device for testing our own rules and those of others in the *Nouvelles de la république des lettres* for July, 1687, Article 8, and I called it a general principle of order arising from the concept of the infinite and the continuous, adding to this the axiom that as the data are ordered, the unknowns are also ordered [*datis ordinatis etiam quaesita sunt ordinata*]. I expressed the matter universally in this way – *if in a given series one value approaches another value continuously, and at length disappears into it, the results dependent on these values in the unknown series must also necessarily approach each other continuously and at length end in each other*. So in geometry, for example, the case of an ellipse continuously approaches that of a parabola as one focus remains fixed and the other is moved farther and farther away, until the ellipse goes over into a parabola when the focus is removed infinitely. Therefore all the rules for the ellipse must of necessity be verified in the parabola (understood as an ellipse whose second focus is at an infinite distance.)” (Gottfried Leibniz, Op. Cit., *Specimen Dynamicum*, p. 447.)

In other words, it is the willful human mind that creates the ordering of the unknown to the known, from the top down, from the universal principle to its particular application. However, there is one last paradox, here, that is most curious and remains to be resolved, also from the top down.

There is a fascinating anomaly in the Poncelet system of parallel lines whereby the two ends of each line going to infinity are both finite and infinite at the same time. The segments that are visible are finite, and the segments that are not visible, are infinite. In other words, the paradox of this *sense-conception* is that you can add or subtract finite quantities to or from a finite line, but you cannot add or subtract any finite quantity to or from an infinite line! Or, to put in a different way, you can add or subtract a finite portion to and from the finite end of an infinite line, but without affecting the total magnitude of that line. In other words, an infinite line is indivisible, because whatever you add or subtract from infinity does not change infinity. Follow closely what Leibniz said about unextended beings in relationship to his ***Principle of Continuity***:

“There are indivisibles or unextended beings, for otherwise we could conceive neither the beginning nor end of motion or body. The proof of this is as follows. There is a beginning and an end to any given space, body, or motion, and time. Let that whose beginning is sought be represented by line *ab*, whose middle point is *c*, and let the middle point of *ac* be *d*, and so on. Let the beginning be sought at the left end, at *a*. I say that *ac* is not the beginning, because *cd* can be taken from it without destroying the beginning; nor is it *ad* because *ed* can be

taken away, and so forth. So nothing is a beginning from which something on the right can be removed. But that from which nothing extended can be removed is unextended. Therefore the beginning of body, space, motion, or time – namely, a point, conatus, or instant – is either nothing which is absurd, or unextended, which has to be demonstrated. There is not point whose part is zero, or whose part lacks distance; whose magnitude is inconsiderable; incapable of being designated, less than that which can be expressed by a ratio not infinite to another sensible magnitude; less than any which can be given.” (Gottfried Leibniz, Op. Cit., pp. 139-140.)

This Leibniz idea is an extraordinarily optimistic insight in comparison with the cynicism of the Zeno paradox and its fallacy of composition directed against change and motion. Here, Leibniz actually sets the logical fallacy aside to internalize the real paradox as the actual contradictory nature of an axiomatic change. This might be a way of demonstrating the famous Yogi Berra paradox: “When you come to a fork in the road, don’t hesitate, take it!” ***This is how you will discover the pathways of anti-entropy: like the end part of an infinite line, an indivisible beginning is a being that can only exist as a contradictory being, as something that is both itself and something else. That should not be confused with the present, which simply doesn’t exist. That is important to understand in order to properly conceptualize change in history.***

This contradictory designation is required by sufficient reason alone, because a beginning cannot have any extension, even though it may be attached to a segment that has extension that is, itself, measurable. However, nothing may be removed or measured from a beginning any more than from the infinite end of an infinite line. Like the natural creative condition of the universe as a whole, a change may be both finite and not bounded.

Leibniz also assigned a contradictory status to other apparently impossible realities such as a straight line being a curve of zero degrees, or a universal change that is unmoving. In a letter to Varignon, Leibniz also remarked, “we may consider rest as infinitely small motion (that is, equivalent to a particular instance of its own contradictory), coincidence as infinitely small distance, and equality as the limit of inequalities, etc.” (Leibniz, *Letter to Varignon*, February 2, 1702) Indeed, in our case, the projection of the square’s sides at infinity expresses the infinite proportion $dM : bM :: dP : Pb$. (Figure 7) It is this infinite proportionality which determines the proportionality of the contracted infinite line $Ml : Ll :: Mm : mL$. In other words, it is the infinite equality that generates all finite harmonic inequalities.

Such paradoxes simply indicate that a discontinuity, be it investigated in the infinitesimally small or the infinitesimally large, is only made intelligible when it is captured in such a contracted form, that is, as a definite infinite, because bad infinities are contrary to reason and detrimental to the human mind. Therefore, the infinite line must stand as a contradictory line, both straight and circular, one end of which can be added to and the other end cannot. Finally, consider the action of the cosmic radiation affecting mitosis as an analog of the infinite horizon principle affecting the harmonic ordering of

the projective change between the circle and the ellipse, and you will be in the appropriate frame of mind to understand final causality as the primary form of causality. This is also how, in the domain of ancient astronomy, Jean Sylvain Bailly discovered the non-existence of a people that had been able to understand the longest waves of history before the coming of the imperial age that began 3,000 years ago.

6- THE LONG MODULAR WAVES OF THE MOST ANCIENT CALENDAR.

“The important thing to discover is not where to go, but how to get there. Once you know that, you can go anywhere you want.”
Dehors Debonneheure

The most amazing evidence in support of Jean-Sylvain Bailly’s hypothesis of the past existence of an anti-imperialist Astronomy-Maritime Civilization, a People of the Seas, ancestors of all of the great astronomy civilizations, more that 5,000 years ago, is the simple fact that the days of the week have been identified, since that time, with a specific ordering of the planets of our Solar System. This is a curious anomaly indeed, because it permitted Bailly to discover the existence of a people for whom no other physical evidence demonstrated their having existed. Bailly wrote:

“It is perhaps the most singular proof of the antiquity of Astronomy, and of the existence of this people, more ancient than the others. These planets, which presided over the days of the week, were organized in an order, which is still in existence today. First there is the Sun (Sunday-Dimanche), the Moon (Monday-Lundi), Mars (Tuesday-Mardi), Mercury (Wednesday-Mercredi), Jupiter (Thursday-Jeudi), Venus (Friday-Vendredi), and Saturn (Saturday-Samedi). The same is to be found with the ancient Egyptians, the ancient Hindus, and with the ancient Chinese. This order is not based on distance, size, or luminosity of the planets. This is an order which appears to be arbitrary, or else it is based on reasons that we know nothing of.” (Jean Sylvain Bailly, *Histoire de l’Astronomie ancienne*, Editions Burillier, Vannes, 1804. P. 74.)

Although Bailly admitted that he did not know what the reason for this strange ordering was, a further investigation reveals that there does exist an ordering principle to the planets relative to the days of the week, but which is not self-evident and cannot be demonstrated through sense-perception. However, before I reveal to you the nature of this ordering, I must first make the following observation.

The point to be made is that, as the Indian nationalist political leader and philosopher Bal Gangadhar Tilak established, “during the early periods of history, the growth of the human mind was more luxuriant than in later times.” (Bal Gangadhar Tilak, *The Orion or Researches into the Antiquity of the Vedas*, Bombay, Mrs. Radhabai Atmaram Sagoon, 1893, p. 13) This mental exuberance is very important to restitute,

because that is the state of mind that must be recovered if one wishes to recreate a new humanity for the future. This means that this People of the Seas, which Tilak discovered had lived at the North Pole, expressed the exuberance of their minds in the poetry of the Vedas as far back as the Post Glacial period, that is, earlier than 10,000 years ago. (Bal Gangadhar Tilak, *The Arctic Home in the Vedas*, Tilak Bros, Pune, 1903.)

The first striking thing about this long wave of correlation of minds resides in the fact that the same ordering of the planets, as applied to the weekdays, is invariable in all three major ancient civilizations of mankind. Bailly pointed out that the only difference between them was that ancient Egyptians started the week on Saturday, ancient Hindus started on Friday, and Chinese started the week on Sunday. For Bailly, this is remarkable evidence pointing to the existence of a more ancient people, a common ancestor, who had made extensive discoveries in Astronomy while traveling the “Seven Seas” before 4,000 BC. Bailly added:

“One can say that it is impossible that chance so ordained that first these three nations would have separately come up with the same idea of giving to the week days the names of the planets, and secondly, that they would chose this precise arrangement, unique among so many others. Chance does not make such coincidences. A few scientists would like to find, in this, a proof that there existed a communication between the Chinese and the Egyptians: as for us, we are persuaded that no such communication existed, and we see, in this, a demonstration of the existence of that ancient destroyed people, who has passed on its knowledge to their successors by means of some institutions. These institutions are found in populations which were living at great distances from one another on this globe, and this forces us to conclude that they had the same origin.” (Bailly, *Op. Cit.*, p. 38.)

The fact that the written record of Astronomy emerged in China, in Egypt, and in India, around 3,000 BC, shows that all three civilizations were informed of this “precise arrangement” of the planets at approximately the same time. Also, the fact that the proper names of the planets all relate to the heroes that also appear in Greek mythology indicates that this “precise arrangement” must have been discovered and decided upon at a much earlier time.

As a matter of fact, no written records attest to such a communication between ancient civilizations, nor is there any account of how this “precise arrangement” was made at all by any of these people taken individually; only that the knowledge of such a correspondence between the planets and the days of the week existed at approximately that time, and were made use of by these three peoples, and without indication of any understanding of the principle that underlies their ordering. The question is: why would three great civilizations choose this apparent disorder for their calendar, unless there was a unique reason for having made that choice? It is precisely the reasonable ordering of that choice behind this apparent arbitrariness that we must now look for.

It should be noted that our India EIR editor, Ramtanu Maitra, confirmed that, indeed, the days of the week do correspond, in India, to the seven planets of ancient Astronomy since time immemorial. They are established according to the same ordering principle as in the French, Spanish, and Italian languages of today.

- 1- Friday is Shukrabar, the day of Venus.
- 2- Saturday is Shanibar, the day of Saturn.
- 3- Sunday is Ravibar, the day of the Sun.
- 4- Monday is Somber, the day of the Moon.
- 5- Tuesday is Mangalbar, the day of Mars.
- 6- Wednesday is Budhbar, the day of Mercury.
- 7- Thursday is Brihaspatibar, the day of Jupiter.

For a Platonic investigator, this lack of reason is a very big clue. It is precisely this lack of reason which provoked Bailly to hypothesize that there was necessarily an ancient people, a common ancestor, that preceded these civilizations which had made extensive astronomical discoveries, more than 5,000 years ago, and I would add, maybe as early as 12,000 years ago. Such discoveries were so important that those oldest civilizations merely had “debris of knowledge” by comparison.

This “precise arrangement” was based on several generations of observation of the planets’ perceived cycles whose periodical ordering ultimately provided the establishment of the first astronomical calendar-clock in history. Such an ordering implies that their inventor had made the difference between the fixed stars and the “wandering” planets and had studied them, day in and day out, in the order of their increasing number of cycles. How can we know this with certainty, simply by looking at the ordering of the 7-day week?

First of all, Bailly provided the following intelligence and insight with respect to the use of number 7 in late ancient history. Here is what he wrote about the shadows of number 7 after its actual astronomical origin had been forgotten:

“It is from the number of 7 planets that the first divinities were established, and the respect and the superstitions related to that number arose in all nations and especially the Asian nations. From there were derived the seven superior angels taught by the theology of the Chaldeans, the Persians and the Arabs, the seven doors of the Mithra theology, through which the souls had to find safe passage in order to get to heaven, as well as the seven worlds of purification of the Indians. Tradition possibly followed written history, and it is easy to imagine how ignorance distorted ideas by abusing astronomical language. The names of the first illustrious men were given to the planets. Then, the genius behind the motion of the planet was mistaken for the individual whose name it belonged to, and that was the beginning of the first apotheosis. Since the region covered by the planets does not extend outside of the zodiac, it was imagined that they had to preside over the constellations, which occupy this zone. The Chinese, who have 28 constellations, enumerate them by the seven planets repeated four

times. Similarly, the Egyptians had them preside over the 12 signs of their zodiac; ...” (Bailly, Op. Cit, 39)

From this sparse historical evidence, it can be inferred that the use of number 7 in ancient astronomy does not originate with the cycles of the Moon, as some people have mistakenly suggested from the Sumerian poems to the Moon goddess Anu. On the contrary, what must be discovered is that this arrangement of the 7 planets has no other origin, and no other significance, but to represent a direct and subjective reference to the creative process of a discoverer who lived before imperial times, and who made observations of the cosmic cycles of each of the 7 planets during 4 cyclical periods. In other words, this ancient cycle is a man made cycle reflecting the creative process! Why else would the Chinese have the 7 planets rotate 4 times in their original zodiac? So, what is the significance of this 4/7 ratio?

Two steps will be required in order to demonstrate the significance of this fractionation: one is to determine a reasonable ordering of the planets as such, whatever it may be, and two is to discover its coherent correspondence with the days of the week. These are two different motions to be conceived as one. So, first, let’s establish the ordering of the planets, following the number of days and years required for their complete cycles.

1. MondayLundi = Moon: 28 days.
2. WednesdayMercredi = Mercury: 88 days.
3. FridayVendredi = Venus: 225 days.
4. SundayDimanche = Sun: 365 days.
5. TuesdayMardi = Mars: 687 days. (1 year, and 322 days.)
6. ThursdayJeudi = Jupiter: 4,385 days. (12 years, and 5 days.)
7. SaturdaySamedi = Saturn: 10,752 days. (29 years, and 167 days.)

Now that we have ordered the planets according to their respective growing cycles, how can this arrangement totaling 45-years be made to relate to our weekly cyclical calendar in the familiar sequence that we know so well? Look at the intervals between them. Why does the ordering jump one whole day in going from one planet to the other, Monday to Wednesday, Wednesday to Friday, and so on? What do those intervals tell us? Why do the 3 last days of this series fit perfectly in the intervals between the first 4 days? These intervals tell us that what counts is what is not there, and that the real substance of knowledge about them, as in cosmic radiation, lies in their intervals of action. So, let’s look for the reason why one full day is missing between each planet.

At first thought, it should be obvious that the above ordering has been chosen for no other reason than to represent the ordered number of daily cycles required for the observation of each and all of the “so-called” seven planets, according to the natural order of their progression in our Solar System. Those intervals are tuned to the musical pitch of the Solar System, which is C-256. Furthermore, the cycles of the Sun, itself, obviously stand for the cycles of the Earth. That is the key for solving this riddle, because the Earth is not really missing in this whole arrangement; it is merely overshadowed by a

fallacy of sense perception and it is replaced by a mental wave process. However, what sort of wave are we looking at and listening to, here?

What is not so obvious at all is how this ordering can be made coherent with our weekly calendar; that is to say, how can the two orders be conceived as a single complex thought-object, as a One of the many? Note that the answer is already in the question. So, how can we discover this singular dual order? The way to discover this is by first looking into the inferential characteristic of the human mind. Let's forget our familiar ordered weekly sequence, for a moment, and address the mind of the inventor of this ingenious ordering process of counting missing intervals.

Ask yourself: why would this inventor have chosen that ordering to determine the days of the week, in the first place? Or was it more than a week that he was originally ordering? It is doubtful that it was merely the week, because you don't start a calendar of a seven-day week without knowing first what the week is a part of. A week is not a natural astronomical cycle to start with. So, what has to be first identified is the One, and not a part of the many. Very well then, what is that One? Whatever this inventor must have chosen as the One, would it necessarily have to account for two different cycles, the planetary cycles and the cycle of the weekdays whose sequences are completely different? Therefore, the One must have been a dual pathway of time, and not a single pathway. In other words, this early discoverer must have resolved the ontological paradox of Plato's *Parmenides*. In all cases of solving anomalies, isn't it always the pathway, rather than the thing, that has to be first discovered?

Since this has to be the case, then, this ordering must have been chosen, first and foremost, because the motions of the planets could give a relative progression of time for the Solar System as a whole, not just for the Earth. It must have been the increasing process of cyclical time that indicated the larger pathway to take. In fact, are the motions of the planets not the most natural space-time clock that man could construct for measuring the time of large waves of history? Moreover, could there be any other reasonable least action pathways for expressing yearly cycles, even millennia, inside of our Solar System as a whole? The answer to this question is now obvious! It seems that this ancient discoverer chose that ordering in order to mark the time by way of the constantly repeated cycles of days, years, and centuries inside the zodiac of the entire Solar System.

However, the ordering that this discoverer seems to have made is that this ancient calendar-clock of long waves of history could not be remembered in any other way than by setting the motions of the planet in another smaller format of the seven-day week. In other words, the ordered cycles of those seven celestial motions had to be expressed in a dual fashion, and therefore, they had to move in proportion with the browsing motions of his own mind. How can this psychophysical parallelism be confirmed with absolute certainty? Try the experiment of timereversal and follow how it works in your mind in the same spirit of Archytas discovering the pathways for doubling the cube.

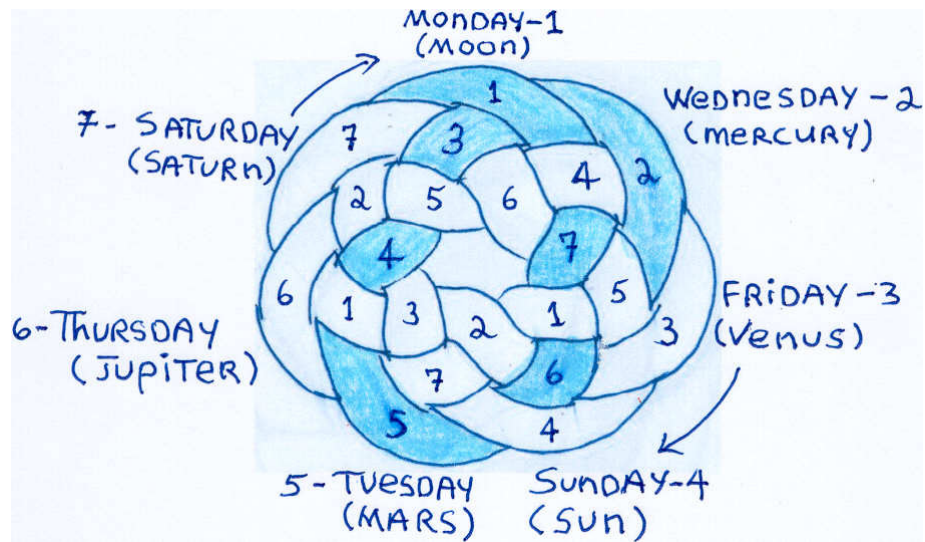


Figure 8. The dual wave function solving the anomaly between the days of the week and the ordering of the planets in their growing cycles. Moving clockwise, the toroidal wave shows the numbered rim sequence (1,2,3,4,5,6,7) of the planetary cycles in their order of increasing motions; while the poloidal waves show the inverse series of highlighted numbers (1,7,6,5,4,3,2) reflecting, one wave at a time, the week days in their well-known ordered sequence. Thus, the One is a fractioning wave function of $4/7$.

The inventor of this weekday sequence, therefore, constructed such a memory modular function in accordance with the cyclical order of the planets listed above in the Poloidal/Toroidal fractionation of $4/7$, as Bailly had stated about the constellations of ancient Chinese astronomy. Since there were no other regular visible moving heavenly bodies, this had to be the unique pathway of least action, the best man-made calendar-clock that could be devised by early man in our Solar System, whether he lived on Earth or on Mars. The calendar pathway fractionation is the same for all of the planets of our Solar System, even though their timing cycles may be different. In fact, you can imagine seven strands coiled inside of a single one, each orbiting in accordance with the space-time of its own planetary cycle, as DNA strands orbit inside of a living cell containing all of the necessary hereditary information for all of the parts of the living being. Is this the same man-made fractioning process of least action pathways that keep the planets harmonically conjugated together as isotopes do in a living process of cell mitosis? It is too early to say at this time.

One thing is certain, however, is that what first appeared as an apparent absurd ordering of the planets, as shown above, is now harmonically ordered into the well known sequence of our week days, where each rotation of one poloidal wave takes you through Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, and back to Monday, again, in a continuous succession of that dual sequence. This seems to be how the ontological paradox of the One of the many was created and solved for the first time in ancient human history. At any rate, this must have been how the first Solar System exploring mind was thinking over 5,000 years ago. This unique ordering of the days of the week with the names of the planets was also traced back to the Sumerian poem of

Enheduanna in which the Lord of the Heaven gave directions “with seven fires lifted at night-time.” (*The temple hymns: translation* (The Electronic Text Corpus of Sumerian Literature)). This prompts me, in ending, to identify the importance of pursuing the line of investigation that Lyn suggested we take in his most recent paper.

Although very little physical evidence has survived the millennia in the records of the three most ancient civilizations identified by Bailly in his research of ancient astronomy, there are sufficient leads in the Egyptian, Pythagorean, and Platonic science of *Sphaerics* to indicate that there existed a pre-imperialist People of the Seas that had developed a civilization based on long standing astronomical observations for the purpose of trans-oceanic navigations during the intervals of ice-ages. Lyn made the point again, recently, of emphasizing such “Platonic Cycles.”

“It is not conceivable on the basis for any relevant evidence of which I have been informed, that the underlying principles of the actually principled form of relevant, ancient scientific method, could not have been discovered, except through the development of a functional concept of astronomy derived from no less than many centuries of the practice of stellar methods of trans-oceanic navigation by continuously functioning maritime cultures of the type which coincide with prolonged “ice age” intervals. What is called “The Great Platonic Cycle” which Bal Gangadhar Tilak attributed, in his Orion, to a central Asian (pre-Sanskrit) Vedic language-culture living in Central Asia more than 6,000 years ago. That cycle is the briefest (about 25,000 years) of the three principle cycles of a long-ranging, compound Solar cycle. It is otherwise known as the Platonic cycle, as attributed knowledge of Plato during his own lifetime.” (Lyndon LaRouche, *The Secret Economy's Outlook*, June 4, 2010.)

For the purpose of further investigation is this broader view of history, it is essential to identify that the most significant contribution of such an ancient People of the Seas was to have based its conception of *Sphaerics* on a dynamic modular function which represented a fractioning twofold process of astronomical cycles that Plato had identified in *Timaeus* 39c-d as the cycle of precession marked by the return of the seven wandering planets during a period of 25,920 years to an original position of the so-called fixed stars.

Primarily, Plato's identification of the “wanderers” with the determination of Time served the cognitive purpose of marking the physical space-time motions of the great psychophysical proportionality between the intelligence of the bodies in the heaven and the reasoning powers of the human mind; and secondly, it served as a practical time table for making astronomical observations of the different celestial bodies by computing their wave cycles, day in and day out, year after year, centuries after centuries. In this unique manner, the discoverer of this Solar System clock, that Bailly identified as being the real live historical figure of Atlas, used the simplest device of least action to impact the cognitive powers of mankind for all time to come. The irony, however, is that humanity has forgotten all about this discovery, because humanity has lost the sense of looking for what is not there. There is hope, however, that a new generation of Solar System explorers might restore this lost knowledge, today, but there is no guarantee.

CONCLUSION.

Thus, it stands to reason that just as space is not empty of non-existent things, what is not there is not empty of non-existent things either. As Thales put it: “Heaven is full of gods.” Indeed, the heavens are filled with sundry singularities that the Biosphere and the Noosphere of the Earth are both created from in the appropriate domain of their incessant activities. The generative powers of what is not there, be they reflected in the short waves of cosmic radiation, in the infinite harmonic waves of non-existent points at infinity, or in the long orbiting waves of planetary motions counting the days of our lives, those generative powers, I say, represent but the shadows of immortality reflected in a discovery of principle. Therefore, in ending this report, it is only fitting that I recall how Bailly identified this Poloidal/Toroidal “module of measured pathways” as a trace of the immortal weaving principle of the long waves of history:

“Thus, human beings carried by time and renewed by time, when they see the works of nature perish, as they themselves go, while the earth is unshakeable, and is always alive, they have conceived of locating in its dimensions, the invariable type of measures they wanted to make eternal. A human being, which only lives a moment, has the ambition of extending his life through memory, and by making his institutions eternal; he wishes to extend his usefulness after his death: this being is replaced by others, who have the same needs, and the same desires. The module of measured pathways has been engraved upon the foundations of a common home, in order to instruct the hosts of all of the centuries to come.” (Bailly, Op. Cit., p. 42)

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