
DON'T BE A SAD SACK, FIGURE OUT HOW METAPHOR REALLY WORKS

On the subject of Lyndon LaRouche's method of creative thorough composition

Pierre Beaudry, 01/21/2020

FOREWORD: THE LAROUCHE METHOD IN A NUTSHELL

“My specialty, a branch of physical science founded by Gottfried Leibniz, is the field of inquiry which addresses the efficient connection between the fostering of individual human creativity and increase of the productive powers of labor. For the period of nearly fifty years, since I adopted that vocation, the center of my work has been to show the specific incompetence of all currently accepted doctrines of political economy. The essential core of that incompetence is the use of formal-mathematical and related methods, which exclude consideration of the functional relationship between the fostering of scientific and artistic creativity, and the improvement of the size, productive power, and demographic characteristics of the nations' populations.”¹

¹ Lyndon H. LaRouche, Jr., *Music and Scientific Creativity*, EIR, Vol. 23, No. 33, August 16, 1996, p. 21. This paper by Lyndon H. LaRouche, Jr. was presented on his behalf at the conference's releasing the Schiller Institute's "music manual" in Italy. "One who were familiar with the implications of my 1948- 1952 discoveries in the science of physical economy, should recognize why I was impelled to initiate the production of this Manual, more than a dozen years ago. Anyone who recognizes that connection, which I uncovered between physical science and Classical art-forms, would gain a richer insight into the principles of music itself. That connection is the subject of the remarks I submit for today's occasion." Axiomatics of Art and Science. This report is especially significant

INTRODUCTION: AXIOMATICS OF HUMAN THINKING

“Were we only to start bringing together what is great within us, what is small would not win.”

Mencius

Most people don't realize that the human thinking process was created for the purpose of mastering the universe; they don't believe such a power can exist within their own minds. Therefore, as a result of ignorant beliefs, they neglect the discipline that is required for developing their own mental powers. That is the reason why most people end up being like Sad Sack.



Here is the crucial experiment that LaRouche proposed to examine for the purpose of unraveling what Emmanuel “Sad Sack” Kant was unable to conceive of. The question is: What is the method by means of which the human mind can become creative by bringing one's own soul from a lower level to a higher level of thinking? No; a kick in the ass won't do it.

Sad Sack, Wikipedia²

After Pearl Harbor Day 1941, Sad Sack was called upon to go to war and fight against the worldwide spread of fascism. Sgt. George Baker created this cartoon character in 1942, in the midst of World War II, depicting an inept American soldier having to go through the absurdities and humiliations of military

because it develops a Platonic method of axiomatic transformation which enables the reader to become a creative human being.

² The comic strip first appeared in the first issue of [Yank, The Army Weekly](#), June 1942.

life. Sgt. Baker never intended his character to break out of his apparently unalterable condition; he simply wanted to laugh at him. It is unfortunate that most Americans today still identify with such a lowly soldier and have no idea how they can change and become real human beings by developing their minds.

LYNDON LAROCHE'S CREATIVE METHOD OF COMPOSITION AND THE FUNCTION OF METAPHOR

“How can you pull yourself from the future?
With a galactic sky hook!”

Dehors Debonneheure

One of the most interesting aspects of LaRouche's method is to figure out the fallacies about two things that we normally do not put into question: the ideas of space and time. Isn't it obvious that space is distance and time is the change in direction and length it takes to go through that distance? In other words, time is measured by space. The irony, here, is that you cannot define time without referring to space. Why? Because time is nothing else but the measure of motion and change in space. That being the case, then what happens to space and time when you experience an axiomatic change?

In an astonishing paper written for the inauguration of the Schiller Institute “*Musical Manual*” in Italy in 1996, Lyndon LaRouche stated the following criticism of such apparently self-evident notions of space and time. He wrote:

“The outstanding obstacle to progress in formal mathematical physics, has been the naive assumption, that that simplistic idea of space and time associated with secondary-classroom geometry, is the nature of the organization of physical space-time in the world which exists outside our sense-impressions. That naive opinion fosters the conceit that space is perfectly extended in a linear way, with uninterrupted continuity, in three senses of direction: back-forward, side-to-side, and up-down. It is presumed, similarly, that time is extended, in the same way, in the sense of past-future. This crude, so-called Galileo, "Cartesian," or "algebraic" notion of spacetime, serves poorly educated opinion, as a kind of sausage casing, into

which all physical experience is stuffed. Virtually all commonly taught, and popular opinion about cause and effect in physics (and history), are based upon that mistaken, "sausage casing" view of the universe.

“Once we recognize the absurdity inhering in that algebraic misconception of the universe, we are led back to the notions of hypothesis employed by Plato. Then, we must recognize that our opinions are the results of our attempts to define the kinds of propositions which are not inconsistent with a certain set of our underlying beliefs. These are our beliefs concerning the way in which we presume that the universe is organized. In textbook geometry, these underlying beliefs are called axioms, postulates, and definitions. Any such set of axioms and postulates, or the equivalent, is identified by Plato as a hypothesis.

“Another term for hypothesis is "theorem-lattice." Any proposition which is not inconsistent with the axioms and postulates of a relevant hypothesis, qualifies as a theorem of that hypothesis. Thus, any consistent mathematics, or any consistent mathematical physics, represents a "theorem-lattice": An open-ended collection of all of the propositions which qualify as theorems of the corresponding hypothesis.

“In that light, consider the crucial type of case, in which experimental physics shows us the undeniable existence of a physical principle which cannot be reconciled with a presently accepted hypothesis. This paradox shows us, that there is an error embedded among the axioms and postulates of the existing hypothesis. The solution to such a paradox is found in the discovery of a relatively valid, new physical principle.

“The needed correction gives us a new hypothesis, entirely replacing the old one. We have, then, a new theorem-lattice, of which no theorem is consistent with the superseded theorem lattice. This inconsistency between two hypotheses is recognized in the form of a logical, mathematical, or mathematical physical discontinuity. Relative to the hypothesis which must be superseded, that discontinuity is absolute; the gap between the two hypotheses cannot be bridged by any attempted extension of the first

hypotheses. One cannot "slide through" the logical gap represented by the occurrence of the discontinuity."³

The new principle which permits the mind to recognize the existence of such a gap is the only way in which one can eliminate it by leaping over it; which means that there are ways, other than war, which may be used to close the gap between opposing nations, and the most effective one is the metaphorical process of artistic composition.

BEETHOVENS FIDELIO AND THE FLORISTAN PRINCIPLE

The irony, here, is that the "gap" can only be solved if it is bridged with "agape," as in the musical metaphor of Beethoven's *Fidelio*, and especially in the ironic role played by the wife of Florestan, Leonore, whose paradoxical character of male-female lies in the resolution of social dissonances that Beethoven chose to compose his piece with, as a way to solve what LaRouche identified as the "woman question," the solution of the opposition between the "sexist" and the "feminist" social problem of his day. LaRouche is explicit on the matter:

"The principal character of Beethoven's *Fidelio*, Florestan's wife, Leonore, reflects the healthy direction of Beethoven's approach to the "woman question" in opposition to the reactionary impulses typified by Mary Wollstonecraft Shelley. This is underlined by the wretched, nakedly anti-Shelley theme of Mary Shelley's famous "science fiction" novel, *Frankenstein*. The novel is a naked, Malthusian denunciation of the poet Shelley's own Promethean impulses, reflecting the smug, almost Fabian banality which "feminist" Mary Shelley focuses in thinly veiled hatred against the essential feature of her husband's character. Where Mary Shelley's invidious feminism seeks cheap equality for women by degrading great men, Beethoven directly attacks the mediocrity imposed upon women. His Leonore is not the heroine of the opera, but the *hero*: the woman who is

³ Lyndon LaRouche, [Music and Scientific Creativity](#), p. 22.

feminine, but also a Promethean fit to match herself against the men of her time. Fidelio is of the same type as Rosa Luxemburg.”⁴

Elsewhere, for instance, in [*Music and Scientific Creativity*](#), Lyn identified the same problem as follows:

“In Classical forms of poetry and drama, such a discontinuity is recognized as a metaphor. In musical composition, a metaphor is expressed in such typical guise as a relative dissonance requiring resolution. In music, the theorem-lattice appears in such typical guises as keys, modes, and higher expressions of modality, such as those characteristic of the late string quartets of Beethoven.

“The transitions from one hypothesis to a higher one, whether in science or art, are each and all expressions of the quality in which man manifests the principle of Genesis 1 :26- 30: the individual person qualified by an innate power of creativity which defines man as made in the image of God, and thus afforded the power of dominion within the universe. In the science of physical economy, we demonstrate, that this creative power, when properly expressed, is a power by which the human will may command the universe to obey, a demonstration that the universe is predesigned to obey the creative potential with which man is endowed. In Classical art, this same creative potential, expressed as metaphor, is itself the subject matter.”⁵

Thus, it is the idea of the *coincidence of opposites* which is relevant, here, because this is how the transition from one hypothesis to a second higher hypothesis can take place with the resolution of the conflict and with the Grace of God.

⁴ Lyndon LaRouche, [*The “Florestan Principle” in Art*](#), New Solidarity, January 7, 1977. Republished in EIR, Vol. 47, No. 3, January 17, 2020.

⁵ Lyndon LaRouche, Op. Cit., p. 22.

THE COINCIDENCE OF OPPOSITES BETWEEN VERROCCHIO AND DONATELLO



Andrea del Verrocchio, David, c. 1465⁶



Donatello, David, c. 1435-1440.

Verrocchio's mastery of the David is paradigmatic of the *Florestan principle*. When Verrocchio needed to solve the conflict that he had perceived in Donatello's *David*, he resolved the dissonance by asking his best pupil, Leonardo da Vinci, to pose for his *David*. The joyful smile of *David* (Leonardo) tells the whole story about his victory over Goliath. He looks as if he were saying: "Any other so-called "giant" you wish to send against me?"

I will not say anything about the body language of Donatello's David.

⁶ [Andrea del Verrocchio: A Closer Look.](#)



The joyful smile of Verrocchio's David (Leonardo) after killing Goliath.

LaRouche identified a similar stratagem as the Leonardo smile in Beethoven's opera, *Fidelio*. He wrote:

“In the opera, the character steps forward—away from the “action”—as in a Shakespearean soliloquy. The opera's primary subject is the montage of those soliloquies. Hence, what Leonore does in the narrative aspect, the details of the situation are merely expedients for the expression of the outlooks of the inner selves as expressed by the music. The essential thing about the opera is

Beethoven's choice of the character of Leonore and of her relationship to Florestan in a common struggle against the brutish injustice of the aristocracy. The overall world-historical outlook is *voluntarist*; bold ingenious intervention can discover against all seeming contrary certainties some remedy. It is that creative, voluntarist conduct in a woman which is the essential subject of the opera."⁷

Verrocchio's David is clearly the appropriate reply to the unusual posture of Donatello's David. The victorious resolution of the dissonance is captured in Verrocchio's David, not only in the body language, but in the smile of his mind as well. Therefore, it is recognizable, at first glance, that Verrocchio's David has a republican state of mind while Donatello's David has an oligarchical state of mind. This difference of principle becomes very clear when you apply LaRouche's *Florestan Principle* in both cases:

“As we shall emphasize in due course here, great art has a demonstrated function for alleviating neurotic disturbances and stimulating the creative potentialities. Not accidentally: it is by stimulating the individual's creative potentialities that neurotic impulses are most efficiently checked. A population which lacks enjoyment of great art, great music most emphatically, is not only culturally impaired in the ordinary sense of that term, but is deprived of a means for improvements in its qualities of moral judgment and creativity in general.”⁸

One may find strange the fact that LaRouche identified his *Florestan Principle* as a cure for “alleviating neurotic disturbances and stimulating the creative potentialities,” but there is nothing surprising about it when one realizes that it is precisely the same fight that the republican forces have been waging against oligarchism around the world, for the last 5,000 years of recorded history; a fight to establish a new way of thinking for mankind: a universal form of galactic thinking.

⁷ Lyndon LaRouche, *The “Florestan Principle” in Art*, New Solidarity, January 7, 1977.

⁸ Ibidem.

RECIPROCITY OF SPACE-TIME-REVERSAL AND THE C-256 SERIES

How do you hypothesize a higher hypothesis for space and time? When you change naïve time and space into what can be termed space-time-reversal, you discover a new way of measuring space and time which Leibniz had identified as an ordering of space-time that he called *analysis situs*. LaRouche called it isochronicity of spatial ordering or simultaneity of eternity. He identified the axiomatics of this matterofmind as follows:

“As Riemann stresses in 1854, we are not permitted merely to dump the new principle into the proverbial mathematical pot; we must take into account the new kinds of interactions to be considered by shifting from the hypothesis of “n dimensions,” to the relevant new hypothesis of “n+1 dimensions.” The new quality of interactions is expressed for measurement, in terms of physical space-time “curvature.” All of the leading work of Gauss, W. Weber, and Riemann (among others) expresses this mathematical comprehension of the process of experimental-physical progress.

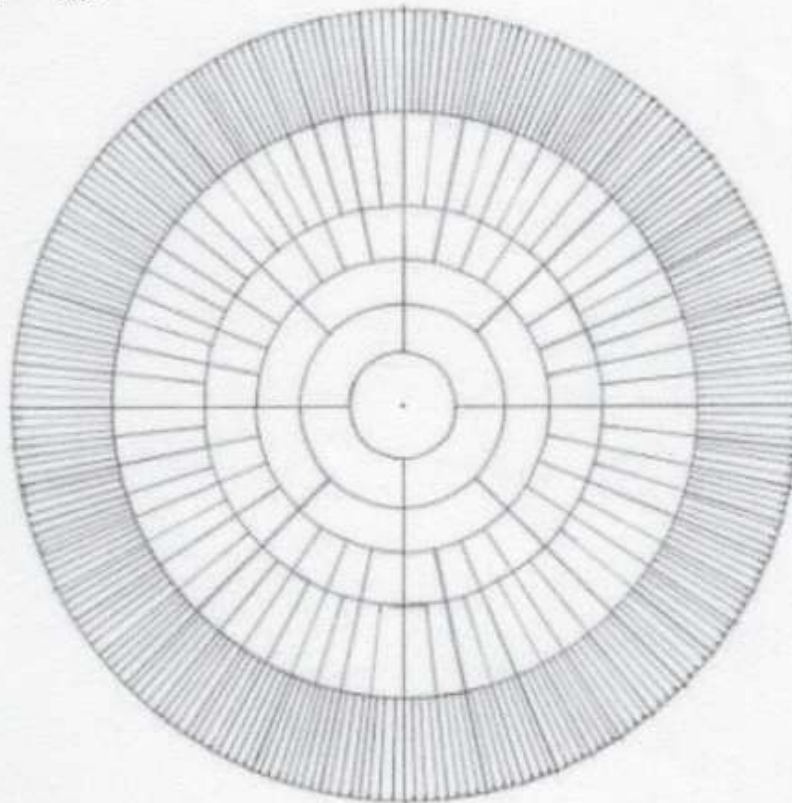
“This change in the way we must think, geometrically, eliminates all further toleration for such aprioristic conceits, such as the notions that space and time are infinitely extensible, in perfectly linear continuity, backwards, forward, and up-and down. How far any dimension (extensible application of distinct, validated experimental principle) is extendable, and with what restrictions, must be determined experimentally. Of this, we should have been forewarned no later than the Eighteenth Century, by the proof of isochronicity in gravitational field, and in refraction of light propagated at some rate of retarded potential.

“Time itself, free of its aprioristic shackles, like space, is removed from the domain of Cartesian and algebraic intuition; its nature becomes a subject of experimental physics.”⁹

⁹ Lyndon H. LaRouche, Jr., [Mathematicians Who Can't Tell Time](#), EIR, Vol. 24, No. 23, May 30, 1997, p. 30.

1	=	1
100	=	4
1000	=	8
100000	=	32
1000000	=	64
100000000	=	256

$$\overline{101101101} = 365^{18}$$



Replica of the original Fu Xi idea of a circular 365-days calendar calculated from the C-256 series. Drawing by Pierre Beaudry

¹⁸Note the mirror image chirality of number 101101101

The epistemological point to be made, here, is that there exists an incommensurable connection between *physical space-time isochronicity* and the epistemological time-reversal *experiment of simultaneity of eternity*. You can hear that difference with special musical compositions based on the Bach lydian modality: that is, through a doubly-connected lydian spiral action for the purpose of achieving a least action resolution of *coincidence of opposites*.

The ancient Chinese philosopher, Fuxi, found a way to measure such a process by applying the ordering principle of the *I Ching* as a reciprocal ordering akin to the cyclical musical ordering of C-256. In doing so, he discovered that the C-256 series was the only reciprocal cyclical series which generated the 360 degree angles of the circle. How can you reconstruct that?

In my last two reports on the Fuxi-Leibniz discovery of the principle of reciprocity,¹⁰ I suggested that it were possible to measure, by *analysis situs*, a self-reflective process of change by adding units of action which constantly increase the speed of that change by an increment of one. Imagine now that, instead of simply adding single units of action, you were to multiply added units of action in accordance with a constant ordering principle; that is, by multiplying them by 2 and by 4, successively and alternatively, such that you accelerate the process in the following complex manner: $1+4x1+2x4+4x8+2x32+4x64+ 2x256+4x512+2x2048$, etc. Take the first five cyclical changes in the Fuxi calendar manifold and add the numbers in accordance with the *analysis situs* of each concentric circle of 1, 4, 8, and 32:

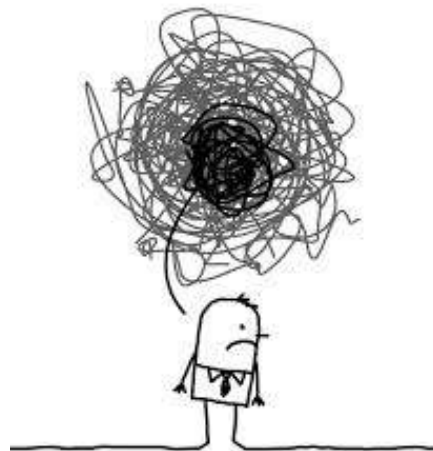
Using the C-256 series as the basic source of the ancient Chinese calendar; that is, in conformity with the Fuxi *I Ching* principle of reciprocity between the yearly orbiting rotation of the earth's 365 days around the Sun and the 360 degrees around the 26,000 year cycle of precession of the universe around the wobbling axis of the Earth. How can these three cyclical actions be constructed into a single higher manifold? I have not discovered the appropriate toroidal geometry to express this discovery yet, but the above application should suffice to show the difficulty of the challenge. If one of you should find a solution, please do not hesitate to write and tell me about your excitement.

¹⁰ See my report: [FUXI, LEIBNIZ, BACH, AND LAROUCHE ON THE PRINCIPLE OF RECIPROCITY](#)

creative to gain knowledge of Beethoven. Without the development of the inner mental faculty for hearing the content of the music, only the stultified senses are stimulated in a superficial way. Without creative insight, art ceases to be art, and is degraded into a mere matter of differences in the banalities of private taste.


“Beethoven is the creative intellect’s preferred companion. Powerful, ebullient humor saturates his compositions. His music is a delightful prank against pompous philistinism, constantly a new discovery ostensibly intended to confound the apostles of ‘thoroughness.’ If Beethoven was, in his daily personal life, sometimes embittered as well as contemptuously mocking against moral and intellectual banality, his surviving creative life is a joyful assault against the same imbecilities. His work is concentrated attention-span expressing that latter quality.”¹¹

Thus, the question of adding new axioms to old ones is a self-fulfilling paradoxical trap. The human mind is both open-ended, and also requires closure, because it was created by God for the purpose of resolving all of the paradoxes of the *coincidence of opposites*.



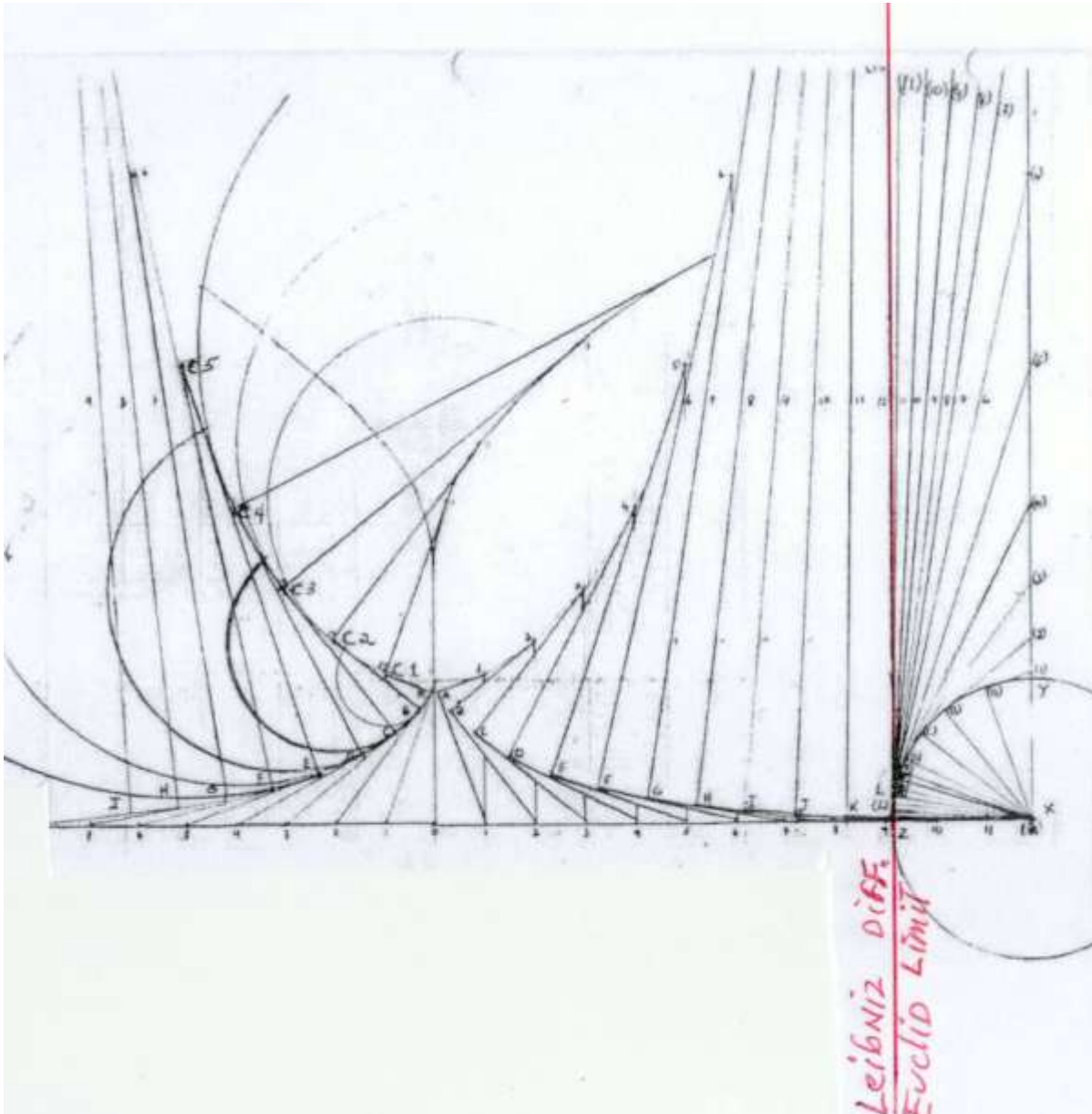
Don't be a sad sack. <http://www.midlifeupswing.com/dont-be-a-sad-sack-red-flags-that-you-might-be-a-party-killer/>

¹¹ Lyndon LaRouche, *The "Florestan Principle" in Art*, New Solidarity, January 7, 1977.

If this is the way you feel, after what I have just said, then, you have missed my point. So, I recommend that you have patience and that you construct for yourself this following Bach experiment as described by Fred Haight: 

[WennVor.mp3](#)

J. S. Bach, *Before thy Throne, I Now Appear.*



The construction of the catenary-tractrix going through the inversion of tangents and normals, as if through a looking glass, between the two axiomatically different domains of positive and negative curvature. Construction by Pierre Beaudry.

Compare the interplay of the following triply-connected curvature of the Circle (Tonic), Tractrix (Sub-Dominant), and Catenary (Dominant) with the Leibniz inversion of tangents and normals applied to the Catenary Tractrix from the Circle, which I constructed about 20 years ago. (See above figure)

Bach's assistant was absolutely right in saying that "you need the soul to understand such a complex proof." This is what I have always considered to be a proof by performative construction. "Given the property of the tangent, construct the curve! Given the property of the lydian connection among the Tonic, Sub-Dominant, and Dominant, compose a *motivfuhrung* idea." All three functions are means of each other, as are the Arithmetic, Geometric, and Harmonic means of a conical least spiral action to one another.

This triply-connected function is the key to the proportional dynamic of the creative process for itself: The Tonic, Sub-Dominant, and Dominant memory function of music is to the Arithmetic, Geometric, and Harmonic mean function of conical circular action as the Circle, Catenary, and Tractrix axiomatic transformation is to the galactic torus of universal history. It all comes together nicely as the core function of the LaRouche epistemological *motivfuhrung* principle of economics. And, the beauty of it is that you will never know it truthfully unless you have proven it to yourself by construction; that is by doing the impossible act of going through the looking glass like Alice did. That is what Friedrich Schiller suggested we do when he called on our minds to go through universal history:

"A noble longing must glow within us to also make a contribution out of *our means* to this rich bequest of truth, morality and freedom, which we received from the world past, and which we must surrender once more, richly enlarged to the world to come, and, in this eternal chain, which winds itself through all human generations, to make firm our own ephemeral existence."¹²

¹² Friedrich Schiller, *Poet of Freedom, Volume II*, Schiller Institute, Washington D.C., 1988, What is and to What End Do We Study Universal History, p. 271.

LEIBNIZ AND LAROCHE ON THE SUBJECT OF SPACE AS THE ORDER OF THINGS CHANGING IN TIME

There is a crucial point that should not be missed in anyone's mind about Lyndon LaRouche's idea of history. Human history is a direct corollary to the fact that mankind is the only species, aside from the galaxies, which has the power of increasing its relative population density. As Helga emphasized, recently, there are two trillion galaxies, and new ones are being born every day. So, the best mirror for mankind to see himself has been in the heavens. This means that man should stop comparing himself to animals, turn his head to the heavens, and compare notes with galaxies. Remember how Francois Rabelais identified the function of time in Lanternland. He said:

“So, when you philosophers, with God's guidance and in the company of some clear Lantern, give yourselves up to that careful study and investigation which is the proper duty of man – and it is for this reason that men are called ‘alphestes,’ that is to say searchers and discoverers, by Homer and Hesiod – they will find the truth of the sage Thales's reply to Amasis, King of the Egyptians. When asked wherein the greatest wisdom laid, Thales replied: “In Time.” For it is time that has discovered, or in due course will discover all things which lie hidden; and that is the reason why the ancients called Saturn or Time the father of Truth, or Truth the Daughter of Time. They will also infallibly find that all men's knowledge, both theirs and their forefathers', is hardly an infinitesimal fraction of all that exists and that they do not know.”¹³

LaRouche's hypothesis of cyclical least action in the universe is not a new axiom added to old dysfunctional ones, but rather an unhypothesized principle which links human history to the history of galaxies, and it does it best through the creative process of great classical music. What is it that mankind can learn from the cyclical motion of galaxies and apply successfully to the cycles of human

¹³ Francois Rabelais, *Gargantua and Pantagruel*, translated by J. M. Cohen, Penguin Books, New York, 1955, p. 710.

generations? What is it that galaxies do, which is republican as opposed to oligarchical, and which could help mankind as well as the general welfare of the entire starry system? The secret is in the language of metaphor.

If you think that metaphor is a figure of speech which is a substitute for something that cannot be stated directly and literally, you are right, because metaphor functions as the currency for what is unspeakable. And, the most unspeakable of all things is the creative process of the universe. That is the reason why metaphor cannot be explained in simple terms. As Jacques Cheminade recently made the point: “Metaphor is not merely an elegant literary form, but it is the very means through which an individual thinks. It leads us to the universe of exploration of the pre-conscious from which conscious thoughts proceed. It is an area of thought which is a rare occasion for man, where he is in direct relation with the creation of the universe.”¹⁴

Although it is not sensually obvious, the fact that God created galaxies as an exercise in preparation for the creation of the human mind should be a provoking idea for anyone who realizes that mankind and galactical formations are the only two species of being in existence that grow without limits inside of the universe, as they are both limitless and bounded. What is the connection between this maximum and minimum? Everything is in proportion. Here is how Leibniz conveyed this idea in his investigation of the meaning of the Chinese concept of *Li* and the idea of space in his writings on China. Leibniz wrote:

“§7 [...] But they also call it [*Li*] the sovereign plenitude because it fills all and leaves nothing empty. It is extended within and without the universe...In order to give an appropriate sense to this, it is necessary to conceive of space not as substance which possesses parts upon parts, but as the order of things insofar as they are considered existing together, proceeding from the immensity of God inasmuch as all things depend upon Him at every moment. This order of things among themselves arises from their relationship to a common principle.

¹⁴ Jacques Cheminade, Memoriam for Lyndon LaRouche in Morning Briefing for December 24, 2019.

“§8. The Chinese also call their *Li* a globe or circle. I believe that this agrees with our way of speaking, since we speak of God as being a sphere or a circle whose center is everywhere and whose circumference is nowhere. They call it the Nature of things, which I believe corresponds to our saying that God is the *Natura Naturante* (creative power of nature).”¹⁵

Now, let us look at how a galaxy is formed in accordance with this principle of the well-tempered musical system of C-256. Look at how a Torus is constructed, for example. First there are only two apparent rotational actions, one toroidal and the other poloidal. Then, from outside of that doubly-connected action, one may add an additional third “galactic” action.¹⁶

What is galactic thinking? Galactic thinking is the creative thinking that Lyndon LaRouche referred to in his keynote address to the Schiller Institute and the International Caucus of Labor Committees in Reston, Virginia, on August 31, 1996, when he shared with the ICLC members of his organization, for the first time, his discovery of principle of *time-reversal*; that is, a form of thinking which requires the human mind to change the past from the future and determine how that past should have been.¹⁷

How can you conceive of the universe as the future ordering of what should have been? Of course, when you look at the Crab Nebula, for instance, you are looking at the past, because the spectacle that you see no longer exists at the moment of your perceptual observation. In reality, the polyphonic Crab Nebula exists only in the changing isochronic process of a universal event in the

¹⁵ Gottfried Wilhelm Leibniz, [Writings on China](#), translated by Daniel J. Cook and Henry Rosemont, Jr. p. 80-81.

¹⁶ See my construction: [TORUS CONSTRUCTION](#)

¹⁷ Lyndon H. LaRouche, Jr., [How the Future Shapes the Past and the Present](#), EIR, Vol. 23, No. 41, October 11, 1996, pp. 16-18. Lyndon LaRouche, in his keynote speech to the Labor Day conference of the Schiller Institute and International Caucus of Labor Committees (ICLC) in Reston, Virginia, on Aug. 31, 1996 launched a campaign to expose George Bush as the "drug-trafficking kingpin of the 1980s," and to shape a "third force" in American politics, to defeat the Conservative Revolution in the Nov. 5 election. EIR reported on these initiatives in its issue of Sept. 13, 1996 (pp. 10-12 and 58-60). Here, the focus is on the philosophical core of his two-hour speech, of which these tactical initiatives are an expression: the question of *time-reversal*. In the theoretical document that follows this report, LaRouche develops these concepts at greater length, with specific reference to mathematical economics.

simultaneity of eternity. That is the way that the universe constantly changes in real physical space-time terms as opposed to under mathematical theorization. The question is: how can one conceive of space as such a changing place in time?



[The Crab Nebula:](#) “This image combines data from five different telescopes: the VLA (radio) in red; Spitzer Space Telescope (infrared) in yellow; Hubble Space Telescope (visible) in green; XMM-Newton (ultraviolet) in blue; and Chandra X-ray Observatory (X-ray) in purple.” [NASA](#)

LaRouche identified how the work of Leibniz, Huygens, and Bernoulli led to the discovery of different special distances as “equal time pathways.” It is called the principle of “*physical isochronicity*.” This is the physical reciprocal to the epistemological principle of “*simultaneity of physical eternity*.” Now, this does not mean that many individual present moments, separated in space by millions of light years, exist simultaneously; such an idea is merely an abstract notion of absolute time, which has no real physical existence. Besides, that is the wrong way of looking at this new principle. What you are looking for is *the idea that a future causes a past to change for the benefit of mankind as a whole such that you shape that idea at any time and over time at the same time*. LaRouche gives a basic example of how the experience of such a discovery takes place. He wrote:

"When you re-experience the principle of Eudoxus, or the principle of Theaetetus on the Platonic solids, or other discoveries, like the Eratosthenes discovery we use so often: These discoveries bring you into a direct experience of the mental experience of the living Eudoxus, the living Theaetetus. You are experiencing the mind of a person thousands of years before you, in that moment. You are establishing a personal relationship with someone who was dead thousands of years before you, or hundreds of years before you ... Therefore, you have a sense, again, of what? You have a sense of time, you have a sense of isochronicity, that this person, thousands of years before, helped to make you. By what? By reinforcing and strengthening a principle by which you could become you. That you have a personal, direct relationship with people who are long dead. You have, similarly, a personal relationship and responsibility to people who are long yet unborn. And, what you are, is you are a means to advance society, the continuity of the past into the future which you can only do if you relive the process of discovery, if you reactivate from within yourself what a child does, when he learns how to play with blocks, for example, this agapic sensation, the higher quality of emotion referenced by Paul, as in I Corinthians: B."¹⁸

This very simple experiment of rediscovering principles that others have discovered before you, actually changes the universe isochronically by time-reversal, because these discoveries become alive again in your own mind and change the universe at every level of its existence. As a matter of fact, these ideas never died; they were only dormant, because they are immortal; and they are immortal because they are universally true, for all times. And, that is why they live in the *simultaneity of eternity*. But, the crucial way that such a discovery takes place is when you discover that it is the future that does the work by changing the past. First, the future makes the dead live again; but even more significant, the future improves on the curvature of physical space-time by positioning your mind on the arc of what the future generations of mankind will require for the improvement of their existence. Once you know that, you know you are working

¹⁸ Lyndon H. LaRouche, Jr., [*How the Future Shapes the Past and the Present*](#), EIR, Vol. 23, No. 41, October 11, 1996, p.18.

for a higher purpose and from a higher principle that commands you. As LaRouche said:

“If you know that a certain principle of discovery leads to an improved curvature of physical space-time in physics, then you know mankind is operating on a higher dimensionality. We say, 'Therefore, if we explore space, for example, then we will gain knowledge which we otherwise will not gain, which will enable mankind in the future and, also, in the nearer term, to progress to a quality of life which is not otherwise possible. So therefore, we do it.' Some wise guy comes by: 'Well, what are you going to discover when you get to Mars?' 'I'm going to discover how to get away from your nagging!' We're going to discover how to increase man's power in the universe, how to find truth, a better truth than we know now; the power to solve problems that we can't solve now. So, we want to get there.’¹⁹

And that is the point. Why do you do this? You do it because you want to change the world for the better. And, why do we want the world to be better? Because that is what I have decided the future to be. It is that desired intention which causes time-reversal to exist in the form of something whose anticipation causes a change in the past. As LaRouche said: “*What is desired is not a mere event, nor a mere change in opinion, but, rather, either a change in hypothesis, or theorem.*”²⁰ In other words, a change in the laws of the physical universe themselves. LaRouche further emphasized:

We may desire the coming into being of a condition which is consistent with a theorem of an established hypothesis, a condition which does not presently exist. More profoundly, we may desire a revolutionary change, a new hypothesis, to replace the reigning hypothesis of existing practice. The properties of Plato's method of hypothesis are indispensable keys for rendering transparent the meaning of the "time-reversal" paradox. Bernhard Riemann's 1854 habilitation dissertation then serves as a pivotal

¹⁹ Ibidem, p. 18.

²⁰ Lyndon H. LaRouche, Jr., [*The Essential Role of 'Time-Reversal' in Mathematical Economics*](#), EIR, Vol. 23, No. 41, October 11, 1996, pp. 20.

reference, for transforming the mathematics of "time-reversal" into the form of expression suited to validation according to Nicolaus of Cusa's and Riemann's principle of experimental physics: *measurement*.”²¹

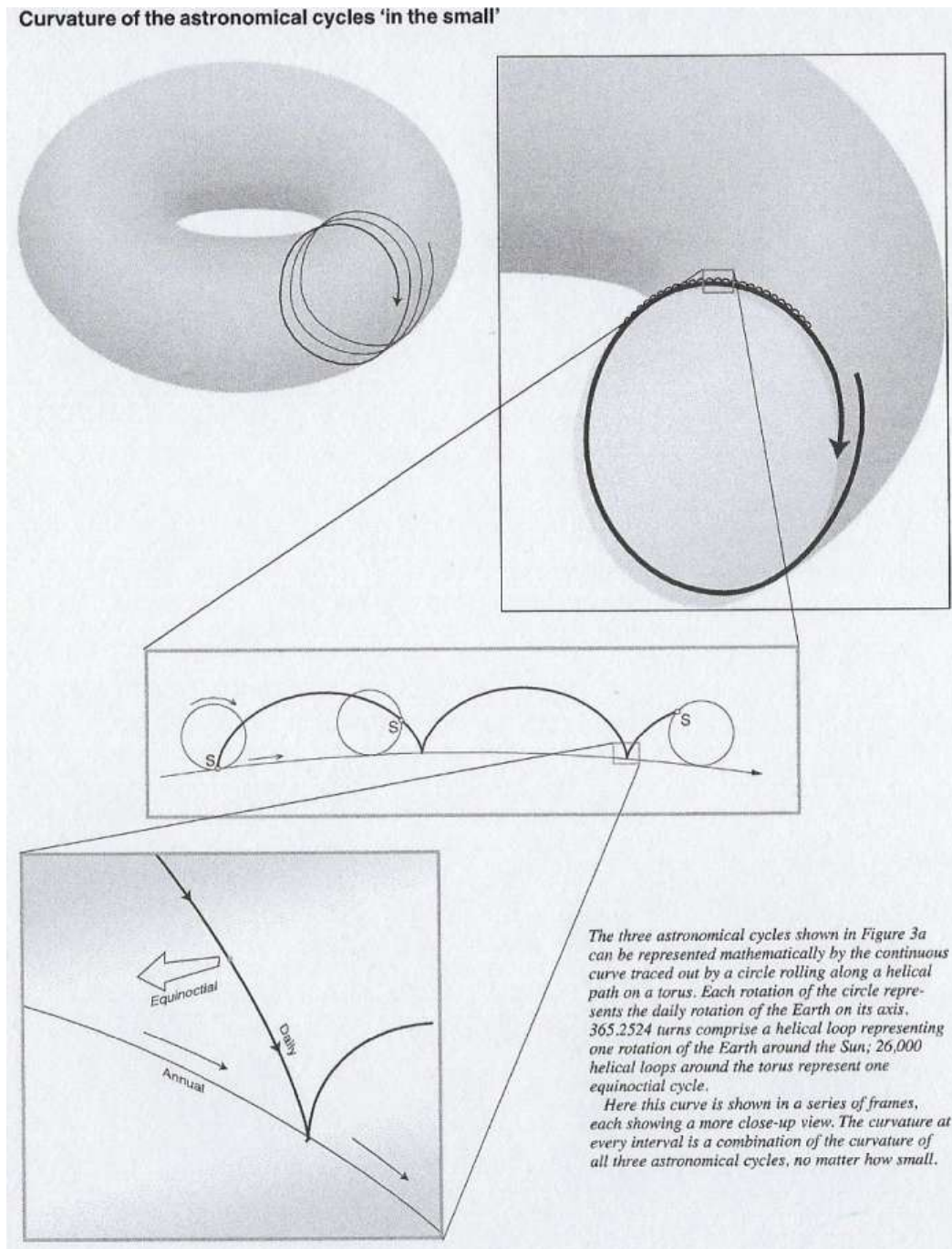
LaRouche lays out the theoretical basis to answer the question: “How might one represent, mathematically, a function in which an event in the future might serve as the apparent cause for an event in the present?” His conclusions are stunning at first, “but, as he says, “gradually, the initial shock of astonishment will give way to the consoling reassurance of Reason.” LaRouche’s shock comes as follows:

“Look at the development of human culture from the vantage-point of the determining, subsuming role of very long cycles. In dealing with human cognition, we are addressing something which has probably existed for less than two millions years, not the tens of millions to billions of years associated with long astrophysical cycles. Nonetheless, there is a relevant comparability. Look at this aspect of the matter from the vantage-point of nests of successive Riemann manifolds.

“In human existence, it is the principle of cognition, the characteristic distinction of man from beast, which determines a long cycle in human existence as a whole. Cognition, itself anti-entropic in character, introduces an anti-entropic ordering-principle into the marginal directedness of the nature with which man is interacting. Situate this within Riemann’s notion of manifolds. *It is the family of anti-entropic “curvatures” expressed within Step Two of the four-step process of cognition, which provides the long-wave characteristic of mankind’s successful relationship to the universe as a whole.*”²²

²¹ Ibidem, p. 20.

²² Lyndon H. LaRouche, Jr., [*Truthful, or Merely 'Factual'?*](#) EIR, Vol. 25, No. 2, January 9, 1998, p. 38. Within the crucial 1996-1998 period of discovery of principles, LaRouche established a four-step Riemannian-Manifold based on the following four epistemological levels: Step 1, Posing an Ontological paradox (metaphor); Step 2, The discovery of a validatable solution; Step 3, The argument for the principle; Step 4, The design of the validating experiment.



The galactic cycle from Lyndon H. LaRouche, Jr., [Truthful, or Merely 'Factual'?](#) EIR, Vol. 25, No. 2, January 9, 1998, p. 36.

Although the mathematical-physics of the matter are much more complex than shown in the graphic above, the real existential motive for *not* adhering to

such a higher hypothesis can be located in the “limit theorem” that Augustin Cauchy imposed on the school system of his day, as a pragmatic measure to prevent bright students to become truly creative human beings. That poisoning of the mind remains the single most fundamental obstacle to the creative process of the youth today.²³ *The issue here is to be able to determine in the large the direction of the universe as a whole by means of the non-linear curvature of a minimum of action in the small.* LaRouche made that crucial axiomatic observation in the following manner:

“This issue, of the determining role, in the large, of non-linear curvature in the very small interval of action, was the concern which prompted Johannes Kepler to propose the development of a calculus to “future mathematicians,” the calculus which Leibniz developed. Unfortunately, few presumably literate science graduates today have the slightest grasp of the significance of the fact that Isaac Newton never developed an actual calculus, and that the revised form of Leibniz’s calculus introduced through Augustin Cauchy’s sophistry, the “limit theorem,” is no longer the Leibniz calculus which Kepler had specified. It was precisely the error of Leonhard Euler, on which Cauchy’s revision is based, which Gauss understood, and successfully corrected, in his forecast of the orbit of Ceres. The entirety of the work of Gauss, Wilhelm Weber, and Bernhard Riemann, thereafter, is premised upon Kepler’s and Leibniz’s recognition that physical action is non-linear in the infinitesimally small, and that it is this non-linearity in the infinitesimal interval of real-life physical action which is key to understanding the principled determination of the same continuing process in its totality. We should not overlook the fact, that Cauchy’s trick with fractions is often useful for those work-a-day forms of engineering work, in which calculations may be, and must be simplified. To carry that simplification over into the domain of serious scientific work, is incompetence rooted in scientific illiteracy. The most popular forms of

²³ See my report on Cauchy: Pierre Beaudry, [The Bourbon Conspiracy the Wrecked France's Ecole Polytechnique](#), EIR, Vol. 24, No. 26, June 20, 1997, pp. 25-35. “

present-day statistical analysis and forecasting are the worst cases of the catastrophes to which blind acceptance of Cauchy's revision may lead."²⁴

Thus, LaRouche established the measuring rod for making the difference between being practical and being passionate about ideas. The beauty of this LaRouche-Riemann process of an anti-entropic function is that it also coheres with what Leibniz established as the living function of *analysis situs*.

THOROUGH COMPOSITION: THE AXIOMATIC CRUX OF THE MATTER

How can one understand the principle of composition of the universe as a whole? You must have not only a complete knowledge of the universe at any moment, but also as it develops over time; which means, isochronically and in the simultaneity of eternity at the same time; that is, you have to create a triply-connected idea which works *any time, over time, and at the same time*.

What LaRouche does to make you discover this axiomatic crux of the matter is that he takes your mind by the hand and walks you through the different levels of his anti-entropic domain like Virgil took Dante through the different levels of the Divine Comedy; that is, through the triply-connected galactic cycles of the universe as in a great musical composition. So, don't be surprised if you feel you are missing a step, here or there, or if you come under the impression that you are jumping into some strange waters. That's what happens when LaRouche takes your mind for a tour of his gallery of anti-entropic inequalities. Here is how he put it:

“As I have demonstrated this repeatedly, the characteristic features of a successfully anti-entropic economy may be expressed in terms of a modular, multiply-connected manifold of inequalities. However, this modular system can be expressed only in terms of a set of physical-

²⁴ Lyndon H. LaRouche, Jr., [What Economics Must Measure](#), EIR, Vol. 24, No. 48, November 28, 1997, footnote 3, page 12.

economic parameters, as opposed to measurements made in terms of simple money prices or other commonly used, fictitious terms.”²⁵

An anti-entropic set of inequalities

The following discussion on “a paradoxically anti-entropic set of inequalities,” is excerpted from “The Essential Role of ‘Time-Reversal’ in Mathematical Economics,” which appeared in the Winter 1996 issue of *Fidelio* magazine and *EIR*, Oct. 11, 1996. For further discussion, see LaRouche’s textbook, *So, You Wish to Learn All About Economics?* (Washington, D.C.: EIR News Service, Inc., 1995).

Let **V** signify input/output of the labor-force, **C** signify required materials input for the entire economy (functionally defined), **F** net (functional) physical capital, **d** necessary deductions for government and administration otherwise, **S** output in excess of *energy of the system*, and **S'** *free energy* (after deductions for both necessary administration and waste). Be reminded: read these symbols as defined here, not the Marxist reading. Prepare the way by describing the constraints to be examined, as follows.

The general constraints are:

1. The potential population-density of the economy (as a whole) shall not be decreased, and the demographic characteristics of the population as a whole shall be improved.
2. The inputs and outputs of the “market baskets,” and of their contents, shall be increased in absolute (physical) terms, for households, for performance of infrastructure, for agriculture and related, for industry, for education, for health care, and for science and technology services. These increases shall be measured in market-baskets, also as contents of market-baskets, and in terms of per-capita (of labor-force), households, per-square-kilometer of land area.
3. The ratio of “free energy” to “energy of the system,” so defined, shall not decrease, but the relative energy of the system (per capita of labor-force, per

household, and per square kilometer) shall be increased through reinvestment of “free energy” generated.

These seemingly paradoxical requirements may then be expressed as:

Population-density (adjusted for demographic parameters):

$$|(F) P_1| \leq |(F) P_2|$$

“Free Energy” Ratio:

$$\left[\frac{S'_1}{(V_1 + C_1)} \right] \leq \left[\frac{S'_2}{(V_2 + C_2)} \right]$$

“Energy-Density” Ratio (per-capita of labor force):

$$\left[\frac{(V_1 + C_1)}{F_1} \right]_1 \geq \left[\frac{(V_2 + C_2)}{F_2} \right]_2$$

But, the physical content of market-baskets (M) for productive functions, per capita, for labor-force:

$$(M_1)^1 \leq (M_2)^2$$

and:

$$(M_1)^1 \leq (M_2)^2$$

This set of “market-basket” relations overlays a set of constraints defined in terms of divisions in output of employment of the total labor-force’s operatives, letting **V** correspond to the operatives’ ration of the total labor-force. In this case:

$$\left(\frac{V}{C} \right)_1 \geq \left(\frac{V}{C} \right)_2$$

and:

$$\left(\frac{S'}{V} \right)_1 \leq \left(\frac{S'}{V} \right)_2$$

and:

$$\left(\frac{S'}{V + C} \right)_1 \leq \left(\frac{S'}{V + C} \right)_2$$

²⁵ Lyndon H. LaRouche, Jr., *An ‘American Century’ Seen as a Modular Mathematical Orbit*, *EIR*, Vol. 25, No. 29, July 24, 1998, p. 28.

These parameters, which he called an “anti-entropic set of inequalities”, are to be also found in motivic thorough musical composition under the “inequalities” of Lydian dissonances, even though such parameters have no resemblance to a musical score nor even to a combination of such scores, however polyphonic they may be.

The LaRouche economic parameters reflect the higher hypothesis of his original S/V+C hypothesis initially developed in *So, You Wish to Learn All About Economics? EIR Service, Inc, Washington D.C., 1995*. The key to understand this process lies in the fact that LaRouche identified how to measure the effects of anti-entropy based on the Kepler method of cycles as a triply-connected galactic torus. As he said:

“At first, to the novice, the modular mathematical method developed by Kepler appears to be a method of successive approximations. We begin with consideration of the solar year, add the qualifying notion of the sidereal year, add such other, interacting periods as the equinoctial cycle, and so on. We are moving on a moving planet within our Solar system, a Solar system which, itself, is undergoing long-range cycles of internal change, a Solar system otherwise in motion within the galaxy, and so on. In addition to such orbital changes, there are other periodicities to consider. Each step of refinement of this colligating accumulation of “cycles,” leads us deeper into the recesses of non-constant curvature in the infinitesimally small, and thus gives us a new, more precise frame of reference for locating our relationship, from our place on Earth, to the universe at large. [...]

“One cannot purchase cognition by the bucket-load, or the kilogram, or measure it by counting; nonetheless, its existence, and the efficiency of its existence as action, can be readily demonstrated, and measured. By what means, and how to effect such measurements, is the mathematical side of economic science. [...]

“In the case of Kepler’s astrophysics, and its crucial validation by Gauss, it is demonstrable that all efficient laws of the Solar system conform to the principles of Platonic harmonics, as Luca Pacioli and Leonardo da

Vinci also insisted upon this earlier. We cannot dump such notions of harmonics upon the Solar system in a mechanistic way, and directly calculate the result accordingly; but no validatable calculation will violate those notions of harmonics. Similarly, no increase of the potential relative population-density of mankind occurs, without the apparently unmeasurable act of cognition; but, although the efficiency of cognition can be shown in a measurable way, one cannot derive a simple, deductive (e.g., algebraic, analytical) calculation of the connection between cognition and its physical-economic result. This kind of distinction, between either cognition and increase of potential relative population-density, or between Platonic harmonics and the lawful composition of our Solar system, is a distinction of a type known from Plato as the difference between ordinary hypothesis and higher hypothesis. It is the latter, higher hypothesis, which supplies the meaning of the term Reason in first approximation. It is that distinction which is crucial for a comprehensible notion of a mathematical application of economic science.²⁶

LaRouche used to have another way of formulating how to effect such measurements; that is: “Believe nothing that for which you cannot give, yourself, a constructive proof.” In other words, the solution cannot be found by generating any preexisting formal mathematics or deductive formula. The solution can only be found by construction of a higher domain of epistemology. LaRouche added the final condition as follow:

“Such a notion of higher hypothesis belongs to a domain for which the term epistemology has often been used. By “epistemology,” we imply answerable responses to the question, “How is our universe composed?” Kepler’s development of the first comprehensive mathematical physics, is an example of the practice of epistemology. The answer to the question, “How is our universe composed,” is both the notion of higher hypothesis and the notion of Reason, or necessary and sufficient reason as these terms appear, variously, in the work of a Kepler or Leibniz. The answer to that question lies within a crucial second question: “What kind of a person is qualified to

²⁶ Ibidem, p. 33.

answer that question?" If the wrong type of person is involved, the effort will be a failure, usually a travesty.

"At this point, we make a short, apparent diversion which is no diversion.

"The world-historical individual

"At this point we return to a subject addressed within the second of our four referenced reports, *"The Substance of Morality."* That subject is the notion of the world-historical individual, as distinct from the morally inferior, "small change" personality, whose preoccupation is "success" in the narrowly defined, so-called "practical" matters of individual and family affairs. The individual who locates his or her personal identity in making a contribution to the benefits of the past and the future of nation and mankind—our "world-historical individual," thinks about the evidence of experience in a fundamentally different way than does the so-called "practical man." The latter is more or less incapable of the kinds of moral commitment, or profundity of intellectual accomplishments, which are normal concerns for the world-historical personality."

"The world-historical personality locates his or her essential identity in the realm of validated ideas, as Plato, for example, defines "ideas." That personality is eager to acquire and preserve those ideas, of physical and Classical-cultural principle, which are the gifts of past generations of humanity, and eager to contribute something new of that same nature to the benefit of all future humanity. The motivation of that personality lies chiefly in the joy of mastering those paradoxes which lead to the production of validated, needed new principles, for the benefit of mankind; all true scientists are so motivated, for example. Such is the personality who locates the outcome of his or her mortal existence within nothing less than the simultaneity of eternity. That personality, such as a Leonardo da Vinci, a Kepler, a Leibniz, a Gauss, or a Riemann, regards all evidence, including the evidence of physical science, from that world-historical vantage-point.

“Thus, in matters of science in general, and economy, the motive of the world-historical personality is the fight for new advances in anti-entropy. That is what shall remain forever of the relatively greatest world-historical value at the most distant place in the simultaneity of eternity. It is anti-entropy as such, anti-entropy as the object of one’s investigation, which, for the world-historical person, is the essence of economy. It is that same object, anti-entropy, which is the essence of science for Cusa, Leonardo da Vinci, Kepler, and Leibniz, as it was for Plato. Let us examine that object, anti-entropy, as an object. Locate this object, in this manner, within the terms of my table of inequalities.

“The proof lies not only in the so-called “objective” evidence considered. Valid proof of principles comes into existence only when the experimenter represents the mind of an appropriately developed world-historical personality.”²⁷

CONCLUSION

Lyndon LaRouche made it possible to connect the development of mankind with such a galactic way of thinking by establishing the missing link between universal history and the growth of human population. The connection was not self-evident because it had to be found in what is not there; that is, for instance, in the historical relationship between Gottfried Leibniz and Frederich List that all European and American economists have missed, to this day. LaRouche restored the connection in the following way. He said:

“Competence in historiography, as in economics, sociology, psychology, and philosophy depends upon consideration of two levels of fact respecting all of known human history and inferable pre-history.

“First, and absolutely decisive for any competence in history, political science, psychology, or sociology, is the fact, that, whereas no variety of higher ape known or conceivably comparable to mankind, could have attained a population of more than several millions individuals, at any time

²⁷ Ibidem, pp. 34-35.

under the conditions of the recent two millions years, the human population had reached several millions prior to the onset of the 15th-Century European Golden Renaissance, and has attained more than five billion during the present century. Recognition of that distinction in cognitive powers of the human individual, which places mankind absolutely apart from, and above all inferior species, is the first prerequisite of historical science in general, and of all endeavors in economics, psychology, history, etc., more narrowly.

“Second, under the conditions of potential for increase of mankind's potential relative population-density, the crucial fact of all known history is, that prior to the launching of the first sovereign nation-state, France under the Golden Renaissance's Louis XI (1461- 1483), society was so constituted, on principle, that 95% or more of every part of the planet lived in political circumstances fairly describable as those of "human cattle": slaves, serfs, or worse. Throughout the Mediterranean region, despite the impulses of such ancient Greek city-states as those of Ionia and the Athens of Solon and Plato, the prevailing form of political institutions, through the Roman and Byzantine Empires, and throughout the history of European feudalism, was the oligarchical model derived from the evil tradition of ancient Babylon. That Babylonian model is represented by the tradition of the British Empire as it continues to exist (in Commonwealth guise) today.

“A science of history must be, essentially, a history of a process of human development. The primary consideration is the increase of mankind's potential relative population density, as accomplished by means of combined artistic and scientific and technological progress in mankind's mastery over nature. The subsumed consideration is the functional role of improvement of the social condition of life of the individual and family, as effected in conjunction with the fostering of artistic, scientific, and technological progress.”²⁸

END

²⁸ Lyndon H. LaRouche, Jr., [*Leibniz and the List Hypothesis*](#), EIR, Vol. 23, No. 35, August 30, 1996, p. 13.