LYNDON LAROUCHE'S CONCEPT OF THE HIGHER HYPOTHESIS AND THE GENERATIVE PRINCIPLE OF THE PLATONIC SOLIDS

In honor of my friend and mentor, Lyndon LaRouche, on his 100th birthday

by Pierre Beaudry 8/19/2022

Figure 1. Raphael, *The Transfiguration*, 1520.

FOREWORD

Raphael's *Transfiguration* reflects the transformation between two axiomatically different domains that Lyndon LaRouche discussed extensively for more than fifty years: the lower tragic level of *simple hypothesis* where human beings are prisoners of their animalistic impulses, and the superior sublime level of *higher hypothesis* where the human mind can be transfigured into the Image of God. Friedrich Schiller identified such an axiomatic change as going from the tragic to the sublime.

INTRODUCTION

Platonic Solids have been known for thousands of years, and yet it seems that only the Pythagoreans and Platonists knew that their generating principle was spherical action. However, as far as I know, the spherical principle of their construction has never been fully investigated.

Kepler identified that the Pythagoreans knew what he himself had discovered about how the Platonic solids were nested in accordance with heliocentric planetary orbits; however, since Aristotle changed that conception by going back to the former geocentric system based on the four elements of earth, air, fire, and water, the result was that knowledge generally, and the domains of music, astronomy, and navigation in particular, were set back a thousand years.

How do spherical and circular actions generate Platonic Solids and polygons respectively? Lyndon LaRouche may have been the first to formulate and answer this question by addressing the epistemological domain of the *higher hypothesis*, which is their source. To my knowledge, no one else has constructed such a self-generative epistemological principle, and the answer is found in what LaRouche identified as his economic generative principle of the transfinite domain beyond the discovery of Georg Cantor. Such knowledge has been deliberately suppressed throughout the Western World, and it is essential that it be restored today.

In LaRouche's science of economics, the difference between perception and cognition is of the same order of magnitude as the difference between *simple hypothesis* and *higher hypothesis*. *Simple hypothesis* reflects a particular moment of economic activity while the *higher hypothesis* represents the actual universal principle which makes the economy grow for a long period of time. Similarly, the polygon appears to be generated from lines and points, while in reality, it is generated by the higher domain of circular action. The same sort of circular action must be applied to spherical action, which is the principle generating the Platonic Solids.

Between the polygon and the circle, or between the Platonic solid and the sphere, there is what appears to be a paradox, because the axiomatic differences between them belong to two different manifolds. The circle cannot be generated from the axioms of the polygon and the sphere cannot be generated by the axioms of the polyhedrons. For this reason, no matter how many times you partition it, the polygon will never become a circle. This is the Cusa paradox of squaring the circle, which creates what Lyndon LaRouche called a "distortion" or a "discontinuity" between the two manifolds. The same occurs in music when you wish to go from

a lower to a higher level emotion with Lydian "dissonances." The musical Lydian ordering principle belongs to the same *higher hypothesis* of the transfinite domain as the principle of the Platonic Solids.

The imperialism that the Anglo-Sphere promotes today, pushes people to go from a higher to a lower manifold, which is the inversion of progress. Prince Charles announced such a green agenda at the COP26 Conference proclaiming: "Here is needed a vast military-style campaign to marshal the strength of the global private sector. With trillions at its disposal, far beyond global GDP, and with the greatest respect, beyond even the governments of the world's leaders, it offers the only *real* prospect of achieving fundamental economic transition."[1]

THE GEOMETRY OF SIMPLE HYPOTHESIS, HIGHER HYPOTHESIS, AND HIPOTHESIS OF THE HIGHER HYPOTHESIS.

"Dissonances" between two geometrical domains reflect a distortion similar to the difference between man and animal. This recognition gives the individual the opportunity and the power to investigate a new *higher hypothesis* through a still higher principle which exists beyond the bounds of all previous *higher hypotheses*. *The hypothesis of the higher hypothesis* is the investigation of the reason behind such a *higher hypothesis*; that is to say, the reason why the universe grows through an increasingly well-ordered series of *higher hypothesis,* and why that reflects perpetual scientific revolutions of axiomatic changes in society as a whole, as well as in our galactic universe. It is this higher understanding of reason which is called cognition and which enables man to increase the *potential relative population density* of his species. In 1984, LaRouche established these fundamental epistemological distinctions as follows:

> "Presently, the human population is estimated to be approximately four-and-a-half billions individuals, about 450 times the maximum possible for primitive man. Soon, with the aid of new technologies, such as controlled thermonuclear fusion and high-powered directed-energy beams, we should command the technology wanted to sustain tens of billions of persons at a significantly higher degree of comfort than existed in the United States during the pre-1974 'seventies. In the mathematician's language, an increase of human potential relative population density by three orders of magnitude. No baboon or other species of beast could *willfully* increase its potential relative population density by even a significant fraction of one order of magnitude: *in this fact, and no other, lies the beginning of the science of the human mind*."[2]

[1] ***Britain's Prince Charles gives statement at COP26 climate summit in Glasgow,*** Nov. 1, 2021.

[2] Lyndon LaRouche, ***The Science of the Human Mind, A Treatise On Fundamentals***, The Campaigner, February 1984, p. 5.

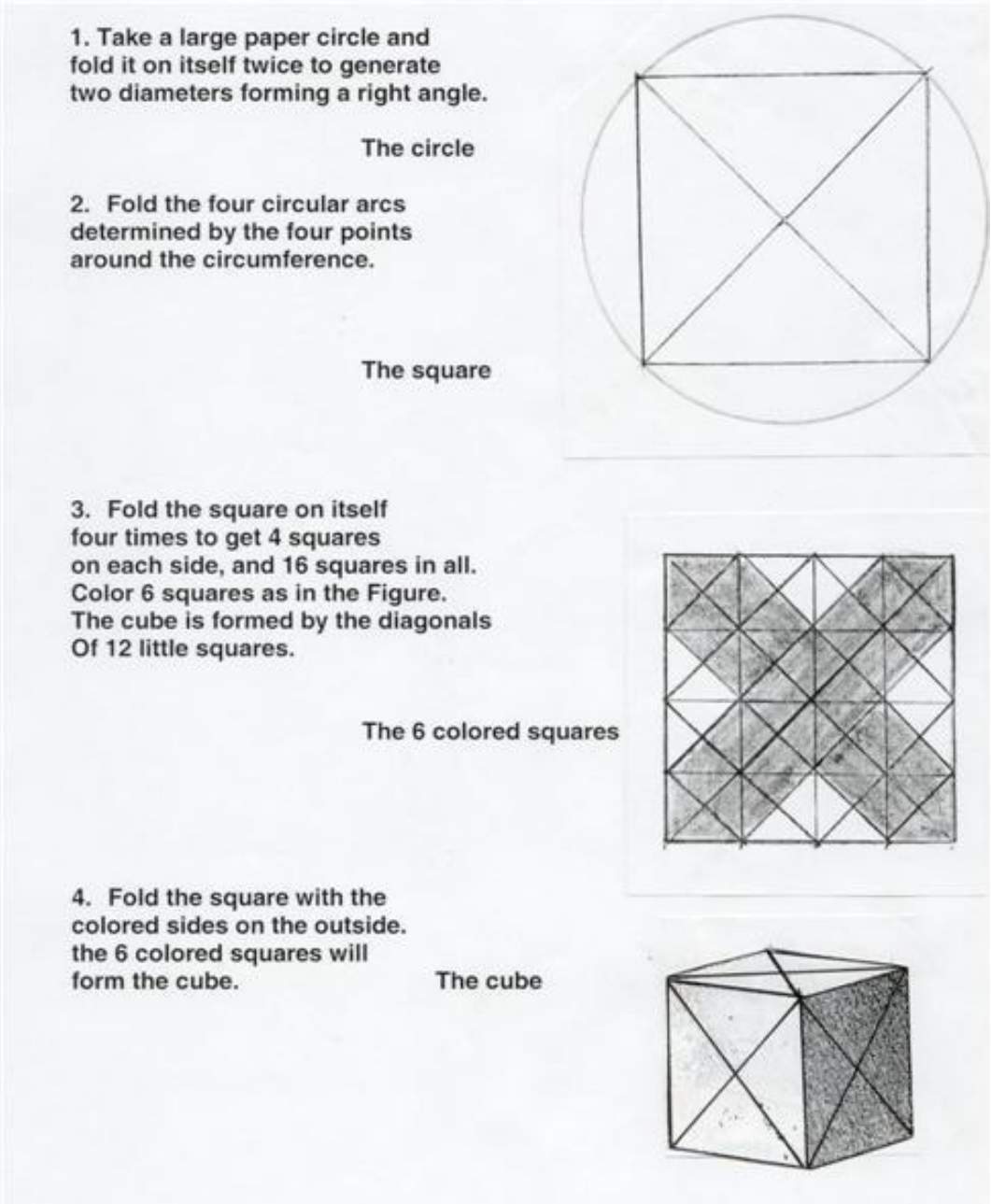

Figure 2. How to generate a square and a cube by folding simple circular and spherical action.

The fascinating question, here, is why does LaRouche's statement relate to the human mind? How does economic science pertain directly to the development of the human mind and only indirectly to, for instance, railroads or ship building? Why is this "*fact*" of population growth the characteristic of how the human mind works? The answer to these questions can be found by discovering why LaRouche underlined two parts of his statement: "*willfully*" and "*in this fact, and no other, lies the beginning of the science of the human mind*." The key to answering these questions lies in conceptually connecting those two underlined ideas of his statement.

This means that the only way to increase the potential relative population density of the human species is by doing it "*willfully.*" The reason why this action is not currently being accomplished "*willfully*" is because the opposite policy of destroying human mental powers with a counterculture of violence is currently being imposed "*willfully*" by your present government. Here is how Lyn stated this matter of life and death for the human species:

> "In other words, a society characterized by zero technological growth as a policy of general practice is a dying society, a form of society morally unfit to continue existing. Repetition of modes of production and related cultural practice inherited from fathers, grandfathers, and so on, is the distinguishing policy of a dying society. For this and related reasons, all economic analysis and policy-shaping premised on systems of simultaneous linear equations, such as those proposed by the late John von Neumann and others, are worse than absurd."[3]

Thus, you have to find a way to go beyond the level of *simple hypothesis* and go to the level of a *higher hypothesis* by changing the past for the benefit of a future progress for all of mankind. What is necessary to discover is what will make mankind grow to the next higher galactic level of thinking, in correlation with previous human improvements. How do you do that? You can accomplish that only from the vantage point of the *hypothesis of the higher hypothesis.* As LaRouche explained:

> "*Hypothesis of the Higher Hypothesis*. The fact that successions of *higher hypothesis* (scientific-technological revolutions) prompt increase of potential relative population density of society, implies that such a succession of scientific revolutions has an ordered character. In other words, the succession of *higher hypotheses* subsuming such an ordered succession of scientific-technological revolutions has an ordered character. This defines a new experimental problem for *hypothesis*, the experiment which isolates the consistent feature of successive scientific revolutions, the common principle of discovery uniting revolutions which are otherwise different. This defines a *hypothesis of the higher hypothesis.*
>
> "Just as no experimental *hypothesis* can be the last word in human knowledge, the same is true for successful *hypothesis of the higher hypothesis*. It cannot be perfect, and it need not be perfect. It is required that the successive improvements in this *hypothesis* successfully direct man to the needed next step upward through scientific revolutions."[4]

Such an evolution within the *hypothesis of the higher hypothesis* implies the existence of a *preestablished harmony* which is the way to increase relative population density of human beings throughout the universe as a whole. It is for this reason that mankind must, at all costs,

[3] Lyndon LaRouche, Op. Cit., p. 6.

[4] Lyndon LaRouche, Op. Cit., p. 8.

avoid self-extinction through thermonuclear war, for instance, and must discover the pathway of his own power over the universe as a whole. As LaRouche stated the matter of principle:

> "*A true discovery of any universal physical principle is a grasp of the power to make a willful change in the ordering of the universe.* The universal physical principle discovered, existed, and functioned in the universe before man first discovered it. Nonetheless, when man not only discovers, but deploys such a principle, man's willful action in using that principle changes the universe. Hence, such discoveries are to be recognized as acting 'powers' for changing the world, in the sense of that usage by pre-Euclidean Greeks such as the Pythagoreans, Heraclitus, and Plato."[5]

If you wish to develop a *higher hypothesis* in any domain of knowledge, you must first look at the past with the view of changing what prevented the growth of mankind throughout that past history. You must do an inventory of the fundamental moments of change throughout the history of ideas during that past period, which means going through, for example, the crucial discoveries of principle of the following four great periods of European-American philosophical and scientific thinking, which are: 1) the Egyptian-Greek period of discovery of principles by Imhotep, Solon, Thales, Pythagoras, Archytas, and Plato; 2) the European Renaissance discovery of principles of Filippo Brunelleschi, Nicholas of Cusa, Leonardo da Vinci, Raphael, and Johannes Kepler; 3) the modern discovery of principles of Gottfried Wilhelm Leibniz, Gaspard Monge, Lazare Carnot, Jean-Victor Poncelet, Jacob Steiner, Karl Gauss; 4) and the recent period of Benjamin Franklin, Bernhard Riemann, Vladimir Vernadsky, and Lyndon LaRouche. Each of these discoverers reflects such revolutionary axiomatic changes in history.

Second, you have to investigate what is the epistemological characteristic common among all of these discoverers; that is to say, you must discover the interconnectedness which makes them belong to the same family of Platonic thinkers, as opposed to what connects the flat Earth Aristotelian family of Euclid, Ptolemy, Galileo, Newton, Descartes, Euler, Cauchy and so many others. That is the first axiomatic difference to be made from the standpoint of the history of ideas. For the purpose of understanding this difference between Plato and Aristotle, Lyn offered the following "distorted" view between *hypothesis* and *higher hypothesis*:

> "We are obliged to conclude from this and related physical (experimental) evidence, that conic self-similar spiral action is the image of the only self-evident action in the real universe. As circular action seems to account for the creation of form and measure within Euclidean space, self-similar conic spiral action accounts uniquely for the creation of form and measure in the real universe, the real universe of non-Euclidean physical space.
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> "This signifies that mankind's mental-perceptual apparatus distorts reality's image in our minds, such that we see non-Euclidean reality in Euclidean images. Plato uses the

[5] Lyndon LaRouche, ***When Even Scientists Were Brainwashed***, 21st Century, Summer 2004, p. 41.

simile of the shadows projected by firelight upon the walls of a darkened cave. St. Paul reports that we see reality falsely, as if in a darkened mirror. The limitations of our mental-perceptual apparatus cause us to see reality in distorted images, such that to our senses it is as if there were distorting mirrors embedded everywhere in the universe, and we could see only the distorted images in those mirrors, and not the real universe."[6]

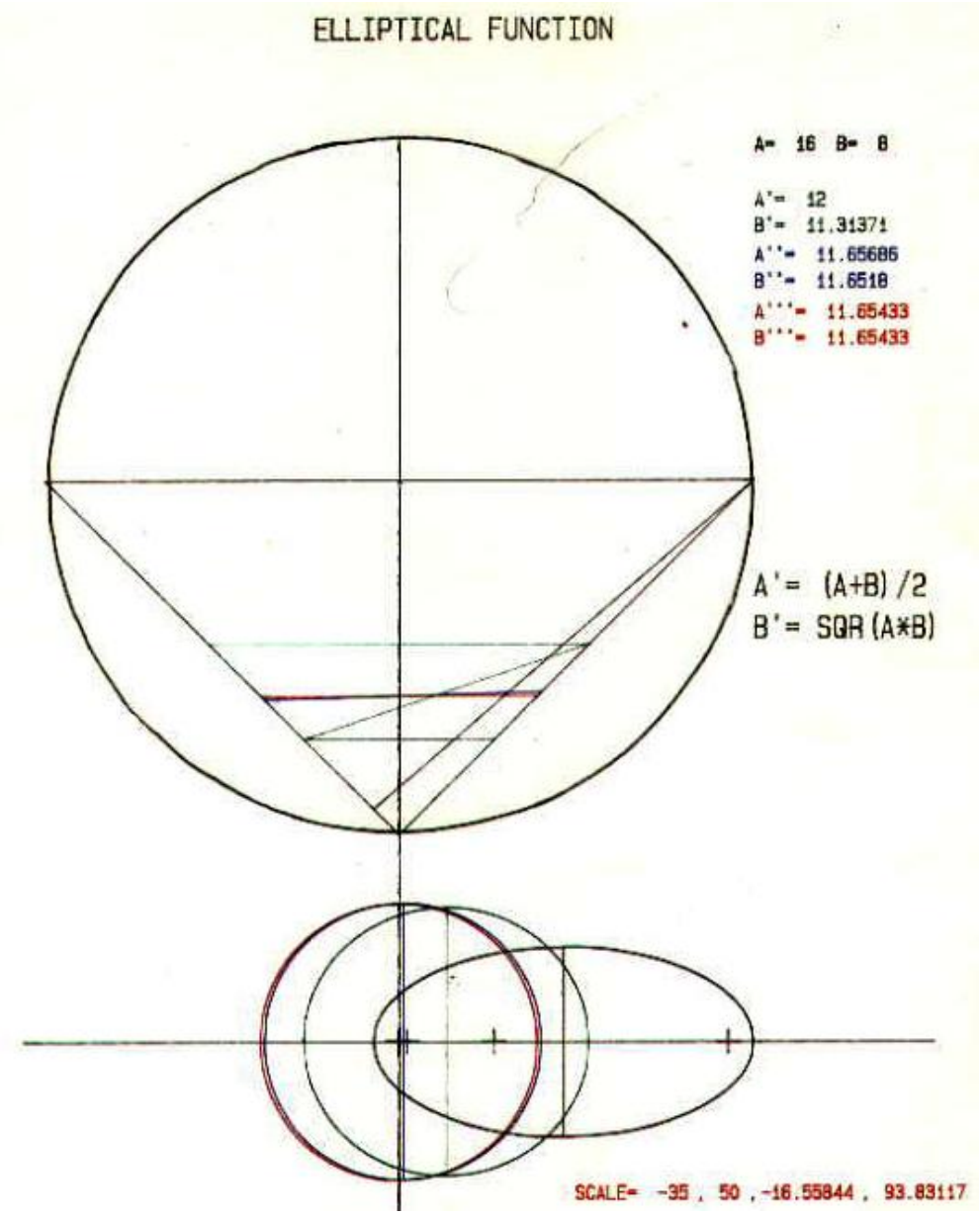

Figure 3. An example of arithmetic-geometric mean elliptic function iteration. How change can be computed by logarithmic conical spiral action. Conceived by Pierre Beaudry and computer image generated by Mark Fairchild.

[6] Lyndon LaRouche, Op. Cit., p. 11.

The best way to geometrically construct a Gaussian conical self-similar arithmetic-geometric mean spiral action is by examining very closely Figure 3 and discovering that it reflects the two interacting domains of Raphael's *Transfiguration*.[7] In the case of both the *Transfiguration* and the conical spiral action, the reality that is projected from a higher domain onto the elliptical plane domain is distorted, as if projected onto the dimly lit wall of Plato's cave. The distortions are located precisely in the transforming process as if there were a distorting lens between the higher domain of the spherical cone and the lower domain of the elliptical plane.

However, and this is the crucial point: reality is neither visual circular action nor visual conical spiral action per se; reality is the action of the distorted method of change between those two domains of the mind by means of which those two different projections are made possible through mastering the discipline of going back and forth, from the higher to the lower domains. The study of the distorted articulation within such an area of changing transformations of human knowledge is precisely the crucial exercise of practice and mastery required in order to access the real world.

The point to be emphasized is that *simple hypothesis* is entropic and is not necessarily followed by a *higher hypothesis*; in fact, it generally never is. Similarly, the advent of a *higher hypothesis* such as just exemplified with this conical projection, or as was exemplified by the Italian Renaissance, for instance, does not necessarily guarantee to be followed by another *higher hypothesis*. Lyn explains:

> "These increases are made possible by technological revolutions, revolutions which can occur only in the form of a successful *higher hypothesis* in each and every instance. However, one *higher hypothesis* success does not in and of itself ensure a successful successor. A succession of successful *higher hypotheses* is assured only if society is self-governed to this effect by the influence of elite institutions which are, themselves, governed in intellectual activity by that efficient common principle of successful scientific discovery defined as the *hypothesis of the higher hypothesis*."[8]

This is not an arbitrary choice on the part of the individual in society, because the failure to understand this distorted difference of manifold between the spiral action and simple circular action will inevitably lead to the breakdown of society. The beauty of this "distortion" , however, is that such a process of unscrambling what happens between the two identified manifold domains during ancient Egypt and ancient Greece, for instance, is what leads us to the discovery of the well-tempered musical system by way of the golden section; that is, by means of the generating principle of the dodecahedron.

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[7] See Pierre Beaudry, **RAPHAEL'S 'TRANSFIGURATION', HOW TO TRANSFORM THE TRAGIC INTO THE SUBLIME**

[8] Lyndon LaRouche, Op. Cit., p. 16.

THE HIGHER GENERATIVE PRINCIPLE OF THE SPHERE AND THE WELL-TEMPERED MUSICAL SYSTEM

What I wish to discuss next is the region of "distortion" between the three-dimensional domain of the sphere and polyhedrons and the two-dimensional domain of polygons, because that region is the most effective pathway of discovering the *hypothesis of the higher hypothesis*. Let's take the bull by the horns on this one and try to discipline the spherical "distortions" which are projected as if through Plato's Cave; that is, as if projected onto the flat plane of our minds.

Consider the spherical generation of the five Platonic solids as being the model of how the human mind generates a pathway to truthful universal ideas. Such an action, however, cannot be conceived as a thing in itself, but only as a process of change between cause and effect of what produces it. In other words, both the cause and the effect change each other self-reflectively. The question is: ***How can you find the pathway that leads to discovering a higher type of projective geometry which is not based on curve-fitting, but on change? The irony of the answer is that the discovery of that higher geometry is nothing but the self-generating pathway that leads you to its discovery by construction.***

Once you discover the nature of this "*performative"* epistemological loop, by construction, then you know, without a shadow of a doubt, that this is the way to go anywhere and come back from anywhere, without ever getting lost. Why am I inviting you into such a "*nowhere"*? Because you have to construct it by yourself. I have always recommended this method of discovery as going to a *nowhere*, as if you were travelling into an unknown area, not only for discovering what you had never seen before, but also, most importantly, as a way to discover the pathway that leads you *to it and from it, by creating it as you are going along*. If you discipline your mind to do that, you will begin to discover a higher constructive geometry as soon as you start looking for it.

For instance, take the case of similarity in the Platonic solids; similarity of figures, sizes, and of angles, for example. Is that the principle which generates them? No. What generates them is the principle of proportionality, which is as ambiguous as the well-tempered power of the musical Lydian generation of modulating the twelve key musical system, both in terms of intention as in terms of action. How do you master such a power? Leibniz reminds us how to do it one step at a time:

> "All beauty consists in harmony and proportion; the beauty of minds, or of creatures who possess reason, is a proportion between reason and power, which in this life is also the foundation of the justice, the order, and the merits and even the form of the

Republic, that each may understand of what he is capable, and be capable of as much as he understands."[9]

This Leibnizian proportionality is an appropriate opportunity to make a historical comparison, here, on the subject of Plato's Apology of Socrates by saying that there is no greater injustice against mankind than to have made believe, worldwide, that Lyndon LaRouche was guilty of having told the truth about the evil of the Britih Empire. The fraudulent case against him is proportional to the fraud of Bernhard Euler.

For such an injustice to succeed, the requirement is to mistake the effect for the cause, as Euler did, when he construed his formula **V – E + F = 2** to become the principle for the construction of all polyhedrons. That formula is an effect, not a cause; it is an injustice by similarity. It is merely an apparent truth to think that this is a cause, a fallacy of composition, not because his formula doesn't work, but because it only works as a fraud, as a piece of sophistry by pretending to be a true cause while it is merely an effect. The fraudulent case against Lyndon LaRouche was similar.

The question is: what is the cause of such an effect? The answer is to be found in the higher domain of the sphere, and not in the lower domain of court arguments, edges, faces, and vortices of the lower polyhedrons themselves.

First of all, note the presence of ten diameter cuts around the circle of Figure 4, representing the twelve notes of the well-tempered musical system. There are ten such circles generating a single sphere, which itself generates all five Platonic Solids, and which may have been originally constructed with papyrus during ancient Egyptian times. Furthermore, the construction of such spherics requires an epistemological phase space of the type that Riemann discussed in his *Philosophical Fragments*.

In this light, the construction of the Platonic solids with the 10-circle sphere (Figure 5.) appears to have, as do Lydian dissonances, the power to combine a multifold Riemannian "thought-mass" (*geistesmasse*) as a One of the Many; that is, as a single Agapic Monad, where two different memory functions take two different directions at the same time, as if the cause of continuous change were to always come from two directions, past and future, in the *simultaneity of physical eternity*. Contradiction? Keep reading. Let's imagine Figures 4 and 5 as a thought-object (*geistesmasse*) resulting from a dual memory function.

[9] Gottfried Wilhelm Leibniz***, Outline of a Memorandum: On the Establishment of a Society in Germany for the Promotion of the Arts and Sciences (1671),*** in ***The Political Economy of the American Revolution***, Washington D. C., Executive Intelligence Review, , 1996, p. 215.

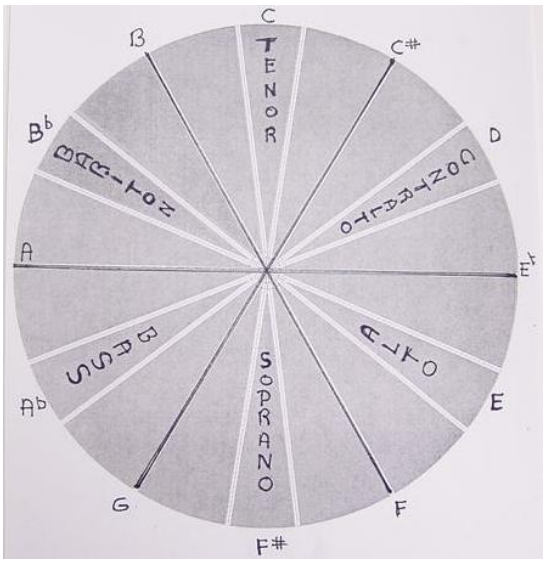


Figure 4. Divisions of one of the ten circles of the Egyptian sphere

Figure 4 is one memory which recalls the individual moments of each particular angle of the six voice register-shifts (Lydian intervals) as the material interconnecting the continuous moments of duration of a lower manifold representing the different five Platonic solids into a single sphere, as if it were the representation of a continuous process of change tugged by the past (minimum).

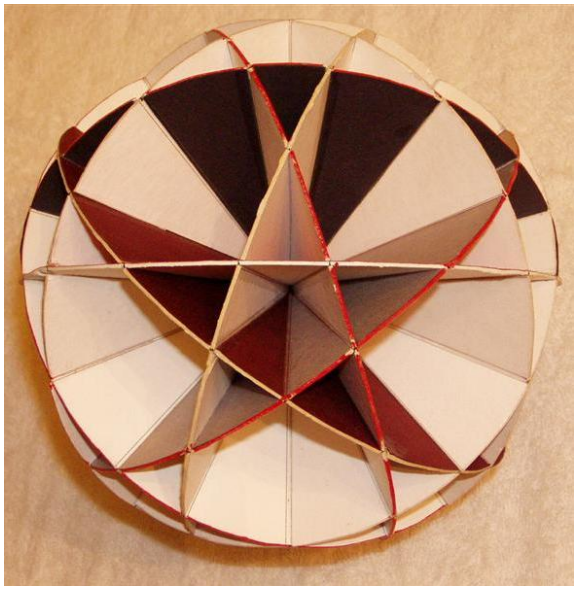


Figure 5. The 10-circle Egyptian Sphere.

Figure 5 is a second higher memory function which embraces and projects the totality of those remembered objects into a single whole, within a continuous duration of time, always present and being pulled by the future (maximum).

This spherical construction is of the order of Plato's *higher hypothesis* of the One of the Many in the simultaneity of physical eternity. Look at this sphere as if it were functioning like Henry Bergson's contradictory motions of two memories: "The memories which we acquire voluntarily by repetition are rare and exceptional. On the contrary, the recording, by memory, of facts and images unique in their kind takes place at every moment of duration."[10] Such is the connection one must concentrate on in order to make the difference between cause and effect in an axiomatic change.[11]

Thus, as in Plato's "*exaiphnes,"* for example, there comes a sudden discovery of self-reflexive knowledge in the *simultaneity of physical eternity*. Imagine, furthermore, that such a spherical thought-object (*geistesmasse*) is as a Leibnizian monad, which connects with other monads through the principle of *preestablished harmony*; that is to say, with Pythagorean characteristics of multiply-connected spherical causality, whose center is everywhere and circumference nowhere. As Diogenes Laertius reported:

> "That the monad was the beginning of everything. From the monad proceeds an indefinite duad, which is subordinate to the monad as to its cause. That from the monad and the indefinite duad proceed numbers. And from numbers signs. And from these last, lines of which plane figures consist. And from plane figures are derived solid bodies. And from solid bodies sensible bodies, of which last there are four elements; fire, water, earth, and air. And that the world, which is endued with life, and intellect, and which is of a spherical figure, having the earth, which is also spherical, and inhabited all over in its centre, results from a combination of these elements, and derives its motion from them; and also that there are antipodes, and that what is below, as respects us, is above in respect of them."[12]

My *higher hypothesis* is the following: Three pairs of the six voices register shifts **[C-F#, D-Ab, Bb-E]** form six pentagonal diameters across the 10-circle Egyptian sphere and determine the Lydian modulation of the twelve divisions of the equal-tempered musical system as a whole in accordance with the sesquialteral partitioning of the circle of fifths. These Lydian divisions act on our minds as a double memory fountain of youth, similar to the spherical generator of the five Platonic Solids. The key to understanding the *higher hypothesis* of this memory function is explained as follows by LaRouche regarding the generation of the Platonic Solids:

> "The most crucial of the facts available for such a study are, first, that the solids are derived by synthetic geometrical construction from the isoperimetric principle, and,

[10] Henry Bergson, ***Matter and Memory***, New York: Humanities Press Inc., 1970, p. 94.

[11] Here, one might take a moment to consider how the Armenian astrophysicist, Victor Ambartsumian considered the principle of an anti-entropic continuing creation within Active Galactic Nuclei (AGN's) as an axiomatic change opposed to an entropic gravitational collapse. See A. M. Mickaelian, ***Victor Ambartsumian's most important scientific achievements***, Communications of BAO, Vol. 2 (LXV), 2018, Is. 2, pp. 162-183.

[12] Diogenes Laertius, ***The Lives and Opinions of Eminent Philosophers,*** p. 348.

second, that all of the solids reduce by construction to the dodecahedron. Therefore, first, we must place the peculiarities of the solids into direct juxtaposition with circular action itself. Second, we must make the centerpiece of this inquiry the relationship between circular action and the most characteristic, irreducible feature of the dodecahedron."[13]

This is not going to be an easy task. How does the birth of the dodecahedron manifest itself within the spherical domain in the *simultaneity of physical eternity*? The answer is through the spherical Golden Section. But, what is the spherical Golden Section? LaRouche adduced that from this spherical Golden Section characteristic of the dodecahedron, all of the other four solids can also be generated by means of some geometrical construction. In fact, initially, the spherical Golden Section appears to be expressed directly by the ratio of 6/10 taken from the twenty crisscrossing measures of the 10-circle sphere (see Figure 5.); that is, the ratio of the diagonal of a spherical pentagon to the side of the same pentagon, which is 6/10 or 0.6. This is where the transcendental projection, from the "spherical lens" to its equatorial circle, translates the spherical pentagonal Golden Section value from the spherical 0.6 to the plane 0.618.

However, the 10-circle sphere gives another version of the Golden Section for the generation of the dodecahedron. The connection between the sphere and the dodecahedron, viewed as the "architectonic model" of a Leibnizian Monad demonstrates in detail how the sphere generates the dodecahedron. The action of generating a polyhedron is an act of causality and, therefore, the action of looking for the cause of the dodecahedron in the sphere will be the appropriate direction to take, as opposed to looking for an effect of its parts. The result will be *agape*, that is, the generation of a joy which "takes pleasure in the felicity of what is loved" (Leibniz, Monadology § 90), which is located in the cause and not in what is seeking to be loved selfishly, which is located in the effect. The action, in fact, takes place as if you were looking at the cause, and not at the effect.

Construct the following irregular hexagonal cone (Figure 6.), which is coming out of the womb of the 10-circle sphere in order to generate the five-fold form of geometry of the dodecahedron. What you are looking for is the Riemannian idea of an axiomatic change between the "distorted" angles of the two manifolds; that is, the value of **n+1/n** between ***an irregular hexagonal cone of six 22.5 degree-triangles which gives birth to a set of three 108 degree-dodecahedral-rhombi.***

This axiomatic singularity of change demonstrates how LaRouche's fundamental idea of the "distorted" discontinuity is generated between the two manifolds; that is, the "blind spot" locus of change from *simple hypothesis* to *higher hypothesis*, where the postulates, axioms, and definitions of the sphere become transformed into new postulates, axioms, and definitions of the dodecahedron. The sphere's hexagonal-conical-rhombic singularity can be characterized as a

[13] Lyndon LaRouche, Op. Cit., p. 12.

spherical-conical-dissonant-singularity of the golden section between the two domains! (See Figure 9.)

The axiomatic change between the sphere and the Platonic Solids is located precisely inside of the hexagonal cone of the sphere, which acts as a womb for both the birth of the regular dodecahedral vertices and the rhombic dodecahedral vertices. The cone is part of the higher manifold of the sphere, and the rhombic rectangles are part of the lower manifold of the dodecahedron; the connection with the rhombic dodecahedron edges (five-sidedness) and the hexagonal cone (six-sidedness) is the locus of their axiomatic transformation.

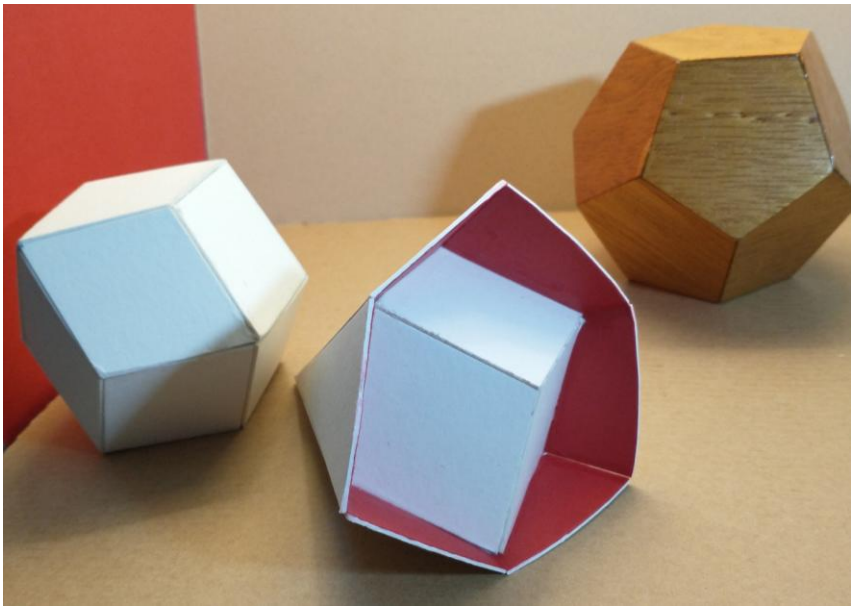


Figure 6. The rhombic dodecahedron, the hexagonal-spherical-rhombic singularity, and the dodecahedron.

LaRouche's discovery of principle of the *higher hypothesis* is not an easy thing to replicate in geometry, artistic composition, or in real life organizing, but I recommend that the reader generate Platonic solids, most emphatically the dodecahedron for example, with a roll of calculating machine paper ribbon, and with the proper attention of his or her mind to the idea of generating it from the *higher hypothesis* of spherical action; that is, from the top down.

With that in mind, what LaRouche requires us to discover is that the power of reason is the power that mankind has to discover in order to *increase his potential relative population density*. That may not be the only truth about the *higher hypothesis* that we have just constructed here, but it might be sufficient to appeal to creative minds. Here is how LaRouche explains the location of such a *higher hypothesis* in history:

> "The formulation of the *higher hypothesis* is best accomplished by a thorough education in the internal history of ideas, especially scientific ideas, with reliance upon

the original sources of the present and past. This historical approach to contemporary scientific work emphasizes those kinds of axiomatic assumptions which are ontological, which bear directly on identifying which aspects of the universe as a whole are properly treated as efficiently substantial, and also how such ontological assumptions implicitly determine the method of adducing the lawful principles governing action in the universe."[14]

Furthermore, such a *higher hypothesis* can also be generated without one being aware of it. Ask yourself, for instance: what is required for generating a precise three-dimensional-dodecahedral-angle? A special mathematical compass? No. You don't need to wrack your brain with mathematics. You can construct the dodecahedron simply by folding a strip of calculating machine paper and, *pouf* you discover that you have a *higher hypothesis* in your hands without knowing how it happened. You can do it, by construction, with a single calculating machine ribbon, as I show below, and without the need of any mathematical calculation. However, how can such a connection between a clear conception and distorted perception be explained?

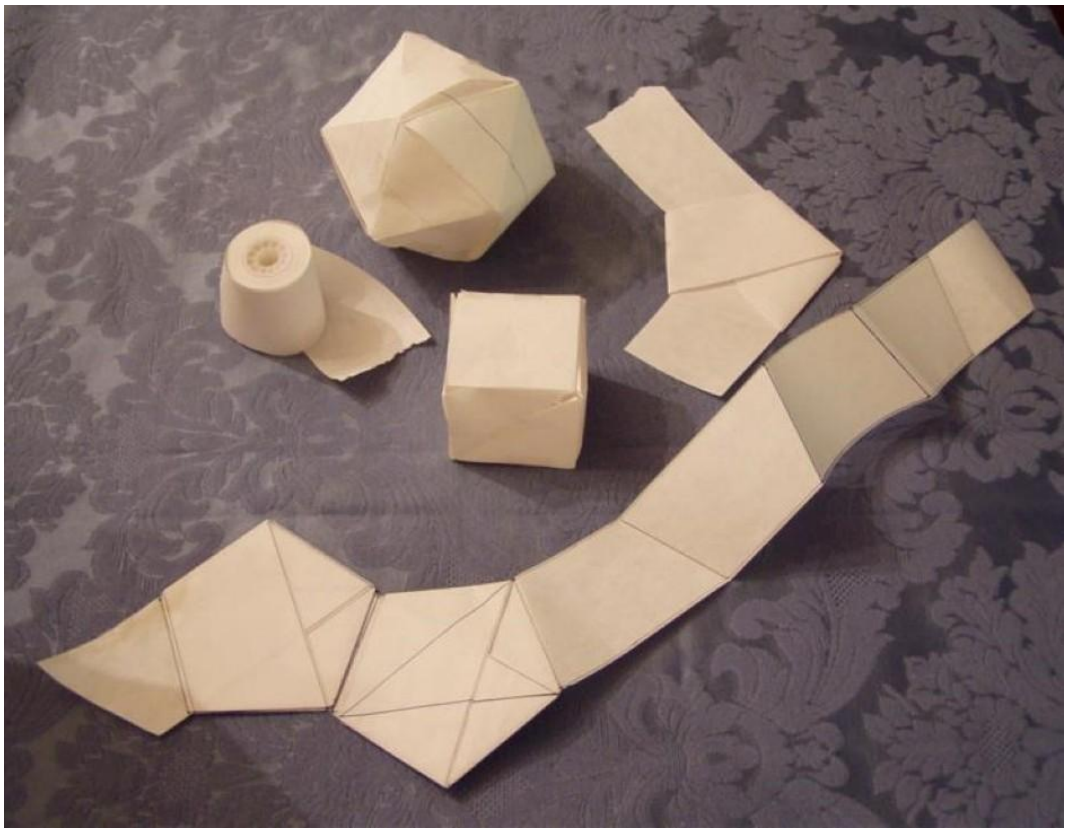


Figure 7. Folding Platonic Solids: "Look Ma, no math."

[14] Lyndon LaRouche, Op. Cit., p. 7.

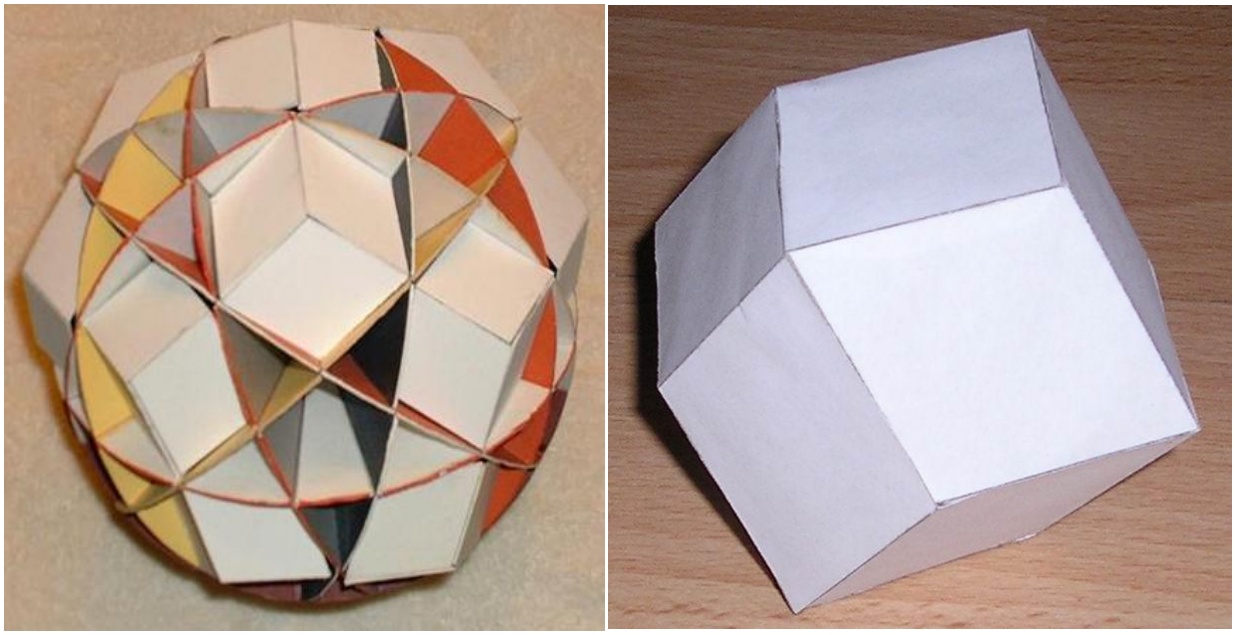


Figure 8. The 10-circle sphere and the rhombic dodecahedron.

Consider the coincidence of opposite forces between the exertion and the insertion angles of the rhombic dodecahedron as it is being created inside of the sphere in connection with the multi-folded intersections of the fifth (3/2), that is, between 22.5/15 degrees of sesquialteral circular action. (See the ten-circle Egyptian sphere generating the dodecahedron with rhombic dodecahedral frames. Figure 8.)

The epistemological matter under consideration has been investigated by Bernhard Riemann in his *Philosophical Fragments*, though for a different domain of investigation, in which he observed what takes place when our comprehension of the world is truthful. Riemann wrote: "The relations of our picture of the world are completely distinct from the corresponding elements of reality which they picture. They are something within us; the elements of realty are something outside of ourselves. But the connections among the elements in the picture, and among the elements of reality which they depict, must agree, if the picture is to be true."[15] Thus the matter of truth requires this connection between the two.

Here, Riemann is not talking about sense perception, but about human cognition and human imagination. These are similar to the connections relating musical Lydians to emotions such as those relating the sphere to the dodecahedron. As the translator of Riemann's fragments, David Cherry, noted: "Gustav Fechner "is remembered today chiefly in connection with Fechner's (or Weber's) law that stimuli are perceived by the mind with logarithmic compression: The intensity of a sensation increases arithmetically if the intensity of the stimulus increases geometrically." Thus, we are, again, measuring an arithmetic-geometric mean proportion.

[15] Bernhard Riemann, ***Philosophical Fragments***, translated by David Cherry, 21st Century Science & Technology, Winter 1995-1996, p. 56.

However, Riemann's idea where the two "must agree" must not be mathematical, but epistemological, as in the case of a Platonic flower.

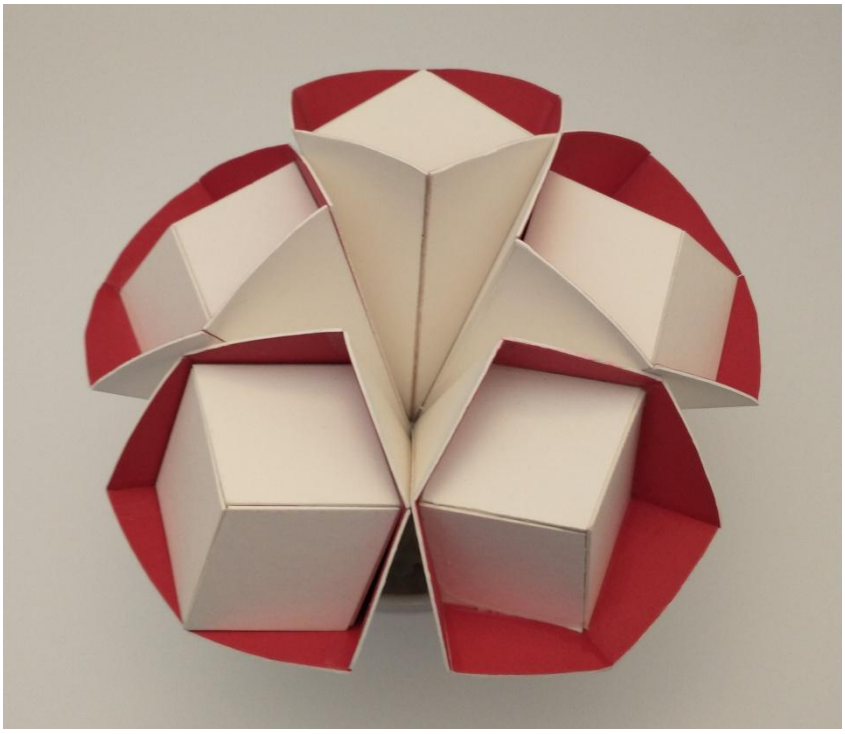


Figure 9. Bouquet of the spherical-dodecahedron-singularity.

THE ARITHMETIC-GEOMETRIC MEAN AND THE MUSICAL LYDIAN SINGULARITY

It is appropriate at this point that I should mention how to deal with the matter of mathematics, because there is an axiomatic flaw in thinking that mathematics is an appropriate tool to solve epistemological problems. Let me emphasize, on this account, how LaRouche properly dealt with the matter by considering that in all advances in science, and in the domain of physics in particular, the investigator requires a type of mathematics which is both arithmetically and geometrically constructive. In other words, constructive geometry must replace all forms of deductive mathematical measurements in matters of physics. Lyn states that quite clearly as follows:

> "The fundamental advances in mathematical physics have been the process of elaboration of successive experiments according to the principle of *higher hypothesis*, a successive, experimentally referenced overthrowing of axioms and postulates, ridding leading European scientific thought of the counterfeit assumptions of Ptolemaic versions

of axiomatic geometry, and also ridding science progressively of the notion of a mathematics derived from an axiomatic-deductive structure in arithmetic."[16]

This means that only self-similar circular action, spherical action, cylindrical and conical spiral action are axiomatically self-evident in physical space-time. Spherical action does not have, as such, an independent visible form of circular least action outside of circular and conical spiral action. And, by least action, LaRouche means an action where a maximum circular area is generated with a minimum of perimetric action (Cusa's Isoperimetric Theorem), which is accomplished here by a mixture of simple circular action and spiral action combined. Only from that isoperimetric-constructive-geometrical vantage point can mathematics be accepted as a legitimate form of measurement in science. Any other form of mathematics should be submitted to serious scrutiny and investigation for underlying assumptions. LaRouche gave the example of the Leibniz "*delta*" in differential calculus:

> "We merely indicate here the development in mathematics which bears most directly on this matter. We have already referenced this, Gauss's development of a general theory, of elliptic functions from the vantage point of the arithmetic-geometric mean. The volume between the beginning and end of one rotation of a self-similar spiral around its cone is characterized by a plane cut, diagonally, through this volume, forming an ellipse. By cutting the volume between the foci of the ellipse with another ellipse, and repeating this for the foci of the new ellipse, we define an iterative function. Wherever this iteration ceases, we have remaining a small volume of the cone, and a distance along the cone's axis corresponding to the height of that volume. This distance is coherent with the "delta" of Leibniz's differential calculus, and with the quantum of action, a smallest division below which subdivision is meaningless. […]
>
> "Formal algebra, like syllogistic systems, is based on the function of the middle term. This middle term has the associated significance of stating such things as 'equal to,' 'identical with,' 'not part of,' 'part of,' 'greater than,' 'lesser than,' and so forth. The objective of formal mathematics of this sort is to assemble all knowledge, or at least a great part of it, into one gigantic, continuous syllogism, such that one might trace one's way from the subject of a single syllogism, by way of middle terms, through every syllogism in that entire part of human knowledge. In other words, a syllogistic lattice-work. All knowledge, or purported knowledge, of this syllogistic form, is either anarchistic nominalism, such as the irrationalism of William of Ockham, or is formal

[16] Lyndon LaRouche, Op. Cit., pp. 10-11. In Leibniz's calculus, the "delta" identified as Δx and Δy represent the increments of x and y as the relevant infinitesimal quantum of action.

nominalism, like that of the neo-Aristotelian scholastics. The one is Dionysian, the other Apollonian; both are pure nominalism, *noun-ism*."[17]

Johannes Kepler raised a similar problem in his *Harmonice Mundi*, in which he recommended that harmonics be dealt with geometrically rather than arithmetically. Kepler considered the arithmetic approach too simplistic, and he was right, because such arithmetical manipulations can never deal with the idea of "distortion" or "dissonance", as it is necessary to go from *simple hypothesis* to *higher hypothesis*. However, he hesitated, as he admitted himself at the end of Book III, on the subject of the causal origins of harmonic proportions. Kepler wrote:

> "For since the term of the consonant intervals are continuous quantities, the causes which set them apart from the discords must also be sought among the family of continuous quantities, not among abstract numbers (as with the Pythagoreans), that is in discrete quantity; and since it is mind which shaped human intellects in such a way that they would delight in such an interval (which is the true definition of consonance and discordance) the differences between one and the other, and the causes of such intervals being harmonious should also have a mental and intellectual essence, that is that the terms of consonant intervals are properly knowable, but those of the dissonant intervals either cannot be properly known or are unknowable."[18]

Here, Kepler was not able to see that it was the musical Lydian intervals of dissonances which generated the consonant intervals in the well-tempered musical system. Possibly for the same reason, Kepler was not able to go as far as Gauss went when he discovered, 300 years later, that Kepler's method of complex sesquialteral elliptic investigation led to the discovery of the mathematical-physical values of the appropriate arithmetic-geometric conic sections that were required for the orbit of Ceres.

It is also crucial to note that LaRouche adopted this Gaussian conical arithmetic-geometric mean function not only as a physical-mathematical means of defining the voice register shift in the well-tempered musical system, but, also, as a fundamental epistemological singularity of the Keplerian Solar System by locating Ceres as part of the remains of an "exploded planet" spread across the Asteroid Belt. Gauss, in the preface to his book on the motions of the heavenly bodies, wrote:

> "Could I ever have found a more reasonable opportunity to test the practical value of my conceptions, than now in employing them for the determination of the orbit of the planet Ceres, which during these forty-one days had described a geometric arc of only three degrees, and after the lapse of a year must be looked for in a region of the heaven very remote from that in which it was last seen? This first application of the method was

[17] Lyndon LaRouche, Op. Cit., p. 20. It is important to note that Lyn adopted the arithmetic-geometric mean as the most effective physical-mathematical means of defining the voice register shift of the well-tempered musical system.

[18] Johannes Kepler, ***The Harmony of the World***, The American Philosophical Society, 1997, p. 139.

made in the month of October, 1801, and the first clear night, when the planet was sought for [by de Zach, December 7, 1801] as directed by the numbers deduced from it, restored the fugitive to observation. Three other new planets, subsequently discovered, furnished new opportunities for examining and verifying the efficiency and generality of the method."[19]

How did Gauss do it? He discovered the Lydian pathway of Ceres by following Kepler's sesquialteral principle and applied it to the equal-tempered arithmetic-geometric mean of conical elliptic function.

How did this happen? Ceres was first discovered by the Italian astronomer, Joseph Piazzi, in Palermo, on New Year's Day, 1801. Piazzi observed Ceres again, on February 11, but he lost sight of it when the small planet came too close to the Sun. It was almost a year later, in October 1801, that the 24 year old Gauss discovered Ceres again by using Kepler's musical composition principle. Eight years later, in Gottingen, on March 28, 1809, Gauss published his complete findings.

Gauss did not reveal his principle of discovery; he merely showed us his calculating method. He showed where Ceres would be located in its orbit, and at what time it could be observed by indicating the precise time of the perihelion passage of the planet by calculating the heliocentric longitude, latitude and distance from the Earth, with respect to the perihelion and aphelion of Ceres' geocentric longitude, latitude, and distance. As a result, Gauss applied Kepler's principle whereby not only the orbits of the planets were elliptical with the Sun located at one of the foci of their elliptical pathways, but, that "in different ellipses the times of revolution are in the sesquialteral ratio of the semi-axes major."[20]

[19] C. F. Gauss, ***Theory of the Motion of the Heavenly Bodies Moving About the Sun in Conic Sections***, Translation by C. H. Davis, Little Brown and Company, Boston, 1857, p. xv.
[20] C. F. Gauss, Op. Cit., page x.

THE PLANETARY ORBITS AND THE EQUAL-TEMPERED MUSICAL SYSTEM
by WILLIAM BOHDAN

PLANETS	ASTRO. UNITS	Log. 10X	ADDED CONSTANT	MULTIPLE CONSTANT	CYCLE EQUIVALENT	MUSICAL CYCLES	PLANETS
MERCURY	(P) 0.310	0.5086	+2.496	x 128.8	255.97	C = 256	MERCURY
MERCURY	(A) 0.470	0.3279	" "	" "	279.25	C#=271.22	MERCURY
VENUS	(P) 0.715	0.1457	" "	" "	302.72	D = 287.35	VENUS
VENUS	(A) 0.725	0.1397	" "	" "	303.49	Eb =304.44	VENUS
EARTH	(P) 0.983	0.0074	" "	" "	320.52		EARTH
EARTH	(A) 1.017	0.0073	" "	" "	322.42	E = 322.54	EARTH
MARS	(P) 1.379	0.1396	" "	" "	339.46	F = 341.72	MARS
MARS	(A) 1.661	0.2204	" "	" "	349.86		MARS
ASTEROIDS	(P) 2.2	0.3424	" "	" "	363.32	F#=362.04	ASTEROIDS
ASTEROIDS	(A)3.6	0.5563	" "	" "	393.13	G = 383.57	ASTEROIDS
JUPITER	(P) 4.95	0.6946	" "	" "	410.95	Ab=406.37	JUPITER
JUPITER	(A) 5.45	0.7364	" "	" "	416.33		JUPITER
SATURN	(P) 9.006	0.9545	" "	" "	444.43	A = 430.54	SATURN
SATURN	(A)10.074	1.0032	" "	" "	450.69	Bb=456.14	SATURN
URANUS	(P) 18.288	1.2622	" "	" "	484.05	B = 483.26	URANUS
URANUS	(A) 20.092	1.3030	" "	" "	489.31		URANUS
NEPTUNE	(P) 29.799	1.4742	" "	" "	511.36		NEPTUNE
NEPTUNE	(A)30.341	1.4820	" "	" "	512.37	C = 512	NEPTUNE

Figure 10. The Solar system and Musical Lydian divisions. Note that the field of the ASTEROIDS (F# and G) correspond to the Arithmetic-Geometric mean of Gauss.

Such a crucial epistemological *higher hypothesis*, also known as the Lydian interval of the voice register shift, does not only play a unique role in connecting two different Riemannian domains or manifolds, but also establishes the principle of how to understand the axiomatic connectivity among Geometry, Astronomy, Music, and Arithmetic, (GAMA); thus reflecting the *higher hypothesis* of the ancient Pythagorean Quadrivium. The simplest illustration for such a geometrical Lydian singularity can be expressed by the iteration of an elliptical function within the logarithmic conical projection of an arithmetic-geometric mean of the ASTEROIDS. (See Figure 3 and 10.)

Such a *higher hypothesis* leads us to several yet unanswered questions. What did Kepler mean exactly by "dissonances?" Did he mean musical Lydians dissonances? Did Kepler know the geometry of musical Lydians? Is there any evidence that Lydian intervals were understood before J. S. Bach? Does Kepler identify anywhere the significance of the voice register shift as the arithmetic-geometric mean? Did he recognize that such a dissonance-consonance complex function could be made knowable by going from a lower domain to a higher domain of physical (from solid planets to gaseous planets) or epistemological power? What is the significance of such a singularity with respect to a social paradigm shift for mankind as a whole, such as the one the world is going through at this present moment?

THE PERFORMATIVE INTENTION OF NORMALIZING WITH SPHERICS

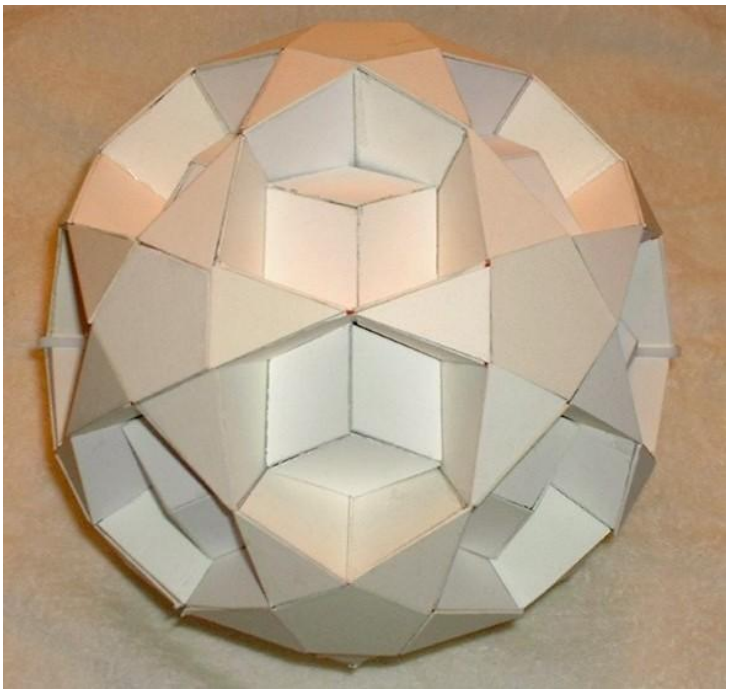


Figure 11. The twelve-stars Egyptian polyhedron hugging a newly born Dodecahedron.[21]

[21] The following pages are a revised version of my previous report written in 2014: ***THE TWELVE STAR EGYPTIAN SPHERE THAT GENERATED THE GREAT PYRAMID AND THE PLATONIC SOLIDS***

Figure 12. The spherical generation of the dodecahedron, the icosadodecahedron, the cube, and the octahedron. Note that the blue Pythagorean sphere (bottom left) is the 10-circle sphere (bottom right).

Over 50 centuries ago, it was the Egyptians, not the Greeks, who invented the principle of generating the regular solids. They may have built the so-called “Five Platonic Solids” at the same time that they built the pyramids. The 10-circle sphere proves that they had the knowledge to do it. What can be proven is the fact that the ancient Egyptians constructed the underlying principle of the Platonic Solids at about 3,000 BC., and that they may have served as astronomical normalizing instruments, and even, possibly, as blueprints for the construction of the Great Pyramid of Gizeh.

We may finally resolve the enigma of the construction of the Great Pyramid by showing, from the vantage point of a *higher hypothesis*, that it could not have been built without an explicit knowledge of the astronomical spherics that generated the five regular solids, possibly earlier that the Great Pyramid. It is known that spherical forms of regular solids were produced extensively in Aberdeenshire, Scotland, a thousand years before Plato.

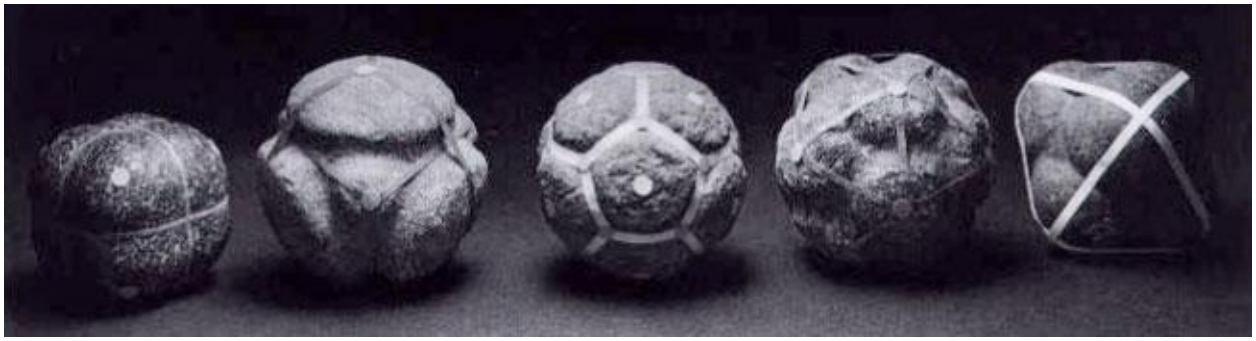


Figure 13. Spherical Cube, Octahedron, Dodecahedron, Icosahedron, Octahedron: http://www.neverendingbooks.org/the-scottish-solids-hoax

The first thing that Egyptian pyramid builders did when they attempted to replicate the canopy of the heavens was to normalize angular measurements with respect to the changing position of the stars in the canopy of the heavenly sphere. As Lyndon LaRouche stated:

> "You'd build a deep pit, a deep well, and if the well is narrowly fixed, you can actually see stars during the daytime, and particularly in areas which are fairly arid. And that's when a lot of astronomy was done. They had the nighttime sky, which they were able to survey this way, and also the daytime sky. Motions of the planets and so forth, they could see, in the dusk."
>
> "What the Greek conception of the spherics was from the Egyptians. You're looking at the universe as a sphere. You don't know what its diameter is: you just know it's very large, and you're trying to interpret things, not by measuring intervals, but

measuring angles. And you're looking at angular changes, and you're looking at trying to normalize your relationship, as an observer on a rotating Earth, to a planet." [22]

Such was the intention of the pyramid builders at their founding moment of astronomy in ancient Egypt. They knew they could not accomplish that task by simply establishing an equal partitioning of the sphere; so, they had to determine a norm by means of which constant angular changes could be measured. From that intention, the construction of equal partitioning of a sphere gave interesting results, but it did not give them a sense of normalizing and closure over what is constantly changing. So, they partitioned their sphere in such a way that the yearly cycles of the heavens were made to correspond to angular rotations of a circle based on 360 degrees.

The divisions of the circle into 360 degrees became the normalizing means of establishing the yearly cycle of 360 days, as Kepler showed with the Pythagorean spherics. That provided closure between the calendar and astronomical observation, but that was not enough for generating a *higher hypothesis*. This inadequacy between geometry and reality was expressed in such a way that, 360 Egyptian days were considered as human days, while the additional five and 1/4 days, for a total of 365 and 1/4 days a year, represented divine additional "holy days" as gifts from the gods. The "distortion" inadequacy was not resolved because religion and numbers are not sufficient to solve such an epistemological problem.

But then, there was a greater inadequacy to be surmounted. The construction of the required sphere could not be done except from the epistemological phase space of a Riemannian type of complex domain, from a *higher hypothesis*. That is to say, the geometer-architect had to locate himself both inside and outside of the sphere that he was constructing. That is not a comfortable position for any person to be in. Like God, he had to be both inside and outside of the universe. He had to be self-conscious of being outside of the experiment at the same time that he was at the center of the scientific experiment as the subject matter of his own design. In fact, the Riemannian thought-mass (*geistesmasse*) of self-change was the most important component of the Egyptian discovery of principle. Plato may have been the only effective Greek philosopher to have internalized such a discovery of principle in his equivalent method of discovering the One and the Many as an axiomatic instantaneousness (*exaiphnes*).

RE-CREATING THE SPHERE OF THE HEAVENS

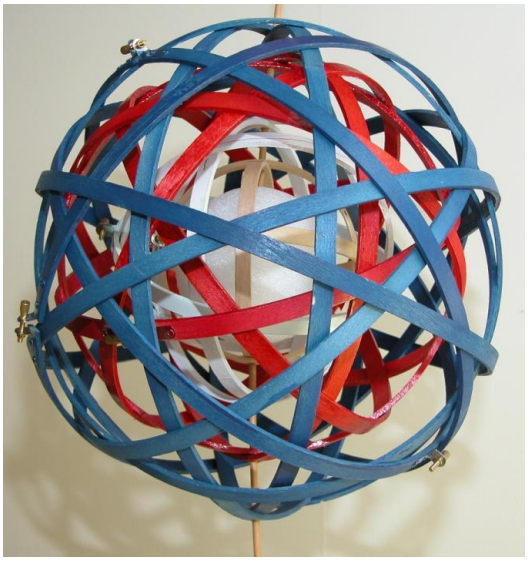
Although the Pythagoreans had constructed different spheres of three, four, six, and ten great circles each, the sphere they required to construct for the generation of the regular solids needed to be divided into Golden Sections of divine proportion, as Leonardo da Vinci and Luca Pacioli later demonstrated. What was required was to have all of the angular sections projected

[22] Pierre Beaudry, ***Pythagorean Spherics : The Missing Link Between Egypt and Greece***, 21st Century, Summer 2004 . Quoted from Lyndon H. LaRouche, Jr., transcript of LaRouche to West Coast Cadre School: ***Only Man Can Discover Universal Principles;*** *New Federalist*, Vol. XVII, No. 6, Feb. 9, 2004, p. 5.

from the center of a sphere, outwardly, where they were required to form a completely close-packed surface of twelve equal stars, and generate, from there, the Platonic solids. As we shall see, in a moment, the only way to project such a spherical surface onto the sphere of the heavens was from the angular measurement of the Great Pyramid of Gizeh. This represented the metaphorical act of man re-creating the heavens, in the Image of God, the creator of the universe.

The canopy of the heavens was thus divided into a twelve-part zodiac, whose spherical blazonry had to inscribe a great celestial dodecahedron, as Plato referenced in his *Timaeus*. However, none of this was ever found in Egypt. One amazing example of this is the close-packing of pentagonal stars displayed on the ceiling of the Pyramid Text Chamber, located at Sakkara. (See Figure 15.) However, no dodecahedron appears on that ceiling.

This masterful idea of ancient times confirms that the Egyptian pyramids, most notably starting with the Pyramid of Unas, was one of the first astronomical-observatory-pyramids, which included a projection of the sphere of the heavens onto the ceiling of an underground chamber, including text and ornaments on the false-walls of the chamber, thus reflecting metaphorically, the principle of proportionality between God's work and man's work. However, perception is not going to help us conceive of this matter. Note again, there is no drawing of a dodecahedron on the ceiling of the Pyramid Text Chamber. In this context, I wish to remind the reader that in his *Mysterium Cosmographicum*, Kepler had recognized the Pythagorean Spherics by alluding to the 10-circle sphere and to the 360 intersections in relationship with the Platonic Solids, and added in a footnote:



"I alluded to the sphere of the planetary system, constructed of the planetary spheres, and the five regular Pythagorean solids, each distinguished from the other by their own colors…The sphere of Saturn was represented by six circles, which by their intersections, three at a time, signified the vertex for the position of the cube, but intersected two at a time over the position of the center of a face of the cube. The outermost of the spheres of Jupiter was shown by three circles, its innermost by six circles, and the outermost of Mars again by six; but the innermost of Mars, just as were both those of the Earth, and the outermost of Venus, were each sketched out by ten circles, of which five met twelve times, every three 20 times, and each pair 30 times."[23]

[23] Johannes Kepler, *Mysterium Cosmographicum*, The Secret of the Universe, New York, Abaris Books, 1981, p. 61

Figure 14. The Pythagorean spherics. The white is three circles, red is six circles, and the blue is 10 circles.

Figure 15. Saqqara: The Pyramid of Unas.[24]

Kepler had the right idea in determining the planetary distances with the nesting of Platonic solids; unfortunately, the original model he had made with great circles has been lost. Finally, the question of solving the problem of the *higher hypothesis* had to come from somewhere else, as LaRouche discovered with the Riemannian manifolds.

[24] https://isida-project.ucoz.com/egypt_mar_2013/saqqara_unas.htm

THE SPHERICAL PROOF BY DISTORTED SHADOW

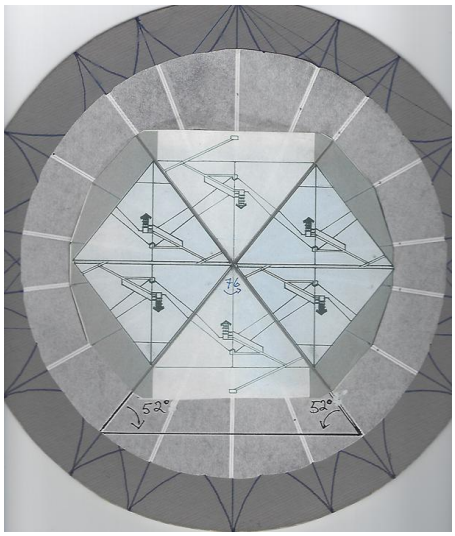


Figure 16. The angular determination of the Great Pyramid of Egypt within the circular partitioning of a 10-circle Egyptian sphere.

The shadow of the Great Pyramid's apex, **N**, established at 76 degrees, comes from the angle of two great spherical circles **A** and **B** projected onto a third plane circle which cuts through the sphere at the equator. Figure 17 below shows the projection of angle **N + 1** degree between side **A** of the spherical pentagon and side **B** of the star extension. In other words, if you were to project a light source from the center of the 10-circle sphere along the triangular sides of one of the spherical starred-pentagons, the shadow angle formed by the side of the pentagon and its starred extension would project back the apex angle of 76 degrees onto the base circle of the sphere, which corresponds to the apex of the Great Pyramid. The "distortion" here corresponds to a change of manifold between *simple hypothesis* and *higher hypothesis*; that is, the discontinuous creative act of going from **N** to **N + 1** with a Riemannian manifold.

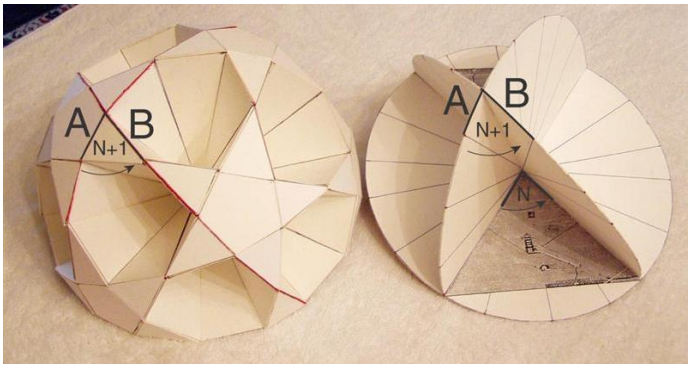


Figure 17. Projection of the **N+1** axiomatic change from the center of the sphere to the spherical surface, and back to the equatorial plane of the sphere.

The principle of proportionality between the surface of the sphere and the plane surface of its equatorial circle works by bridging the incommensurable gap between the spherical domain and the polygonal domain of the Great Pyramid, as the proportionality reflected between God and man in the most excellent way, "through a glass darkly." As LaRouche stated:

> "Following the preliminary outline which Riemann gave in his 1854 '*On The Hypotheses Which Underlie Geometry*,' let us assign an indefinite number N to the previously established state of the universe or local phase space upon which this continuing action is applied. The continuing action is now applied to a universe of a complexity indicated by N, such that the action is divided according to that degree of complexity. It is implicit that the elliptic iteration of the conical volume halts once that degree of division of the action is defined. This is the significance of "quantum of action" from the Riemann-Gauss vantage point indicated. The normal result is a new state of the universe associated with the designator **N + 1**, a new state reflected by a change in the metrical characteristics of space, such as a shift in the value of the quantum of action."[25]

On the matter of the characterization of anti-entropy as being necessary to go from *simple hypothesis* to *higher hypothesis* or beyond, LaRouche is very clear as to what his requirements are and what they need to be with respect to economic science. He chose, as he said, "a principle irreducibly symbolized by self-similar conic spiral action. The only elementary limitation imposed upon that primitive action is also a primitive; a second primitive derived from the first, that continuous action is limited by that which it has previously elaborated."[26] The question is: How do you go beyond?

For an economic system to grow, LaRouche applied Leibniz's least action principle to thermodynamic conditions by separating the total amount of energy required into two types, the *energy of the system* and *free energy*. His purpose, clearly, was to prevent the economic system from running down as the unwinding of a clock would do. These are merely the conditions of the trade, so to speak, the condition under which one must keep a constant watch for allowing an increase of the ratio of *free energy* to the *energy of the system* in order to maintain economic growth. However, this is not quite how the mind works; rather, geometry is to the human mind as hydrodynamics are to economics.

For the human mind to grow to a higher dimensionality, there are different measures to be taken. The domain of classical artistic composition, especially music, is better suited to perform within society. Thus, we must bring Riemann back with us into ancient Egyptian history and change the past where the birth of the Platonic Solids took place.

[25] Lyndon LaRouche, Op. Cit., p. 21.
[26] Lyndon LaRouche, Op. Cit., p. 22.

EGYPT: THE BIRTHPLACE OF THE PLATONIC SOLIDS

Since the partitioning of the 3-circle sphere generates the Octahedron, the 4-circle sphere generates the Cuboctahedron, and the 6-circle sphere generates the Icosadodecahedron, there remains to be discovered why no one ever demonstrated that a 10-circle Egyptian sphere is the only single sphere which generates all of the Platonic solids. The reason may be found in the fact that instead of being equally partitioned, each circle of the 10-circle sphere is partitioned by the "distorted" circular sesquialteral ratio of 22.5/15 = 1.5 degrees. How does this "distorted" ratio relate to the Golden Section? Whatever may be the answer, it cannot be the same as the 10/6 = 1.66666 ratio which generates the Dodecahedron and the Icosahedron by partitioning a 6-circle sphere each into 10 equal parts. Why are such equal divisions missing inside of the 10-circle Egyptian Sphere? And, why does the 10-circle sphere generate a starred Dodecahedron or five Rhombic Dodecahedrons?

Let's examine the anomaly of the 10-circle sphere. How can 20 gaps of hexagonal beehive holes, into which the twenty vertices of the dodecahedron fit perfectly, reflect the Golden Section? This "distorted" singularity, in effect, generates simultaneously, the Great Pyramid, the Twelve-Star Egyptian Sphere, the Twelve Star Egyptian Solid, the single Cube, the single Octahedron, the single Dodecahedron and the dual Icosadodecahedron, all integrated into one single sphere! (See Figure. 12.)

Such a 10-circle sphere is lawful because, as Lucas Pacioli and Leonardo Da Vinci demonstrated during the Italian Renaissance, the singularity of the Golden Section requires an unusual spherical "distorted" connection when it is projected through a mixture of the hexagon and the decagon in the plane. Thus, the spherical mixture of 10-sidedness with 6-sidedness appears to be a unique spherical characteristic of the Golden Section, and since this was not apparently discovered in Ancient Greece, the shadows of evidence lead us back to Ancient Egypt.

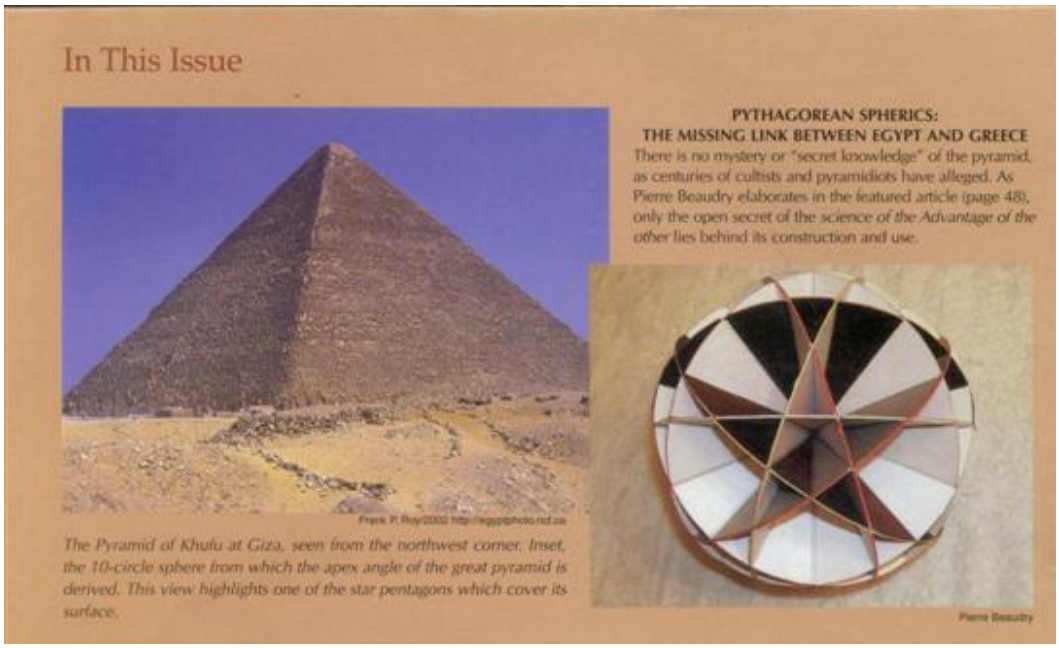


Figure 18. 21_{st} Century Magazine, back cover, Summer 2004.[27]

It is only fitting that the Egyptians, who were the teachers of the Greeks, incorporated the same idea of the harmony of the spheres as Plato describes in *The Timaeus*, within the construction of the Great Pyramid. It is, therefore, not difficult to imagine that the astronomical data, which had been gathered from the Meridian Great Gallery of the Great Pyramid of Khufu, 5,000 years ago, could have been monitored with a chiming water-clock device that rang the twelve-tone series of our musical system.

PARADOXICAL PERPLEXITY OF THE RIEMANN-LAROUCHE PHASE SPACE

All in all, this is very perplexing. But, what is most perplexing of all, in this process of discovery, is the fact that the solution to the enigma of the construction of the Great Pyramid cannot be found from inside of the pyramid itself, but only from the outside. The irony is that it can only be discovered from a Riemannian angular measurement of the sphere of the heaven. This is like the principle of the non-living, which can only be discovered from the higher manifold of the living. Similarly, when you look for the source of this enigma inside of the sphere, you discover the shadows of the regular solids, and when you attempt to explain the presence of those Platonic Solids in their ambiguous shadowy forms, you discover that their appearances can only be explained from the *higher hypothesis* principle of the sphere that also produced the Great Pyramid, and at the same time; that is, from the higher domain which caused the emergence of this enigmatic perplexity in the first place.

[27] Pierre Beaudry, *PYTHAGOREAN SPHERICS: THE MISSING LINK BETWEEN EGYPT AND GREECE*, 21_{st} Century Science and Technology, Summer 2004, pp. 48-67.

In other words, the very unfolding elaboration of the ten-circle sphere makes it impossible for the Egyptians not to have known, and built, the five regular solids, because that unique sphere is their birth receptacle, their generative phase space, so to speak, their *Chora*, as Plato identified her in *The Timaeus*. And, without that sphere, the Great Pyramid itself could not have been built. Thus, the perplexity can only be dissipated after this enigma has been resolved, not before. This means that the Great Pyramid of Egypt, and the Five Platonic Solids, are all historically bounded together and can never be separated from their common generative principle, which resides in the Spherics' power, outside of them, and, the cement that bonds them together is precisely as LaRouche said it was, the isoperimetric power of Squaring the Circle.

CONCLUSION: LOOKING THROUGH A GLASS DARKLY

In ancient Egypt, an astronomer once asked an architect: "If you were an astronomer, how would you start building an astronomical observatory, which would be perfectly in line with a meridian circle of the heaven, from which one could observe and teach young people how to determine the transit of all of the stars in the heavens?" Lyndon LaRouche answered that question by saying: "You'd build a deep pit, a deep well, and if the well is narrowly fixed, you can actually see stars during the daytime, and particularly in areas which are fairly arid. And that's when a lot of astronomy was done. They had the nighttime sky, which they were able to survey this way, and also the daytime sky. Motions of the planets and so forth, they could see, in the dusk." [28]

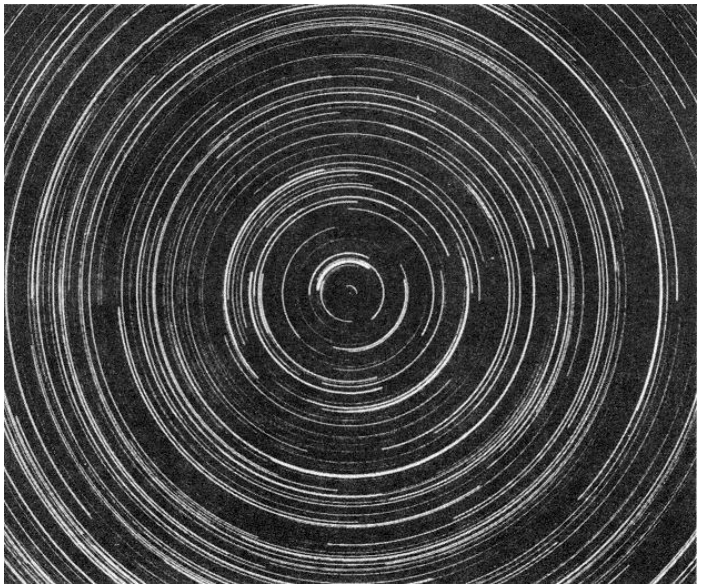


Figure 19. Time delay photo of stars and galaxies rotating around the North Pole of the celestial sphere during the night.

[28] Internal document, January 25, 2004.

What does this prove? This proves that the Egyptian builders of the Great Pyramid of Khufu were the first geometer-astronomers to have conceived and constructed, by angular measurements alone, the principle of the Five Platonic Solids, and in this capacity, served as midwives to the Greeks in matters of pedagogy and science for the benefit of mankind and for centuries to come.

Thus, the Great pyramid of Gizeh has projected, during more than 50 centuries of history, its universal shadow over all human beings, past, present, and future. Could there be any greater gift to mankind than to replicate such a discovery of circular action, as if through a glass darkly? This is your universal heritage. Are you going to pass it on to the next generations? Don't be like the Anglo-American oligarchy, which has slandered Lyndon LaRouche for the past five decades; use circular action as LaRouche promoted it and see if you can also make a discovery of principle.

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