
PLATO'S 'GEOMETRICAL NUMBER' FOR SOLVING THE PARADOX OF THE ONE AND THE MANY

For my friend Philip Ulanowsky: How Plato constructed the One and the Many

by Pierre Beaudry, 4/1/2021

FOREWORD

There is, in Plato's Book VIII of the *Republic*, an extremely important and yet very cryptic section of the dialogue in which Socrates discusses how to make "constitutional changes" in order to improve the government of mankind. In that section, Socrates identifies, among four other forms of government, the form known as "*Timocracy*", in which those who rule are motivated by wealth, property, ambition, and love of honor. Plato recognizes that such a form of government eventually self-destructs because of the in-fighting divisions among its wealthy rulers.

Our nations have a similar problem, today, because wealthy political parties and individuals are robbing people's future by preventing them from accessing the knowledge of new discoveries of principle, such as what Plato required for his time, and which would otherwise help political leaders secure peace in the world by preventing their people from degenerating.

According to Plato's *Parmenides*, the way to secure that knowledge for the future of mankind is through understanding the political epistemology of axiomatic change between the One and the Many; that is, by mastering the science of how to use what Nicholas of Cusa called his method of achieving the *coincidence of opposites* as the means of bringing about the solution to all paradoxes that the human mind may be confronted with.

You are probably going to think that I am crazy for asking you to do this, but what is required to solve the problem of popular degeneracy is for you to discover the purpose of Plato's "*geometrical number*" as a means of dealing with the problem of mastering the *coincidence of opposites* by solving the paradox of the One and the Many. That's right; Plato dealt with this question by constructing a mental process for solving paradoxes with the use of elementary Pythagorean geometry. Here is how you can replicate this discovery of principle.

INTRODUCTION: THE CYCLE OF DEGENERACY OF THE GREEK CITY STATE CONSTITUTION

Since the first four books of Plato's *Republic* were meant to be a treatise on the ideal justice for the City State and for all human beings, Plato had to counterpose this ideal of perfection with the defective forms of government and the characteristics of the leaders that ruled them. After long digressions that he was pressed by his interlocutors to engage into, Socrates reestablished the connection with his original subject of justice at the beginning of Book VIII, where he sums up the characters of the perfect City State and begins to examine the imperfect constitutions of four different forms of government: timocracy, oligarchy, democracy, and tyranny. After demonstrating how each form is the degenerate result of the previous form, Plato realizes that however perfect a constitution may be, it is always corruptible, because it is always subjected to the laws of becoming, which is the source of all corruption. The question which Plato had to investigate, therefore, is: at what moment and under what circumstance does a form of government become corrupt and by which alteration will it inevitably begin to self-destruct? Plato quickly discovers that, as it is the case with fish, the smell of the rot always begins from the head. Thus, the entire composition of the ten books of the *Republic* are well ordered in the following fashion:

Book I. The Prelude.

Books II-IV. How justice is defined for the State and the individual.

Books V-VII. On the coeducation of women and men and the exercise of power by philosophers.

Books VIII-IX. How degeneracy of government is established and how to solve it.

Book X. How bad poets must be excluded as national educators, and how the just ones will gain true benefits in this world and the next.

In choosing such an ordering process, Plato had to show how the progressive degeneracy of leadership in government could be justified and how the City-State of his time was ultimately heading toward the worst of all forms of governments, tyranny. Plato located the source of corruption in the flaws of government leaders, whose discord among each other inevitably leads to the collapse of society as a whole. At that point, tongue in cheek, Plato called on the Muses to divulge the hidden “*geometrical number*” which contains the solution to this sort of degenerative collapse.

THE EPISTEMOLOGICAL CLOSURE OF THE ONE AND THE MANY

"Human life is sacred, and its increase is not only an expression of the universal law of the universe, but if man fails to bring his willful practice into agreement with that law, then the society so failing becomes unfit to exist, and will collapse, to make way, sooner or later, for one which fulfills the law. That is the Law of Population."

Lyndon LaRouche, [There are No Limits To Growth](#),
New Benjamin Franklin House, New York, 1983, p. 283.

In the footsteps of Plato, Lyndon LaRouche made use of the same Socratic method of problem solving, and of the same political epistemology, in order to demonstrate how the geometry of transfinite numbers corresponds to the triply-connected physical principle of change in the universe; that is, by discovering a method whereby the human mind is able to develop a concept of the One through axiomatic transformations of higher orders of magnitude, of change, and of motion in the universe as a whole, all of which for the purpose of achieving a higher universal and a more appropriate closure for understanding what Lyndon LaRouche called the classical idea of substance in the universe. LaRouche elaborated that method as follows in his book, [Project A](#):

“Simple, discrete matter does not exist, as in the sense of a perceptual discreteness, as an object of touch, as an object divorced from motion. That kind of substance does not exist. It cannot exist in our universe. Secondly, even simple motion cannot exist as something primary in our universe. It does not meet the qualifications of substance in any aspects of substantiality. It is not being, it is not substance. Nor is a rate of change in quality of motion adequate. We have to generalize the notion of a rate of change of rate of change of quality of motion, and then we have, at least verbally, encompassed in a general way the kind of definition of being we require.”¹

This is the triply-connected motion of the mind that is required for discovering higher geometrical numbers, or new higher ideas, such as transfinite numbers or Platonic ideas; that is, by increasing the power density of the human mind through 1) the action of change, 2) the action of the rate of change and 3) the action of the rate of change of the rate of change, all for the purpose of increasing the growth of human population. This triply-connected epistemological function represents the method by means of which Plato, Cusa, and LaRouche have gone into higher geometrical numbers to establish the appropriate ontological level for accomplishing the next step of humanity's progress in scientific knowledge, in theology, and in artistic composition. As LaRouche said:

“We get into larger geometric numbers, as Gauss does. We get into the so-called imaginary and complex numbers, which are not really imaginary, and which are quite clearly classes of geometric numbers. They tend to fill up the gaps in between, leftover in-betweennesses not filled in by all inferior sorts of numbers. So, a general notion of number arises, not from particular experience, but by trying to approach universality by the method of successive transfinite orderings. So, hard proofs and strong proofs all involve universality.”²

From this Platonic standpoint, therefore, my intention, here, is to examine briefly the principle behind the Platonic notion of the One with respect to the Many

¹ Lyndon LaRouche, *Project A*, EIR, Vol. 17, No. 41, October 26, 1990, p. 62.

² Ibidem, p. 61. <https://larouchepub.com/eiw/public/1990/eirv17n41-19901026/index.html>

by means of what has been identified as “Plato’s number.” I refer, here, specifically, to the “geometrical number” that Plato discusses in *Republic*, 8, (545-546), without Plato’s identifying it, and which has long been for both translators and scholars alike a big headache and a major source of disagreement over the very nature of Plato’s intention underlying that cryptic section of his dialogue. It is, in fact a very amusing, yet a very serious puzzle, to be resolved, performatively, as an actual puzzle of poetic creative thinking.³

In fact, the poetical irony of this segment of Plato’s *Republic*, corresponds to what Jacques Cheminade identified during the third session of the Schiller Institute/ICLC conference: [THE WORLD AT A CROSSROAD](#) on Saturday, March 20, 2021, when he said that imperialist thinking corresponds to a “divided mind” such as the one of former President Francois Mitterrand when he stated: “What I think, what I say, and what I do are three different things.” In point of fact, the only way that a mind can free itself from such imperialism is to do precisely the opposite; that is, to be truthful, you must always do everything you think and say. In Plato’s view, this means the assembling of the Many in as many different lawfully arrangements as can be done, in such ways that the results of all of those different processes end up being always the same, no matter how many attempts it has taken to get them.

What Plato is doing with his “geometrical number” is not a mystical/mathematical explanation for the origin of the world and for explaining the tragedy of the political human condition. The calling on the Muses was merely an irony that Plato used for identifying the failures of government and its different forms of Timocracy, Oligarchy, Democracy, and Tyranny. The strategic problem that Plato had to solve in his time was known as the Thucydides trap; that is, the strategic danger of a mounting tension which builds up in the world, when an old declining power seeks to create a conflict with a new emerging power. Thus, the characteristic type of leader that had to be changed was one who is “inclined to be

³ The same poetic principle of government that Lincoln used during his presidency.

violent and simple-minded, rather more suited for war than for peace.” (Republic, VIII, 548a)⁴

After the first stage of perplexity has passed, and allowing for a higher respect for Plato’s ability to apply his Socratic method of epistemology to a degenerating strategic situation, I have come to realize that what he was looking for was the original principle of generation of a higher universal creative process, among other things, the spherical principle for generating the Five Platonic Solids and a *transfinite spherical geometry of knowledge* that citizens and political leaders of all times need to learn in order to improve the conditions for the establishment of constitutional republics everywhere on this planet. That universal question is, in a nutshell, the moral purpose of Plato’s *Republic*.⁵

When you examine closely how the government of our universe works, you discover that our three dimensional universe is constructed on a multiply-connected circular action closure upon itself and inside of which the first motion is up and down, the second moves from left to right, and the third one moves forward and backward; six directions in all, forming the hexago-spherical unity of physical space-time that we live in. Although such a complex motion cannot be changed, there is no doubt that it can be mastered.

Metaphorically speaking, Raphael generated a variant of such an hexago-spherical process for *The School of Athens* and *The Dispute of the Holy Sacrament*,

⁴ For this rare occasion, Wikipedia has an insightful note on the character of the Timocratic leader. See Plato’s five regimes: “The governors of timocracy value power, which they seek to attain primarily by means of military conquest and the acquisition of honors, rather than intellectual means. Plato characterizes timocracy as a mixture of the elements of two different regime types — aristocracy and oligarchy. Just like the leaders of Platonic aristocracies, timocratic governors will apply great effort in gymnastics and the arts of war, as well as the virtue that pertains to them, that of courage. They will also be contemptuous towards manual activities and trade and will lead a life in public communion. Just like oligarchs, however, they will yearn for material wealth and will not trust thinkers to be placed in positions of power. Timocrats will have a tendency to accumulate wealth in pernicious ways, and hide their possessions from public view. They will also be spendthrift and hedonistic. Because their voluptuous nature will not be, like that of philosopher-kings, pacified in a philosophical education, law can only be imposed onto them by means of force.”

⁵ Cf. The Myth of the Line in *Republic* VIII, 545-546., and the Third Man Argument in *Parmenides* 132-133. The flaw to recognize resides in the fact that the mind gets caught-up into indefinite loops and cannot properly address the transfinite hypotheses of the higher hypothesis.

starting from the elementary diagram of the Star of David,⁶ and this is also, according to the *Republic*, the measure that Plato used for the Constitutional State of Athens that Socrates described as being subjected to cyclical “*geometrical number*” whose periods of progress should determine the future of mankind without degeneration. But, unfortunately, mankind suffers, alternatively, periods of growth and of degeneracy, as time goes by. Knowing full well that the destruction of a State always comes from the incompetence of its own rulers, Plato, nevertheless, attributed the human state of degeneracy to an uncontrolled cycle of fate. However, from the vantage point of epistemology, the nature of this periodicity of progress and of degeneration is what the mind is also capable of understanding and resolving by adopting the following triply-connectedness form of human thinking and deliberation.

The geometrical projection involved in this universal state of affairs is such that the change of the first two motions can be perceived on the same plane (up and down plus left and right), while the third motion can only be examined in depth (back and forth), in such a fashion that it must also include the motion of time (past, present, and future); that is to say, a third degree of amplification of micro, conventional, and macro dimensions. That is also how the Platonic universe is constructed as a One which determines the Many; the explanation of which can be found in a very difficult but profound section of book VIII of *The Republic*, which Socrates described as the generating principle of a “*geometrical number*” in the following manner:

“Finally, Glaucon, I replied, let me try to explain how Timocracy⁷ came out of Aristocracy. Is it not a self evident truth that every change in a State’s constitution comes from those who govern it, when the division

⁶ See my previous report: [RAPHAEL'S CONSTRUCTION OF THE COINCIDENCE OF OPPOSITES IN 'THE SCHOOL OF ATHENS'](#).

⁷ Timocracy is an ancient Greek form of government in which rulers were property owners who were motivated by ambition and love of honor. This form of *land aristocracy* was introduced by Solon in his Constitution for Athens as a form of graded oligarchism giving rights and privileges to property owners in accordance with the number of bushels a man could produce in a year. Aristotle, in his *Nicomachean Ethics*, Book 8, Chapter 10, showed that Athens had a corrupt form of Timocracy, which was dubbed a Democracy that ended up destroying itself. The same idea of self-destruction appears in *The Laws*, 683e which states: “When a monarchy or any other form of government gets destroyed, is it not itself the cause of its own destruction?”

seizes upon its leading members? However, as long as the State is in harmony with itself, as weak as this harmony may be, it is impossible to undermine its foundation.

I agree with you, he said.

Therefore, Glaucon, I continued, how can our State be destroyed and how can discord insinuate itself among the guardians and the magistrates and arm these bodies against each other, and against itself? Shall we, like Homer, invoke the Muses to tell us how factions fell upon them in ancient times, and that by making them play with us, as with children, we give them the power of speaking spuriously the language of tragedy?

How so?

Somewhat like this: It is difficult to change a State's constitution like yours; however, since everything that is generated is subject to corruption, your constitution cannot also last forever; so, let me show you how it can be undermined. There are, not only for plants rooted in the Earth, but also for the souls and the bodies of animals, who live on its surface, alternate periods of fecundity and of sterility. These alternating periods occur when the periodical revolution closes the cycle in which each species evolves, short cycle for species with short life-span, and long ones for those that live longer.

So, as for the human species, those individuals you have elevated for the purpose of guiding the State will not be able, in spite of their abilities and their enhanced reasoning experiences, to tell the difference between the moments of fecundity and those of sterility; these moments will escape them and they will be generating children at a time when they should not.

[Εστί δε θείψ μεν γεννητῶ περίοδος ἣν ἀριθμὸς περιλαμβάνει τέλειος, ἀνθρωπέω δέ [γεννητῶ] ἐν φ πρώτῳ αὐξήσεις δυνάμεναί τε καὶ δυναστευόμεναί τρεις ἀποστάσεις, τέτταρας δε ὄρους λαβουσαι ὁμοιούντων τε καὶ ἀνομοιούντων καὶ αὐζόντων καὶ φθινόντων, πάντα προσήγορα καὶ ῥι,τα πρὸς ἀλλήλα ἀπέψηναν | ὧν ἐπίτριτος πυθμὴν πεμπάδι συζυγεῖς δύο ἀρμο νίας

παρέχεται τρις αυξηθείς, | την μεν ἴσην ἰσάκις, εκατόν τοσαυτάκις, | την δέ ἰσομήκη μεν ἡί, προμήκη δέ, εκατόν μεν αριθμῶν ἀπο διαμέτρων ρητῶν πεμπάδος, δεομένων ἑνος ἐκάστων, ἀρρήτων δε δυοῖν > εκατόν δέ κύβων τριάδος. |]

“As for divine generations, the period of gestation required involves a perfect number⁸; however, for generations of human beings, on the contrary, it is the smallest number in which certain multiplications between the dominating and the dominated⁹, progressing according to three intervals and four terms¹⁰, finally reaches the results, in the end by all means of assimilation and dissimilation, by increasing and by decreasing, and by ultimately establishing, among all of the parts of the whole, an expressible reasonable correspondence. The basis of these elements, the four-three joined with five, when multiplied three times gives two harmonies: one expressed by squaring a squared number multiplied by one hundred, the other by a rectangle built on the one hand on one hundred squares of rational diagonals of squares of side five, each reduced by one unit, or of irrational diagonals, reduced by two units; and, on the other hand, on a hundred cubes of three.”

It is the dynamic of this geometrical number as a whole which has the virtue of commanding good and bad births; and when, failing to recognize this principle of generation, your guardians bring brides and bridegrooms together unseasonably, the offspring will not be wellborn or fortunate. Among these children, their predecessors will choose the best to lead the State; but since they are not worthy of the task, as soon as they will take up their father's duties, they will begin to neglect the people in spite of their responsibility as guardians, failing to estimate as they should the value of

⁸ According to Plato's *Timaeus*, God reserved for himself the divine order of things and left to the mortals the task of taking care of human affairs. This is the reason why, unless the leaders of human government apply appropriately the “geometrical number” (the principle of change) assigned to them by God, they will cause their constitutional state to fail and humanity will degenerate.

⁹ See the French report by Marc Dekinger, *L'énigme du Nombre de Platon et la Loi des dispositifs de M. Diès*. In: *Revue des Études Grecques*, tome 68, fascicule 319-323, Janvier-décembre 1955. pp. 38-76.

¹⁰ In musical terms, these three intervals and four terms can be expressed by the Lydian divisions of the welltempered octave, such as C, Eb, F#, A.

music and subordinating it to gymnastics. Thus you will get a new generation which will be less educated than the previous one, which will give us magistrates who are incompetent in their role as guardians and who will be incapable of differentiating among you the races of Hesiod, or the differences between golden and silver souls from those of bronze and steel souls. And, since steel will be mixed with silver and bronze with gold, the result will be such that equality, justice, and harmony will be lacking everywhere and everywhere this happens, you will always get hatred and war.” (*Republic*, VIII, 545c9-547a6)¹¹

Plato has obviously used the cover of the Muses to elaborate this amazing geometrical puzzle with the aim of provoking the reader into a profound reflection. You have every reason to find this puzzle difficult, because it is meant to be a real epistemological challenge. In essence, Plato initiated, here, an investigation into an elementary form of transfinite geometry in which he is demonstrating that, in order to be a true guardian of the City State, the political leader must know how the mind needs to investigate the axiomatic transformation of people’s minds, using the change between plane geometry and solid geometry as a means of attaining their goal. This is why Plato’s “*geometrical number*” is such a paradoxical task and such an epistemological test of endurance for the reader. So, bear with me and let’s examine the underlying geometry behind it.

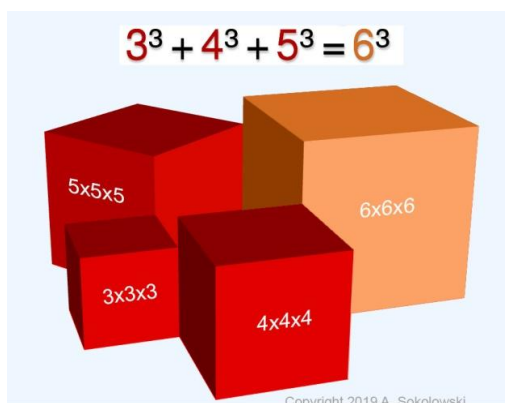
The value of this “*geometrical number*” is not given by Plato, nor does he provide you with any geometrical illustration for constructing it. He leaves you to your own device, and lets you figure out what needs to be constructed by yourself and for yourself, in order to let you discover the nature of the epistemological effect of change its construction has on you, personally. In other words, it is not the number in itself, or its geometrical form, that matters; it is rather the mental pathway of how to discover its construction and its purpose that counts.

¹¹ For this difficult geometrical section, I have used the translation by Auguste Dies in [*LE NOMBRE DE PLATON*](#), Essai d’exégèse et d’histoire. In: Mémoires présentés par divers savants à l’Académie des inscriptions et belles-lettres de l’Institut de France, Première série, Sujets divers d’érudition. Tome 14, 1e partie, 1940, pp. 1-141. The rest of the text is my own translation and adaptation from Emile Chambry’s translation of *The Republic*. All of the American and British translations I have consulted failed to understand the full epistemological value of this puzzle.

The crucial clue to start from is the following: The hypotenuse of the right triangle is the one that “dominates” the two other two opposite sides, which are “dominated”; and the one that is “dominating” is equal to the sum of the squares of the other two. That is the *coincidence of opposites*. Here, there is an irrational transfinite jump to be noted between the two sides of a right triangle, and the third side, which is “*dominating*” the other two, is the hypotenuse. The epistemological significance of this clue is that the Pythagorean triplet is the most elementary geometrical form bringing a unity of closure between the two opposite sides, or the *coincidence between two opposites*.

The model for this sort of right angle triangle is the 3, 4, 5 triangle and its multiples, which are (3 x 4 x 5) (3 x 4 x 5) (3 x 4 x 5) (3 x 4 x 5) representing the “*three intervals and four terms*,” as Plato wrote. The physical result of this process, as illustrated below, is the production of a series of four cubes, the last of which holds the key to the minimum number that Plato wanted us to find. In other words, Plato is, here, talking about generating three dimensional solids from the two dimensional plane!

The minimum that Plato uses to express his “*geometrical number*” is the well known Pythagorean triplet (3, 4, 5) which is also known as the cosmic triangle (*κοσμικὸν τρίγωνον*), because it gives closure to the perfect growth principle of doubling a surface area by squaring, as he explained in the Meno dialogue, and as can be demonstrated by the *Pythagorean Theorem* where $3^2 + 4^2 = 5^2$. However, Plato chose to transform this Pythagorean triplet for a higher purpose; that is, for the purpose of generating four three dimensional solids, notably, four cubes as shown below: $3^3 + 4^3 + 5^3 = 6^3$. But, he made no mention of that. Why not?



<https://blog.world-mysteries.com/ancient-writings/philosophy-ancient-writings/plato-ancient-wisdom-philosophy-sacred-numbers-5040-216/>

There are no mysteries to these numbers. They simply reflect the remarkable geometrical characteristic of a process of composition that Pythagoras used in order to represent

metaphorically the original growth principle formation of the universe and which Plato developed in order to demonstrate how to go beyond the doubling of the square to a higher transfinite domain of increasing the size of a series of elementary three dimensional cubes. This may be considered as a predecessor to the transfinite idea as LaRouche understood and applied it.

However, the most fascinating thing about this geometrical composition is that the limit to the process of growth relates to a hexagonal number: $6^3 = 216$. Many scholars have discovered this number in Plato, but have failed to go any further and discover the purpose of the exercise. In other words, Plato was projecting the geometry of an *axiomatic change* between the second and the third dimensions of geometrical space, in order to discover those among the youth who would have a disposition into becoming golden souls.

Such an examination into hexagonal-cubical geometry is the same that Raphael used with the Star of David in *The School of Athens*; and that is, in the same spirit as the Delian problem of doubling the cube that the ancient Oracle of Delphi had issued as a challenge to put an end to the plague that was decimating the people of Delos.¹²

RECONSTRUCTING PLATO'S 'GEOMETRICAL NUMBER'

Since our reach must always exceed our grasp, we should not be surprised, therefore, if the progress of knowledge beyond these first steps were to escape us, at least for the time being. First of all, let's reconstruct, geometrically, Plato's phrase which says: "*...it is the smallest number in which certain multiplications between the dominating and the dominated, progressing according to three intervals and four terms, finally reaches the results, in the end by all means of assimilation and dissimilation, by increasing and by decreasing, and by ultimately establishing, among all of the parts of the whole, an expressive reasonable correspondence.*"

This will make you discover how Plato has constructed his "geometrical number." First, he simply used the 3, 4, 5 Pythagorean "growth principle" to

¹² See my report: [THE GALACTIC TIME-REVERSAL SOLUTION TO AN AXIOMATIC CHANGE](#).

represent a general process of generation; this can be found by using this playful combination: $3^3 + 4^3 + 5^3 = 6^3 = 216$, a minimum, or $(3 \times 4 \times 5)^4 = 12,960,000$, a maximum. Those are the two limits of the minimum-maximum geometrical boundary conditions that Plato established for his axiomatic experiment.

Secondly let's reconstruct the second part: *“The basis of these elements, the four-three joined with five, when multiplied three times, gives two harmonies: one is expressed by squaring a squared number multiplied by one hundred, while the other is constructed as a rectangle built, on the one hand, with one hundred squares of rational diagonals of side five squares, each reduced by one unit, or built, on the other hand, with irrational diagonals, each reduced by two units; and with a hundred cubes of three.”*

This is a little more difficult to figure out; because Plato implies a series of variations of the same original 3, 4, 5 numbers, including their different combinations and multiplications. For example, the hexagonal cube $6^3 = 3^3 + 4^3 + 5^3 = 216$, which is the minimum, and $(3 \times 4 \times 5) (3 \times 4 \times 5) (3 \times 4 \times 5) (3 \times 4 \times 5) = (3 \times 4 \times 5)^4 = 12,960,000$, which is the maximum representing, in fact the three intervals and the four terms.

The first harmony: *“expressed by squaring a squared number which is multiplied by one hundred”*? That is: $(36 \times 100)^2 = 12,960,000$. This result can also be gotten by $(3 \times 4 \times 3) (3 \times 4 \times 3) (5 \times 4 \times 5) (5 \times 4 \times 5) = (36 \times 36) (100 \times 100) = 12,960,000$ or by $60 \times 60 \times 60 \times 60 = 12,960,000$, that is, 60 to the fourth power. The form can also be rectangular, such as $1,296 \times 10,000$, which is also the rectangular equivalent of the square of $3,600^2 = 12,960,000$.

The second harmony: *“a rectangle built on one hundred squares of rational diagonals of squares with side five, each reduced by one unit, or of irrational diagonals, reduced by two units, and, on the other hand, on a hundred cubes of three.”* That is rectangle: $(3 \times 3 \times 3) (5 \times 4 \times 5) (4 \times 3 \times 4) (5 \times 4 \times 5) = (27 \times 100) (48 \times 100) = (2,700 \times 4,800) = 12,960,000$. Plato could have gotten the same result with $(4 \times 4 \times 4) (5 \times 3 \times 5) (3 \times 3 \times 3) (5 \times 4 \times 5) = (4 \times 75) (27 \times 100) = 4,800 \times 2,700 = 12,960,000$.

This second harmony is a little more difficult to establish, because it involves the square root of fifty ($\sqrt{50}$), which is subjected to a revolutionary inversion. The process of construction is as follows: If the length of each side of a hundred squares is equal to the diagonal of a square whose side is five, then the length of that diagonal is an irrational number which is $\sqrt{50}$, therefore: $100[(\sqrt{50}^2) - 2] = 100 \times 48 = 4,800$. Now, let's see where this comes from.

First, each of those squares must be reduced by one rational unit, which gives us 49, whose root is 7. Thus, 7 is the rational root of 50. Why 50? Because $50 = (3^2 + 4^2 + 5^2)$. The sum of the three sides of the triangle 3, 4, 5 is (in length) corresponds to 12, which is the paradigm for the daily cycle of time, for the musical system of twelve notes, and for the partitioning of the six circles which generate the paradigmatic sphere of the five Platonic solids. This square root of fifty is, therefore, the locus of a most significant paradigm shift, like no other number we have seen. As a power, this transfinite mixture of five and six (or ten and twelve), which creates number 50, shows that the surface is a transfinite power higher than the power of a simple length, just as the volume of the solid is a transfinite power higher than the surface. That is the core of the issue.

Each of the hundred squares with side 7 will be $100(7 \times 7 - 1) = 100(49 - 1)$ or $100 \times 48 = 4,800$ which is the value of the long side of the rectangle you are looking for. Secondly, each of those squares, to be reduced by two rational units, will give $100(50 - 2) = 100 \times 48 = 4,800$, also the long side of the rectangle as above. *Naturally, the area of squares, whose sides are all $\sqrt{50}$, will become $\sqrt{50} \times \sqrt{50} = 50$, where the root of the square is also the square of the root, and vice versa. This is the space-time idea of inversion which is at the core of Plato's revolutionary conception and at the very heart of every axiomatic change that the human mind is capable of achieving to alleviate the degenerative tendency of the human species.*

As for the shorter side of the rectangle, we should calculate that the "hundred cubes of three" is: $100 \times 3^3 = 100 \times 27 = 2,700$, which is the value of the small side of the same rectangle whose total area will again be 12,960,000, which obviously must be Plato's maximum "geometrical number." Is there any reason to

doubt, now, that 216 is the minimum and 12,960,000 is the maximum with respect to the same geometrical process of transformation of all of the numbers from one to ten?

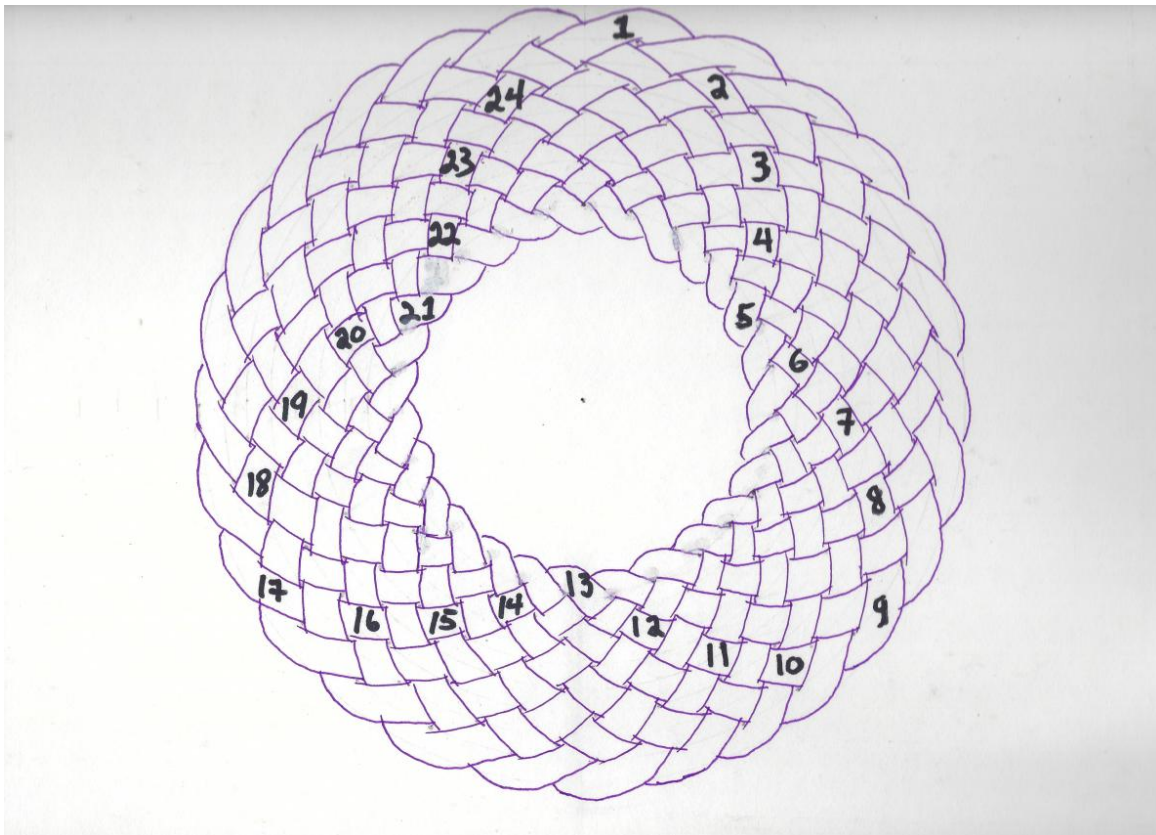
Finally, according to Plato, those two different harmonies of the same product, 12,960,000, that is, the product of a square and the product of a rectangle, reflect the age of man and the age of the universe which, when divided by 360 days in the perfect year, comes to 36,000 years. Here, Plato adopts an inspiring vision of the microcosm and the macrocosm whereby, if the ideal lifespan of a human life is to be a 100 years, as he claims in *Republic X*, (615b1), then, $360 \times 36,000 = 12,960,000$ days which represent 36,000 ideal years. This means that to the day of the human and the year of the universe are connected with each other; thus, a proportionality between the cosmos and the human mind is established according to which the macrocosm and microcosm are related to such a mixed degree that the universe may be considered to be a large human mind within which the individual human mind is actually a small universe.

It should become clear, after all of this, that Plato was searching for the originating principle of the five regular solids as well as a method for doubling the cube, but what he discovered above all is that if the human mind obeys the laws of change of the universe, it can also rule the universe and command the universe to such a degree that the universe will have to obey. On the other hand, if the human mind does not obey the laws of growth of the universe, the human species will degenerate and self-destruct. Thus, the irony whereby the galactic species and the human species are the only two species in the universe which can grow indefinitely, based on the same universal principle of mutual inclusion. Such is the all-inclusive principle that all human beings need to discover today in order to survive as a species. As Lyn wrote:

“Well, typical of those kinds of acts that we make--which we can prove, the universe will *obey*, otherwise the universe won't obey them--are actions which conform to the discovery of a universal physical principle. If you can discover a validated, universal physical principle, and you can give that, as an order to the universe, the universe will obey. Man is the only

creature that can do that! That can formulate an order, called a universal physical principle, validate that discovery, and issue that discovery as *an order, a command*, to the universe, and the universe is compelled to obey.”¹³

One may be tempted to conclude that since Plato's numbers 216 and 12,960,000 can both be divided hexagonally like in the geometry of Raphael's *The School of Athens*, and that Raphael may have assimilated Plato's method of investigating this geometrical number. I, therefore, venture the hypothesis that the cube against which Heraclites/Michelangelo is pensively leaning against, in the forefront of the fresco, may be Plato's 6^3 cube. Nevertheless, there is a new and more exciting surprise to come if one generates Plato's "geometrical number" within the geometry of a three dimensional torus.



The nine-day cycle for Plato's "geometrical number" where $9 \times 24 = 216$ hour-intervals of action and where $20,000 \times 216 = 12,960,000$, a calendar cycle of 1,500 ideal years.

¹³ Lyndon LaRouche, [*STORM OVER ASIA, TAKE TWO: I TOLD YOU SO, AND NOW IT IS HAPPENING*](#), EIR, Vol. 27. No. 36, September 15, 2000, p. 35-36.

An amazing cyclical torus geometry appears to correspond to Plato's "geometrical number" when the toroidal value of the torus is 27 and the poloidal value is 9. As a result of such a P/T ratio of 9/27, one discovers that nine times the total number of hours in a day generates 216 hours, and sixty thousand times that total will be 12,960,000 hours, or a span of 1,500 ideal years. From that vantage point, if you multiply the following torus cycle of one day by 60,000, you will generate both Plato's minimum number where $9 \times 24 = 216$ and his maximum number where $216 \times 60,000 = 12,960,000$ hours. Thus, this is what such a Platonic nine day calendar cycle would look like:

In conclusion, what is happening to your mind, here, is that it is increasing its energy flux-density through a process which is continuously growing by means of two numbers at a time, which are similar (square) and different (rectangles), as in Plato's two harmonies for discovering his "geometrical number", because they are both themselves and different from themselves, as they increase their relative powers in the same way, and at the same time, by themselves as well as for other.

PLATO'S PARMENIDES: THE ONE AND THE MANY

The previous epistemological-geometrical section was only an exercise for the purpose of wetting your appetite. In the *Parmenides* dialogue, Plato presents an even higher difficulty by showing the limitations of the logical investigative method of dialectics and by reaching to a higher transfinite level of the mind by having it go through an axiomatic change beyond the limit of the *coincidence of opposites* of logical deduction.

Plato uses the One as the universal principle of the Good to generate everything; however, if the oppositions derived from the contradictions of the One and the Many are to be resolved, it will not be with regards to some transcendental mystery, but by the hard work of a transfinite ordering process of higher hypotheses that Plato was the first in history to examine rigorously with a dialectical method of political epistemology.

The most difficult part of the *Parmenides* dialogue is the second and last part, which begins at 137a and ends at 166c, and where the old Parmenides chooses to have the youngest among a group of four, Aristotle, to respond to him and to give him short pauses giving him just enough time to reflect. This part is the most difficult because it calls upon the reader to make a transfinite leap and to discover the existence of the higher mental domain of investigation that Plato is looking for.

Plato has taken out the entire psychological dramatization that is usually found in his other dialogues and chose to develop a rigorous geometrical and epistemological drama reflecting his own mental transformation throughout the following nine hypotheses:

HYPOTHESIS I: If the One is one, what are the consequences? (137a-142a)

HYPOTHESIS II: If the One is, what are the consequences? (142b-155e)

HYPOTHESIS III: If the One is and is not, what are the consequences? (156a-157b)

HYPOTHESIS IV: If the One is, what are the results for others? (157b-159b)

HYPOTHESIS V: If the One is, what will others not be (159b-160b)

HYPOTHESIS VI: If the One is not, what are the consequences? (160b-163b)

HYPOTHESIS VII: If the One is not, it has no determination (163b-164b)

HYPOTHESIS VIII: If the One is not, what will others be (164b-165e)

HYPOTHESIS IX: If the One is not, what are the negations for others (165e-166c)

I have highlighted **HYPOTHESIS III** in bold because this is the crucial one among the series of nine hypothesis; it is the most dramatic, because it hypothesizes the *coincidence of the opposites* at the same time that it causes an axiomatic change to take place in the mind of the reader. The paradoxical nature of the hypothesis is the axiom buster of the entire dialogue, but it is barely noticeable to the young Aristotle. Most translators have stumbled and broken their necks over this third hypothesis, some have even ignored it entirely, and without any proud comment.

The stumbling block is that **HYPOTHESIS III** requires that a transfinite leap be made by the reader over the fact that something cannot “logically” pass over from non-being to being, or from being to non-being, and still remain itself

and something else at the same time; or remain in the same state of shock of a “*sudden instantaneousness*,” as Plato identified it, after the change has been accomplished. And yet, that transfinite leap can be made by any normal individual who accepts to make the change and who accepts in his heart the real purpose for the change (*agape*). Let us examine patiently the entire two pages of this difficult passage:

“Let’s repeat our examination under a third form. As our deductions have proved it, if the One, on the one hand one and many, and on the other hand, neither one nor many, is otherwise partaking of time, is there not for the One, because it is One, a moment in which it does not participate at all in being? – Yes, necessarily – Therefore, will it be possible for it not to participate in being at the moment of participating; or to participate at the moment of not participating? – This is not possible – Because the time when it participates is different from the time when he does not participate; that is the only way for it to be able to have or not to have any participation with any given reality – You are right – Therefore, there must be a time when it possesses being and another time when it leaves it, because how could there be, in fact, a moment when it possesses being and a moment when he does not, if there isn’t a moment when it assumes or it quits? – That would never be possible – Partaking of being, is that not what you call being born? – Exactly – And to quit being, isn’t that dying? – Yeah – It appears, therefore, that when the One assumes a state of being and leaves that state, it is born and it dies. – Necessarily – Isn’t it the case, therefore, that being One and Many, being born and dying, its birth as a One is its death as Many, and its birth as Many is its death as One? – Absolutely – But becoming One and Many, isn’t that for it to be separated and to be unified? – Yes in all rigor – And becoming similar and dissimilar, is that not assimilating and dissimilating – Yes – Becoming greater, smaller, or equal, is that not increasing, decreasing, or equalizing itself? – Obviously – But, being moved, becoming immobilized; being stable, being in motion; all of this can only be done in an instant when it is not in any time – What do you mean? – To be unmoving in a first moment and, a moment later, to be moving; first to

be in motion, and the next moment, to be at rest; it is not without changing that the One can acquire these different states. – That is obvious. – *But there doesn't exist a time when a same being could, simultaneously, be neither moved nor unmoved. – Certainly not. – Nevertheless, even changing cannot be done without changing. – Probably not – Then, when does it change? It is certainly not when it is unmoving or when it is moved; and it is not either when it is in time – Indeed not – Will it not be in some strange state, that it will be in, at the moment it changes? – Which strange state is that? – A sudden instantaneousness (exaiphnes) (ἐξάιφνης). That is, in fact, what seems to be the meaning of instantaneousness; the sudden starting point between two inversed states of changing directionality. Because it is not from the non-moving immobility that change is able to surge; nor is it from the motion moved by the transition of the change. It is rather in the strange nature of the sudden instantaneousness (exaiphnes) (ἐξάιφνης) an inbetweenness which, located out of time in the interval between mobility and immobility, is precisely and simultaneously the point of departure and the point or arrival for the change which passes from mobility to rest and from rest to mobility.– That has every chance to be true – Thus, since the One is both in an immobile state and in motion, it will have to change in order to go from one state to the other: it is only under this condition, in fact, that it can compose with both states. That is, this operation of change can only take place in a sudden instantaneousness (exaiphnes) (ἐξάιφνης); and while it changes, it cannot partake of any moment of chronological time, no more than it could be moved or be unmoving. – Undoubtedly – [Emphasis added]. But, is it the same thing with other kinds of changes? When the One operates a change from being born to dying, or from non-being to being born, does it not find itself in an interval of inbetweenness different from other sorts of motions and rest, and is it not either in the state of being or of none-being, or in the one of being born or of dying? – This, at least, seems probable – Therefore, by the same token, when the One is in the process of going from the One to the Many, and from the Many to the One, it is neither a One nor a Many, it is neither divided nor united. Similarly, for his passing from similar to dissimilar and from dissimilar to similar, it is neither similar*

nor dissimilar, neither in assimilation nor in dissimilation. Whether it goes from the small to the large and to the equal, or conversely, during that time, the One will neither be small, nor large, nor equal, neither increasing, decreasing, nor becoming equal. – This is probable, at the very least – There you have the results to which the One will be subjected to, if it exists. – Without a doubt.” (*Parmenides*, 155e4-157b3)¹⁴

Here, Plato has achieved a transfinite level of thinking which Cusa identified as realizing an *intellectualiter coincidence of opposites*, and that LaRouche might have identified as the transfinite process of higher hypothesizing of an axiomatic change. Plato is pushing the mind of the reader to the limit by describing a state of exalted in-betweenness (*exaiphnes*), the interval of time reversal moment where an axiomatic change takes place inside of the human mind; that is, a non-linear moment of transition specific to an axiomatic expulsion of past disfunctioning postulates and axioms, and which results in the mind freeing itself from its underlying assumptions about itself, nature, and God; that is, where everything has changed freely while the mind has remained unchanged.

Plato is exceeding here, the logical capability of reasoning and is asking of the reader to abandon his deductive-linear thinking; that is, the point at which reason itself must abandon its deductive proclivity and let the intellect lead the mind to a higher transfinite level; a level such that the locus of inbetweenness leads to the *coincidence of opposites* between past and future by being neither in the presence of the coming future and neither in the moment of losing the present to the past, but in some sort of non-time and unchanging moment of eternity. LaRouche might have called this a moment akin to the experiment of *physical simultaneity of eternity* in which the human mind is able to experience a form of time which is not logical or chronological, but which reflects universal connotations of supra-temporal change and of no-change at the same time; a *simultaneity of eternity* a moment of universal truth such as was captured by Raphael in *The School of Athens*, *The Dispute of the Holy Sacrament*, and *The Transfiguration*.

¹⁴ Platon, *PARMENIDE*, Texte établi et traduit par Auguste Dies, Paris, Société d’Edition “Les Belles Lettres”, 1974, Parménide, 156a-157b. English translation by P. B.

CONCLUSION

The only reason why such an axiomatic change might not reach a state of completion would be if the mind refused to accept the challenge to make the required lawful change. The difficulty, of course, is that no logical mind can accept that state for itself without abandoning the deductive-logical prerogative that it claims to be its mantra; that is, without leaving behind all forms of sense perception and of deductive logic in order to take the risk of becoming creative in the way that Cusa identified at the level of *intellectualiter* as opposed to *rationaliter*. And, that is the whole point that Plato is getting at with the *Parmenides* as with *The Republic*. We have, here, the crucial turning point in which, if you wish to secure the future of mankind as a whole, you must eliminate all of your wrong deductive underlying assumptions. Such a moment is easy to grasp but difficult to decide, because nothing in your mind will be the same after it has been transformed by time reversal, that is, after the decision to change has been taken; yet, the identity of the mind will have remained unchanged and free.

This change/no-change state of transformation that Plato called “*sudden instantaneousness*” (*exaiphnes*) comes with the flash of a new discovery of principle, which is only the beginning of a series of transfinite leaps through which the human mind is capable of accomplishing the impossible. That is the road that Aristotle refused to take, because he refused to abandon logical deductive reasoning that he had mastered so well. Ultimately, what Plato demonstrates with the One and the Many and with his “*geometrical number*” is that no matter how difficult, no matter how long the road may be, or how many roads blocks you may have to avoid in order to get where you are going, if you follow the lawful transfinite ordering of the composition of the universe, you cannot get lost and the Universe will obey. You will always ultimately be able to make things change and grow, you will always be able to attain your objective, and you will always be able to get back to the One you started from. That is the Platonic epistemological road. Take it or leave it, the result will always be the same: if the leaders of our nation take it, our population will grow; if our leaders don't take it, our population will self-destruct.

FIN

APPENDIX

STORM OVER ASIA, TAKE TWO: I TOLD YOU SO, AND NOW IT IS HAPPENING¹⁵

by Lyndon H. LaRouche, Jr.

Well, typical of those kinds of acts that we make--which we can prove, the universe will *obey*, otherwise the universe won't obey them--are actions which conform to the discovery of a universal physical principle. If you can discover a validated, universal physical principle, and you can give that, as an order to the universe, the universe will obey. Man is the only creature that can do that! That can formulate an order, called a universal physical principle, validate that discovery, and issue that discovery as *an order, a command*, to the universe, and the universe is compelled to obey.

That is the means, the accumulation of these principles, which are part of our technological culture, is the means by which mankind has been able to increase the life-expectancy, to improve the demographic characteristics of populations, and, in general, to increase man's power, *measurable power, in and over the universe, per capita and per square kilometer*. That's the great, scientific experiment.

We are able to *do* this, not only through physical experiments, through physical discovery: We're able to do this, by discovering higher levels of methods of social cooperation, through which, we're able to cooperate in fostering these kinds of discoveries, and applying them.

¹⁵ Lyndon LaRouche, [*STORM OVER ASIA, TAKE TWO: I TOLD YOU SO, AND NOW IT IS HAPPENING*](#), EIR, Vol. 27. No. 36, September 15, 2000, p. 35-36.

So, those things. Those are the kinds of actions, which the universe acknowledges to be *man's willful actions of significance*. Everything else that man does, is on the level that any lower form of animal life can accomplish.

So, therefore, the kinds of action which distinguish a human being from lower forms of animal life, is that, and only that.

Now, look at this question of strategy, which I've introduced here, from that standpoint: Strategy should mean, once we've understood these lessons--which, presumably, we had learned from study of European history, since the time of Solon and Plato. Say, what's important? What is strategy?

The purpose of strategy is to defend the human species, to improve its condition, to improve its well-being, to improve its power in and over the universe at large. That's the purpose of strategy.

In order to do that, we must promote scientific discovery, and utilize it. We must promote those discoveries of principle, such as artistic principles, which enable us to cooperate, in more advanced ways, to utilize these physical discoveries, for man's benefit. What we, therefore, require, is forms of society, in which we perpetuate the rearing of our children, and our institutions, in such a way, that this mission of mankind, implicit in our nature, is fulfilled.

Thus, we fight to defend this idea of progress. We fight to defend and improve forms of society, which promote progress. We fight to undermine, and nullify, those forms of culture, and political and social systems, which are the enemies of progress. The significance of the United States is that it was produced as a product of a certain phase in European civilization, coinciding with the 15th-Century Renaissance, centered in Italy. It struggled to create a form of society, in which the only legitimate authority awarded to government, was the responsibility and power, to promote the general welfare *of each and all persons*. That is, to promote progress, in that sense.

In this process, during that century, the policy was adopted, of having self-governing, modern, sovereign nation-states, whose authority to rule, was located in the commitment to progress so defined. *Against that*, we had an opponent. The

opponent was forces of bestiality: Those, who see a few people, as the power to *use as human cattle, the majority of other people, other nations, and subject populations, generally*. This is called, oligarchy.

So, the forces of progress, and the nation-state, are pitted against the forces of oligarchy. In the same way that the idea of free trade, of globalization, today: *These are the enemy*.

Because, without the nation-state, without protection of the form which only the nation-state can provide for an economy, to *ensure* progress, can we have progress. Those who propose to *liquidate* the nation-state, that is, to globalize it (or globularize it); those who propose free trade, rather than fair prices to protect the process of production of food, and other things upon which life depends: *These are the enemies* of civilization.

Since its establishment in 1714, the British Empire has emerged as the chief proponent of a system of oligarchism on this planet. The United States was created, in order to provide a fulcrum of opposition to those forces of globalization--that is, Roman Empire-style--represented by the British monarchy.

And, it is that fight, which defines it.
