
HOW TO MAKE A DISCOVERY OF PRINCIPLE (2)

Addendum to

[THE GEOMETRY OF LYNDON LAROUCHE'S DOMAIN OF DISCOVERY OF PRINCIPLES](#)

By Pierre Beaudry, 2/17/2025

FOREWORD

Further reflections on my last report of February 12, 2025 led me to make some additional remarks on Lyndon LaRouche's investigations for an "adequate projection of the distribution of prime numbers." An additional six pages to my first report have been included here for that purpose.

There is an innate ordering principle to numbers which Gottfried Leibniz called "preestablished harmony." Leibniz wrote that such harmony was created by God for a purpose that has not yet been made clear to mankind and which remains to be investigated. Here is what Leibniz wrote about his principle of preestablished harmony:

"It is good to give an example. Let us take in order the numbers: 0 1 2 3 4 5 6 7 8 9 10 etc. and then their squares: 0 1 4 9 16 25 36 49 64 81 100 etc., and the differences between these squares: 1 3 5 7 9 11 13 15 17 19 etc. We find that the differences between the squares of the numbers taken in order are the odd numbers, again in order; and after having tested a long sequence of numbers, and found that this holds good, we justifiably presume that it will always continue to hold good to infinity; but we do not thereby see either the necessity or the cause of it, which depends on certain demonstrative reasons taken from the source, or a priori. Souls capable of these reasonings are called 'minds,' and it can be rightly said of them that they are made in the image of God, and that there is a society between God

and them, so that with regard to them, God is not only what an architect is to his building, but also what a Prince is to his subjects.”¹

Why would such preestablished harmony exist among numbers and not among human beings? And what makes it necessary to have such a divine a priori ordering? Why were numbers the chosen ones to represent such a preestablished harmony? What is its purpose and what does it tell us about the lawfulness of the universe? What was God's intention? You may want to try to understand the following biquadratic geometrical construction and see if my hypothesis for the coincidence of opposites of Nicholas of Cusa and of the *I Ching (Book of Changes)* is on the right track.

THE BIQUADRATIC GEOMETRICAL CONSTRUCTION OF TIME-REVERSAL IN TEMPORAL ETERNITY

My hypothesis is that the preestablished harmony of numbers was created by God for humans to understand *creative time; that is, time-reversal in temporal eternity*. My first question is: how can one discover the transfinite principle of time, the time above and beyond the moment to moment cyclical daily time? I can conceive of time in two different ways, which requires two completely different axiomatic processes. The first is a simple sense perception cyclical time (Figure 1. Left), which is the equivalent of counting moments like numbers, such as **1, 2, 3, 4, 5**, etc., clockwise, where the succession goes from the past to the future. The second is a more complex three dimensional torus Galactic process of doubly-connected cyclical time which can be represented as follows: **1, (1) 2, (1, 2) 3, (1, 2, 3), 4, (1, 2, 3, 4), 5**, etc., clockwise, which goes from the future to the past, then back to the future again. (Figure 1, Right).

¹ In [*Leibniz and the Two Sophies: The Philosophical Correspondence*](#), Edited and translated by LLOYD STRICKLAND, Iter Inc. Centre for Reformation and Renaissance Studies, Toronto 2011, p. 198-99. See my report: [*WHAT GOES INTO A DISCOVERY OF PRINCIPLE.pdf*](#)

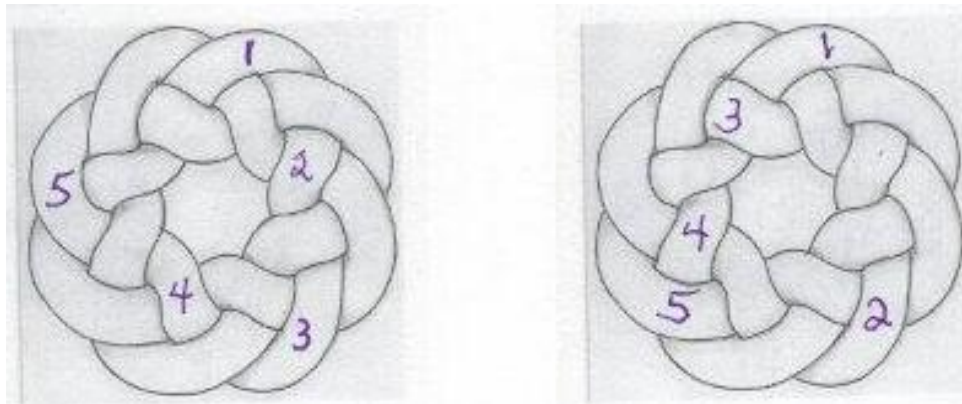
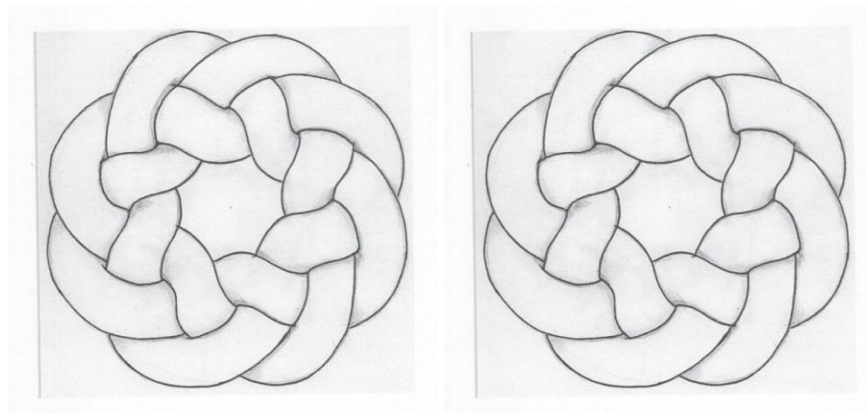


Figure 1. The three-dimensional biquadratic time modular cycle (Left) and the time-reversal modular cycle (right)

Why is there a difference between the ordering of numbers in the two images of Figure 1? The construction on the left demonstrates simple sense perception ordering whereby you go from one number to the next successive one, one step at a time, as **1** to **2**, to **3**, and so on. The second construction on the right, demonstrates an infinite succession of units of action whereby *each past number is added to the next number in such a way that you leave an additional empty space between each new step for the inclusion of future numbers to come, as if you were moving in a constantly rotating present of temporal eternity.*



(Use the above two empty torus models for your own exercise.)

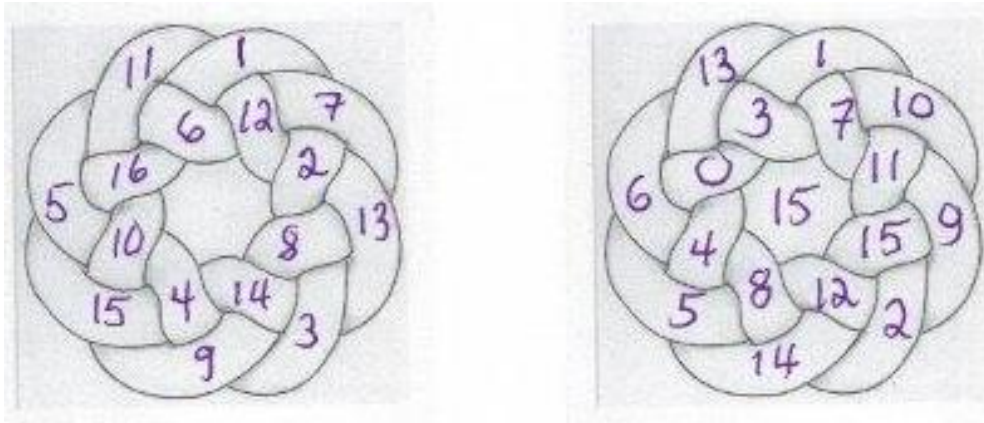


Figure 2. Sense perception modular cycle (left) and time-reversal temporal eternity modular cycle (right)

First, note that number **1** is at twelve o'clock on both the right and left cycles of Figure 2. (Take the time to find where number **2** is located in both cycles.) In the left cycle, I inserted after number **2** as many numbers as I could until there were no longer any empty spaces left. All numbers represent simple units of action of time moving forward without axiomatic change, continuously, and clockwise, **1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16**. This is an infinite unchanging cycle of 16 units of action. The geometry of that simple sense perception cycle is such that if you keep repeating the series, you will always get the same continuous succession, again and again, without ever changing a single step. The question is: How do you go beyond that limitation of continuous unchanging time into a changing and growing creative time-reversal of temporal eternity?

Secondly, take the right cycle in Figure 2 and break the previous limit by changing the rule of succession of numbers and create a new rule for an infinite succession of units of changing actions from past to future. In other words, each time you take a new step into the future, *you have to leave behind an empty space for a future number to come*. This is long range future thinking and forecasting.

All numbers have a pre-assigned location where they belong and where they are all ordered in correspondence with their future reciprocals. What does such a preestablished harmony mean? *This means you have discovered the geometry of the creative power of change*. The Chinese people have been using Mencius's

principle of the good for thousands of years in order to give the proper direction to their growing society. They called it, *I Ching (Book of Changes)*, which is an ancient Chinese text that originally provided crucial insights into changes of personal growth, inter-personal relationships, and long range political decision-making. This is also in agreement with Helga Zepp-LaRouche's 10th principle of the good and with Zhang Weiwei's principle of China as a "civilizational state."²

There is a hidden singularity when you get to the limit of **15** on the right module of Figure 2. That reciprocal limit **15** united with its opposite **0** becomes the reciprocal for the entire cycle, such that **15+0 = 15**, **12+3 = 15**, **8+7 = 15**, **4+11 = 15**; because Nicholas of Cusa's coincidence of opposites is the same as the one of *I Ching (Book of Changes)*. Furthermore, the next number **16** falls at the same place as **15**. This is strange, because this is the only place in the entire system where the unit of action doubles up with another number in the same location, as the unity of **yin** and **yang**. This is the singularity which calls for a change into time-reversal, from **14** to **17**, from **13** to **18**, and from **12** to **19**, etc. (Figure 3.)

This doubling of opposites is a welcoming signal to get to the next higher modular cycle of reciprocal **47** in reverse. In other words, the last reciprocal of the module is inviting us to continue the same process into a series of new modules, which will also have **16** steps in each and which will be the inverse of each other; that is, reciprocals **15, 47, 79, 111**, etc., with a difference of **32** between each. Once this future series of cycles is discovered, you will realize that the limits of **15** and **0** (Figure 2.) are the two anchors of inversion for the complete infinite system. Note the following interactions between the four sets of reciprocals of Figure 3.

² Zhang Weiwei, *The China Wave, Rise of a Civilizational State*, World Century, Horizon Media, Co. Ltd., 2011. Helga Zepp-LaRouche, [Ten Principles of a New International Security and Development Architecture | The Schiller Institute](#)

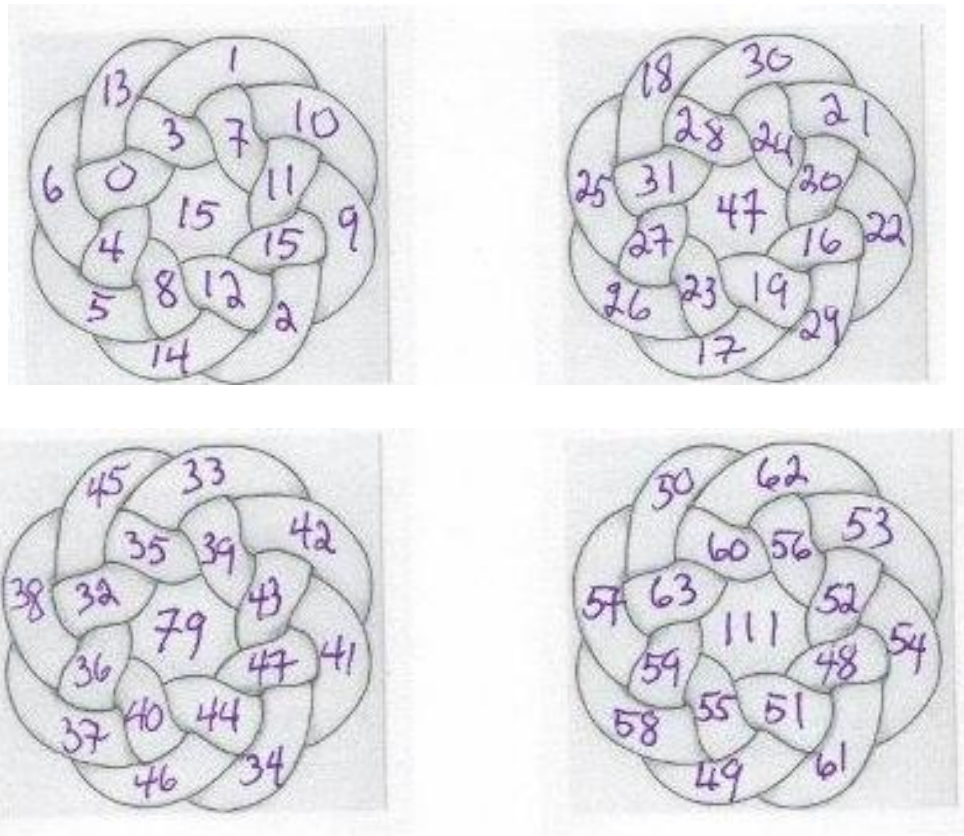


Figure 3. Four sets of reciprocals of temporal eternity within the same module: **15, 47, 79, 111**, etc. Note that all even and odd numbers alternate all of their locations from opposite sides.

Keeping in mind what Leibniz said about the divine cause of “preestablished harmony” in numbers, I suggest paying special attention to the epistemological singularity function of numbers **0** and **63** in all four modules.

When you add crosswise any two numbers of the same unit of action, the total always comes to **63**. Similarly, when you add any similar unit of action from all four modules, the sum total of all numbers of each unit adds up to $126/2$ or **63**, and the total of the four reciprocals $15 + 47 + 79 + 111 = 252/4 = 63$. This unique value of **63** is, therefore, the crucial singularity which makes the entire quadratic modular system work harmonically.

Why? I don't have a complete answer yet. However, if you add up all of the numbers which total **63** by the units which forms each number, the new limit number will be **9**.

For example, add up all of the units of the reciprocals $15 + 47 + 79 + 111 = 252 = 2+5+2 = 9$. Similarly, add up any of the four modular units of action; say $1 + 30 + 33 + 62 = 126 = 1 + 2 + 6 = 9$ or $3 + 28 + 35 + 60 = 126 = 1 + 2 + 6 = 9$.

Thus, the reason all of the unit numbers add up to 9 is because the Galactic rotational domain of doubly-connected cyclical action is dominated by the principle of reciprocity underlying the decimal ordering of numbers.

THE PRINCIPLE OF RECIPROCITY UNDERLYING ALL NUMBERS AND THE TRUTH OF SELF-CONSCIOUSNESS

In honor of the fiftieth anniversary of the EIR magazine (May 2024) and of the republication of Lyndon LaRouche's August 18, 1981 article, [*The Function of Teaching of Grammar as a Crucial Element of Military Policy \(larouchepub.com\)*](#), I am submitting here a hypothesis regarding what LaRouche was investigating with the projection of a geometrical distribution of prime numbers. This hypothesis is also published in honor of Leibniz's original contribution to an appropriate use of numbers expressing his principle of pre-established harmony for human thinking.³

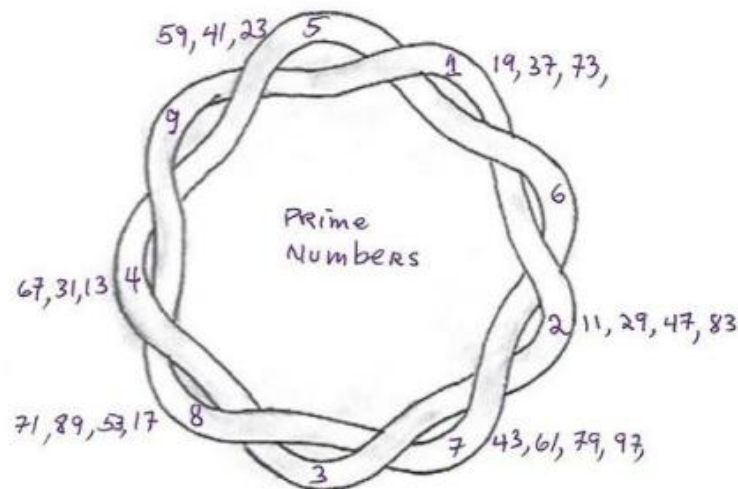


Figure 4. Prime number module.

³ Pierre Beaudry, [14. THE WIN-WIN RECIPROCITY PRINCIPLE OF THE PEACE OF WESTPHALIA.pdf](#)

Following LaRouche's insight formulated at the end of his article regarding the geometrical ordering of prime numbers, Figure 3 shows the existence of a singularity which leads to the discovery of an adequate geometrical ordering of such prime numbers. The singularity shows what is missing; that is, the fact that none of the prime numbers from **1** to **100** are located within the cycles of **3**, **6**, and **9**! Why are prime numbers missing in those three locations? This singularity indicates something that is not at all obvious and which may reveal the reason for such a geometrical distribution of prime numbers. Let us count only the first **25** prime numbers from **1** to **100**, and find out why this is the case. The list is as follows:

**2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41,
43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97**

Note that all of the prime number reciprocals, which are **[5+4]**, **[8+1]**, **[3+6]**, **[7+2]** add up to **9**; but that all of the **[4+2]** add up to **6**, and all of the **[2+1]** add up to **3**. Thus, reciprocity is the higher geometrical ordering principle underlying prime numbers.

$$\begin{aligned} [5+4 = 9] \quad 23+13 &= (3+6) = 9 \\ &41+31 = (7+2) = 9 \\ &67+59 = (1+2+6) = 9 \end{aligned}$$

$$\begin{aligned} [8+1 = 9] \quad 17+19 &= (3+6) = 9 \\ &53+37 = (9+0) = 9 \\ &89+73 = (1+6+2) = 9 \end{aligned}$$

$$[6+3 = 9] \quad \quad \quad = 9$$

$$\begin{aligned} [7+2 = 9] \quad 43+11 &= (5+4) = 9 \\ &61+29 = (9+0) = 9 \\ &79+47 = (1+2+6) = 9 \\ &97+83 = (1+8+0) = 9 \end{aligned}$$

$$\begin{aligned} [4+2 = 6] \quad 13+11 &= (2+4) = 6 \\ &31+29 = (6+0) = 6 \\ &67+47 = (1+1+4) = 6 \end{aligned}$$

$$\begin{aligned} [2+1 = 3] \quad 11+19 &= (3+0) && = 3 \\ 29+37 &= (6+6) = (1+2) && = 3 \\ 47+73 &= (1+2+0) && = 3 \end{aligned}$$

In discovering the principle of pre-established harmony behind even and odd numbers, Leibniz realized that he had found the means of ordering congruence and reciprocity among all counting numbers from the vantage point of a higher unity of principle between power and reason. He had thus acquired one of the most powerful ways of dealing with conflicting oppositions in war as in peace ever devised by mankind; that is, the underlying principle of reciprocity of all human minds behind the principle of the “benefit of the other” of the 1648 Peace of Westphalia.

In a letter dated June 12, 1702, recommending to Sophie, Electress of Hanover, a new method of understanding the principle of proportionality between odd numbers and square numbers, Leibniz emphasized that such truths were valid for all human beings and for all times; that is, for the domain of temporal eternity. He wrote:

“It is in this way that experience convinces us that the odd numbers continually added together in order to produce the square numbers: **1 + 3** make **4**, that is, **2 times 2**. And **1 + 3 + 5** makes **9**, that is, **3 times 3**. And **1 + 3 + 5 + 7** makes **16**, that is, **4 times 4**. And **1 + 3 + 5 + 7 + 9** makes **25**, that is, **5 times 5**. And so on.”⁴

Thus, Leibniz discovered that the harmonic ordering principle behind numbers was the way that God had established “eternal truths” as “fixed and immutable points on which everything turns.”⁵ Perhaps God might have had a purpose to prompt us to look for a pre-established state of affairs in the universe

⁴ In [*Leibniz and the Two Sophies*](#): The Philosophical Correspondence, Edited and translated by LLOYD STRICKLAND, Iter Inc. Centre for Reformation and Renaissance Studies, Toronto 2011, Letter No. 48, March-June 1702, p. 231. Sophie of Hanover was the presumptive heiress to the throne of England and Scotland which was sabotaged by British “Intelligence.”

⁵ Gottfried Leibniz, Op. Cit., p. 123.

for the same reason that we can be assured with the certainty of truth when we think of ourselves as thinkers in opposition to our sensual experience. In letter 49 of June 1702, Leibniz wrote to the Queen of Prussia, Sophie Charlotte:

“Being itself and truth are not grasped entirely through the senses. For it would not be impossible that a creature have long and well-ordered dreams resembling our life, so that everything it thought it perceived through the senses were nothing but sheer appearances. Therefore there has to be something beyond the senses which distinguishes the true from the apparent. But the truth of the demonstrative sciences is exempt from these doubts, and must even serve to judge the truth of sensible things. For as able ancient and modern philosophers have already rightly pointed out, even if everything I think I see were only a dream, it would still be true that I, who thinks while dreaming, would be something, and would indeed think in many ways, for which there will always have to be some reason.

“So what the ancient Platonists have said is very true, and very worthy of consideration, namely, that the existence of intelligible things, and especially of this self which thinks and which is called the mind or soul, is incomparably more certain than the existence of sensible things, and that therefore it would not be impossible, speaking in metaphysical rigor, that there should ultimately be only these intelligible substances, and that sensible things should be nothing but appearances. Whereas our inattention makes us take sensible things for the only real things. It is also right to note that if while dreaming I discovered some demonstrative truth, mathematical or otherwise (as can indeed be done), it would be just as certain as if I were not asleep. This shows the extent to which intelligible truth is independent of the truth or the existence outside of us of sensible and material things.

“This conception of being and truth is therefore found in this ‘self’ and in the understanding rather than in the external senses and in the perception of external objects.”⁶

⁶ 8 Gottfried Leibniz, Op. Cit., p. 241. See my report:

[**12. GOTTFRIED LEIBNIZ AND FRIEDRICH SCHILLER AN INVESTIGATION INTO THE PRINCIPLE OF THE BENEFIT OF THE OTHER-2.pdf**](#)

Leibniz demonstrated that the reason behind the ordering of regular integers reflects, infinitely, the process of reciprocity and of congruence of doubly-connected spiral action that Lyndon LaRouche advocated as a way of going beyond the finite by giving a foundation to simple circular action. Such a demonstrative truth confirms what he said about the reciprocity between truth and self.

Thus, it was as if God had created within both numbers and human minds, some pre-established harmonic order of reciprocity for the purpose of showing how mankind is able to resolve world problems by progressing to a higher manifold from the resolving of singularities in a lower manifold. As LaRouche emphasized with extraordinary foresight in the conclusion of his 1981 paper:

“In any case, all integers count nothing real excepting singularities. Singularities of real processes, and all numbers not integers (or not normalizable as integers) are reflections of geometrically-determined proportions. Although no perfectly adequate projection of the distribution of prime numbers is yet known, the Euler-Riemann attacks on this problem, as well as the implications of the convergence of arithmetic and geometric means in a Fibonacci series, are collateral expressions of the ontologically geometric characteristics of all meaningful arithmetic statements.”⁷

Thus, **3**, **6**, and **9** reveal that the ordering and distribution of prime numbers are based on the principle of reciprocity, because when all prime numbers are taken two by two within a doubly-connected cycle of **2 mod. 9**, they all add up to **9**, **6**, or **3**. In that sense, such a series of geometrically preestablished prime numbers represent the unity of truth between mind and numbers in a manner such that it is the higher domain of the principle of reciprocity of mind which determines the lower domain of numbers, and not the other way around.

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⁷ Lyndon LaRouche, [The Function of Teaching of Grammar as a Crucial Element of Military Policy \(larouchepub.com\)](http://www.larouchepub.com), p. 42.