A PRIME NUMBER MODULE

IN HONOR OF THE 50TH ANNIVERSARY OF EIR PUBLICATION

By Pierre Beaudry, 4/28/2024

In honor of this week's fiftieth anniversary of EIR publication 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 would like to submit a new hypothesis regarding what Lyn was investigating with the projection of a geometrical distribution of prime numbers that he identified in the conclusion of his report. 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.

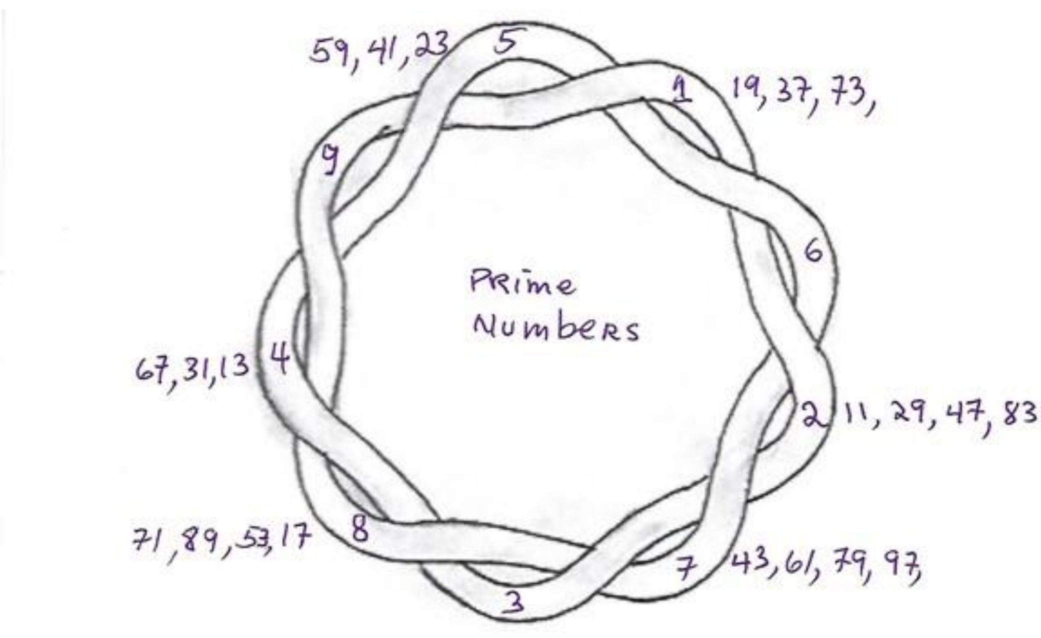

Figure 1. Prime numbers module.[1]

[1] **ADDENDUM: THE ORDERING MODULE FOR PRIME NUMBERS**

Following LaRouche's insight formulated at the end of his article regarding the geometrical ordering of prime numbers, Figure 1 shows the existence of a singularity which is not obvious at first glance. The singularity shows what is missing; that is, the fact that none of the prime numbers from **5** 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 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, 37, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97.

A GEOMETRICAL DETERMINATION OF PRIME NUMBER RECIPROCITY

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

[5+4=9]	**23+13 = (3+6)**	**= 9**
	41+31 = (7+2)	**= 9**
	67+59 = (1+2+6)	**= 9**
[8+1=9]	**17+19 = (3+6)**	**= 9**
	53+37 = (9+0)	**= 9**
	89+73 = (1+6+2)	**= 9**
[6+3=9]		**= 9**
[7+2=9]	**43+11 = (5+4)**	**= 9**
	61+29 = (9+0)	**= 9**
	79+47 = (1+2+6)	**= 9**

97+83 = (1+8+0) = 9

[4+2 = 6] 13+11 = (2+4) = 6
31+29 = (6+0) = 6
67+47 = (1+1+4) = 6

[2+1 = 3] 11+19 = (3+0) = 3
29+37 = (6+6) = (1+2) = 3
47+73 = (1+2+0) = 3

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 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 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, he realized that such truths were valid for all men and for all times. 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."[2]

Thus, Leibniz realized that the harmonic ordering principle behind numbers was the way by means of which God had established "eternal truths" as "fixed and immutable points on which everything turns."[3] Leibniz demonstrated that the reason behind the ordering of regular integers reflects, infinitely, the process of

[2] 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."
[3] Gottfried Leibniz, Op. Cit., p. 123.

reciprocity and congruence of doubly-connected spiral action that LaRouche advocated as a means of going beyond simple circular action.

Thus, it was as if God had created within both, numbers and human minds, some pre-established cyclical harmonic order of reciprocity for the purpose of showing mankind how to resolve world problems by progressing from a lower to a higher 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."[4]

Thus, numbers **3, 6,** and **9** are the higher singularities ordering the distribution of prime numbers, because they are reflections of their geometrically-determined reciprocals.

FIN

[4] Lyndon LaRouche, **The Function of Teaching of Grammar as a Crucial Element of Military Policy (larouchepub.com),** p. 42.