
AGAPĒ: THE GEOMETRICAL PRE-ESTABLISHED PRINCIPLE UNDERLYING CREATIVITY

Did you know that numbers come alive when they take different forms of knotty wave motions of measuring God's steps? Who do you think such numbers are waving at?

by Pierre Beaudry, 12/2/2022

ATTENTION:

Calling on mathematicians, young and old, who are interested in the geometry of numbers, and, more specifically, in the geometry of modular arithmetic: this is not a mathematical project, but an epistemological puzzle.

The purpose of the project is to discover the underlying principle of fundamental emotions such as agapē, which are the true essence behind everything that is created. Such a principle is capable of putting an end to the Schwärmerei of rage which underlies deductive reasoning and formal thinking, when rage prevents the mind from having access to its own mental powers.

Epistemology is the domain from which one can unlock the knotty geometry of Poloidal and Toroidal wave motion, which is only a small part of a larger domain that Leibniz called pre-established harmony.

If you are interested in learning more about this epistemological investigation, send a message to pierrebeaudry@larouchepub.com

INTRODUCTION

When I first attempted to study modular arithmetic in *Disquisitiones Arithmeticae* by Carl Friedrich Gauss more than thirty years ago, I could not believe that such a doctrine of deductive complications could be expressed with simple twisted motions of knotwork braids. I could not have imagined either that the reason for such a state of affairs stemmed from a lack of moral strength in the nature of mathematical thinking. Yet, here we are thirty years later, and not a single mathematician that I know of, has been able to figure out the underlying geometrical ordering of modular arithmetic.

However, when I first discovered LaRouche's method, I did not realize that *agapē* was the principle behind the synthetic geometrical method of composition in art as in science, and that this same method was the instrument by means of which the human mind was able to surmount all of the neurotic disruptive effects that could take place between art and science. As Lyn recommended: "Believe nothing that for which you cannot give yourself a constructive proof."

Take a bunch of numbers and leave them sitting around on a flat counter somewhere; nothing wrong will happen to them until a mathematician comes in and starts playing some nasty deductive game with them. The result will be a mess and someone will end up having to clean it up. However, there is another option. Simply rotate those same numbers like musical notes inside of your head, and very unseemingly and unexpectedly, good things will begin to happen to those numbers, especially when you twist them into doubly-connected waves of torus motions. It will be as if numbers have come alive for some unknown reason and are beginning to sing some unheard melodies.

When I first discovered that a simple knotwork braid forming closed rings of twisted motions could reflect such hidden underlying harmonic ordering among remainders of primitive roots, for example, nobody believed me, and that is when I began to realize to what extent, ordinary numbers were being kept away from their underlying pre-established form of geometrical and musical harmony. Frankly, it does not really matter whether mathematicians believed me or not, because it works. Inspect the following example of Figure 1 for yourself and you will see what lies behind a single one of those numbers, for example 17, when you relate the increasing power of other numbers to it.

THE CASE OF 3 MODULO 17 FROM THE C-256 SERIES

List the numbers from 1 to 16, vertically, and add to them, horizontally, all of the residues of powers that each of these numbers generates with respect to modulo 17. What happens? Is this series a reflection of some sort of living chirality? Is Figure 1 not an example of left-right handedness characteristic of all living processes? Is this not a shadow of living matter

as Louis Pasteur and Vladimir Vernadsky understood it? Since everything that moves and changes comes from biogenesis, do numbers come from biogenesis as well? Are these the footsteps of a living God?

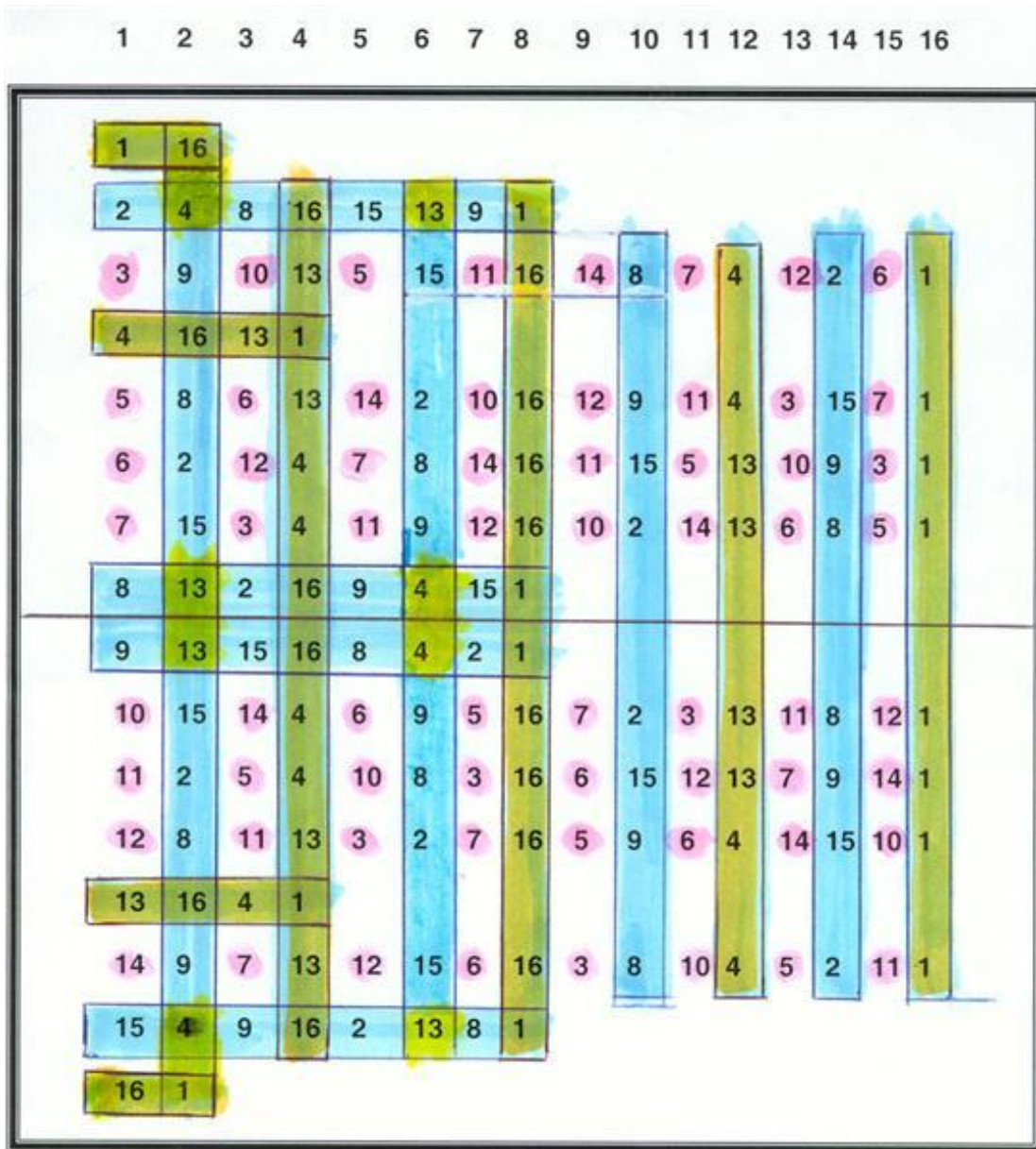


Figure 1. Residues of 1 to 16 modulo 17. Chirality of residue numbers.

Note how in Figure 1, the lower half of the figure is almost a perfect chirality picture image of the upper half. Although some of the numbers (green and blue) are the same in the two halves, most of them (green, blue, and pink) are all reciprocals of 17! Note also that all of the octaves, their halves, and the half of their halves are reciprocals of 17. What does that mean

If you wish to know how the series of residues of 3 modulo 17 is calculated, multiply each and every step your rotating motion by 3. In other words, do the following: $1 \times 3 = \mathbf{3}$, $3 \times 3 = \mathbf{9}$, $3 \times 9 = 27 - 17 = \mathbf{10}$, $3 \times 10 = 30 - 17 = \mathbf{13}$, $3 \times 13 = 39 - (2 \times 17) = \mathbf{5}$, etc. You will require a lot of patience if you wish to calculate all of them, but you don't need to do so much work. All you need to do is to let your finger do the counting.

You might also want to provoke more knowledgeable people with this, or you might want to investigate why this is the case with a torus. But, before you do that, make sure that you have completed the construction of Figure 2 on your own, and have located all of the residues of 3 modulo 17 into their new geometrical home in the Poloidal/Toroidal ratio of 3/17. Here is how to do it:

First, fill in all of the units of the braid in Figure 2 with regular integers in an ordinary sequence as if those numbers were simply units of action reflecting the simple motion of your finger going around the torus twice from 1 to 17, clockwise, then back to 1. Nothing could be simpler; yet, this very simple exercise hides a most intriguing form of modular arithmetic transformation, which mathematicians call "congruence" among the remainders of a primitive root; that is, some sort of "agreement" among all of the residues of all of the powers of 3 modulo 17.

For some mathematicians the idea of "congruence" may appear to be a simple form of concordance, but it is not just that. "Congruence" also implies the presence of residues or remainders which act as problem solvers in continuous cyclical least actions. Residues are the remainders of a modular operation which solve the presence of discontinuities after their numbers have been divided among each other before returning back to 1. For me "congruence" reflects a higher principle. It means that behind the motions of numbers there exists an underlying *pre-established harmony*; that is, a *principle of reciprocity* which has the power of solving a conflicting *coincidence of opposites*. In other words, the circular actions have enough "living power" to continue moving indefinitely.

However, this "congruence" is not visible at all when you merely look at those two subsequent series of numbers from 1 to 17. Nevertheless, when you pay close attention to their ordering motion, there is much more than meets the eye. The numbers reflect the motion of successive congruent powers that mathematicians have called "primitive roots." Maybe they should have called them "agapic roots."

What this means is that no matter how many times you double the power of 3 with respect to 17, for example, there will always be a remainder or a residue which will serve as the next step required to complete the entire series of remainders going from 1 to 17 and back to 1 again. When all of the numbers under 17 are accounted for, the primitive root of 3 modulo 17 is

completed. It is important that the reader construct this process by and for himself, so that he can make the difference between telling the truth and seeking public approval.

THE DIFFERENCE BETWEEN *AGAPĒ* AND *EROS* IS THE DIFFERENCE BETWEEN SYNTHETIC AND DEDUCTIVE THINKING

In November 1987, during one of the most dangerous moments of history when the American government colluded with Moscow to attack the International Caucus of Labor Committees (ICLC), Lyndon LaRouche gave an internal evaluation on the subject of the contrast between the emotional state of creative thinking called *agapē* and the opposite infantile emotional state known as formal knowledge, or *eros*. Lyn stated the following fundamental discovery:

“Hence, history as the history of the struggle between *agapē* and *eros*, between the synthetic and deductive ways of thinking, together with an approach to physical science and music based on synthetic-geometrical thinking, encompass in principle the entirety of all human knowledge, all that is needed for human practice, in society as a whole, or as an individual.

“Correspondingly, it is shown that those forms of errors in science and music, which promote the deductive against the synthetic, or the erotic over the agapic, are not merely errors in those specific domains, but are character-flaws which poison the potentiality of the entire person, and which may lead to the breaking of that personality under suitable forms of stress.”¹

Indeed, the only way to extirpate the dominance of the erotic tendency from inside of the human thinking domain is to apply a rigorous synthetic geometrical method of composition in both art and science and by constructing it yourself. Although this is contrary to the deductive method of mathematicians in general, it is essential for all present and future generations to make this epistemological difference between *eros* and *agapē* as being the same as the difference between public opinion and telling the truth. But, the only way to accomplish such a task is by construction; that is, by confronting public opinion makers themselves, in public. So, the solution to this problem lies in your constructing a continuous knotty geometrical motion of what truth is.

¹ Lyndon LaRouche, [*Eros vs. Agapē: The Armageddon of Souls*](#), THE LAROUCHE LIBRARY, Internal document circulated to members of the International Caucus of Labor Committees, November 6, 1987. In a memo to Helga, written on November 9th, 1987, Lyn also stated: “This also indicates the proof, that only when scientific knowledge is enveloped and permeated by *agapē*, does knowledge define the moral character of the person. Formal knowledge, without *agapē*, may be advantageous, but it does not fulfill the development of the character which ought to be the goals of proper education and related cultural development.”

As I said, you don't need need to go through all of the mathematical calculations in order to prove the truth of this knotty wave process. All you need to do is to move around the torus with your finger and discover the pre-established position that all of the residues listed at the top of Figure 2 have. That is, 3, 9, 10, 13, 5, 15, 11, 16, 14, 8, 7, 4, 12, 2, 6, 1, are all in their proper niches around that torus. Why is there such a beautiful and difficult to understand order behind those numbers? Because, after each new step you take, there is the need to increase the next power. This is how the progress of the human mind works when faced with telling the truth.

Apply this process to the present strategic situation, and you will see what needs to be done. The world is presently in a situation where a Comedian-President of Ukraine is confusing his TV series with reality, and his Anglo-American puppet masters are playing "perception management" with the world's population in order to support him. In other words, the British and American governments both manage media propaganda by manipulating the population into believing what they wish them to believe. Therefore, you don't need to and should not think for yourself; do not increase your own creative mental powers.²

Never mind, let's get back to our numbers. I have to remind you that not calculating doesn't mean you are cheating; it simply means that *the ordering of the numbers is already pre-established*, and all you need to do is to wonder why such beauty exists underlying numbers as you play the game according to the following simple rule of looking for what is lying behind perceived things. So, the question is: Are you going to follow the maker of public opinion or are you going to think for yourself and follow God's pre-established harmony?

Start at 1 and use your finger to follow a single poloidal wave clockwise to get to 3.

From 3, make three more poloidal waves to get to 9.

From 9, make nine more poloidal waves to get to 10.

From 10, make ten more poloidal waves to get to 13.

From 13, make thirteen more poloidal waves to get to 5.

From 5, make five more poloidal waves to get to 15.

From 15, make fifteen more poloidal waves to get to 11.

From 11, make eleven more poloidal waves to get to 16. Etc. ...

Once you have reached the mid-point of the entire process, that is 16, then stop and think. Consider that all of the numbers, taken two by two across the internal rim and external rim, form a total of two series of eight reciprocals of 17, each of which crosses the torus in parallel and

² See [Perception Management: The Polish Missile Incident](#), by Kevin Michelizzi, Scott Ritter Extra, November 21, 2022. According to the [DoD Dictionary of Military and Associated Terms, 12 April 2001, Amended 19 August 2009](#), perception management is nothing else but controlling public opinion: "Actions to convey and/or deny selected information and indicators to [...] audiences to influence their emotions, motives, and objective reasoning [...], ultimately resulting in [...] behaviors and official actions favorable to the originator's objectives. In various ways, perception management combines truth projection, operations security, cover and deception, and psychological operations."

inverse fashion, as if the two sets were a mirror image of each other: [6+11], [1+16], [13+4], [8+9], [3+14], [15+2], [10+7], [5+12]. Furthermore, if you add all of the digits of each reciprocal dual, each one will be equal to 8! How can there be such pre-ordained reciprocal and chirality symmetry among these residues of a single number?

The irony here is that there exists such a *pre-established harmony* only within the creative process. There is a chirality and reciprocal principle of composition underlying the epistemological nature of such a process as a *primitive root*; which is far from being understood by anyone today. So, give yourself a chance, let your fingers do the walking and let your natural curiosity get the better of you by investigating seriously the higher *principle of reciprocity and chirality* involved; that is, investigating it by construction. The more daring among you will put 1 somewhere else on the external rim.

Here is the pedagogical exercise I would like you to work on by and for yourself; because it is the very action of what you do which will make you discover the underlying principle involved. Insert into the external braid of Figure 3, all of the 16 residue numbers; but, use only the outside rim of the braid to rotate them. This is a short cut to the same solution presented in Figure 2, except, you are not allowed to use the inside rim at all, and you should start somewhere else on the outer rim of the torus. Put your pen anywhere on an external braid section and, like on a roulette wheel, take a chance: rotate your figure and write in all of the residue numbers starting at 1 and ending at 1.

3, 9, 10, 13, 5, 15, 11, 16, 14, 8, 7, 4, 12, 2, 6, 1

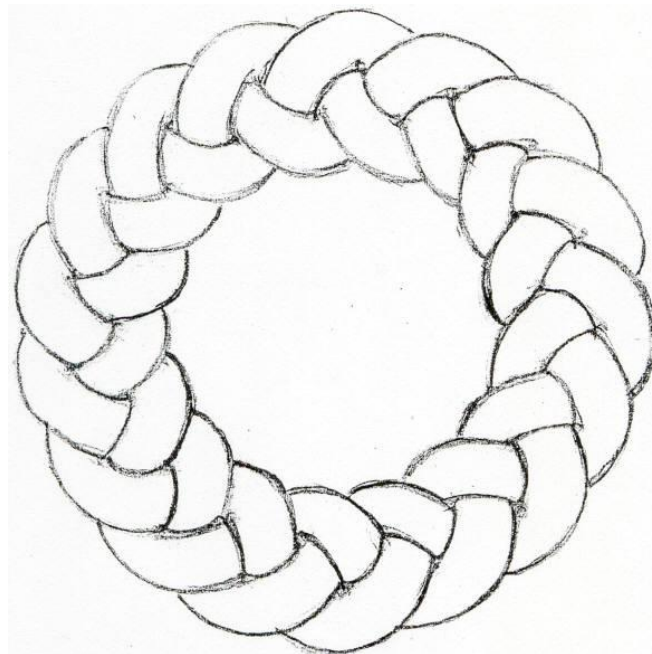


Figure 3. The agapic home of number 3 as a primitive root of 17.

Put 1 anywhere you wish on the outside rim of the torus and count 3 steps. Write 3 on that spot and then move 9 steps in the same direction before you drop number 9 where you have stopped. Next, count 10 steps and write down number 10 where you stop. Continue like this, following the same process of counting the steps of the next residue until you have covered all of the braid sections and you have gotten back to 1. In the end, there will be only one empty braid section left open somewhere on the outer rim. That last braid section is the locus of 17.

What you have discovered by construction is the way to overcome every power increase that your mind needed to do by formal calculation, and you have superseded such powers with the means that the creator has given you for the benefit of mankind, that is, *agapē*. That locus is the One of the Many.

Inscribe 17 in that empty section and note that all of the numbers, from both sides, left and right of that location, are reciprocals of 17. Thus, the entire process demonstrates the principle of reciprocity everywhere throughout the transformation of powers. You can now easily fill in the rest of the numbers to complete the braid. There you have it: *agapē* has made you happy. Congratulations! You have discovered the constructive principle of reciprocity that constantly elevates and enriches the human soul, no matter how weak or powerful it may be at any given time.

ENJOY IT!