THE 3n+1 CONJECTURE: AN INTRIGUING PROBLEM TO INVESTIGATE

Is it a mathematical trap or is it an epistemological warning signal?

by Pierre Beaudry, 9/25/2022

INTRODUCTION

The **3n+1 conjecture** represents an intriguing mathematical problem, because it is simple and yet, it turns out to be unsolvable. In fact, its very existence is a challenge to all mathematicians because it appears to be both a complete waste of time and a beautiful pathway to humility at the same time. Generally known as the Collatz conjecture, it is also known as the Thwaites conjecture, the Kakutani's problem, the Ulam conjecture, the Hasse's algorithm, or the Syracuse problem.

I bring up this puzzling problem because I think there is a lesson to be learned here, by investigating the underlying assumptions behind its simplicity. The conjecture calls for repeating two simple arithmetic operations which are supposed to transform all regular counting numbers by bringing them back to **1**. The sequence of integers is such that if the initial number is even, it must be divided by **2;** and if the number is odd, it must be multiplied by **3** with the addition of **1**. The question is: Do all integers lead back to **1**?

This is a conundrum, because it cannot be proven that all numbers in such a sequence will come back to **1**. Most mathematicians believe the **3n+1 conjecture** is unsolvable. However, since mathematicians are much like human beings, they have a lot of false perceptions to deal with. I see a way to resolve this conundrum from the vantage point of epistemology in the following manner.

Since no true knowledge can be acquired from sense perception unless it is projected with scrutiny and reconstructed properly from the vantage point of a *higher hypothesis*, I thought that, as a galactic epistemologist, I could attempt to demystify some underlying assumptions behind some of the apparently self-evident mathematical perceptions, and attempt to reconstruct the distorted parts appearing on the wall of Plato's cave.

First and foremost, I see the **3n+1 conjecture** as an irony that God placed inside of the *preestablished harmony* of numbers, in order to test the endurance of mathematicians, and to help them see the limits of deductive logic by helping them go beyond mathematical deductions. When confronted with a conundrum like this one, I suggest you turn toward your own underlying assumptions and ask yourself: Who is trying to muddy the waters by preventing you from seeing the truth behind your perceptions?

WHAT IS THE EPISTEMOLOGICAL SIGNIFICANCE OF THE 3n+1 CONJECTURE?

> "If a crisis-stricken nation is to survive, it must act just as a scientist must, when he or she is confronted by a stubborn error in pre-existing scientific opinion; the nation must locate and uproot the fatal flaw rooted in its own prevailing, habituated mind-set. Here lies the necessity for revolutionary action in such a circumstance. Not only must axioms be changed, but the action to be taken must reflect such a necessary change in axioms." Lyndon LaRouche, ***On the Subject of Tragedy***, Fidelio, Vol. IX, No. 2-3 Summer-Fall 2000.

A graduate analyst from Berkley, Arghyadeep Das, discovered a beautiful way to illustrate this puzzle by replicating how the formula seems to generate a living bouquet of algorithms. In his short report on ***The Collatz Conjecture: Beauty or Conundrum of Mathematics?*** Das reflects on how such a harmony of numbers should humble us, with the following simple, yet beautiful insight:

> "All these years, numbers have intrigued humans as something so fundamental, having definite patterns that we can continue till infinity, and the sense of symmetry and pattern is what satisfies the human thirst for knowledge. However, anything off-balance from it, we find ourselves lost in the randomness and question the very existence of the universe. We keep

wondering if we are eligible to get answers to all questions of the universe. Whatever we prove is like a miracle for us, and the vast amount of mystery that lurks in the darkness is still unexplored territory, probably something our level of intelligence may never get access to!"[1]

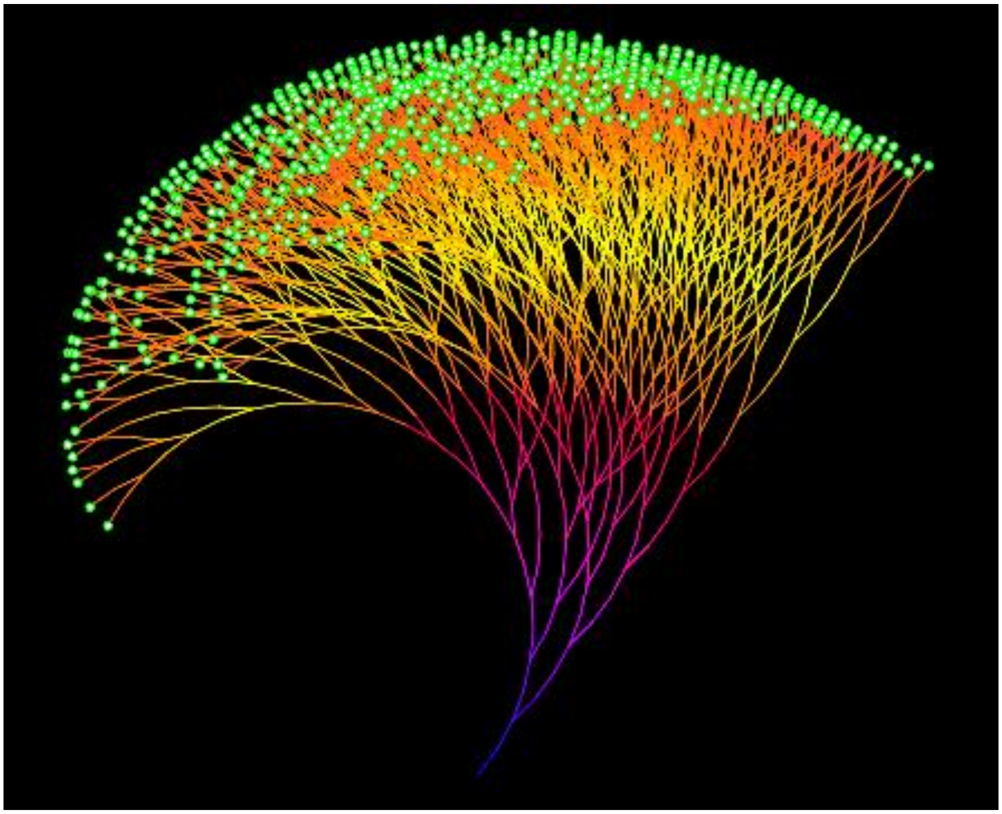

Figure 1. The Collatz Tree. Source: Algoritmarte

I agree that this problem is mind boggling, because once you start playing with it, you can't let it go, as there seems to be no satisfying answer as to why it works the way that it does. The patterns are different and confusing with every number added, and the best image you can get from its composition represents "a coral seaweed" such as Das composed in this beautiful Collatz Tree. (Figure 1.) Let me give you a simple example of how this puzzle works. I will take the case of number **10** that Das explained in his report in the following way:

[1] Arghyadeep Das, ***The Collatz Tree,***

"Let's work it out for example n = 10. Since 10 is even, we divide it by 2 and get 5. Now, 5 is odd. So, 3(5) + 1 = 16. 16 is even, so half of it is 8. Halving 8 gives 4. Going on, 4/2 = 2. And 2 divided by 2 is 1. 1 is odd, so, 3(1) + 1 = 4. But we already got 4 in sequence, which goes down to 2, then 1. This 4–2–1 loop continues till infinity! So, our finite sequence of unique numbers observed, also called the **hailstone sequence** is **10, 5, 16, 8, 4, 2, 1.**

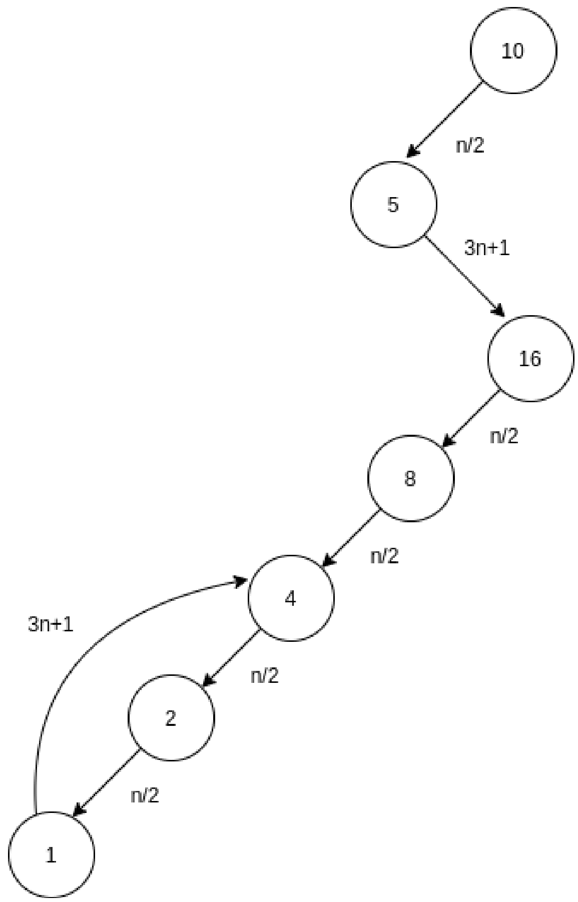

Figure 2. Collatz Sequence for n = 10. Source: Author, Arghyadeep Das.

"One can identify the hailstone pattern as we plot for more numbers together, as they can bounce up and down much like hailstones in a cloud were thought to, eventually all down to **4–2–1**." [2]

[2] Arghyadeep Das, ***The Collatz Conjecture: Beauty or Conundrum of Mathematics?*** August 7, 2021.

When I first looked at this problem, the first question that popped in my mind was: why do all numbers go back to **4,** then **2,** and then **1,** as if all of the small branches sprung from a single larger branch which had to finish in a power of two loop by going back to **1**? Why do you always have to end with this looping cycle going back to **1**? Why does this disappointing ending go into a bad infinite quadratic loop? As Lyndon LaRouche demonstrated extensively in his writings, this is what Georg Cantor would have identified as a bad infinite. What lies beyond a bad infinite, a transfinite?

That's when I started thinking about spherics; that is, about a higher transfinite principle of thinking which could integrate the infinite totality of regular numbers from the outside and from above. Then, I saw the video of spherical action that Arghyadeep Das composed as a processing animation to make the Collatz Tree rotate as a sort of spherical totality, like a One of the Many as Plato discusses in his *Parmenides*. That made sense, but what was his generating principle behind that spherical motion? He didn't say.

I invite the reader to watch this spherical motion **here,** because this is when the important axiomatic epistemological question came to my mind: ***why is there a bad infinite loop for each individual number and no closing circular action for the whole? Can the universe of numbers be so disparate that it has no unity of composition?*** Why did Das invent that spherical action for the whole? Where did he get it from?

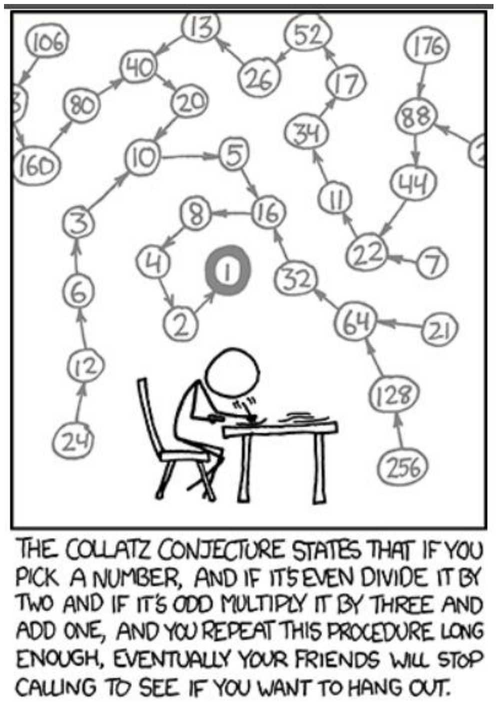

Figure 3. Source: XKCD, Randall Monroe, March 5, 2010.

Then, suddenly ("*exaiphnes*"), I remembered that Gottfried Leibniz dealt with a similar odd and even number problem in his correspondence with the two Charlottes. In a letter dated June 12, 1702 to Sophie Charlotte, Electress of Hanover, Leibniz 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.
>
> […]
>
> "[That is] why the odd numbers are consecutively the differences between the square numbers taken in succession.

Numbers multiplied	1 2 3 4 5 6 etc.
by themselves.	1 2 3 4 5 6 etc.
	------------------

1 4 9 16 25 36

Differences. 3 5 7 9 11." [3]

Such a preordained ordering of whole numbers reflects the principle of reciprocity and congruence of a *preestablished harmony* of minds behind all types of numbers, a harmony between God's Mind and human minds. So, why would God have put such disharmony in the **3n+1 conjecture**?

Let me focus on God here for a moment and remind the reader that when He created the universe, God based it on such a beautiful principle of *preestablished harmony* that it became represented to the human mind through cyclical patterns that anyone can observe today in the trillions of galaxies rotating around the universe. Is that what Arghyadeep Das's Collatz Tree and Randall Monroe's cartoon above (Figure 3.) were attempting to suggest to us with their illustrations? What else is there to discover, here, which is not already well known to mathematicians? Is there some pattern of cyclical boundary conditions underlying ordinary odd and even numbers that we have not yet discovered?

Once I started looking for that missing *preestablished harmony*, the irony of **3n+1** became visible to me in the very first attempts at solving the problem, simply because the formula **3n+1** always ended up like the closing of a circle; that is, by repeatedly going back to **4, 2,** and **1.** But, it was as if the conjecture meant to say by repeating itself twice: you are not allowed to go any further; you are not allowed to go beyond this boundary condition which seemed to be the power of two.

My optimism was challenged, because the conundrum was as if the repetitive ending process of **4-2-1** was, every time, meant to disappoint. All of the numbers were unhappy and seemed to be missing their common purpose. Each one was left open-ended in an infinite loop where there is no closure.

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[3] GOTTFRIED_LEIBNIZ_AND_FRIEDRICH_SCHILLER_AN_INVESTIGATION_INTO_THE_PRINCIPLE_OF_THE_BENEFIT_OF_THE_OTHER, p. **2.**

THEN, THERE WAS THE DEVIL NAMED COLLATZ CONJECTURE

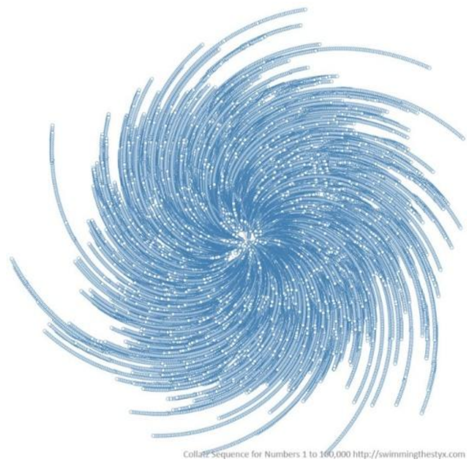

Figure 4. Collatz Sequence of 1 to 100,000 — Every number connected till 1. Source

https://www.cantorsparadise.com/the-collatz-conjecture-some-shocking-results-from-180-000-iterations-7fea130d0377

Another young mathematician by the name of Sparsh, wrote the following devilish note about The Collatz Conjecture, but in a flat view of numbers this time:

> "Diving deep into the intricacies of mathematics is always an enjoyable thing. Most engineering undergraduates, like myself, are up for a good mind-bending problem any time of the day. Not only does it help sharpen the mind but also provides a gratifying experience that one can solve anything put on the table — what I can understand, I can solve.
>
> "But from the deep dark corners of mathematics, where even the theoreticians dare not enter, comes a devil dressed as a saint. It lures its prey with its simple looks and easy arguments. The petty prey starts with a blank paper and a pen. Nothing much happens on the first page, but it seems too simple to give up already. Eventually, the predator leads the gullible frosh to page two, followed by page three, four and five. The problem seems to clear bit-by-bit, but nothing concrete emerges out. He keeps working days, weeks, months. Eventually, it has been a year — and the progress is not any better than he had on page one.

Such is the devil named *Collatz Conjecture*."[4]

Since it is God who created such *preestablished harmony* among numbers, I figured it may have been Him instead of some devil who tried to pull a fast one on us, just to see if we were paying attention. Here is the new hypothesis that I am proposing to investigate with respect to this *preestablished harmony* as a means of forecasting the future.

HOW *PREESTABLISHED HARMONY* IS A MEANS OF FORECASTING THE FUTURE

What if there existed inside of the ordering of numbers a principle capable of foretelling the future? No, I'm not talking about such things as numerology; I'm referring to the Lyndon LaRouche science of physical principles capable of predetermining an expected economic future instead of depending on the past; that is to say, the ability of knowing in advance and with certainty, what the future outcome of our actions holds for us, as opposed to expecting the same ole, same ole. Here is how LaRouche addressed this new possibility:

> "This superior capability of "insightful" forecasters and their like, is located, functionally speaking, in their apprehension of universal physical principles, as distinct from the disabled human mind's reliance on what may be classed, for purposes of illustration, as statistical deduction.
>
> "It is precisely that sense of a principle of an emerging future, which supplies some persons the power to apprehend the future: because they experience the principle which determines the future, rather than being limited to deduction from past-into-present sensory or like experience. It is the sense of the future, which I have just identified here, which is also the only possible principle which could govern mankind's acceptance of a true principle of conscience. It is here, precisely here, that the possibility of checking the chain-reaction of endless warfare can be found."[5]

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[4] Sparsh, ***The Collatz Conjecture,*** July 28, 2020.
[5] Lyndon H. LaRouche, Jr., ***THE ANCIENT ROOTS OF CHRONIC MODERN WAR ... On a Subject of Ancient Antiquity***, EIR, Volume 49, Number 34, September 2, 2022, p. 26.

Yes, there is such a principle of foresight embodied inside of mathematics which enables one to surpass the dysfunctional axioms of statistical forecasting as perceived by accountant-investment bankers and the like. That principle gives you the ability to foresee an alternative to the environmentalist chain-reaction which depends on animalistic behavior; it is the principle of irony called "*reciprocity*," which is the alternative to the repetitive back tracking loop of past to present inhuman behavior. The irony, here, is that this "*reciprocity*" is based on the principle of *preestablished harmony* which is the foundation of the principle of forecasting.

THE DOUBLY-CONNECTED IRONY OF THE 3N+1 CONJECTURE

After looking into a few mathematicians' attempts at making sense of this conjecture, I got a very happy surprise when I learned that on September 8, 2019, a California Professor at UCLA, Terence Tao, proposed a pathway to the solution of the **3n+1 conjecture**, which he said is "almost" true for "almost" all numbers.

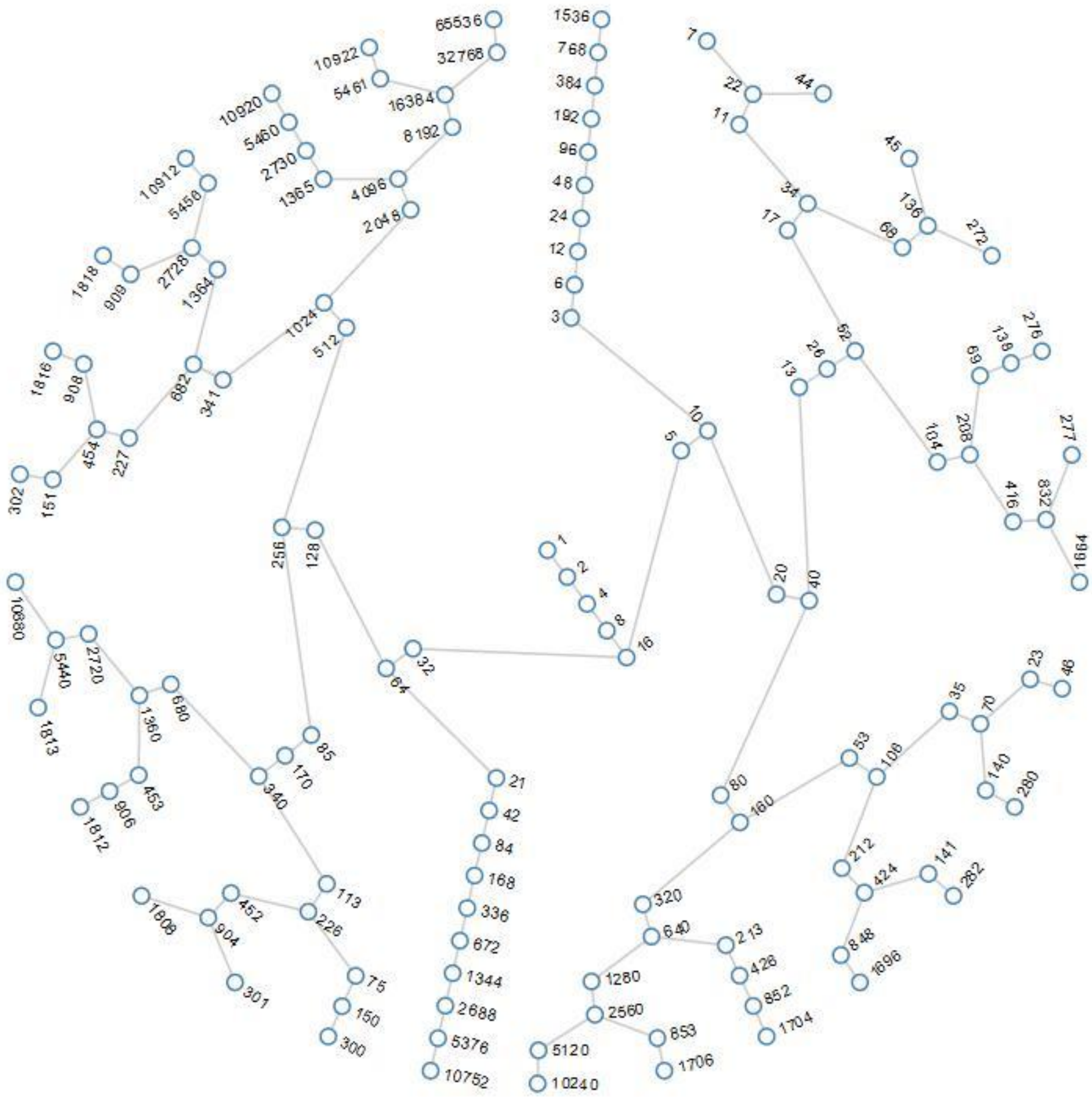


Figure 5. https://d2r55xnwy6nx47.cloudfront.net/uploads/2019/12/CollatzGraph_1300Lede.mp4

The construction attributed to Tao (Figure 5.) seemed to be proceeding from the power of two series, **1, 2, 4, 8, 16, 32,** etc., which is precisely the area of investigation I had been looking into from the vantage point of an axiomatic epistemology of spherics. The illustration by Quanta Magazine is the following: https://www.quantamagazine.org/mathematician-proves-huge-result-on-dangerous-problem-20191211/

I considered that Tao seemed to be on the right epistemological path to solving this mathematical problem, because he was converging upon an epistemological irony which suggested to me that the **3n+1 conjecture** was bounded externally by a higher "transfinite" manifold.

The problem may not be solvable with current mathematical techniques, but I think there has to be some way to approach the problem differently; that is, by looking at it from the vantage point of an *epistemological irony*, as opposed to what appears to be a bad infinity. Here is the way I see the epistemological approach to the problem.

First I looked at the contradictory aspect of the problem and asked myself: why did Collatz invent such a conjuncture? The problem seems to be contrary to everything that mathematicians do, which is to solve problems, not create unsolvable ones. What would be the reason behind a problem that cannot be solved? Was Collatz a masochist or did he come upon this conjecture by accident as if someone had planted this idea in his head?

The irony of the **3n+1 conjecture** became manifest when I found the reason for the ending in the form of **4-2-1**. What is the significance of each **4-2-1** ending that puts you into an infinite repetitive loop for each number? I suggest that you look at it as if you had come to the limit of a manifold and you were not permitted to enter the next higher one without shedding your old axioms and postulates.

The problem is very similar to how LaRouche described a "crisis-stricken nation." The political leaders of such a nation must do as a scientist does; that is, confront its bad underlying axioms and root them out. There is, however, no chance to make such a change for the nation unless the individual who makes that change applies it to himself.

Therefore, when a shock hits your axioms, a sort of inversion takes place in your mind, which forces you to change or which blinds you from the truth; that is, when the end of the process becomes the beginning starting point of discovering a new higher domain of investigation that you didn't know existed before.

Look at that ending as if it were the metaphorical limit of the power of two series, otherwise known to Gottfried Leibniz and to Fu Xi as the power of change that is illustrated in the *I Ching, The Book of Change*.[6] That principle is so powerful that if people knew how to use it properly, they would be able to solve the present world crisis and unify the opposing factions between the West and the East.

I am not proposing a mathematical solution to the **3n+1 conjecture**, but rather, an epistemological method to solve the present world crisis. The cyclical power of this axiomatic change merely shows the boundary condition of mathematics and suggests the existence of a higher power of epistemological constructive geometry hovering above all numbers and above all of our minds. There exists a transfinite agapic power which lies beyond the domain of statistics as they are presently being used to lead mankind into World War III.

Apply the formula of **3n+1** to numbers like **5, 21, 85, 341, 1365, 5461**, and **10922**, etc. for example, and put each singularity that you find into a rotating torus. An example of the process is seen in Figure 6. What do you discover? You discover that the reason the **3n+1 conjecture** ends in the form of **4-2-1** is because there is a *preestablished harmony* underlying the choice of that series of numbers, which is hidden behind the quadratic series of the power of two. Such numbers are axiomatic singularities.

Furthermore, look at the form of the **4-2-1** ending as a sort of musical Lydian dissonance which calls for a resolution to come from the future. The *preestablished harmony* of such singularities can be described as Leibnizian monads, each containing the totality of all numbers in the universe. Such closed monads represent the boundary condition for all existing numbers. Here, for example, is a torus model for monad number **16:**

[6] See my report: ***FUXI'S AND LEIBNIZ'S I CHING PUZZLE***

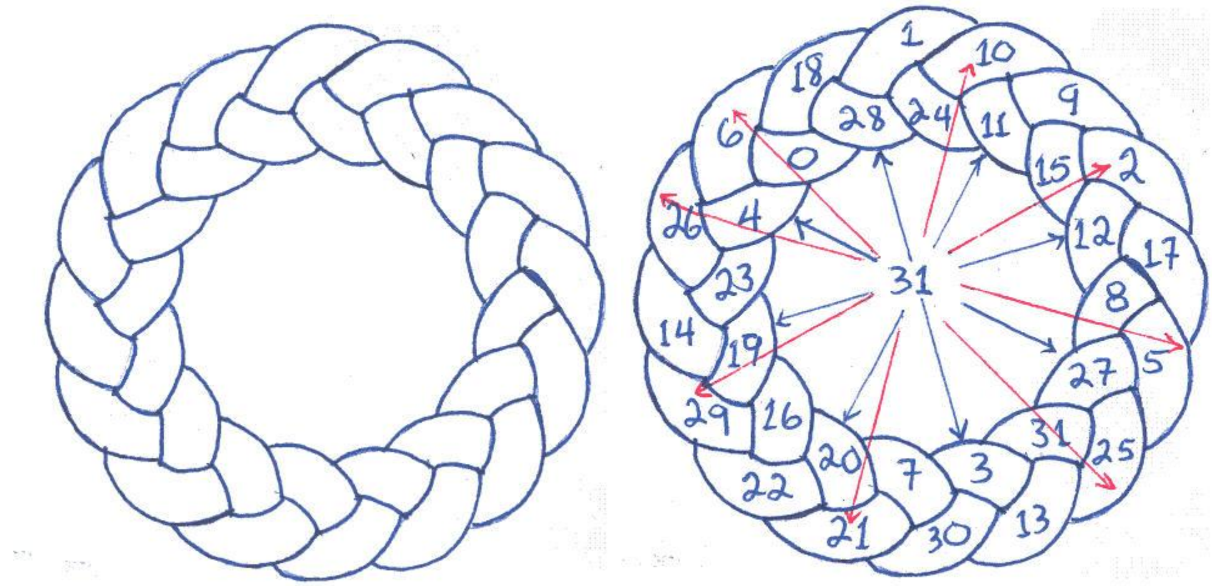


Figure 6. Closed cycle of the Poloidal/Toroidal ratio **3/16.**

If you construct a braided torus, which functions like a doubly-connected manifold, you can easily see how it has the proper cyclical geometry for all regular integers. ***Consider the power of two series as a series of Leibnizian monads containing all of the numbers in the universe.*** Such a series elevates your mind from the flat two dimensional world of numbers you were caught in before, and takes your mind to the domain of a higher transfinite dimensionality. Mathematician Georg Cantor discovered this higher transfinite dimensionality, and LaRouche raised Cantor's transfinite to the domain of epistemological economics.

Generate, for example, a closed braided torus cycle in the P/T ratio of **3/16** (Figure 6.) and inscribe inside of each of the **32** units of action, the ordered series of numbers **0, 1, 2, 3, 4, 5, 6,** etc., in such a manner that they rotate clockwise following the recurring counting of each of your steps. Fill all of the units of action according to the following intervals of steps, 0**1**, 1**2**, 12**3**, 123**4**, 1234**5**, etc. Each number will find its own harmonically ordered and preestablished location no matter how many times you go around the monad.

There are two significant aspects of such a simple ordering, the first is that the *preestablished harmony* is based on the reciprocity of all of the numbers and secondly, the reciprocal number, here **31**, forecasts the next higher number of the same *preestablished harmony* for the next monad, and so on at infinity. In other words, each and every torus monad will form a closed cycle announcing the next one to come in the following **P/T ratios of 3/4, 3/8, 3/16, 3/32, 3/64, 3/128, 3/256, 3/512, 3/1024,** etc. Who would have thought that ordinary fractions were ordered according to a doubly-connected torus circular action of Leibnizian monads?

In the present case of **P/T ratio = 3/16**, all opposite numbers are reciprocals of **31**, which forecasts the next step, which is monad **31+1 = 32**, which will take you, again, to the next higher step where all of the numbers will have reciprocals preestablished at **63 +1,** thus forecasting monad **64** as the next level to go to and beyond, at infinity. I would call such a *preestablished harmony*, the *Leibniz Monad Cycle of the Power of Two*. So, what about a monad which includes almost all numbers?

THE UNIQUE MONAD OF ALMOST ALL NUMBERS

Take, for instance, the indefinite and natural series of the power of two, which underlies the octaves of the well-tempered musical system, centered on middle **C-256**, and add up the multiple digits of each number such that they correspond to a series of single numbers under **10,** as in the ordering of the following numbers: **7, 5, 1, 2, 4, 8**. As Leibniz showed, the ordering of the digits is such that all numbers beyond **10**, for instance, **16** is **1+6 = 7** and **32** is **3+2 = 5**, etc:

1, 2, 4, 8,	**16,**	**32,**	**64,**	**128,**	**256,**	**512,**	**1024, …**
	1+6	**3+2**	**6+4**	**1+2+8**	**2+5+6**	**5+1+2**	**1+0+2+4 …**
	7	**5**	**1+0**	**1+1**	**1+3**	**8**	**7 …**
Total	**7**	**5**	**1**	**2**	**4**	**8**	**7 …**

Note that the series **5, 1, 2, [4], 8, 7, 5** forms the six octaves of an electronic piano keyboard with **256 [4]** as middle **C.** The ordering of those octaves forms a unique musical range which, when put into a doubly-connected cyclical form, generates a higher transfinite modality of creative thinking, the Lydian modality. How do you inscribe those numbers into the following monad cycle such that they represent an actual infinite cycle which integrates almost all possible regular integers into a shared universal congruence and reciprocity?

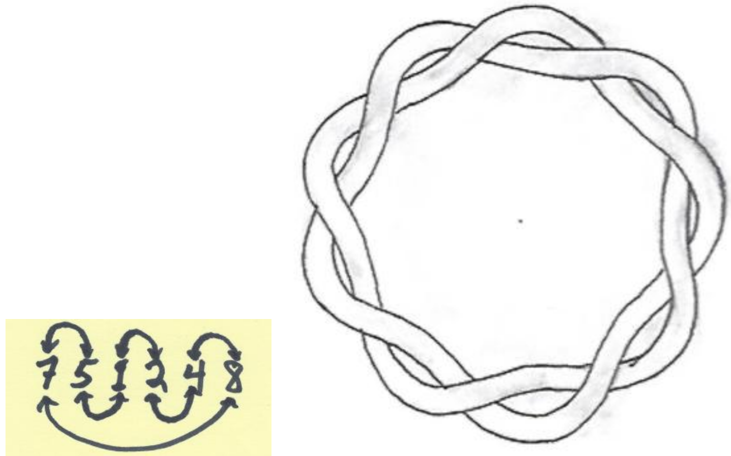


Figure 7. Monad of your piano keyboard.

Follow a backward counterclockwise motion of the numbers from the following series: **1, 5, 7, 8, 4, 2,** repeatedly. Place **1** anywhere on the torus and count **5** steps counterclockwise. Then count **7** counterclockwise, then **8,** then **4,** then **2**, and then **1**.

At this point, you might have the impression that your footprints had been pre-ordained, ahead of time, before you took the first step. You are not wrong. In other words, the geometrical construction is as if a *preestablished harmony* had already been set before you started counting your steps by half, and half the half, as you walked backward.

As you proceed counterclockwise, you will realize that your steps are becoming smaller and smaller, as if you were going toward an absolute minimum. Fill in the following monad with numbers and add up the multiple digits for each number. Remember that the addition of all of the digits must correspond to a single number, and all of the numbers must form a single monad which is **P/T= 2/9**:

1 = 1
0.5 = 5
0.25 =7
0.125=8
0.0625 =4
0.03125 =2
0.015625 = 1
0.0078125 = 5
0.00390625 = 7
0.001953125 = 8
0.0009765625 = 4
0.00048828125 = 2, etc.

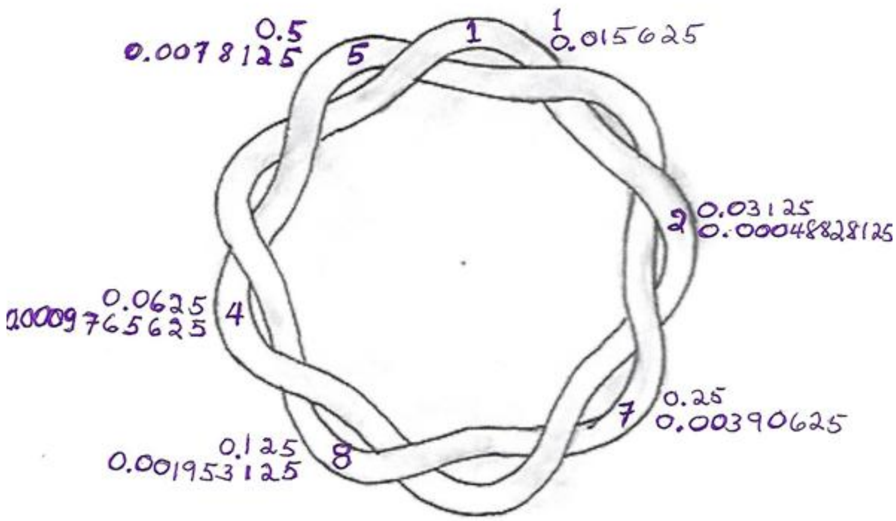


Figure 8. The counterclockwise number of wave counts **1, 5, 7, 8, 4, 2, 1**, etc. correspond to an indefinite halving process, the inverse of the power of two series.

Of course, when you add up the digits of all of fractions, the totals corresponds to the series of wave counts **1, 5, 7, 8, 4, 2, 1**, etc. The underlying process shows that the counterclockwise motion reflects a decreasing ordering with the division by half; that is, when you start moving your finger counterclockwise through the above knot, counting **5** waves starting from **1**, then counting **7** waves from **5**, then **8** waves from **7**, then **4** waves from **8**, then **2** waves from **4**, and then finally **1** wave from **2,** etc.

As if this process of halving were not amazing enough, then ask yourself: why are numbers **3, 6**, and **9** excluded from this motion? The reason is because number **9** is a unique singularity in which the digits of all three numbers, **3, 6**, and **9**, always come to a total of **9,** thus forming closed loops. Furthermore, the power of two series excludes the division or multiplication by **3**.

Mark the waves from **1** to **10** clockwise, one number per wave, and you will be able to discover the solution to the complete cyclical process. (See Figure 9.) Then, count all of the waves again, clockwise, from **1** to **36**, and identify each step as a unit of action.

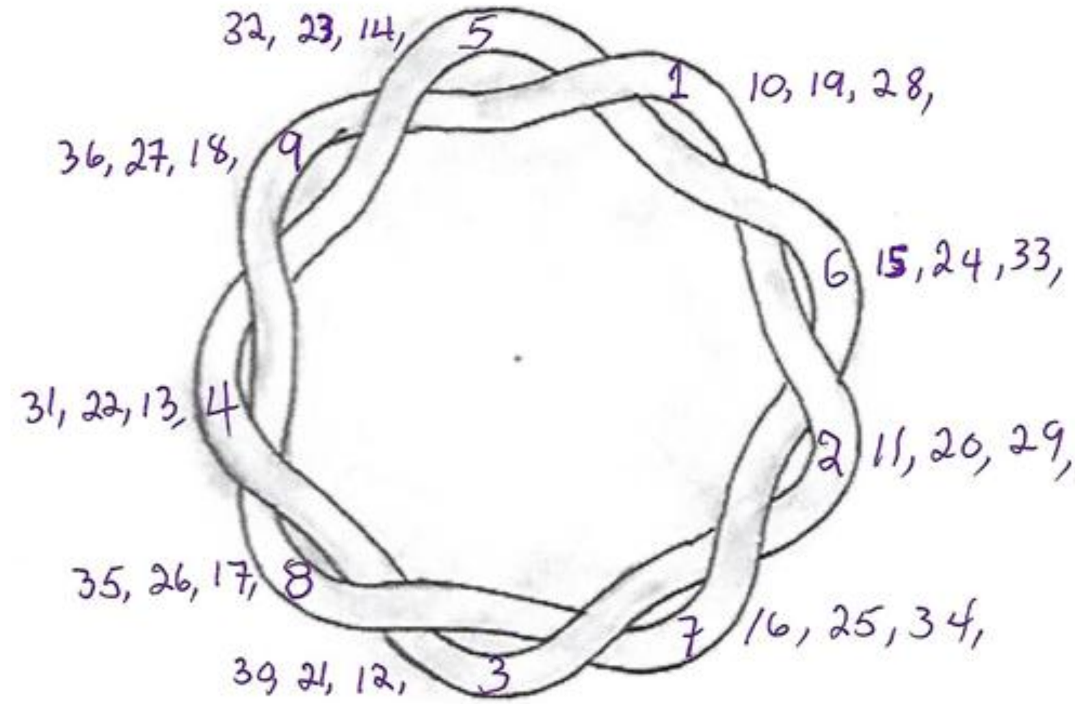


Figure 9. The **6** remainders of **2** mod **9** are **1, 2, 4, 8, 7, 5, 1.** Numbers **3, 6**, and **9** are not remainders or residues of this modular wave function.

Some of them represent the remainders or residues of all of the powers of **2**. Additionally, note that the sum of all of the digits will always correspond to a single number. Thus: **1x2=2, 2x2=4, 2x2x2=8, 2x2x2x2=16**, or **1+6=7, 2x2x2x2x2=32**, or **3+2=5**, and **2x2x2x2x2x2=64**, or **6+4=10** and **1+0=1**. Thus, the remainders or residues **1, 2, 4, 8, 7, 5, 1**, can be counted as follows:

Start at **1** and count **1** wave to get to **2**, from **2** count **2** waves to get to **4**, from **4** count **4** waves to get to **8**, from **8** count **8** waves to get to **7**, from **7** count **7** waves to get to **5**, and from **5** count **5** waves to get back to **1**. It is the preestablished number where you land which tells you how many steps you have to take next. Thus, you have found that all of the remainders (residues) of **2** modulus **9** (**2** mod. **9**) will forecast the next future number, at infinity. If you wish to know how to go from **8** to **7**, you have to consider **7** as the remainder of the fourth power of **2** with respect to **9**. In other words: **2x2x2x2=16 - 9 = 7.**

In this way, the mystery of the underlying ordering of numbers disappears, and the forecasting of all numbers appears by *preestablished harmony*; the solution is nothing else but the ordering cycles of **2** mod. **9**, which gives you all of the regular integers of the decimal system as integrating the whole of the well tempered musical system within a single knot of reciprocity; that is, the solution to the problem when **9** is the **Toroidal wave** (large circumference) and **2** is the **Poloidal wave** (small circumference); thus, the **P/T ratio =2/9**. Thus, all of the numbers from **1** to **10** add up as follows:

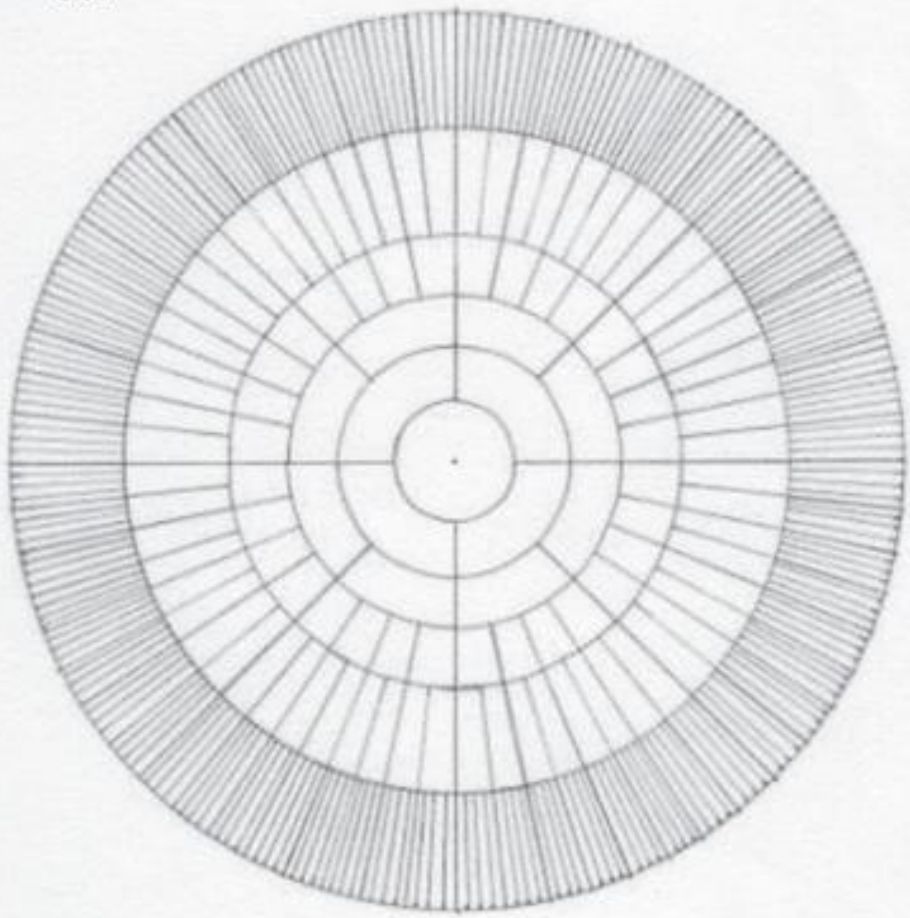
1 = 10, 19, 28,	**6 = 15, 24, 33,**
2 = 11, 20, 29,	**7 = 16, 25, 34,**
3 = 12, 21, 30,	**8 = 17, 26, 35,**
4 = 13, 22, 31,	**9 = 18, 27, 36,**
5 = 14, 23, 32	**etc.**

Finally, give me any number whatsoever and I will tell you where it is located on this modular wave torus. Take, for instance, $\mathbf{2^{68}}$, which corresponds to about 300 quintillions; that is, **295,147, 905, 179, 352, 825, 856**. The sum of all of these digits will be **103**; that is, this exceedingly large number will be located at wave number **4** of Figure 9. That place has already been prepared ahead of time by God's *preestablished harmony* and in the *simultaneity of temporal eternity*. In other words, the distinctions among the different doubling powers reside in the physical and geometrical location of such preordained places, because numbers cannot exist independently of position.

CONCLUSION: HOW TO PLAY RECIPROCALS

What is satisfying about such a *preestablished harmony* ordering of the monad power of two series is that it is perfectly cyclical like in a planetary system, such that it reflects the calendar of our own solar system. Indeed, if you apply this cyclical process to the solar cycle, you will get a surprising result where the sum of the successive quadrupling and doubling numbers **1, 4, 8, 32, 64,** and **256**, will generate the **365** days of the year.

$$
\begin{array}{lcr}
1 & = & 1 \\
100 & = & 4 \\
1000 & = & 8 \\
100000 & = & 32 \\
1000000 & = & 64 \\
100000000 & = & 256 \\
\hline
101101101 & = & 365
\end{array}
$$
[18]



Replica of the original Fu Xi idea of a circular 365-days calendar calculated from the C-256 series. Drawing by Pierre Beaudry

[18] Note the mirror image chirality of number 101101101

Figure 10. Hypothetical Fu Xi Calendar.

You may never be able to discover the mathematical solution to the **3n+1 conjecture**, because the sort of solution you are seeking may not be the one you should be looking for. However, since the limitation and boundary condition of this conjecture can be found in the power of two series, couldn't the peace makers of the world get together and calculate how the spirit of such a mathematical singularity could bridge the gap between the East and the West?

FIND ALL OF THE RECIPROCALS OF 63: Locate the proper place of each and all of the numbers from **0** to **63** by filling the following continuous **64** braids in such a way that all of the numbers are *preestablished harmonically* across the diameters of the circle as reciprocals of **63**. (See the example of Figure 6.) You can start anywhere you wish. Put **0** anywhere and from there rotate clockwise to **1** in one step, then skip one braid to go to **2**, then skip two braids to go to **3**, and then skip three braids to go to **4**, etc. Suddenly, the process becomes the inverse of the **3n+1 conjecture.**

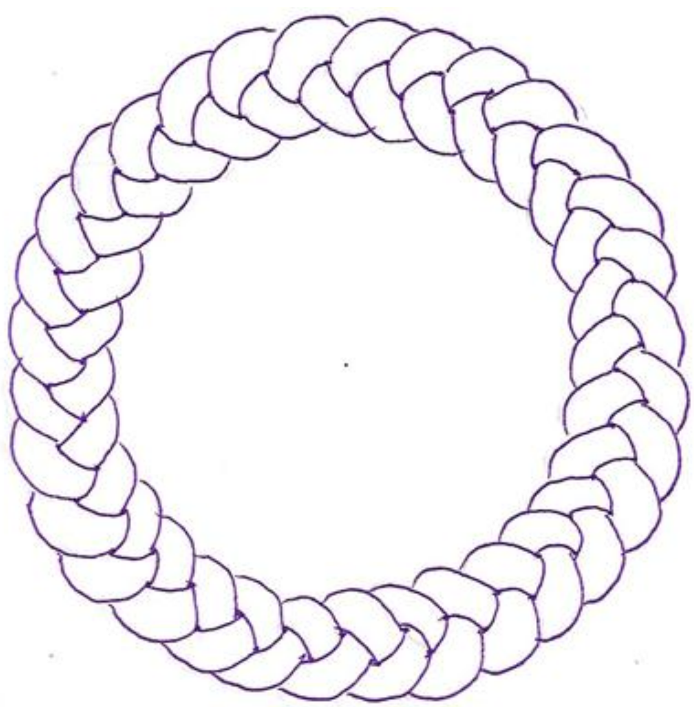


Figure 11. Closed cycle of **64** harmonically preestablished units of reciprocal actions in the **Poloidal/Toroidal ratio** of **3/32.**

FIN