Chapter 18 – Randomness

As odd as this may sound, I believe that the only pure number in a one-dimensional system is our most uncertain number…0.5. Every other number I can think of is just an abstract representation of IS or NOT IS. Our most common abstract digits are 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 used in the decimal numbering system; our least abstract digits are 1 and 0 when they are used in the binary numbering system.

To show the *decimal* number 11, I can use the *binary* sequence 1011 which converts back to a *decimal* sequence in this way: 11 = (1*2*2*2) + (0*2*2) + (1*2) + 1. The binary *sequence* of 1011 also means TRUE FALSE TRUE TRUE or just SOMETHING NOTHING SOMETHING SOMETHING.

Our minds abstract from objects, to binary representations, and onto decimal representations automatically from practice and learning – we gain this courage to do math without really ever knowing that we do so or have done so.

I know that numbers are abstract because I cannot see a 'four' in the same way I cannot see a 'faith.' I can see the symbol '4' to represent the idea of *four-somethings*, in the same way that I can see a cross or a star symbol representing the idea of a faith's religion. When someone says that they are bad at math, or that he or she lacks faith, are they really saying that they are bad at using abstraction?

To explain uncertainty, I rely on there being both a *procedural*-math, and a *substantive*-math where the *procedural*-math sets nature's rules to perform any math, and *substantive*-math applies the variables and numbers to solve problems, but *substantive*-math only works with the problems that are (procedurally) valid.

The following *procedural* example abstracts the ‘glass-half-empty or glass-half-full’ scenario’s question:

If 0 means EMPTY_GLASS, 1 can mean NOT_EMPTY_GLASS

There is no point in me speculating or examining anything about whatever can be in the glass if the glass has no measurable contents. For *procedural* purposes, I don’t care about the name of anything that may be in the glass, how far above sea-level the glass is, or the temperature around the glass because these are some of the distracting questions involved with *being* something, rather than *working* with something. The procedural question is: TRUE or FALSE – is there something in the glass capable of reasonably being measured (or being able to be reasonably worked with)?

For all practical purposes, anything in a one-dimensional system can be considered to be either just a point, or something other than a point, so *procedurally* my one-dimensional certainty choices only are:

0 = NOT _EVEN_ A_POINT, 1 = AT_LEAST_A_POINT

In two dimensions, some of the certainties I can check for are:

00 = NO_WIDTH, NO_HEIGHT
01 = NO_WIDTH, HAS_HEIGHT
10 = HAS_WIDTH, NO_HEIGHT
11 = HAS_WIDTH, HAS_HEIGHT

I don’t care about the object’s *substantive* qualities, such as size, name, or location so the *procedural* question is only: TRUE or FALSE – does this object represent an area with two measurable dimensions (such as height, width, depth, or length)?

In four dimensions, four-required certainties can be:

0000 = NOT_NOW, NO_DEPTH, NO_WIDTH, NO_HEIGHT
0001 = NOT_NOW, NO_DEPTH, NO_WIDTH, HAS_HEIGHT
…
1111 = NOW, HAS_DEPTH, HAS_WIDTH, HAS_HEIGHT

I suspect that "now" involves using a unity Time-Factor (1.0); that as I come away from "now" (with time-factors of 0.99999… or 1.0000001 for example), what I am really doing is looking for a past or future date-and-time away from now. This idea is a distraction from *procedural* math; even though it may be an interesting distraction, procedural math requires sorting out logic from even interesting distractions because performing math in a procedurally distracted system risks losing a productive purpose. Any ideas that are proven to be *procedurally* flawed provide only the faulty grounds for displacing worthy effort.

MY HYPOTHESIS is that there is a relationship between random values in anything, to the uncertain and unknown value of Pi.

The number 0.5 (½) is our single-dimension based absolute uncertainty number and is important because it is the most uncertain known number in our lives – it is 50-50, 50%, or exactly as likely as unlikely to be or not to be.

The following shows the foundation of randomness by using Pi; by showing that Pi is derived by observing how all possible numeric uncertainty adds and subtracts uncertainty (in a certain way). My idea comes from a mathematical technique called the Gregory-Leibniz series, which produces Pi accurate to five digits (beyond Pi's decimal point), after the series is taken-out to about one-half-million iterations:

$\pi = (4/1) - (4/3) + (4/5) - (4/7) + (4/9) - (4/11) + (4/13) - (4/15) \ldots$

So, an equal version of the Gregory-Leibniz Series can be:

$\pi = (2/0.\mathbf{5}) - (2/1.\mathbf{5}) + (2/2.\mathbf{5}) - (2/3.\mathbf{5}) + (2/4.\mathbf{5}) - (2/5.\mathbf{5}) + (2/6.\mathbf{5}) - (2/7.\mathbf{5}) \ldots$

Abstracting the above two equal Gregory-Leibniz series entirely, shows that Pi includes only a sliver of doubt or uncertainty, but Pi still never has any pattern, ending, or any other certainty – beyond that any number sequence ever needed by anyone or anything will be found in Pi somewhere:

$\pi \approx 1 * (\text{AlmostHalfOfAllUncertainty} – \text{AlmostAllRemainingUncertainty})$

Simplifying the Gregory-Leibniz series a bit more seems to show a relationship *between uncertainty and the exact midpoint* of any two certain states (1 or 0; on or off, yes or no, true or false, yin or yang, something certain or something certain' complete opposite) by incorporating the position of absolute uncertainty that lies exactly between every number or state: *0.**5** is exactly as far away from 1 as from 0; 1.**5** is no closer to 2 than to 1; being as close to **on** as being **off**, anything as near to being **true** as that same thing is to being **false,** etc.*

Using the 'sum of all' sigma ∑ symbol, I end-up with a formula for Pi simplified to:

π = PFd * (∑ (S / (Nwor + uC)) - ∑ (S / (Nwr + uC)))

Which is my slightly modified shortcut way of saying:

π = (2/0.**5**) - (2/1.**5**) + (2/2.**5**) - (2/3.**5**) + (2/4.**5**) - (2/5.**5**) + (2/6.**5**) - (2/7.**5**)...

Where S = 2:	| A system's number of certain States [IS or IS_NOT for example]
Where uC = 0.5:	| The point between certain states where things have a 50% likelihood
Where **Nwr** = [1, 3, 5 …]:	| Numbers with a remainder harmonic when they are divided by S
Where **Nwor** = [2, 4, 6…]:	| Numbers without a remainder harmonic when they are divided by S
Where **PFd** = 1:	| 1 being the unity Pi-Factor [think of how power factors work]

Adding all the digits from 0 to 100 together achieves the certain answer of 5050, but I know that randomness comes into play where things are not as pure and concrete; so, I know that randomness comes from forms of abstraction. One of life's sticking points is that if abstraction is a courage, then abstraction is a courage that should be able to be learned and practiced – but it might be too abstract of a concept for typical learning methods… a real catch-22, a catch-10110, or a catch- (something nothing something something) plus nothing at all.