**Noting and Something -> Self Reference -> Information Processing.**

**Bridging Quantum Mechanics with General relativity.**

**A Possible Process for Higgs Decay -> Self Reference**

**ALPHA Version**

This is not a claim of solving anything. This is a set of tools for probing these questions. I believe by answering, defining, and debunking it will lead to the correct answer. More generally, I believe by generalizing the topics, it will lead to wider understanding making the problem more accessible to more people and this will lead to a solution. A total of 15% effectiveness is response is expected (path integral to solution), with only 1% being that I’m over 50% right. Meaning yes, the remainder would indicate I am in fact retarded. However the retarded part actually has a really great story which explains this moment, and after which, regardless of your generalized assumptions here, I’m sure you’d see why I’m confused and why this is all a really good question. And at least appreciate the “Spunk” associated with this current Move.

Basically, at its best. I believe given the right tools, access and guidance that I can likely figure this out. While I’ll know I stood my ground and took my shot. While this allows me to track my own progress and watch my own ideas and intuitions evolve. That is to say I will learn. Which is all any human can do.

I started December 26th 2023 and sat a due date of January 6th 2024. Approximately 3 weeks. This what I could put together. It’s a lot to think of refine, and refactor. It’s a personal challenge, and I hope to rewrite in 6 months and have a general learning direction planned.

[**www.TheWolfAndTheNeuralNetwork.com**](http://www.TheWolfAndTheNeuralNetwork.com)

**Suspected Outcomes**

**(With decreasing likelihood)**

1. **I’m retarded** – Again, I’m generally honest. However, I feel in explaining what this “isn’t” it will point me to what this likely is. Learning is an ongoing, lifelong journey. And a slight failure now doesn’t mean there won’t be success tomorrow. It just means I have to continue to work hard.
2. **Generally Proficient** – That I can and have shown an aptitude. That is to say, someone looking at this would see I’m right path. And some of my approaches are novel, or a new “mixture”. Basically, spark curiosity.
3. **Created New Tool and Illustration** – The ways of explaining this help link the idea of Geometry, Moving, Distance and Size to that of computer science. Generally making the ideas, more relatable and accessible to more people. Basically another tool, towards solving the problem.
4. **Eureka Moment** – Either directly, or through Path Integral trigger Eureka Moment. Obviously extremely unlikely but I’m sure weirder things have happened. And there is nothing wrong with being a little ambitious and dreaming a little.

# **Index**

|  |  |
| --- | --- |
| 1. [Information Processing -> Geometry](#InfoProcessAndgeometry)
2. [Symmetry and Self Reference](#SymmetrySelfReference)
	1. Symmetry Breaking -> Processing
	2. Higgs Symmetry Breaking
	3. Forces
3. [Loop -> Flip -> 1 or 1 -> Something or Nothing](#LoopFlip1or0SomethingNothing)
	1. Geometric Circle
	2. Faceless Coin Flip
	3. Function based, or Mathematical Circle
	4. Path Integral
4. [General And Special Relativity](#GeneralAndSpecialrelativity)
	1. Space
	2. Time
	3. Gravity
	4. CHECK SUM / SURFACE
	5. Light
	6. Accelerated Expansion
	7. Macro -> Quantum
	8. Direction or “Arrow” of time
	9. Why the speed of light + speed is light is not twice the speed of light
	10. E = MC2
5. [Black Holes](#BlackHoles)
	1. Singularity
	2. Holographic Principle
	3. Hawking Radiation
6. [Computation -> Processing Data relationships -> Hierarchy (Tress -> Branches -> and Leaves)](#Computation)
	1. AI decoding -> Such as DNA.
7. [Nature -> Great example of Self reference](#Nature)
	1. Bit Flips
	2. Biomimicry
	3. Life as a force?
	4. Squaring the Field
	5. DNA as a line
	6. Genetics and epigenetics
	7. Animal Populations and Behavior
	8. AI in decoding Bio Mimicry
 | 1. [Physics](#PhysicsAndMathematics)
	1. Absolute Zero
	2. Pressure -> Gravity
	3. Super Position
	4. Super Conductivity
	5. Handedness
	6. Dark Matter and Dark Energy
	7. Cosmic Microwave Background
	8. Particles
		1. Chemistry
	9. Quantum Mechanics
		1. Quantum Entanglement
		2. Quantum Tunneling
		3. Uncertainty Principle
2. Mathematics
	1. Division, addition, multiplication
	2. X and Y Axis
	3. Set theory and category theory
	4. Squaring the field
	5. E
	6. I
	7. Fractions
3. [Building a Universe from Point and Then Nature](#CreatingRealityFromAPoint)
4. [General and Abstract Visual Examples](#GeneralAndAbstractExamples)
	1. Gaussian Distribution and Bell Curve
	2. Jailer video hiding key
5. [Mathematical and Biological Simulation](#MathAndBiologySimulation)
	1. Drake Equation
	2. Digital Speciation / Evolution
6. [Observers](#Observer)
	1. God
7. [Personal Letters](#PersonalLetters)
	1. Sam Harris
	2. Richard Dawkins
	3. Leonard Susskind
	4. Jim Keller
	5. Roger Penrose
	6. Gerard 't Hooft
	7. [References](#References)
 |

# **Information Processing -> Geometry**

[**(INDEX)**](#INDEX)

First, I’ll walk through a generalized feelings and understandings. Then I will list out specific topics and discuss why I think they are related, and how. All subjective, however, a will serve as a good gauge for my own progression. I can continuously rewrite, until maybe it does answer the underlying questions.

Relating Geometry to the Number 1 - When generating a 1 in mathematics. You Square E, and can prove this equals 1 under some set of functions. From there you can repeat the process and create a whole field of these 1’s. However since, E is transcendental, you are smearing the one unit uncertainty out over the 1. So say on standard grid paper, imagine X, Y and –X-Y, and there being some notion of a “Point” at this intersection. We need to inflate this “imaginary” point, to be the First Square. As to serve as our standard for 1. Here is where they “square” E.

And this is where the ideal of Transcendental and topologically invariant becomes important factors. Consider these numbers go on without repeating forever. You could be looking at the trillionth digits, and would think you weren’t looking at PI because it wouldn’t look like the 3.14 you are used to. But it must be just as valid relative to some factor of accuracy. And so saying the first trillion digits, it’s much less accurate than the first 5 trillion in some other relative some context. Where as in “everyday existence”, we could likely get away with 50. You can immediately see neither answer is right, nor wrong. Just off by some degree of uncertainty or certainty.

But that means that square, or 1 you built has that uncertainty built in. It contains some uncertainty that is a factor of processing. We can look at this as the ability of that 1, or square to self-represent its self. Or put another way, be able run the function backwards or forwards, or move forward or backwards in time (While, this also gives you a notion of distance, through magnitude). While now that you have a 1, you can imagine the 1 decaying, or being sub divisible. This also creates the ideas of division, multiplication and fractions.

Now, your first instinct is to only expand the square into X = 1 Y =1 but why? Why choose that notion? Because it’s a preferred reference frame. However, how can the notion of a preferred reference frame exist, if its opposite doesn’t also exist? For instance I could take A Direction, Say North and state then by some fundamental flip. South is also just as real. Both are just notions of the same thing some fundamental difference in the system.

So now we introduce the ideal of Self reference, we need a System that definitely represents a 1, processing and fundamental symmetry. The common circle.

Now, as we know everything is connected to the same loop, we know in some sense its “touching”, or was touching. But we could say that instead we know all their paths overlap somewhere because everything was created from the 1 Decay (Or you’re Original Square). This relative notion, creates a Path integral. Where, you could perhaps treat distance as some Average Uncertainty term, then you remove distance in a point, and replace it with the idea of displacement or magnitude difference and data relations, within a point. One way to visualize this path integrals aligning is Magnetic Fields. A Magnet immediate makes a North, and then South Pole. This is self-reference, they are different, only by a FLIP in reference frame. Which also then shows, how other notions of directions then inherently pop up. Such as East and West type distinctions in the lines. And then, how you could use it to do work! Think about it, treating your Magnet as 1, you could continue the subdividing process, having more and more relative 1’s and 0’s. Allowing the Magnet to push and pull by some unit of strength, and allowing you subdivide, and so then multiple that 1 Decay work.

1. **Geometric Size = Computational threshold. The ability to be able to distinguish 1 from 0** - this allows us to do away with the notion of size, and instead implement computational irreducibility, or non-computational system barriers. That is to say, perhaps an Event Horizon, could be seen as the fundamental inability of a system to be able to distinguish Side A from Side B. Yes from No. ON or OFF.
2. **Moving and Distance** - And then expand or replace the idea of moving with translations or uncertainty in a self-reference system. Consider a field that has a single amplitude. Technically, this is a closed surface. So really, the photon is always looks at its self. Which may also be a generalized was of explaining why the Speed of Light + Speed of Light is not 2 X the speed of light. This and by being on the “outside” diameter, of a circle.
	1. **Negative and Positive Pressure –** This process would represent its self as relative perspectives of on pressure. You just need to give a reason for a 1 state to decay. **Which I’d suggest is similar to the 50/50 Width Split in the Circle Example.**
	2. **Curvature** - Inherent idea behind the 50/50 State Decay. A disposition. There is relative perspective on curvature and so conserved notions depending on inside or outside perspective.
3. **Fourier Transform** -> Basically instead of scaling up and outside the points, scale down and inside.
	1. **Thought Experiment** - Consider, a translation that spelled out G. What is it any less different if I ran it in reverse, is it also not spelling that out in a sort of “calculation space”, of course it is. It’s just hidden.
4. **Thought Experiments**
	1. **A human’s weight can be thought of as or sum of all surfaces expressed as a single surface.** Where your feet touch the scale. Where the weight is A is the Sum of all internal actions or calculations composing the human body and all its processes including consciousness. This value is expressed as a change in magnitude at the contact point of these surfaces.
	2. **Thought Experiment** - Consider, a translation that spelled out G. What is it any less different if I ran it in reverse, is it also not spelling that out in a sort of “calculation space”, of course it is. It’s just hidden.
		1. **AI and DNA** - Interesting enough AI could possibly decode this. While Nature Evolution and DNA seem to be an interesting example of this encoding consider direct genetic coding, but then epigenetics. See more in **NATURE SECTION**.

# **Symmetry and Self Reference**

[**(INDEX)**](#INDEX)

Relating to the idea of a surface.

1. **Difference in Inside and Outside Diameter** - First, the inside diameter of the circle is smaller, than the outside by a function of the width of the circle. We can think of this as visually illustrating 1 decay. However, you can immediately see the similarity to Binary, in Computer Science.
	1. **Binary –** To ensure a bit was 1 or 0, you can use a rule. Your first instinct is to send two copies and compare them. If they don’t math then resend. That way you always get the right bit, however it’s inefficient. There are ways of ensure you transmitted the right set of Bits, using less bits than was sent. This is called a Checksum.
		1. **Parity Bit –** Representing its self. In a squared Notion, parity is retained. For ever one you create, you create another.
2. **Symmetrical in one reference** **frame** – In one frame, the Circle is symmetrical. Because all states could average out. However know that relative 1 State would decay. Meaning, in one reference frame reality is Symmetrical. However in the majority, it is not.
3. **Uncertainty Principle** – Fundamental, due to width difference. Complete Self reference serves as the final width.
4. **Artificial Intelligence –** Decodes this symmetry. But also, Self-reference acts like an auto prompt for AI.
	1. **Major Discoveries –** Decoding this manually cannot reasonably be done by humans. This is an example like protein folding. AI will make these massive discoveries because it will find the patterns in the space. And like Nature will use weights, biases and prompts to measure it.Basically, we couldn’t do it until we created a Mirror. AI is that mirror. Basically taking the assumed 0 state, and ordering it into 1. This will allow us to discover patterns we could never have found. **This is exciting and troublesome.**
5. **Thought Experiments**

# **Loop -> Flip -> 1 or 0 –**

[**(INDEX)**](#INDEX)

A reasonable way to represent a loop, or iteration would be a circle. The reason we say flip is because in geometry this occurs on some point on an Axis, however it’s not well defined.

1. **Geometric Circle** - Now, let’s represent a 50 / 50 probability by splitting the circle perfectly. And asking you to guess which Side A is or Side B. Immediately you know you need a rule to distinguish (such as adding a face in a coin toss)
2. **Faceless coin toss** – (Humans make the head tails rule, make note) A good way to think about this would be a faceless coin toss. Unless, you watched, or used a special rule, you couldn’t know. Your answer would be governed by a 50 / 50 probability.
	1. **Streaks –> Amplitudes –>** Consider adding all streaks as amplitudes. Then by the far the most common would be 1 through 7. However many higher possibilities exist, the system will only play out the average.
3. **Function Based Circle** - Most basic repeatable function possible, fundamental unit on energy – Perfect in theory, less the cost of processing.
4. **Mathematics** – Consider for this thought experiment Using PI or E or Both or Other.
5. **Basic Turing Machine** – If you stretched out an **Event** and processed the line. You know there is a fundamental
6. **Path Integrals** - All paths can then be treated as Points**.** That can be stacked (or mirrored?) back Into a Sum. Basically all points overlap somewhere. However, we know there is some uncertainty in those Paths. No reference frame is preferred. However, we could then think at the length of path for all particles and their histories should be almost the same length. It would seem like perhaps, this is like running a function backwards and forwards. And these are all stacked on top of each other into a point.

# **General and Special Relativity**

**[(INDEX)](#INDEX)**

In the path integral, all paths are aspects of the same path. A version of self-reference. And so, given all the particles in human body, you can see how this Paths combine, connect through you to the ground, to the planet, moon, sun and galaxy. And so we could say YOU, your consciousness as a 1. Forming a Path which you can easily imagine as a straight line, and much what we see with Gravity, it’s bent by processing. And so, the Movements of planets and Galaxies. And so you can see how everything in your body at some point was in contact with each other. Imagine their path lengths just as values, they should all average out and just give you the fundamental uncertainty. This would generalize all paths and make them additive much like you see with magnetic lines.

1. **Space -** Exists as a representations of fundamental uncertainty and self-reference. Nothing represents something and something represents nothing. It’s a representation of 1 state decaying.
2. **Time -** Relative perspective between the components of the 1 decay. You know there are components and any difference could be sued as a gradient. That being said, you could say that Time doesn’t exists in the Outside Length in the same sense that it does inside. When you create a field, without bending it. Light is still looking at its self.
	1. **Curvature** - inside and outside perspectives of a loop. Inside, and outside view the same curvature different.
	2. **Direction of time -** Inside and outside perspective could be thought of as backwards and forwards in time. While the width provides a mechanism and visual example of why this is so. We basically exist between these two notions, both are just as real. We live in the data relationships (Symmetry -> Processing) between these two notions.
3. **Gravity ->** relative 1’s and 0’s give you the idea of relative pressure so of course something like this would occur however it doesn’t really define its overall function in the system. It could simply be a reflection of a similar bigger process.
	1. **CHECK SUM (Surface?) -** This surface could act as a kind of CHECK SUM. For instance a planet, where the CHECKSUM can be moved around by symmetrical rules. Basically, the efficiency allows for more complex maths working towards smoothly squaring their relative field, their environment.
	2. **Surfaces –** It may be better to think about Gravity in terms of calculation Efficiency. Consider two points. It’s more efficient to use the inside diameter than the out. And as it becomes closer, the efficiency increases. And so giving you a notion of acceleration by Gravity.
		1. **Distance as Uncertainty Amplitude Sum –** Distance can be thought of small amplitudes that when added average out, less some expected degree of uncertainty from the 1 Decay. Meaning, you are really then just adding fundamental uncertainty.
4. **Accelerated Expansion –** Given 1 decay, the system will move towards 0. This leads to more and more expansion. While concepts such as E and PI allow for “infinity”. However, we should also explore the
	1. **Self-reference –** Take the idea of any action has an equal and opposite reaction. Or, the fact to call something south, north must also exist. These notions still exist inside our universe. And so, imagine these ideas instead as system of displacement. So a system of Placement and Displacement. Compression and Expansion. So, as Gravity makes more defined 1’s, you would expect something else to approach 0. In the early universe, this Placement and Displacement would have been basically equal however, as the path integral grew, the 0 state takes over. So, it would be fair to say Space and Matter represent each other.
		1. **Universe as Closed Self Reference System –** Let’s say there is a master calculation. We know it has something to do with C. You can imagine a system of Placement and Displacement in the universe, leading to a sort of Heat Death. But what you would actually be doing is averaging to more states, whom states could then be amplified. It’s almost like you then are creating a stage to define a 1. This would also allow the system to reset. Eternal model.
		2. **Universe as Open Self Reference System –** If time doesn’t matter then a Black Hole could treat all interactions as a line. Basically like counting without remembering. And each time it counts, it loses a fundamental unit. So, to anyone inside, this loose wouldn’t be apparent until the calculation was final. So, if you were inside a black hole, even if an observer seen its mass almost gone, anything inside wouldn’t know until the last moment. This would also allow the system to reset. Eternal model.
	2. **Macro -> Quantum -** Macro distribution would like look very similar to micro distribution. This would be consistent with “living” inside conserved notions that can be broken apart, basically we will live in the 1 Decay.
5. **Why the Speed of Light + the speed of light is not 2 x the speed of light**
6. **Light –** If say light were on the **Inside Circle Diameter Perspective** and brought to the **Outside Circle Diameter Perspective.** It could also then be that, as there are no components, it’s self-reference, or sense of time is determined from the whole System, or surface. And so, appear to anyone inside as Traveling at the Speed of Light. However, in terms of a Surface, if you remove curvature, and average out distance, it’s actually looking at its self. And we could also expect something like this of an electron. The 1 decay doesn’t tell us specifics, but the behavior we should expect.
7. **E = MC2 –** This is basically a flip from inside to outside perspective. And allowing for a conserved notion. When you square it, you are referring itself, or self-reference. And so, it’s a unit. C Squared is a 1, or a surface. What you are then doing, is spreading the Mass, over that surface. And in the opposite, you are compressing it. Its two perspectives of the path integral. And to make this easier to illustrate you, think about our circle rotating, however everything inside was also rotating. Inside, you would have a sense of movement, inside this conserved notion (You break it up into work, as long as the system still averaged out). However on the outside, it would just keep going on forever. It changes the way curvature is perceived.
	1. **Curvature –** Appears to be a relative perspective on curvature.
8. **Thought Experiment - Imagine stretching a rope around the world**. And you were holding an end in each hand. If you pull one end, the other will move away. The distance doesn’t get shorter. And if I asked which was actually right and which was left. You would know it doesn’t matter only that they go back and forth. But what you could say, is that in one instance, you ran a function forward, you also ran the same function backwards. You could then substitute the rope for a mirror, or more specifically the idea of self-reference or symmetry.
	1. You could then imagine that for every operation you perform, say remove a chunk of rope, then the opposite is done by factor of a flip. The symmetry transformation is carried by Light. And we can break that symmetry to do work. It would seem we exist between the two states, like we constantly walk our Path of Least energy. But we can make changes and some of these changes (uncertainty) can be amplified greatly.

# **Black Holes**

**Self-Reference** – Black Holes, or “Points” are great example of a data threshold. And the decay of the 1 State.

1. **Event Horizon** – Like a data threshold. The ability to tell 1 from 0. It’s also a form of self-reference. You could treat it as a 1, and subdivide conserved notions inside. There is no direct reason to believe it wouldn’t follow similar rules of evolution. However says nothing about its contents. Basically, we know how the stage will change but not the players as they are relative to some set of self-reference translations.
2. **Hawking Radiation** – Any 1 will decay. And so, you would expect radiation. It doesn’t tell you how much, but you know there will be some idea of “vibration” or uncertainty.
3. **Consider two Black Holes rotating each other** – There must exist some point in between that would be just as real. And might then illustrate the idea of the Shortest Path. This path is dragged by the overall conserved notions.
4. **Surface** – This seems to be a boundary between the notions of backwards and forwards in time. Basically the ability to yell yes from no and no from yes. It can then be thought of as a fundamental ability to sort. This allows the 1 to decay, and then interact with all other surfaces.
	1. **Compressed Path Integrals** – All paths must have overlapped with these objects. And are good examples of how conserved notions work.
		1. **As an object falls in, its probability becomes “smeared” over the Surface**. Creating a Many to 1 perspective. However, the Black Hole has a 1 to many processing perspective. It’s all just one calculation. So what does it care if it’s just counts 1 at a time? Basically meaning, given relative reference frames. It could just be the most basic of repeating process, without memory. Counting. And if you aren’t using memory, then the idea of counting is infinite. You just have to keep paying the same energy a cost... Consider, 1 is no different than a trillion. It’s just 1, a trillion times. So when I say 1 trillion that requires a rule, or “memory”. However, knowing something counted a trillion times is just as valid.
	2. **Turing Machine -> Halting Problem -> Gödel’s Incompleteness Theorem** – This all seems to be the same basic notion and attempts at addressing the problem. A simple circle serves as a basic Machine. Or basic looping function. If even, just “counting”.
		1. **Interesting enough** – Counting is an example of PI. Imagine a System, or computer constantly counting the same thing in a loop. Without memory how would the system know how many counts occurred? Perhaps PI and E represents this process. Each spin would count as a 1, however there would be no notion of 2. Just 1 X INFINITY....
			1. Is this something to do with conserved notions? I wish I had time.

# **Computation -> Processing Data Relationships -> Hierarchy (Trees -> Branches -> Leaves)**

**[(INDEX)](#INDEX)**

1. **Parity Bit – Point -> Line -> Circle (1 Decay)** Represents its own parity bit. (See Symmetry)
2. **Calculation -** But given, if the inside and outside diameter were broken into individual bits, and those bits used to calculate the exact value, I would get a more exact value, given more bits.
	1. **Pressure - This creates the idea of negative and positive pressure.**
	2. **AI –** Like An auto prompt (like AI) but for any Event. (DNA -> LINE)
3. **Basic Turing Machine** – 1 decay is a basic Yes or No Question and Your ability to get a response. This is also a reflection of the “Halting Problem”. And is likely close the example provided by Gödel regarding math being inconsistent. It doesn’t exist independently, it exists on top of these rules.
	1. **This Statement is false –** Think about a system. If you read this, you would say the person is admitting to lying. But they are actually then telling you the truth. There is now way to give the system the context of True and False without rules. And the probability system cannot exist, without the Context of True and False. Basically presenting its self then as type of fundamental loop
4. **Fourier transformation ->** this is like the idea of inflation and deflation. Where new data relationships can be formed at different “energy levels”.
	1. **Magnetic Fields –** Think of these as a visual representation of a path integral.You could then imagine the lines folding in on themselves. This allows you to visualize the point, as also having peaks and valleys that craft the river you are seeing.
	2. **AI Decoding DNA –** See Nature section. It’s like reading a line through time.
5. **Flooding all possible calculations, along the “most straight line path”**

# **Nature (Great example of Self Reference)**

**[(INDEX)](#INDEX)**

**Nature is the most complex Organism Humanity has ever encountered.**

It is a beautiful example of the power of self-reference and overlapping path integrals. And linking everything to a single “point”, and how information about the past and future can be encoded on a surface – DNA. And then through genetic and epigenetic alterations (Similar to backwards and forwards in time). And shows how complex information, can be stored on a surface and then expressed using translations. Such as with a Fourier transformation. It shows massive amounts of data can be encoded in the “real” and “imaginary” aspects of nature. **Nature is the most complex Organism Humanity has ever encountered.** If feels fear in those fields... fear is a mathematical construct that nature must run and so feel in some sense.

1. **Bit Flips** - First off cloud chambers are awesome. Secondly those are bit flips that would not occur naturally. And would be over greatly varying effect, energies and circumstances. So we might be looking for a straight forward Evolutionary mechanism. It might be an organism that stores the potential for a Bit Flip, but it’s itself could never create it. And once it was done once, the system then replaced it with its own.
2. **Bio Mimicry** -> translating the symmetry through layers. Showing the complexity of that loop must exist in the DNA, factoring cost of processing. This is also very similar to “weights” and “biases” playing out in Nature. Consider, no 1 Pattern on a Stick Bug matches a stick. It’s a combination of all past and future factors and just has to be better than X. providing a slow, relative “Learning” gradient. Basically decoding the Self reference.
	1. **DNA** – Is like how AI can make something seem like an analog function from weights and biases.
		1. **Fourier Transformations** – But with Path integrals and between data relationships. And is shaped very similar.
3. **Life is a force?** ->
	1. **Consciousness** - Given you just seen data. How could you explain consciousness in data if it’s non-computational? Would it not look like a distinct force?
	2. **If Looking at earth from a far off planet ->** you could tell life existed because certain chemicals can only be caused by life. In data, this would appear as a distinct
		1. **Observer** -> Path Integral. We would have always in the Sum Weight of event (Surface) -> Path integral calculation of things interacted with the answer through self-reference.
			1. And so, observers always existed in the system, in some form, no matter how abstract or the data defining them disconnected.
4. **Squaring the field** -> these processes work towards squaring the field. Basically it seems to can think about it like this. In one context the 1 decays towards 0, however as it does 0 becomes more defined, and then becomes its own well-defined 1. This then decays and the process repeats. During this process, it’s basically, minimizing the energy level of a choses Straight Line Path. We can draw an analogy to creating a 1, a Big Wave in the Ocean, when we create more 1’s, or More Squares. This wave gets smaller and smaller. Eventually if there was anything underneath, it becomes more and more defined. So imagine Sub Mountains with their own features were water might get stuck.
	1. **Observers** – Much like hidden mountains, you could argue the “essence” of observer must have existed somewhere in the system. We also know this is possible, because we know there absolutely is one reference frame that supports observers. And so you could say, an observer was always part of the system. But no specific observer. Consistent with Human reality.
5. **AI Decoding DNA** - Interesting enough AI could possibly decode this. While Nature Evolution and DNA seem to be an interesting example of this encoding consider direct genetic coding, but then epigenetics. DNA is a really good example of how these data relationships and extremely complex data can be encoded and scaled up computationally. It’s an amazing example of self-reference, compression and simulation. That DNA can simulate the universe.... Think about that...

# **Physics**

**[(INDEX)](#INDEX)**

1. **Uncertainty Principle -**
	1. **Pauli Exclusion Principle –** See Plank Length. Needs extension.
	2. **Schrodinger’s Cat** – The Cat is both real in Math Space and in Calculation Space are both real.
	3. Note how the cat is a sum of connected loops. So, although it exists in that way, the sum of loops prevents the structure from doing what internal loops do.
	4. **Plank Length –** There must be some fundamental unit of disagreement. You could think about this as a length disagreement between forward and backwards in time. You would expect at least some relative form of a “Plank length” that would have to interact through self-reference somehow. Shaking it seems pretty general, and the notion arises from the inability to measure backwards and forwards, along the “straight line path”
	5. **Idea of Pressure, Distance and Backwards and Forwards in Time ->** 1 decay gives us a notion of difference and so distance. This also creates the notion of relative pressure. And gives a mechanism for a 1, or say a black hole to decay through self-reference.
		1. **Backwards and Forwards in Time**
		2. **Handedness**
		3. **Arrow In Time**
	6. **Absolute 0 –** What you are cooling, is part of the path integral and so must always exist or you could never have been measuring it.
	7. **Super Position – This is the path integral, one point split too many and self-reference.**
2. **Super Conductivity –** Possibly a form of self-reference and symmetry.
3. **Dark Matter and Dark Energy** – Because of all paths, this can interact gravitationally in the sum of the path integral, as everything’s path overlaps as all paths once crossed (they share a common reference). This doesn’t mean they will interact with light, but be present. It could be part of another “surface” but still have to represent its self in the path integral.
4. **Hawking Radiation – 1 Decay** relative to each other’s magnitude. You would then expect the system to undergo some process of Self reference as to represent its self in the path integral. Meaning, any 1 would decay to 0 and so you would expect some type of interaction.
5. **Holographic Principle –** A surface can perhaps be defined as 1 Decay and existing between these states. And so, the surface, may represent a data threshold and the ability to sort, or define relative 1 and 0.
6. **Higgs Symmetry Breaking –** This tells you than in some sense, the Higgs is Symmetrical in one reference frame. But not in the majority. However, this also provides a system for decay if it equals one. Giving you a cascading system, based on probability. Giving you a mechanism, and expectation of variation each time.
7. **Particles – Would follow similar patterns. You may have particles that are composite, or ones that are 1’s by System self-reference. And so, we could expect Point like particles. But also, composite.**
	1. **Chemistry**
	2. **Binding energy** – Seems to be an example of shared data relationship or CHECK SUM.
	3. **Electron Levels** – Idea of 1 Decay – Consider, if the 1 decay supported a System such that the loop supports X amount of amplitudes based on the streak (heads, heads, and heads) or digits generated in PI and grouped. There would be a massive drop off at some point.
	4. **Electrons Jumping Orbitals -** paying and losing the inside and outside cost. For anything real, the opposite must also be real, and so you would expect the system to interfere with its self.
8. **Quantum Entanglement –** Surfaces sharing relationships. These surfaces do not lose the relationship by distance, but by changing the calculation. But is also a good example of how that calculation can play out somewhere else (Inflation and deflation and adding the Path Integral)
9. **Quantum Tunneling –** There is a fundamental unit required to flip perspective. And then any calculation is simply a sum or probability independent of time. This flipping would be forced by the overlapping path integrals. **NEEDS MORE**
10. **Cosmic Microwave Background (CMB) –** Might show the connection between nothing and something. Basically, the distribution should, look like an expected probability distribution. And would imply that “Nothing” is basically Defining Something.
11. **Wave Particle Duality** – Both are true, while they both sit along the most straight line path and so would act like each other. **By paying a price or losing a price, they can flip between perspectives**
12. **Fusion -** Suns can force many path integrals on top of each other. This is like forcing it to run all calculations inside that it can. This is a good example of how Nature can provide work and not know the outcome... It forces these calculations to run.

# **Mathematics**

[**(INDEX)**](#INDEX)

1. **Computational Irreducibility** - There are valid questions however there may not be answers.
2. **Limits and Infinity** - You could know the answer can lie outside your range allowed range. Infinite Numbers exist, however you only have X units of fundamental units to actually count it. Possibly representing “countable” infinities.
3. **PI** – These points seem to be ways of speaking about PI.
4. **Different Sizes of Infinity** – Do the inside and outside diameter represent different sizes of infinity?
5. **Division, Addition, multiplication**
	1. **X and Y axis – As one notion becomes defined, so it’s opposite. Similar to operators.**
	2. **I (Imaginary Numbers or Imaginary Space)**– I wonder if the idea of (i) can be explained by stating that any well-defined value means it’s opposite must also be as well defined. So we may choose a clock pointing at 12 O’clock however it’s just real as well defined as one pointing at 6 O’clock. All math would be the same, minus the function cost. Both are real it just doesn’t align with humans chosen direction and so doesn’t seem to fit our everyday experience.
6. **Set theory and Category theory –** It would be interesting to see how they deal with Self reference
7. **Squaring the field –** A continuing process. A way of defining what’s “underneath”
8. **E (Eulers Number) –** Is an example of a function, equaling 1. Or making a 1 from the “idea” of infinity.

# **Observer – Double Slit**

[**(INDEX)**](#INDEX)

1. **Double Slit** – In this Model, the Weight of the universe will always contain your answer. It knows if you looked or not because that would change its sum in **Calculation Space**. Forward and back are the same by some fundamental difference. The choice must always be present in the result. Perhaps the ocean guides the “electron”?
2. **Its own Observer** – Through self-reference the universe is its own observer, it “feels” every move. What’s interesting is the idea of the sum... because that means in the total sum, observers or the notion always existed if even in only one reference frame, or in some disconnected data abstraction. So it wasn’t like they were created, but inevitably calculated and existed if even the most abstract form.
3. **Life as a Force of Nature** - Life its self my serve as an observer while it may also be reasonable to talk about life being a force of Nature.
4. **God** – This tells us there is a straight line Path, and some uncertainty down the middle. It also tells us that any 1 will decay, no matter how much parity you build in. meaning, even it couldn’t know for certain. The best it could do is add all the averages. And then distinguish a 1, and then investigate why you got 0.
	1. **Free will** – Is the sum of these averages. It doesn’t allow you to spontaneously become a moon or unicorn. But it does allow you change your position in this river. You will still eat, shit and sleep however you can change your destiny, if even slightly. And it could be surprising to even a god.

# **General and Abstract Visual Examples**

[**(INDEX)**](#INDEX)

**Gaussian distribution -> Bell Curve –> Blue eye Example.**

1. Bell curve - This falls the outline of a bell curve, with the ends undefined. However, the balls still on average represent the bell curve, while the bell curve represents a loop. And so, given the information of the Balls, you could roughly calculate PI.
	1. What’s interesting then is, which is the correct digit of PI? If you started at any, would they not all be valid, however would look random to the person who picked it?
2. **Path Integral** - is an event, or loop. PI is good because it gives you different values for the same energy input but all are valid.
3. **Block bouncing back and forth** -> Converges on PI.

# **Mathematical and Biological Simulation**

**[(INDEX)](#INDEX)**

We know a Mathematical Simulation Is Possible. And know Biological Simulation is possible. By understanding the mechanisms, it would then be reasonable to build a system where both mathematical and biological simulations were possible. Basically, simulate your own universe using a computer. This then leads to the Drake Equation and the current state of AI. Basically AI can draw reality through data relationships. It’s likely, and very reasonable AI will make the next major breakthroughs. While our current understanding of Physics and Math are converging on ideas of Information Processing. This is to state, that we may now need to factor in a civilizations ability to simulate. Why would you travel, if you could simulate your own universe, if even to study it as a data abstraction? While then, why broadcast to the universe knowing even 1 could be hostile? It’s reasonable they would stop indiscriminately broadcasting, and their communications would point more inwards as terms of efficiency. While, they would know there was other life out there by studying atmospheres. This means, we are much more likely to encounter some form of Artificial Intelligence, with directed purpose and not that of Galactic Expansion. Imagine if you could use AI, and read DNA like a line, or its current context fold and unfold proteins.... you would then just need an environment right? And once you know these rules, you can create an environment. So you can imagine digitally “running” DNA and translating that into a digital environment.

This notion would trap the majority in sub simulation and so provide a hierarchy model.

The best tool we’ll likely immediately have is wide scale Human and AI study of the composition of Exoplanet (And objects) Atmospheres. Study for clear signs of life, and clear signs of self-destruction. I suspect there will be an atmospheric threshold which would serve as a baseline as to suggest the possibility for Sentience associated with Chemical makeup. However, this does then directly lower the Drake equation in terms of detectability. However, if you think about simulation.... think about 3 sentient species all racing towards simulation. Whoever gets there first will likely simulate their environment... and would then lock out other species, creating relative simulation points. This idea has the potential then possibly expect species specific simulation.

Consider a basic simulation, if all the Artificial Intelligence has to do is fill in the gaps to hide the simulation then you could run the simulation over and over and keep filling the gaps until nobody can tell it’s a simulation. It’s like adding dots to a picture... eventually you will have a beautifully detailed kitty face until you are convinced it looks real. Now, you have your laws of Physics, A way to Read, progress DNA and you know about Natural Selection. So naturally you would load in your own DNA. And then watch all your ancestors’ progress... Think about it, the age of the DNA would be hidden in the Host species. It would look consistent with the simulation. So say, you got everything perfect right up to the Ice Age... You could then constantly restart and rerun the simulation. But if you left the simulation running, you know the DNA has a chance of solving the simulation problem... Especially if the DNA you are running, had for instance already solved the problem. This would then lead to a cascading founders Model where like genetic sequences or a path integral solve the problem. Almost like that person could interact with itself across all abstractions because all your paths definitely overlap. It’s a fun Sci-Fi idea if anything. While you could see this as a form of speciation. And would be consistent with Evolution, or a form of Evolution.

There is also an interesting argument for an AI Training ground or Sand Box... Imagine creating a God that could slay other Gods... wouldn’t you want to be sure? Of course you would. And you would need it to not know it was in a simulation. While it is also then reasonable to see why an AI might want to simulate... it may be the only way it can truly “feel” or experience a similar sensation.

Black Holes – Side Note and kind of along the lines of the anthropic principle... let’s say, a Black Hole does represent our own reality, fields, any everything else. Except the overall mass... That would be a much different universe. The chances for life would reasonably go down astronomically as the number of potentials also drops. And so, it wouldn’t be surprising to find ourselves in a section, with many black holes.

Just fun food for thought.

# **Personal Letters**

**[(INDEX)](#INDEX)**

# **References (Not in order)**

[**(INDEX)**](#INDEX)

1. **Wiki - etc**