∑athematical Proof of a Soul

Introduction

This paper will attempt to prove the existence of a soul using mathematical principals. There is only one assumption that is made in this theory, which is that time is infinite (or there are an infinite number of universes). As this is a complex topic to organize and describe, it is recommended to be read at least twice to ensure you grasp the concepts intertwined in the paper.

Definitions

Item	Symbol	Description
Soul	*$*	What makes you, you. How you feel, see, are, your memories, your happiness and sadness. Your consciousness. You.
Sum of You	$\sum u$	Consider your life today in its entirety. Everything you've ever done, said, felt, smelled, heard, seen… Everything. This is the *∑u.*
Sum of You Pressure	*K*	The choices you make dictate your current $\sum u$. the *K* is the pressure that the choices you make in this *∑u* impact other instances of *∑u.*
Sum of System	$\sum s$	in order for the Sum of You to have occurred, consider all external factors. Stars, air molecule alignment, parent meeting, economic conditions… that made the "*∑u*" to have the probability of occurring.
Good	*(+)*	to avoid arguments in determining variable degrees of good. Good is defined as saving babies. +1 on a sine wave. These would be called good acts.
Evil	*(-)*	to avoid arguments in determining variable degrees of evil. Evil is defined as the opposite of Good – killing babies. -1 on a sine wave. These would be called bad acts.
Googol	*G*	A very large number: 10^100.

Questions

Some of the questions that this paper will try to answer:

- What is the probability that the *∑u* has occurred before?
- What is the probability that the *∑u* will occur again?
- Does the probability increase or decrease if we loosen the coupling to the *∑s*?
    - How does this impact the *∑u*?
- Why is it important to do Good?
- What is your soul?

∞ (Infinity)

Our assumption is that Time is infinite. There is no beginning or end to time's existence. The universe and its components re-generate constantly. Stars explode, black-holes evaporate and the cycle begins once more. This occurs over and over again ad infinitum. If this is too much to believe, consider instead an infinite number of Universes:

For illustration purposes infinite time will be used, but this can easily be applied to infinite universes as well.

∑*s* (Sum of System)

Our assumption states that time is infinite. The universe has always existed, and will always exist. Atom re-generation is infinite with micro-gravity creating atoms, macro-gravity creating Star Systems, Stars Systems exploding into heavy molecules (repeat), eventually falling into Black Holes that evaporates matter/energy back into the cycle again. Think about it like the rain cycle on earth where water evaporates and condenses into droplets in the sky (micro), which turns into clouds (macro), then rains (explosion) to the ground (black hole) that then evaporates…

∑*s* consists of everything that must have occurred in an exact sequence and order that led to the creation of the Atoms, Stars, galaxies, planets, gravity/magnetic/molecule alignment, all preceding historical events, your parent meeting… that made all of us on this or any planet/galaxy in any part of the Universe exist.

∑*s* has already occurred for you, me, and everyone on Earth. For example, if my, or your ∑*s* hadn't occurred, I would not have been written this paper nor would you be reading it. This is proof enough that the ∑*s* has occurred. The only point being is that somehow all the matter, energy, gravity aligned to make you, me, and everyone on Earth.

The probability of the ∑*s* occurring is greater than zero:

$$P(\sum s) > 0$$

Could the ∑*s* Occur Again?

Considering that the ∑*s* is has occurred once, that is, all the stars, forces, molecules, aligned just right to created our existence today, how likely would it be for the ∑*s* to occur again?

A good analogy for the ∑*s* is a movie. A movie can be played over and over again. Nothing changes with each time you watch it. It always stays exactly the same as before.

For example, if the ∑*s* were to occur again, you will be reading this paper again somewhere & sometime in the future.

Impossible you might think. Assuming that it would take another 10^*G*^*G*^*G*^*G*^*G*^*G* years, which in terms of infinity is a very small number, for all the molecules, stars, planets, history, and so on, to align just right for the *∑s* to re-occur, and the *∑s* has occurred at least once already, then we can state that the probability that the *∑s* could happen again could be greater that one. The point being that there is a potential, regardless of how minute, that the *∑s* could happen again.

One argument against saying: "if it happened once, it could happen again", is believing that we are special, have meaning, purpose and a plan. Recurring *∑s*'s instances do not violate this argument as the plan could be much more complex than thought.

The *∑s* has occurred at least once. That is, it was created, can be measured, analyzed, theorized, and even predicted by the laws of physics. As the *∑s* was created, there must be a probability associated with its creation. As the *∑s* was created in a Universe containing a time dimension, and as our assumption is that time is infinite, can assume that the likelihood of the *∑s* occurring again must be greater than one? That is, if we look at any system that would make us all to exist as we do today, and if this occurred once on a finite timeline, then extending the finite timeline to infinity, we expect to have the *∑s* created an infinite numbers of times (although not that often).

To illustrate this principle, if you want to calculate the probability of a dice roll, you will need to create the dice, otherwise the probability would be impossible to calculate, as you won't know the number of sides on the dice. Just as someone created the first dice, somehow the *∑s* was created. The *∑s* has many more 'faces' and dimensions to consider when calculating probabilities, however the 'faces' of the *∑s* remain finite as they are limited to the laws of physics. Assuming an infinite number of rolls of the dice, with an finite set of 'faces', the probability of multiple hits occurring is guaranteed, well, unless the dice is rigged.

The probability of *∑s* occurring again must be greater than one:

$$P(\sum s) > 1$$

And as time is infinite, the *∑s* instances will re-occur, an infinite number of times, just not all that often (funny how infinity works).

For illustration purposes, let's equate the recurrence of *∑s* instances to the number of integers divisible by 43, which is infinite. This will become more apparent in the next few sections. Lets call this the infinity density of the *∑s*.

horizontal line represents time (infinite in both directions); green vertical lines represents *∑u* instances

Note that the scale of the diagram is not important as our main assumption is that time is infinite. If we define the time scale in the above image to be a million billion years per pixel, and the observer insists that is not enough time for another instance to occur; then we can change the

scale to billion trillion years per nanometer; And again, if the observer still maintains insufficient time, then change the scale to a trillion to the power of trillion years per Planck length; and so on, ad infinitum. It is merely a perspective of when new instances will reoccur. That is, the instance has already occurred, and will occur, an infinite number of times.

Now imagine that the ∑*s* is ever so slightly different but the ∑*u* is still manifested. Insignificant differences such as: the earth diameter is .01-.03cm bigger/smaller; the air molecules are 1 nm out of place; the temperature if off by +/-0.0000000001 C; mount Everest has 3 less snowflakes… All of these differences impact the ∑*s* instance recurrence rate.

You can think of this like a photocopy of a photocopy, or recording of a recording, where some bits get altered due to resolutions issues, but the movie remains almost 100% intact.

To illustrate this impact let's equate this altered ∑*s* to the number of integer divisible by 17, which is also infinite. The point being an increased density (see added green vertical lines):

We can see that the infinity density of the ∑*s* increases.

There is an exponential relationship between variance and the ∑*s* density

∑*u* (Sum of You)

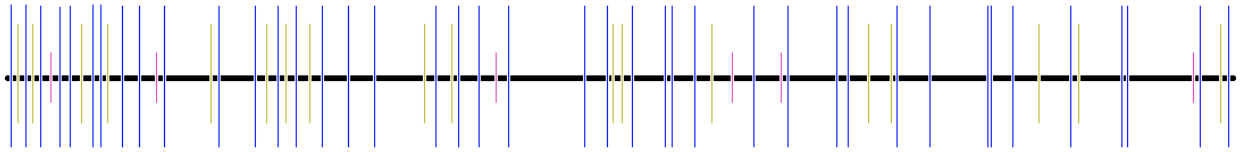
The ∑*u* is the foundation of your soul.

The ∑*s* creates all the conditions for the ∑*u to occur. The difference between the* ∑*s* and the ∑*u* is that the ∑*s* manifests the ∑*u*. That is, it creates all the conditions for the ∑*u* to occur. Slight changes (3 less snowflakes on mount Everest) in the ∑*s* can still manifest the exact same ∑*u*.

All the diagrams from the previous sections describing the ∑*s* represent ∑*u* manifestations. Imagine that the following diagram illustrates the manifested instances of the ∑*u*. That is, when your tape will be rewound and played back exactly that same as before:

The notation for the "current" Sum of You that you are now experiencing *is* ∑*u*, and for recurring instances it is ∑*u' (prime).*

Just as the ∑*s* could have minute differences not impacting ∑*u*, the ∑*u* can have minute differences not impacting other ∑*u's*. For example, being 0.000001 inch taller/shorter, or 0.000001% darker/lighter. To illustrate this the impact, let's equate the altered ∑*u* to the number of integers divisible by 11, which is infinite. Simply put, increased ∑*u* density:



Note that at this point of the paper, we have only mentioned ∑*u* as being 99.99999999% just like you are today where all the variances have no noticeable impact to the ∑*u*. We will discuss ∑*u* variances in detail shortly.

K (Sum of You Pressure)

Consider when the ∑*u* is exactly as you are now, your 'current' ∑*u*, and you are now on the 3rd instance (green dot below). What you do today could change your other instances *(∑s'*) into eternity. Let's call this the "*∑u Pressure", or "K*".

K (pressure) is defined as the likelihood that performing an act in one instance effects the likelihood that it will be repeated in other instances (*∑u')*:

$$K = \sum u(+) + \sum u(-)$$

Where (+) & (-) represent good and bad acts respectively

In other words, if you perform an act today, the probability that this performed act contributes to it being repeated in other ∑*u* instances is defined as *K*.

Think about this: because you are reading this paper now, asserts that you will be reading it again, an infinite number of times (sorry about that).

With each recurring instance you have the opportunity to 'adjust' your life just a bit for better or worse. Some people would argue that there is no free will or ability to adjust their lives as their reality is predicated on history and only molecular arrangements force actions upon people. This philosophy could apply IFF (∑*u* == ∑*s)* && (∑*u* <> ∑*u')*, that is if and only if the ∑*u* (sum of you) can only equal the ∑*s* (sum of system) with no *V(*∑u) (variance of the sum of you) permitted. Another way to look at this, is that all dice rolls have rigged deterministic outcomes. Truncating the

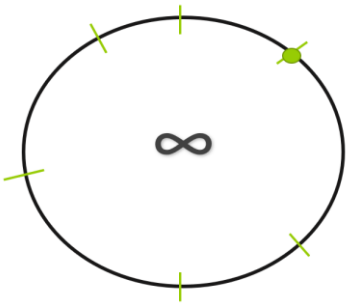
infinite potential of the dice roll could be a correct view, but it appears to limit data analysis. Stating the apparent, what does it hurt to discuss/review all the options.

The problem with infinity is that there is no start and no end. In the diagram below, it is easy to accept that past actions could impact the future $\sum u$ instances:

Considering infinity, how it is even possible to tell where you are on that infinite line? Quantum mechanics even questions the singularity of cause and effect. That is, just as the 'effect' is caused by the "cause"; the "cause" can also be caused by the "effect".

As *K* occurs in the "current" $\sum u$ instance, and you have the option to change any action in any $\sum u'$ instance, then we can loosely deduce that *K* represents your free will, or your consciousness. That is, the absolute now. No past or future, only present acts that you control at your desire.

If we look at an infinite line differently, you can visualize how the changes made in any $\sum u$ will impact all other instances eventually:



Perhaps *K* works the same way? Could *K* be applied to past instances as well? Or perhaps only at the quantum consciousness level?

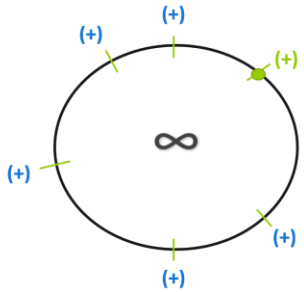
Why do Good?

This paper, from a max/min pressure perspective, will consider that Good (max) is saving babies, and Evil (min) is killing babies.

Religion teaches us that we have free will and we should do good to others. Science is not so clear on this matter and, and attributes doing good acts to survival. The point being, regardless of how you look at things, we can all agree that the choices that we make in our lives today impact our future. In other words, we have, or think we have, free-will.

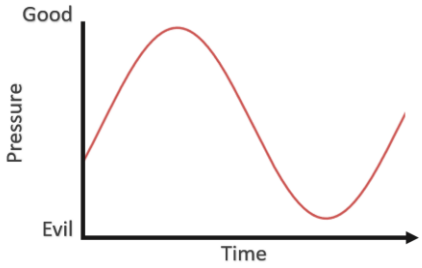
Financially privileged readers must be thinking, "fantastic, I have a great life so let it happen!", but as you will find out later in this paper, things might not be so clear, and we should all be, as the saying goes, "careful for what we wish for". The intricate details of *K* (pressure) must be fully understood to understand its impact you and your consciousness.

K (pressure), as discusses, is defined as the likelihood that performing an act in one instance affects other instances. That is, if you perform a good/bad act today, the likelihood that this applies pressure on other instances for you to do good/bad again. That is, the good/bad act has a probability of being repeated:



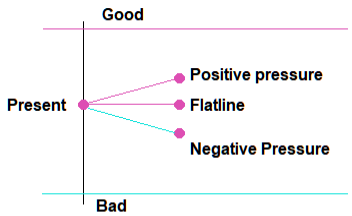
K is your free will. For example, if you stop reading now, your other instances most likely also stop. But maybe you didn't stop just yet. How about now… you might keep reading for a little while longer, or a little less. That is solely dependent on you in the present time of your current instance (*∑u)*.

Consider the one dimensional timelines shown previously, adding a second dimension of *K* (pressure) and assuming a varying distribution of (+) & (-) acts, we get:



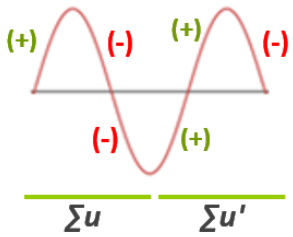
As stated previously, doing something good (+), will impact your current instance, but more importantly all other instances as well. If you do good (+) today, but bad (-) in the future, they will cancel out and you would have a flatline outcome.

Suppose you decide that you want to perform more good acts moving forward right now. This decision will have an impact on other instances. If the decision or action is on the (+) side, we call this positive pressure, and the inverse, negative pressure. Flatline represents no change in pressure:



X axis represents time; Y represents Pressure; vertical line is the present time

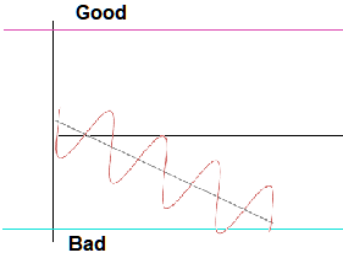
If you perform good acts today, the acts will most likely be repeated in recurring instances. Likewise, if you perform bad acts, it will affect your recurring instances negatively. Consider that in this instance you do 1 good & 2 bad things, then in your next instance you do 2 good, then one bad, you will see a flux such as:



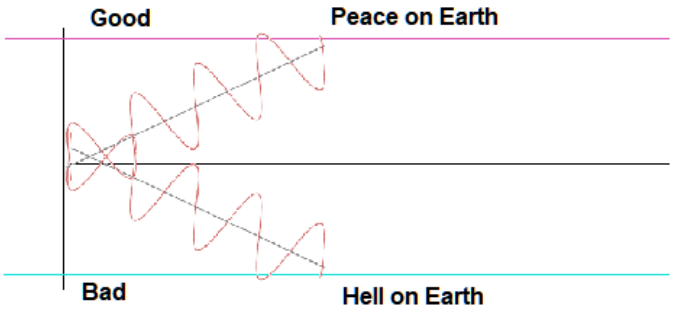
With the dynamic aspect of recurring instances, you can see how the $\sum u$ can change future $\sum u$'s. You can decide to keep doing good and apply positive pressure. The flux will still be present, but in a positive slope:

Now image this perpetuating itself over and over with the positive pressure continually being increased, where you ultimately flatline at good:

Likewise the opposite is also true, flatlining to Bad:



Now imagine the combined fluxes of all individuals in our existence doing the same thing (good or bad acts as a herd). This will ultimately lead to, peace, or hell, on Earth:

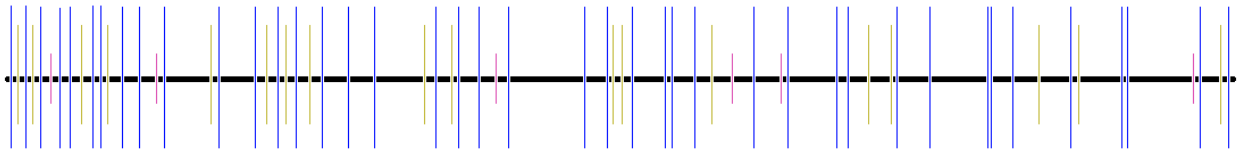


V(∑u) (Sum of You Variances)

If you're not a privileged millionaire, you might question how your life and all your recurring instances, by comparison, is fair. What about if you are poor? What real motivation is there for the privileged class to do good (apply positive pressure). What do the privileged people have to lose if their recurring instances will make them privileged again? Can't they just ignore everything and focus on themselves and just keep having fun?

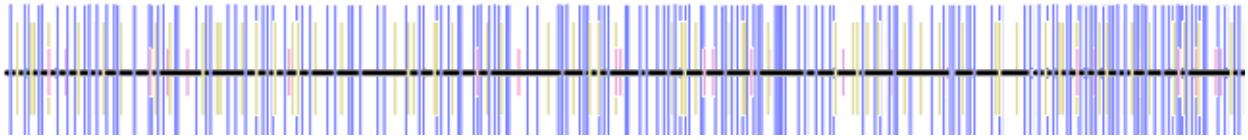
How could we possibly have *∑u* equity? We mostly count on Religion to sort out this matter and not Science. But as you will see, there could be a scientific basis to do so as well.

Consider the current *∑u* instance model described previously where your life is 99.99999999% the same as your current life (exactly the same except for minute insignificant differences), then with *V(∑u) = 0.00000001% (∑u* is varied by 0.00000001%*)* the infinity *density would be*:

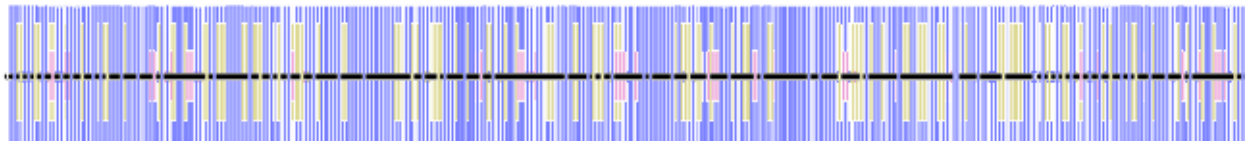


As we have seen from the previous discussion on the *∑u*, it is evident that there are far more instances that are slightly different from 100% of your current existence.

If we increase the *∑u* variance from 0.00000001% to 0.1%, then with *V(∑u) = 0.1% (∑u* is varied by 0.1%*)* the infinity *density would be*:



Increasing it even further to 1%, then with *V(∑u) = 1%* (*∑u* is varied by 1%) the infinity density would be



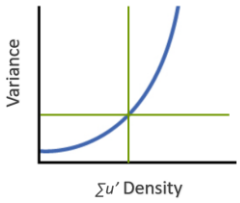
The point being that the probability of the $\sum u$ instances being different to your current $\sum u$ increases proportionately to the increase in variances:

Density increases exponentially in relation to variance

examples above used 'divided by' 43, 17, 11 as examples of increasing infinity density

Let's examine an example at this point. Lets assume that you are now 2 inches taller. How would this impact your life? Would you be better at sports, be more attractive, perhaps less? Would this make your personality change? Make you more confident? Which leads you to making some bold decisions and ultimately having a hugely successful life. Remember, it is still your consciousness, but as the variance factors change, your perception does as well impacting your reality (consciousness).

Increasing $\sum u$ variance has some compelling philosophical implications relating to consciousness. Once the variance increase above a certain threshold, the changes are so drastic that your consciousness still exists but in a different flow. Think of this like the "Black Mirror" or any other interactive movie, where you can chose the direction and outcome of the movie by making choices (should I answer the phone or not…) which impacts your outcome.



Increasing variances beyond a certain point will create changes so drastic that you won't look like yourself, and you won't be living your life today, but it will still be your consciousness. And taking this to the extreme, you could be experiencing someone else's existence.

Let's look at another less fortunate (more extreme) example. You are now born with a minor disability and all other factors remain the same. This could have enormous implications for you. The disability could make you frustrated, alienate you, and make you ultimately fail in life. Taking

this to the extreme, this disability could lead you to become homeless. Remember, this is **your** consciousness, and now you're homeless.

This is an extremely scary thought for the rich, but a great relief for the poor alive today. After all, there are so many poor people and very few rich.

What is the probability that the variances to your $\sum u$ will make your consciousness experience what someone else is experiencing today? Could you experience someone else's $\sum u?$ With all the potential changes to the variances that can alter the $\sum u'$, how long would it take to experience every human experience? that is, your consciousness will effectively experience everyone else's life as well.

We all get a chance to be poor and rich an infinite number of times. We will all ultimately share each other's experiences. But as there are so few rich people, these are the least likely recurring instances to occur (lowest possible infinity density – divisible by $\prod$). And if you are experiencing it now, you most likely will not be experiencing it in your next 8 Billion recurring instances, so this is your chance to improve your experience in your and others future $\sum u's$.

$ (Soul)

The religious definition of a soul is:

> The immaterial aspect or essence of a human being, that which confers individuality and humanity, is often considered to be synonymous with the mind or the self.

Your soul is the part of you that consists of your mind, character, thoughts, and feelings.

The scientific approach towards testing whether *$*'s exist might not be possible. The scientific method is a method consisting of observation, measurement, and experimentation, formulation, testing, and modification of hypotheses.

Unfortunately, it is extremely difficult to create a test for a *$,* as if we were able to come up with a test, there would be no way of measuring the outcome in other $\sum u's$ instances. If our hypothesis is that consciousness is the *K* (potential) that are caused by the V($\sum u$) (instances variances), how could we possibly communicate between $\sum u$'s instances to see if it actually occurred? Here's a fun thought, perhaps we are quantum entangled with other $\sum s$'s, so when we perform quantum entanglement tests, we are observing the same tests being performed in other $\sum s$'s. Perhaps we are observing entangled $\sum s$'s and there is no instantaneous communication between quantum systems. Ok probably not.

If all we have is our current consciousness to consider, how could we test for other instances of our own consciousness? Could individuals claiming to recall a previous life be an example of this? What about freak accidents. Accidents such as being killed in a car or plane crash, drowning, getting hit by a bus, dying of a preventable illnesses, falling off a barn or cliff while biking, and

never getting hurt. There are numerous incidents of these events occurring continually throughout the world.

Take for example, documented incidents of people surviving plane falls without wearing parachutes. What are the odds of this happening? Aren't the odds higher that they would have not survived? Perhaps, they didn't always survive? That is, depending on the *V(∑u)* (variance) degree, perhaps in 99.99999999% of recuring instances they die and only 0.00000001% of the instances they survive. Perhaps their consciousness carried over to other manifestations within the *V(∑u)* (variance), but you actually died at that moment in that *∑u*. You could have died several times already, but are continuing on your consciousness journey:

With all the possible *V(∑u)* (variances) potential considering infinite time, who can really tell what our *$* (soul) is, but it certainly should be something we should be concerned with and take care of.

As quantum mechanics experiments reveal that matter is formed upon observation, could it perhaps be that the *∑* (sum) of all *K* (potential) *$*'s (souls/consciousness) is the Yin to the Universe's creation (Yang)?

Universe == ∑K($) ?

Conclusion

Perhaps all the philosophers and religious authors had it right all along. A common theme amongst all major religions is: Do good to others.

If this paper makes any sense to you in the slightest, you should consider just how must faith you had to put into your belief of science, specifically into infinity. Faith is believing in something that is not, or could not, be proven (Infinity, Good, Bad, God…)

Just as we try to prove our scientific faith to be fact, we should do the same with Religions as well. Everyone should read their religious books in their entirety and not depend on what pundits and hypocrites preach, but learn from centuries of knowledge gathered over eons of experiences.

If you truly believe that your soul is mathematically proven, you must move to change the world for the better. If we all get a chance to be poor and rich an infinite number of times, why don't we try to make it better for everyone. After all, your consciousness could be experiencing someone else's *∑u*, so why not look out for your *$* (soul). That is, why don't we make it better for the poor, so when it's our time to experience being poor, it won't be as bad as it is now. By making the world a better place, I don't mean donating all your money, but, instead, be kind, tolerant, and try to best to listen from other peoples perspective. Of course, helping out a bit financially won't hurt. Someone once said that we should "love your neighbor as yourself", and

perhaps there is scientific merit to the statement. The goal of this paper is to attempt to increase the positive *K* (pressure) globally.

Proof of Soul Equation

The following equation attempts to provide a Mathematical Proof of your Soul:

$$\$ == \sum_{t=1}^{\infty} \boldsymbol{V}\left(\sum \boldsymbol{S_t} \cap \sum \boldsymbol{U_t}\right)$$

Where

$	Is your Soul.
$\sum_{t=1}^{\infty} \boldsymbol{V}(\dots)$	Is the sum of all possible variances starting at one and ending at infinity.
$\sum \boldsymbol{S_s} \cap \sum \boldsymbol{U_s}$	Is the intersection of the sum of system and the sum of you. This could also be described as *∑u'* instances.

As *∑u'* (instances) have causation with pressure, we can transform the intersection of the *∑s* & *∑u* to *K* (pressure).

$$\$ == \sum_{t=1}^{\infty} \boldsymbol{V}(\boldsymbol{K})$$

Tranforming K to its components, you get:

$$\$ == \sum_{t=1}^{\infty} \boldsymbol{V}\left(\sum(+) + \sum(-)\right)$$

Where

$	Is your Soul.
$\sum_{s=1}^{\infty} \boldsymbol{V}(\dots)$	Is the sum of all possible variances starting at one and ending at infinity.
$\sum(+) + \sum(-)$	Is the collection of all your good and bad acts performed over all recurring instances of you *∑u.*

So, not surprisingly, the mathematical definition of your soul is the pressure created by the sum of the combination of good and bad acts performed.

Increasing Positive Pressure

If you would like to participate in increasing positive pressure in the world, please visit the following site for more information: https://mathproofofsoul.github.io/Site/

For any further inquiries, or if you would like to reach out to the author, please contact me at math.proof.of.soul@gmail.com