# "WHY EVERYTHING IS IN THE WAY IT IS"?!

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## ABSTRACT

Altogether, this is an attempt to further explain briefly "why things are in way they are". This paper is a "to the point" & simplified attempt to explain & prove that everything we call as real (including space, energy, force, charge, field & mass) are just properties that "Cumulative Time Content" exhibits, there by unifying everything from broader sense, but as a subset of multi-verse of time.

## KEYWORDS

*Space, Time, Mass. Energy, Fields, Force, Momentum, Interactions, Law of Equi-preference, Gravitation, Electromagnetism, Inertia, c, Speed of Light, 3D, 4D, Action-Reaction, Intractability, Operability, Cartesian, polar , spherical, coordinate system, infinites, zeros*

## INTRODUCTION

Great minds of our past and present have pushed away shadows of ignorance by giving us knowledge, but still lots of gap exist in understanding **"WHY EVERYTHING IS IN THE WAY IT IS"?!**

In past, in our understanding, forms of energies have been unified; forces of nature boiled down to few & those few were understood to unify under higher energy states, mass is now considered cumulative property that energy exhibits.

This paper is a "to the point" & simplified attempt to explain & prove that everything we call as real (including space, energy, force, charge, field & mass) are just properties that "Cumulative Time Content" exhibits, there by unifying everything from broader sense, but as a subset of multi-verse of time.

With this paper, I also intend to strongly put forward "Why space of our universe is not just 3-dimensional" and further to this I put forward "LAW OF EQUI-PREFERENCE", which helps in explaining principle of Action-Reaction & Inertia.

### "EVERYTHING "PHYSICAL" ARE FUNCTION OF TIME"

According to concepts of dimensional analysis of physical quantities, almost all physical quantities can be expressed in dimensions of "Mass-Energy" & "Space-Time".

Mass can be considered as property that cumulative Energy content exhibits or Energy can be considered as property that de-condensed Mass exhibits, i.e. either Mass is a property that Energy exhibits in Space-Time interactions and/or Energy is a property Mass exhibits in Space-Time interactions.

$m = E/c^2 => m = f_1$ (Energy, Space, Time) ----------------- **1**

$E = mc^2 => E = f_2$ (Space, Time) --------------------------- **2**

$E = mc^2 => E = f'_2$ (Mass, Space, Time) ------------------- **1'**

$m = E/c^2 => m = f'_1$ (Space, Time) ------------------------ **2'**

$E/m = c^2 => c = (E/m)^{(1/2)} = (d \, x \, / d \, t)$ --------------------- **3'**

$dx = (E/m)^{(1/2)} * dt = c*dt$ --------------------------------**3"**

=> With similar logic that equates Mass-Energy by "$E=mc^2$", we can infer that Energy-mass are properties exhibited as a result of Space-Time interactions. So, from 1, 2, 1', 2'& 3' we can infer that Mass-Energy is function of Space-Time or Mass-energy is cumulative content of Space-Time; or in more meaningful sense, Energy can be considered to be kinetic form of space-time which is moving as disturbance or wave at speed "c" or at velocity "v" when combined with Mass; & Mass can be considered as potential form of Energy or Space-Time. This can be proved for all physical quantities and equations that are coherent with concept of dimensional analysis.
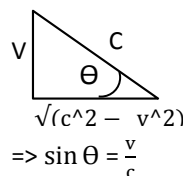
Also, in unbiased Energy-Space-Time interactions

$d \, x = c*d \, t => d \, x =$ element of space $= f_3$ (time) ---------- **3**

$=> $ Energy $= f_4$ (time) --------------------------------------**4**

$=> $ Mass $= f_5$ (time) --------------------------------------- **5**

Where, "c" is not just velocity, but also signifies rate of interaction between fully energized-mass and space-time i.e. "c" is the velocity of energy in free space-time interaction and also should be the rate at which elements of space can get distilled into elements of time. Similarly, during unbiased Space-Time-Mass-Energy interaction, $c^2$ will be rate of conversion of mass to energy & $1/c^2$ will be rate conversion from energy to mass (so later have lesser rate, because $c^2 > 1/c^2$, similar to element of time to elements of space conversion ($c > 1/c$)). Also, Force = mass*acceleration $= m*a = $ mass*$(d \, v \, / d \, t)$ <--this equation can be used to measure force by its effect on system.



$$x' = \frac{(c-v)*t}{\sqrt{\left(1-\frac{v^2}{c^2}\right)}} = \frac{\left(\frac{c-v}{c}\right)*c*t}{\cos\theta} = \left(\frac{1-\sin\theta}{\cos\theta}\right)*x$$

$$=> \sin\theta = \frac{v}{c}$$

$$t' = \frac{\left(1-\left(\frac{v}{c}\right)\right)*t}{\sqrt{\left(1-\frac{v^2}{c^2}\right)}} = \left(\frac{1-\sin\theta}{\cos\theta}\right)*t$$

$$\frac{1}{\cos\theta} = \frac{1}{\sqrt{\left(1-\frac{v^2}{c^2}\right)}}$$

*Where, "Θ" is also angle between lines of action of inertial frames & also, x'= c * t' & x = c * t*

**Force = c* (d (energized mass in system)/ time interval)** $= c*(d \, (m_e) \, /d \, t)$ ----this signify cause of change in momentum in the system, i.e. force or change in momentum is a function of amount of energized mass ($m_e$ or me or $e_m$ or $m^e$ or $e^m$) in the system. Energized mass is nothing but

energy with rate interaction or velocity of "c" in free space-

$$E = mc^2 = \int_{ci}^{c} mv\,dv \quad \text{----------when measured by effect}$$

$$E = mc^2 = \int_{(me)initial}^{(me)final} c^2 * dm \quad \text{-when measured by its cause}$$

$$E = \oint_{potential\ part}^{kinetic\ part} F(m, dm, v, dv) \quad \text{---Generalized concept}$$

**"This approach gives a clearer picture on why it's difficult get more than speed of light. "Energy" is mass-space-time interaction with momentum of "$m_e*c$"; so even if we completely replace rest mass with energized mass, even then max momentum final mass will have will be "$M_e*c$" & this mass will still have velocity of "c", even though energized mass content of system changed by ($M_e-m_e$)."**

Similarly, other physical quantities also can be proved to be functions of time. For example,

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**Gravitation**, $G_{\mu\nu} + \lambda g_{\mu\nu} = \frac{8\pi G * T\mu\nu}{c^4} \Rightarrow c = \left(\frac{8\pi G * T\mu\nu}{G\mu\nu + \lambda g\mu\nu}\right)^{\wedge(1/4)}$
=> by dimensional analysis we know that both sides of this equation are function of space-time.

**Electromagnetism**, $c = 1 / (\text{C}_0 * \mu_0)^{½}$, similar as above by dimensional analysis we know that both sides of this equation are function of space-time.

Above equations shows that fields are properties of space-time when interacting with mass or charge. Even if field-force is mediate by particles, then those particles will have to interact with space-time to move from one body to other. "How graviton (even if existing) escape from black holes, to create strong gravitation fields, even when light can't escape"? Field is created by exchange of properties between space and mass in case of gravitation or charge in case of electromagnetism, i.e. in case of gravity, surrounding space in contact with mass becomes massive or more like pseudo energized mass ($m_e$), this provides acceleration to mass in the gravitational field, and curvature of space (condensivity or condensation of space towards mass) by position of mass provides direction to accelerate. Electromagnetic field will also have same basic principle, but charged mass, which is a form of energy-mass interaction, will be exchanging charge with space to create its field. Some particles might mediate the action of field, some particles might be byproduct, but role of space-time in action of field-force can't be outweighed by role of particles.

**Planck's constant**, h= $\lambda*m*v$ = f (length, mass, space-time) => same results as above, so uncertainty, wave function etc can be proved to be function of time

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This same procedure can be repeated for any physical quantity and result will be that all physical quantities are cumulative sense of function of time.

 **"Time"** maybe motion of hands in God's clock or gear tooth counter or process time of some mechanism that creates what we call reality, or some perplexing randomness counter or even nothing at all or most probably might be indication of present degree of "infinity and zeros" of real reality, **but also with "all physical quantities = function of time" is to show that time gives legitimate meaning and sense for what we call reality.**

If this be truth, then most probably big bang never happened in the way it's been previously thought and we maybe still inside singularity, only sense of time is changing and our mind and senses are deciphering it as Space-Mass-Energy and all other physical senses.

Element of time are like value of $(1/\infty)$, most of time taken as insignificant, but cumulating it creates every value and everything. If $(1/\infty)$ was really equal to zero, then nothing would have existed ever.

For simplifying things, I have used a very crude approach here, but detailed approach will lead to similar results, as this concept is mutually conclusive with concept of dimensional analysis. Also, backup support is from logical sense of principle of intractability and/or operability.

 "**Principle of Intractability and/or Operability**" in crude sense can be stated as: "to have a meaningful interaction or operation (let it be logical, mathematical, physical, chemical, biological, philosophical or any other field) can be done only on some sense of equality or commonness.

For example, there is no sense in mathematically adding a cat and a dog; but if we consider them as animals, then we get a mathematically meaningful result of "2" animals. Also, we can operate real and imaginary numbers and get meaningful results only because we consider them to be on single plane.
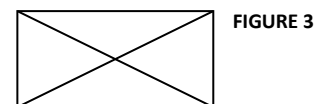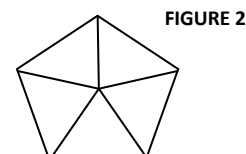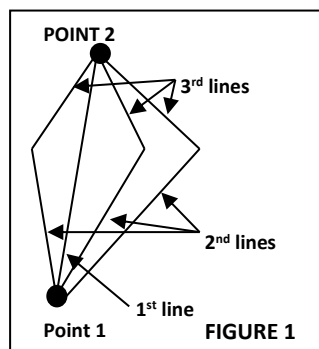
So, it's logical to consider that all physical quantities are function of time, that's why they are able to interact with each others, like mass-energy is able to curve space –time & space-time curvature is able to move energy-mass for same reasons. Similar is the case for electromagnetism, strong & weak interactions.

"EVERYTHING PHYSICAL ARE FUNCTION OF TIME" is also logically conclusive with "Principle of Intractability and/or Operability".

<u>"WHY SPACE OF OUR UNIVERSE IS NOT JUST 3-D"</u>

We know that parallel lines don't have meeting or intersection, 2 straight lines in non-curved space can have only single point of contact and 3 straight lines in same condition will have only 3 point of contact.

Please refer **figure 1**.



FIGURE 1

=> We need at least 3 lines to locate a point with respect to another point in space, i.e. **First** line joining both points of interest gives us sense of direction of point with respect to other. **Second** line can be drawn in pretty much any direction or angle to first one, but should be at an angle to the first line and should meet first line at the origin. **Third** line can be drawn at any direction or angle such that it passes through "point for which position is to be determined" & also intersects first line at same point and

third line should have a point of intersection with second line. So 1st line gives us direction and with help of 2nd and 3rd lines we find position of points with respect to each other on the 1st line.

Cartesian system, polar coordinate system & spherical coordinate system uses above properties of straight lines in different approaches. We use same approach for locating points with respect to each other in plane or volume. In plane we don't call 3rd line as function of 3rd dimension, but in volume we erroneously relate it with 3rd dimension.

<u>In fact, "**3**" comes from the property of straight lines, and not from property of space.</u>

For space we need minimum of 3 dimensions, because all other dimensions can be represented as functions of those 3 dimensions. Considering space to be 3d is same as considering all polygons to be triangles, refer **fig. 2 & 3**
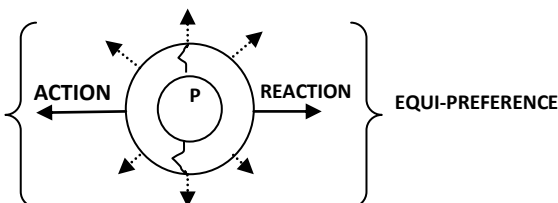
Space can be considered as infinitely infinite dimension or of zero dimension, both are mutually inclusive sense. Space maybe considered as a continuum which might have fine discretions, beyond those size of discretions our reality may cease to exist.

### "LAW OF EQUI-PREFERENCE"

This can be stated as "any unbiased tendency prefers all its real options equally"

Proof: Mathematically probability for any option of any unbiased tendency = (1/ total no. of options for tendency which is usually infinite), ($1/\infty \neq 0$, but equal to smallest sense of reality).This will be same for all option till tendency is unbiased, so tendency will have equal probability for each of its options. Newton's laws of motion including Action-Reaction and Inertia are result of above law. Also each time we think that world should have infinite possibilities and have parallel worlds, and then we are unknowingly referring to this basic law.

**ACTION-REACTION:** Action-Reaction is obtained when Equi-preference is biased by material strength. E.g. Fluid Pressure acts equally in all direction on its container, but if that container breaks into 2 halves, we would find both halves moving away from each other with equal momentum in direction perpendicular to plan of breakage. This is because other material strength is absorbing forces that want to move materials into other directions, i.e. Action-Reaction is just a concept, but actually it's "Equi-preferential".



**Inertia :** If a body is at rest or motion, then all other options or chance of changing to other states of motion have only one out of infinite chance, so body will continue to be same state of motion or rest until disturbed by external cause.

### CONCLUSION

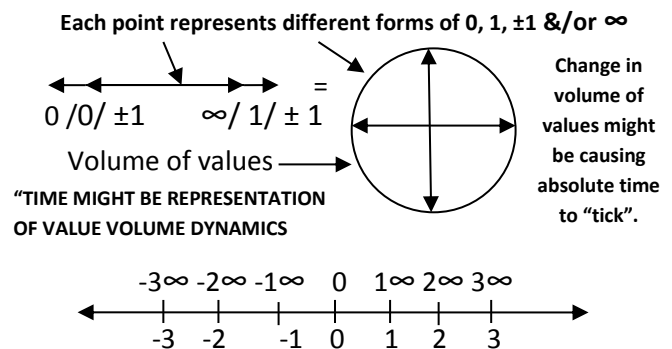If "Law of Equi-preference" holds true universally, then everything would have been everything else, and universe would have been jungles of possibilities. Then the question will remain "why they are in way they are", why only this possibility of existence now…etc etc. For this, only possible conclusion will be that universe is still inside singularity and singularity is split into coexisting infinitely infinite possibilities, to form whatever we call as real.

**"But it's also a fact that some infinites are bigger than other infinites and some zero can be more zero-er than other zeros".**

So existence/split sense of singularity is chasing those unfathomed higher/different orders of infinites continually, and absolute time may be signifying that chase. This ticking time element when cumulated might be the reason for expanding space; quantum behavior and virtual particles of space…etc etc…This cumulative compounding of time maybe continually creating space-mass-energy into universe, and therefore might be reason for almost equal average energy distribution around universe in every directions.

So "why they are in way they are", most probably because this is how present degree of "infinity and zero" after infinitely infinite years plus almost 2018 years when deciphered by our mind and senses looks like and we are moving ahead chasing higher or different orders of "infinites of existence".

Also, "Law of Equi-preference" is giving inertia to change of time, i.e. even there are infinitely infinite possibilities for change, but each option is also one out of infinitely infinite option; so probability of each option will tend to be 1/infinitely infinite; because of this time or our reality's chase towards higher/different orders of "infinites and zeros" will have a constant tendency of inertia. Mass-Energy-Space can be considered as cumulative time which is only subliming in controlled way because of "Law of Equi-Preference".



EVERYTHING IS FUNCTION OF TIME & TIME IS FUNCTION OF VALUES

$0^0$= (0, 1); $0^0 * \infty$= REASON FOR VALUE VOLUME DYNAMICS

**\*\*Time and values here referred to are in there absolute sense, in multi- universal scale, but local sense of time might be different and much more malleable, but we may have to overcome effects of universal absolute time and values on given environment before being able to manipulate local time and values of system under consideration.**

### REFERENCES

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