{Evolution Through Quantization (Version Three)]

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Abstract

The author has detailed some important notions regarding *Evolution* (Of the type of our *Universe*) here, in this research manuscript.

Theory

Evolution Pointer 0

One can note that the geometric representation of '*TessellationsOf Numbers*' can be used to understand the concept of *Evolution*. To this end, we first consider a '*Scalene Triangle*' as the basis element for generating the *Tree* of such *Tessellations Of Numbers*. For example,

Number '1' can be represented by One such aforementioned Scalene Triangle graphically,

Number '2' can be shown by Two such aforementioned Scalene Triangle's graphically,

wherein the Second Triangle is added to the First Triangle along a side such that it allows Tessellations, i.e., the Tessellation Co-ordinate's of the Added Triangle's third vertex forms One Recursive Tessellations Set, i.e., which satisfies the Definition Of Tessellation, i.e., enables Tessellation to Eternity. Such A Coordinate can be simply found by just GenericallyChecking all the Possible Coordinates to see if they 'Satisfy' the RecursiveTessellation Equations representing theTessellation Type of concern used.By all 'Possible Co-ordinates', we mean the Set of Group of Co-ordinates gotten as the possibilities as Third Vertex of the SecondTriangle (to be added onto the First One using one of its sides as the Common Side to the to be added Second Trianglewhile consideringTessellational Growth) wherein the aforementioned Vertexis opposite to the side which was used as the common side for Tessellational Growth, i.e., the afore-discussedAddition.

Furthermore, such aforementioned *Generic Check* for *Tessellational Compatibility* involves checking such Compatibility consecutively for *Three (3) Generations* of *Tessellational Growth*.

In the same fashion, the same analogy holds for representation of any number's *Tessellational Representation's Growth SchemeOf Any 'Number' Of Concern*. One can note that one can use this Scheme to *Evolve* any aspect *Universe* of concern.

Evolution Pointer 1

Now, as far as Evolution of any aspect is concerned, once it's Primality is slated in terms of Numbers, one can use the author's {[8] 'Recursive Consecutive Element Differential Of Prime Sequence (And/ Or Prime Sequences In Higher Order Spaces) Based Instantaneous Cumulative Imaging Of Any Set Of Concern' available at <u>http://www.vixra.org/abs/1510.0091</u> as viXra:1510.0091} and [4] 'Universal One Step Natural Evolution And/ Or Growth Scheme Of Any Set Of Concern And Consequential Evolution Quantization Based Recursion Scheme Characteristically Representing Such Aforementioned Evolution And/ Or Growth' available at <u>http://www.vixra.org/abs/1510.0030</u> as viXra:1510.0030} to consider it'sOne Step Evolution.

Evolution Pointer 2

However, one should note that *Evolution is Quantized* {see author's [22], '*Theory* Of 'Complementable Bounds' And 'Universe(s) In Parallel' Of Any Sequence Of http://www.vixra.org/abs/1510.0428as **Primes** *RthOrder* Space' **0**f at viXra:1510.0428 and [13] 'Evolution Through Quantization' at http://www.vixra.org/abs/1510.0144as viXra:1510.0144}. Therefore, one needs to update the Evolution incorporating in commensuration, the concepts in [22].

Evolution Pointer 3

Also, one can note that one can consider the Constraint of Restriction OfTime on Evolution, i.e., as the Universe is ever Evolvingand such Evolution is due to the Local Recursional Field Intensity Gradient characteristic of the location at which the Evolution of any aspect of concern is considered. Furthermore, one should note that such aforementioned Recursional Field Intensity Strength Function itself is a Function whose RangeConforms along the Prime Metric(constructed using Sequence Of Primes Of 2^{nd} Order Space and/ or Sequence Of Primes Of Higher Order Space) and therefore, if a certain Aspect Of Concern's Primality (considered at a Certain Order Of Recursion Intelligence) is unable to reach a

state of Evolution commensurate with Time Restriction, the Evolution Recursion Intelligence switches to the Next Higher Order Of Recursion Intelligence. By Time Restriction, we mean a function, i.e., a Map between the ConsecutiveDifferences OfRecursional Field IntensityStrength and the Pair Of Consecutive Prime Metric Bases(constructed usingSequence Of Primes Of 2^{nd} Order Space and/ or Sequence Of Primes Of Higher Order Space, whichever is appropriate, as the author assumes that a seasoned reader of the author's works can easily infer the same). That is, if a certain Apect'sPrimality, which ischaracteristic of a Certain Position in some Prime Metric constructed using some Sequence Of Primes Of (Higher) Order Spacedoes not reach there, when it is intended to as is ordered by the aforementioned Restriction, then the Evolution Scheme switches to the next available Order Of Recursion Intelligence Of Evolution.

Evolution Pointer 4

One can also say that Continual Evolution to exhaustion of a given Set bestows a given set with its Complete Recursive Sub-Sets (and also the Complete Recursive Orthogonal Sub-Sets) Of The Given Set Of Concern Found Continually To Exhaustion Such That The Primality Sets Of The Additional Elements In Addition To The {Original Given Set With Its Complete Recursive Sub-Sets (and also the Complete Recursive Orthogonal Sub-Sets) Of The Given Set Of Concern Found Continually To Exhaustion} Generated By Way Of Such Aforementioned Evolution, Also Form One Complete Recursive Set.

One can find the Recursion Scheme of any Aspect Of Concernand can find the components of it along the 'Universal Basis Vector Formed By Pi Value And/ Or Its Higher Order Equivalents Up To A Certain Order Of Concern Necessitated By Our Investigation Of Concern' and can evolve {along the Optimal (Primality) Path wherein the Pi Value And/ Or Its Higher Order Equivalents of the aspect of concern is along an ever increasing Precision Of Pi Value And/ Or Its Higher Order Equivalents, Path. Furthermore, one should note that the Increments Designof the aforementioned Precision Increase in Pi Value And/ Or Its Higher Order Equivalents must themselves Conform to thean Ever Increasing Precision Of Pi Value And/ Or Its Higher Order Equivalents, Path and so on, so forth, continually, we repeat such implementation as many times as is necessitated by our investigation of concern.

Evolution Pointer 5

Direction Of Evolution

Evolution happens because of ever existing* {*such never ceasing existence is due to the ever asymmetric presence of Perception Gravity Fields driving Recursional Evolution on both arms of the Infinity Geodesic of The Aspect Of Concern} the Algebraic Difference between the Entropy of the Redundancy in Primality of an Aspect Of Concern and the Entropy of the Redundancy In Primality Of it's Complementary Aspect Of Concern (that existsbeyond the Inflexion PointOf TheInfinity Geodesic Of The Aspect Of Concern). The net algebraic sign of such aforementioned difference governs the Direction of the Evolution of any Aspect Of Concern. Therefore, one can compute Instantaneous Infinitesimal ChangeInTheDirection of Evolutionusing the aforementioned fact. In the Ancient Culture of Great China, The Yin and Yang are supposed to represent Any Aspect Of Concern and it's Complementary Aspect Of Concern. The RedundanacyIn The Yin Is what creates Yang and the Redundancy In Yang is what creates the Yin.And together they form theUniverse and also drive the Universe.

Evolution Pointer 6

Given a set S with some number, say n_s number of elements, we can firstly distill its elements as belonging to the Sequence(s) Of Primes Of Higher (greater than and/ or equal to 2) Order Space(s) i.e., we can label each element of S as $PS(R) \gamma$ where PS(R) denotes the Order Space Number Of The Sequence Of $S(i) \{PS(R)\}(j)n_{PS(R)}$

Primes to which this element belongs, $n_{PS(R)}$ is the subscript denoting The Total Number Of Elements of S(i) that belong to the Sequence Of Primes Of $R^{th}Order$ Space and $\{PS(R)\}(j)$ denotes the The Position Number of this element in the Set PS(R). Also S(i) is The Position Number of this element in the Set S. We also note (Find) the Recursion Scheme Of the Set S and the Sequence(s) $n_{PS(R)}$.

For each of the Sequence $n_{PS(R)}$, we decompose its elements as detailed in the aforementioned symbol $\frac{PS(R)}{S(i)\{PS(R)\}(j)n_{PS(R)}}$ and find the resulting Sequence(s) equivalent to $n_{PS(R)}$ at this stage. We also Find the Recursion Scheme(s) Of The

Sequence(s) equivalent to $n_{PS(R)}$ at this stage. We keep repeating this procedure till we can no longer perform such operations. We now now use the Recursion Schemes as shown below



to orient the Refinement Of The (Constructed using Evolution Pointers 1 through 5) One Step EvolutionRecursion Scheme of the to be Evolved Aspect Of Concern detailed in the above detailed Evolution Pointers 1 through 5. The Recursion Common to all the Recursion Schemes at all three levels gives us the best aforementioned orientation of desired concern.

Evolution Pointer 7

In this research section, the author has presented some basic definitions using which one can form the basis for algebraic operations in the *Prime Metric Of* Any R^{th} Order Space.

Prime Metric Algebra {see author's work on this} Firstly, we consider a Set S_{PS_R} representing a Sequence Of Prime Numbers Of R^{th} Order Space(considered in an increasing order). Representing the n^{th} element of this Setby $S_{PS_R}(n)$, we consider Normalization the Distance(s) and/ or Value(s) $S_{PS_R}(n) - S_{PS_R}(n-1)$ according to the assignment $S_{PS_R}(n) - S_{PS_R}(n-1) = 1$. We can then write any Non-Prime (i.e., a Composite) Number $S_{PS_R}(j)Of$ $R^{th}Order$ Spaceconforming to the condition $S_{PS_R}(n-1) < S_{PS_R}(j) < S_{PS_R}(n)$ such that

Definition 1:

$$\overline{S_{PS_{R}}(j)} = \left\{ n + \left[\frac{S_{PS_{R}}(j) - S_{PS_{R}}(n-1)}{S_{PS_{R}}(n) - S_{PS_{R}}(n-1)} \right] \right\} \text{Equation (1)}$$

Definition 2:

$$\overline{S_{PS_{R}}(j)} = \left\{ n + \left[\frac{S_{PS_{R}}(n-1)}{S_{PS_{R}}(j)} \right] \right\} \text{ Equation (2)}$$

Definition 3:

$$\overline{dS}_{PM_{PS_{R}}} = \sum_{n=1}^{N} \left\{ 1 + \left[S_{PS_{R}}(n) - S_{PS_{R}}(n-1) \right] \right\}^{\frac{1}{2}} \text{ Equation (3)}$$

where $\overline{S_{PS_R}(j)}$ denotes the Normalized Value Of $S_{PS_R}(j)$ in the Prime Metric Of RthOrder Spaceand $\overline{dS}_{PM_{PS_R}}$ indicates distance along the Prime Metric Of RthOrder Spacefrom $S_{PS_R}(1)$ through $S_{PS_R}(N)$.

The above Equation (3) can be further refined by noting the Euclidean-Pythagorean Relation

$$ds^2 = dx^2 + dy^2$$

And noting that we can write the Sequence $\{dx, dy\}$ along the Prime Metric Of Some Certain Order Space. That is, if dx represents the Distance between Two Consecutive Primes (belonging to some Sequence Of Primes) along the Prime Metric Of Some Certain Order Space, i.e., $dx = S_{PS_T}(m) - S_{PS_T}(m-1)$, then if dy < dx then,

we can write dy

as
$$dy = dx + \{S_{PS_T}(l) - S_{PS_T}(m-1)\} = \{S_{PS_T}(m) - S_{PS_T}(m-1)\} + \{S_{PS_T}(l) - S_{PS_T}(m-1)\}$$
 where
 $S_{PS_T}(l) = S_{PS_T}(m-1) + |dy|$

Therefore, it remains to find two Prime Numbers Of Some Certain Order Space $S_{PS_T}(m)$ and $S_{PS_T}(m-1)$ such that

 $dx = S_{PS_T}(m) - S_{PS_T}(m-1)$ Equation (4.1) or

 $dx = \alpha \left\{ S_{PS_T}(m) - S_{PS_T}(m-1) \right\}$ Equation (4.2)

where $0 < \alpha < 1$ is some Scalar. If dy > dx, we simply have to implement the same procedure by only noting that dy and dx have to be interchanged to produce the effect of the aforementioned Scheme.

Also, one can note that dy canrepresent the Distance between Two Consecutive Primes (belonging to some Sequence Of Primes) along the Prime Metric Of Some Certain Order Space, i.e., $dy = S_{PS_B}(h) - S_{PS_B}(h-1)$. Usually, we consider the case wherein B = (T-1) or (T+1) or totally some other Positive Integer U

Now, that we have slated how to find the value of any number in the Prime Metric Constructed Of Sequence Of Primes Of Certain Order Space, all the Algebraic Operations can be performed as Usual on these thusly computed Values rendered in the Prime Metric Constructed Of Sequence Of Primes Of Certain Order Space, only after we Transform(see author's work for this Transformation) all the Operands (i.e., the values to be acted upon by Mathematical Operators of Concern)} of the Mathematical Expression(s) in theSame Prime MetricConstructed Of Sequence Of Primes Of Certain Order Space Of Concern.

PRIME METRIC ALGEBRA (Advanced)

{see author's work on this} One can note that Since dy is Orthogonal to dx, we write the quantity dx+dy as

dr = dx + dy

And considering

 $dr^{2} = (dx + dy) \cdot (dx + dy)$ **i.e.**, $dr^{2} = dx^{2} + 2(dx)(dy) + dy^{2}$ **i.e.**,

The Square Of Direct Bearing (Distance) is a Map that extends the Euclidean Inner Product Of (dx+dy) by a Value of 2(dx)(dy).

One should know that the Direct Bearing for the above case is that of the case wherein we are removing the terms that can be factored in 2 dimensions wherein dy and dx are Orthogonal to each other at a Consecutive Order(s) Levelor Orthogonal to each other at a Non-Consecutive Level.

Therefore, basically, if dx is a Possible Difference Of Two Consecutive Primes Of Sequence Of Primes Of Certain Order Space, say, T and dy is a Possible Difference Of Two Consecutive Primes Of Sequence Of Primes Of Certain Order Space, say, (T-1) or (T+1)or U, all (T-1) or (T+1)or U being some Positive Integers, then the distance between them is given by

 $ds^{X} = dx^{T} + dy^{(T-1)or(T+1)orU}$ wherein we have to find X using the Right Hand Side Value of the given Equation as a Possible Difference Of Two Consecutive Primes Of Certain Order Space, such that the equation is satisfied for X being a Positive Integer.

We can then write the Direct Bearing (i.e., The Distance) between the (Possibly) Orthogonal to each other at a Consecutive Order(s) LevelorOrthogonal to each other at a Non-Consecutive Level.

dy and dx as

 $ds = \left\{ dx^{T} + dy^{(T-1)or(T+1)orU} \right\}^{\frac{1}{X}}$

Universal Law Of Quantization Of Differences

Basically, the important point to note, is that, in Reality,

'All Differences Are Quantized'.

(i.e., exist and manifest in these values only) and the Quantization Scheme is given as

'Any Real (Perceptionally only, not the Real as in the Real Numbers Line sense) Difference Exists And/ Or Manifests Itself In The Universe Only As ADifference Between Some Two Consecutive Elements Of ASequence Of Primes Of Some Order Space'.

Conversely speaking

'AnyDifference Between Some Two Consecutive Elements Of A Sequence Of Primes Of Some Order Space Exists And/ Or Manifests Itself In The Universe Only As Any Real (Perceptionally only, not the Real as in the Real Numbers Line sense) Difference'..

And hence

All Algebraic Operations Have To Be Founded Upon This Universal Restriction Of Universal Law Of Quantization Of Differences'.

Therefore,

The Universal Set Of Differences {USD} can be written as $USD = \bigcup_{R=1}^{\infty} \left\{ \bigcup_{n=1}^{\infty} \left\{ S_{PS_{R}}(n+1) - S_{PS_{R}}(n) \right\} \right\}$ Equation (6) where $S_{PS_{R}}(n)$ is the n^{th} element of the Sequence Of Primes Of R^{th} Order Space.

Using the above Universal Set Of Differences, one can Linearize (see author's work on this) any Aspect Of Concern (built of the Sub-Sets of the Universal Set Of Differences) and can arrange them in Increasing Order of the FundamentalNatureAspectof theAspect(s) Of Concern.

One can also use this 'Universal Law Of Quantization Of Differences' usefully as an aid to slate Evolution Scheme.

Moral

To that fact that God is here or there, there is no doubt, wherever you search, God is there !

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