Toward a Unified Theory of Everything

V1.0

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Abstract:

I here present an introduction to both the devolutionary and evolutionary components of my TOE ("Theory of Everything").

Abstract for Part One:

**"Ergodic Matrix Quantum Gravity:
A Proposed Four-Way Unification of Quantum Gravity and the Two Second Laws"**

This article proposes;

#1. ..The reformulation of Einstein's spacetime curvature (gravity) as quantizable, distributive spacetime-mass erosion that produces both gravity and black hole dynamics.

#2. ..The reformulation and subsequent unification of both thermodynamics and black hole dynamics as (almost) discrete "info-dynamic" systems.

#3. ..The reformulation of both Second Laws as the inevitable (non statistical) result of residual, cross-(info)domain" interference & erosion.

#4. ...The compression and subsequent objectification of space-time dimensions into background "things"

#5 ...The simultaneous "dimensionalization" of matter and energy as foreground "things" with a hidden dimensionality.

#6. The residual statistical blurring of otherwise localized matter into the semi-local gravitational field.

#7. ..The bundling of Einstein's spacetime (four dimensions) into a single dimension (X axis) plus the bundling of all material and energy into a single

dimension (Y axis) -- thereby permitting a two dimensional (X,Y) solution to all entropy(S) pertinent black hole equations ($S = A/4$ and $S = M^2$).

#8. ...The distinguishing of black hole entropy (S_{bh}) from orthodox entropy (S) wherein S_{bh} is a "super-entropy" measuring loss of primal space-time-mass info-matrix (loss of primal information).

#9. ..The existence of a zero gravity black hole core, one quarter the area of the event horizon over which space-time-mass attains a state of pure primal equilibrium.

#10. ..The existence of a fundamental spacetime info-dynamic quanta -- a primary "orthogonality" or "matrix" that serves as a background read/write mapping surface for matter, particles and energy.

Part Two:
Cosmic Evolution
And the Iterating God Function
Toward a Unified Theory of "Anti-splatter"
(rhymes with "antimatter")

Abstract for Part Two:

Part two of this article casts the various problems-of-origin in dimensional terms wherein the emergence of a new information rich ("Z" axis) occurs in defiance of stochastic agents and probabilities (X&Y axis). A latent somnambulistic, cosmic source of "Z" axis (new information) is discovered through an, ideologically free, re-assessment and subsequent completion/expansion of primal equilibrium.

Toward a Unified Theory Of Everything

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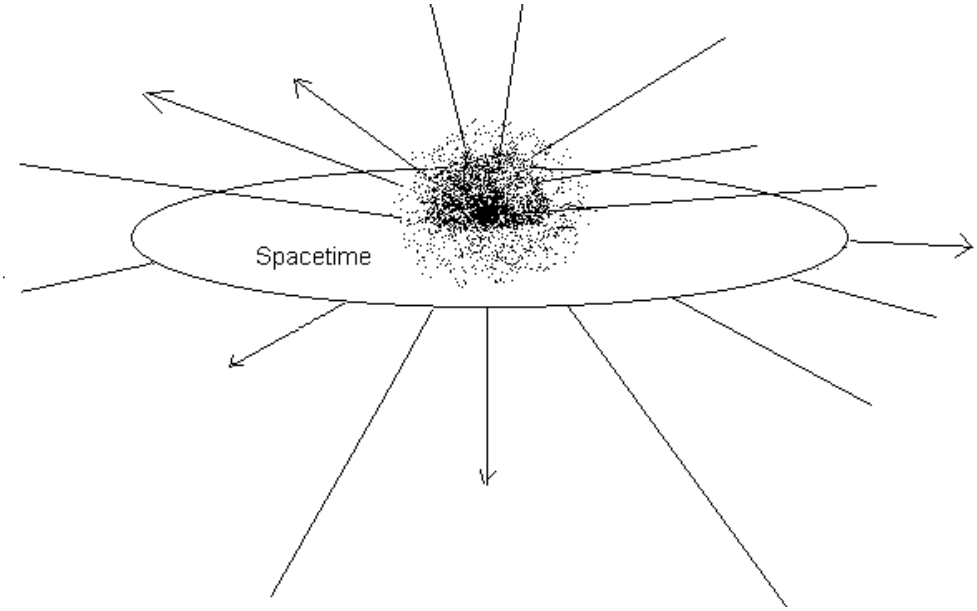
-- Part One --

Ergodic Matrix Quantum Gravity

A Proposed Four-Way Unification of Quantum Gravity and the Two Second Laws



It is in the dynamic and mysterious behavior of black holes, that our best and most powerful physical theories unite. How this can be so, given their diverse formulations, is a puzzle indeed. The situation by the end of the twentieth century was eloquently summated by Andrew Strominger -- from Les Houches Lectures on Black Holes -- 1995...

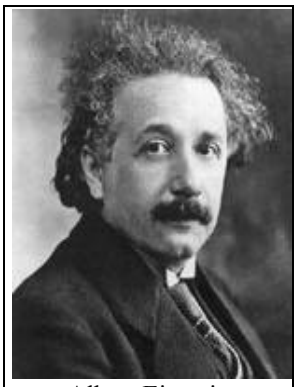
"In the nineteenth century, Boltzmann derived the laws of thermodynamics from statistical mechanics. In the early seventies, the laws of black hole mechanics were derived from Einstein's equation and differential geometry. It was immediately noticed that the laws of classical black hole mechanics are identical to those of thermodynamics when the variables are renamed (e.g. the substitution of the entropy **{S}** *for the black hole area* **{A/4}***).*

"Shortly thereafter, with the discovery of Hawking evaporation, it was realized that there is really only one unified set of laws: in the presence of quantum mechanical black holes, neither the laws of thermodynamics or of

classical black hole mechanics are separately valid. For example, in the real world the horizon area **(A)** *may decrease (because of Hawking evaporation) in violation of the area theorem and the accessible entropy S may decrease (by falling in to a black hole) in violation of the second law. However a combination of the two sets of laws appears to remain intact.*

"For example, there is good theoretical evidence that the magical sum of S **(external entropy)**+ *A/4* **(black hole entropy)** *is always non-decreasing. The derivations of the laws of thermodynamics and the laws of classical black hole mechanics are both extremely beautiful, but could hardly be more different. The fact that they are united in the end cries out for a unified treatment, in which the two sets of laws are not patched together, but appear as different manifestations of the same underlying principle. It is hard to imagine how this might be achieved."*

"Some have advocated that the laws of black hole mechanics are really statistical in nature, and that the (exponential of) the horizon area literally counts black hole microstates. Another possibility is that the entropy is a kind of quantum area, and the second law of thermodynamics is a quantum area theorem. Perhaps more likely is that a totally new point of view is necessary. In any case the resolution of this issue seems likely to lead to fundamental changes in our view of quantum mechanics and gravity. It will be fascinating to see how or if this meshes with the picture of information flow developed in these lectures..."


Albert Einstein

Throughout his later years at Princeton, until his death in 1955 Albert Einstein pursued, but never found, his "unified field theory." It is now well known that at the core of this problem there exists a conflict in the underlying topologies of quantum mechanics and relativity. Beneath quantum mechanics is the assumption of discrete quantized steps on a linear spacetime background while in general relativity there is the assumption of continuous variability (non-quantized) on a curved (non-linear) spacetime.

In recent years the most popular attempts to resolve this dilemma have employed what is known as "superstring theory." This theory however, with its many (ten, eleven or possibly even twenty-four) new dimensions represents for many a departure for from suitably constrained theorizing.

Black holes, considered initially by Einstein to be an embarrassing anomaly in his field equations, are now considered very real and persist at the forefront of theoretical physics. During the 70's and 80's the motto

amongst leading black hole physicists was "black holes have no hair." Lately however, (fashion conscious?) scientists have knitted "superstring theory" into a veritable cosmic wig -- turning black holes into more modestly attired "fuzz balls." Without any evidence for cosmic superstrings (or its numerous extra dimensions) however many see the wig-in-question as merely another attempt to avoid an embarrassing cosmic wardrobe malfunction.

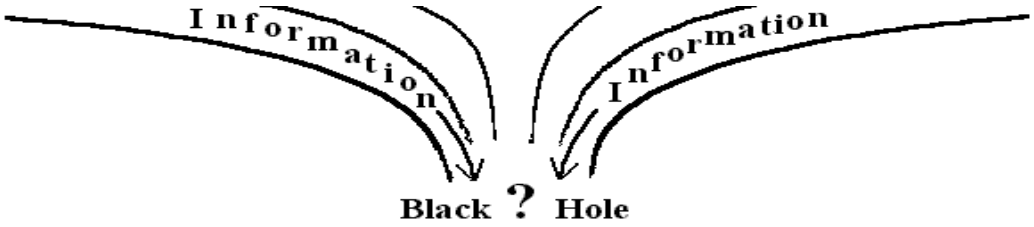


Fig.# 3

An Embarrassing Cosmic Wardrobe Malfunction.

Black Holes Unstrung

String theory requires at least ten dimensions. Theoretical caution and Occam's razor however, would suggest the use of no more dimensions than the four known spacetime dimensions. Even more economical however, would be the positing of gravity as a distributive, mass induced, anti-dimensional effect. This is the basic approach that I take here.

This approach does however employ two primal supporting dimensions already embedded in our spacetime-mass cosmos. In this model, spacetime serves as the X axis group and mass/matter/energy serves as the Y axis group. Together these define an underlying, black hole dynamic, two dimensional superspace/subspace.

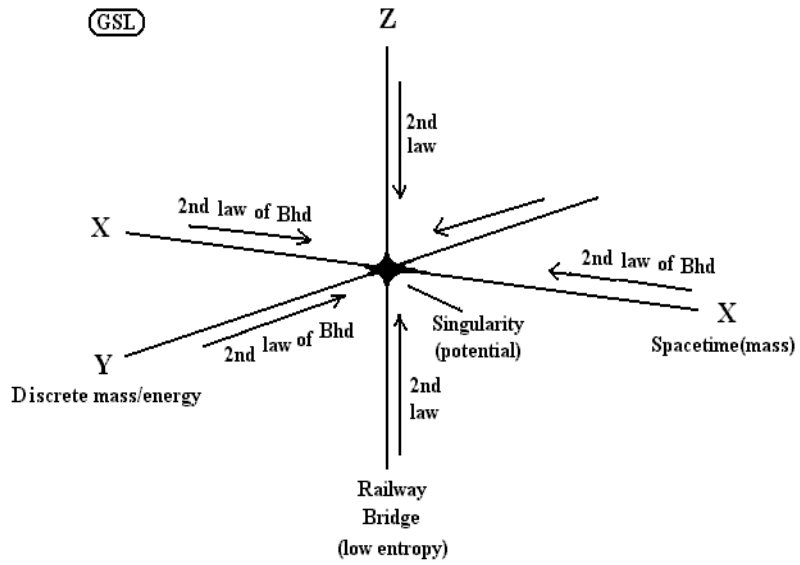


Fig. #4. *Notice that in figure #4, I have used the word "railway bridge" to signify "low entropy" of a familiar variety. If there were only sufficient spacetime for the bridge, but no surrounding spacetime available for the bridge to fall into, the bridge would just stay "up" forever (with absolute certainty). Without appropriate maintenance the bridge will fall down and become more spacetime like -- more "spaced out" or "spread." Probabilities exist only because spacetime exists. The thermodynamic arrow is a consequence of an underlying active space-time-mass system. The spacetimemass system, while more stable than the bridge, is also prone to collapse (to singularity).*

A Unified Approach

Instead of pursuing a "unified" field theory in terms of say superstrings(1) in a ten dimensional space (2) -- or quarks (1) in a four dimensional space (2) I am suggesting the modeling of "material" as a type of inner or hidden dimensionality (1) in a four dimensional space (1). I am also suggesting the unification of the matter dimensions (1) and the spacetime dimensions (1) in a dynamic and primal two dimensional subspace (1). By describing all things in terms of dimensions (1) therefore, a unified hyper-dimensional theory avoids disunity (any use of "2").

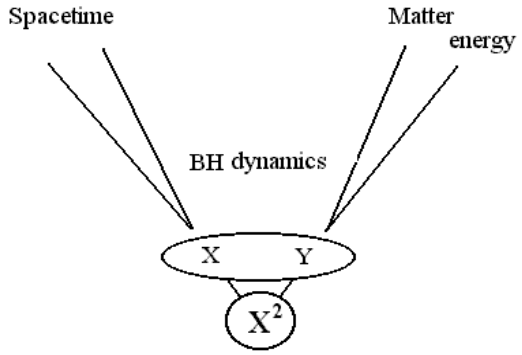


Fig #5.

The advantage of a dimension-based approach is the ability of this particular model to answer formerly unanswerable questions regarding black holes..

Q. Why is the area of the black hole entropically (S) pertinent (S=A/4) and not the volume or hypervolume?

A. Because a black hole represents the relinquishment of a primary two dimensional, orthogonality -- with spacetime appearing "bundled" on the X axis and orthodox mass/energy "bundled" on the Y axis. With only two pertinent axis there is only a two dimensional surface (area), not a volume nor a hypervolume.

Q. Why is black hole entropy (S) proportional to the mass squared ($S=M^2$)?

A. Because a black hole is composed of both discrete-mass (X) and spacetime-mass (Y) that was formerly spread so as to serve as a two

dimensional information read-write surface (X) x (Y) -- a surface that is itself a primal information structure. These two orthogonal/informational components attain equilibrium (unity) as "flat mass" within a black hole and can therefore be exhaustively described with the singular (zero internal information) statement "$X.^{2"}$

Q. Why is black hole entropy proportional to the EH area over 4 (S=A/4)?

A. The effective mass-induced, spacetime annhilotonic quotient (SAQ) at the event horizon, is one times the speed of light. The SAQ at the core perimeter is two times the speed of light (more below). Dimensional and directional statements beyond this perimeter are meaningless. Everything "beyond" this threshold thus counts as flat mass at primal equilibrium. The area of this two dimensional core surface reflects the total super-entropy (spacetime-mass disorder) of the black hole. It reflects the area over which all spacetimes are utterly singularized (disordered).

Q: Why is black hole dynamics so similar to thermodynamics?

A: Because they both represent information domains and subsequently obey laws of infodynamics.

Q: Why is the Second Law of Black Hole dynamics so similar to the Second Law of Thermodynamics?

A: Because both laws track information loss -- loss that is due to the dimensionally reductive effect of interaction with an underlying substate/dimension/domain.

Unification of the Two Second Laws (the GSL)

Consistent with an "ID science" or "infodynamic" paradigm, is the implication that the universe is an information structure and that the appropriate paradigm for its study is that of "infodynamics." This means that orthodox thermodynamics and black hole dynamics are to be perceived as information domains.

Within the orthodox thermodynamic domain there exist zero information states known as "thermal equilibrium." Similarly, within the space-time-mass information domain there exists zero information states known as (black hole) "singularity cores." Within this model therefore, the

universe is seen as a hierarchy of information domains from the most basic "space-time-mass-geometry" to more local "info-domains" such as "cyberspace."

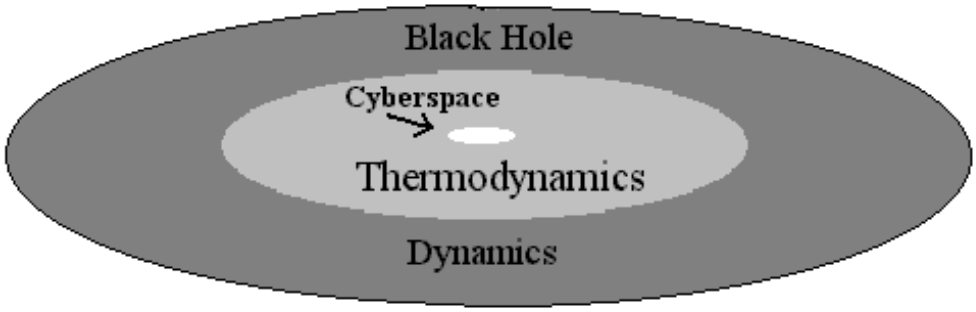


Fig #6
Three co-nested "Info-domains."
Not drawn to scale.

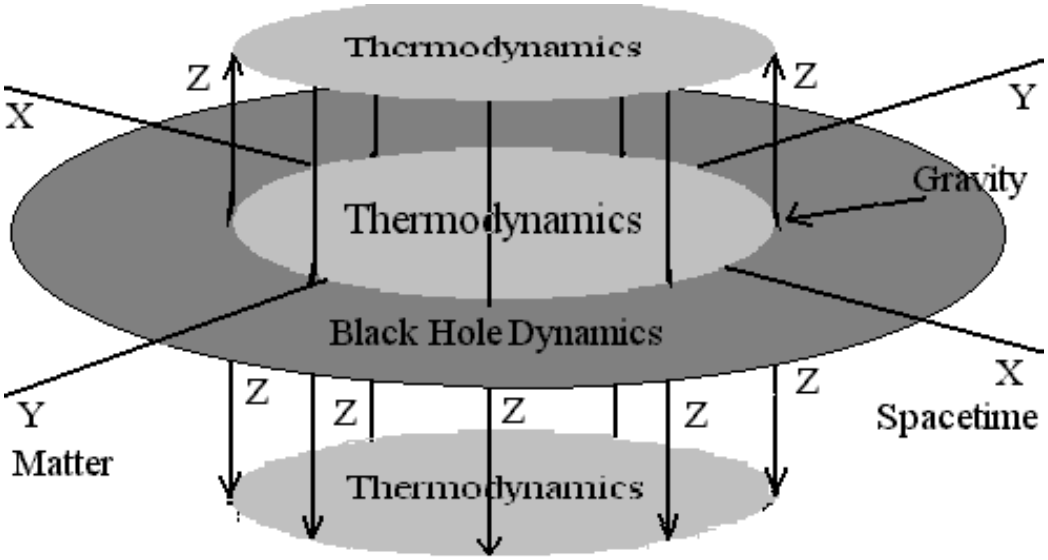


Fig. #7

The thermodynamic (Z axis relative to BHD) is portrayed here as a cylinder(with an internal phase space). The orthodox thermodynamic info-domain however is not isolated from the spacetime background (as shown in figure #7) but is instead holographically imbedded in the black-hole-dynamic background/infodomain.. Human "cyberspace" is holographically embedded in a small region of the thermodynamic info-domain. which is in turn embedded in the gravitational black-hole-dynamic info-domain. "Cyberspace" exists inside human computer environments. Computers are subject to thermodynamic decay. Thermodynamic systems in turn, exist as

mass-in-spacetime and are therefore subject to gravitation and black hole dynamic decay.

Because such information domains are never entirely separate, there is always a certain small amount of "domain collision" and subsequent frictional "domain devolution." Hawking's radiation and general relativistic perihelion advance are two examples of this at the black hole dynamic level.

In the case of the famous double star pulsar system (PSR 13+16) with their descending mutual orbits, decay is seen not as curvature based, but as a highly consistent erosion wherein both attendant spacetimes are slightly collapsed and subsequently slightly objectified.. This results in relativistic friction and energy dissipation (gravity waves) occurring as spacetimes collide and are slowly erased from existence (approach singularity).

Within this theory, both the second laws of thermodynamics and black hole dynamics arise from "cross-domain" or "trans-domain" interactions. In the first case the orthodox Second Law results from the gradual interaction/collision of the higher thermodynamic info-domain with the lower space-time-mass info-domain. In the second case the Second Law of Black Hole Dynamics results from the gradual interaction of the higher space-time-mass info-domain with the lower non-local info-domain. In the case of orthodox thermodynamics, statistical uncertainty (in finite systems) is replaced by cross-domain collisional certainty.

What is important to the infodynamicist is not the proverbial "counting of the microstates" but is instead the dynamics of information and the potential effects and sources of information depletion. An ideal gas at equilibrium can be described by very few parameters (temperature, pressure, volume). A black hole (being ostensibly bald) can be described by very few parameters (mass, charge, angular momentum). The black hole therefore represents an ideal candidate for a new localized zero information state and suggests a new, post-Einstein re-formulation of gravity as an effect of information depletion.

Just as it is natural for an infodynamicist (such as myself) to frame a post-Einsteinian special relativity as information translation, it is natural to frame a post-Einstein's general theory in terms of information loss. Einstein's theory explains gravity as curvature of a four dimensional spacetime framework. My theory explains gravity as deeper two dimensional space-time-mass erosion that in turn produces Einstein's four dimensional surface (x axis) curvature.

The Black Hole as an Anti-Dimensional object
Gravity as an Antidimensional force

In my theory, matter and spacetime are mutually orthogonal and mutually corrosive. Normally they are kept sufficiently separate due to their different frequencies ("angles"). Due to primal quantum uncertainty (and certain devolutionary considerations[1]), there are occasions when they do combine. This results in "place-holder annihilations" and spacetime rushing inward (at the speed of light) to fill the annihilated gap. The result is that, in the vicinity of a massive object, spacetime "operates" (as in, "selectively malfunctions") as a four dimensional conveyer belt, accelerating objects through spacetime, toward the center of the mass. Relinquishment of all orthogonality results in a black hole.

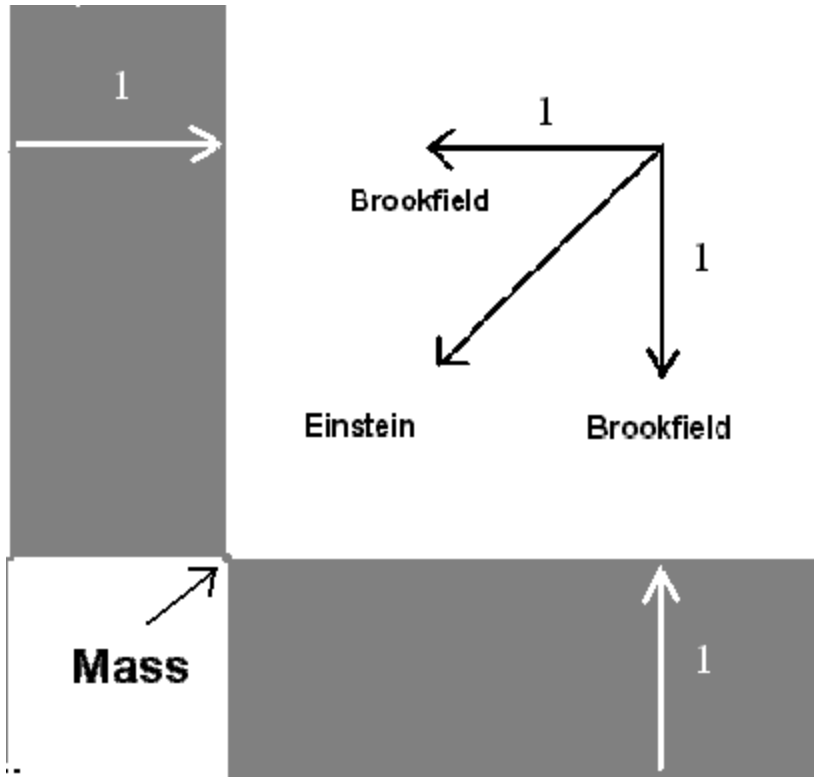


Fig.#8

Einstein's gravitational vector is a composite illusion derived (summated) from the mass induced loss of spacetime and the subsequent rush of the remaining spacetime to fill the annihilated spacetime gap. In the statistical theory the "Brookfield" vectors are themselves summated from a very large statistical distribution of sub-plankian annihilotons.

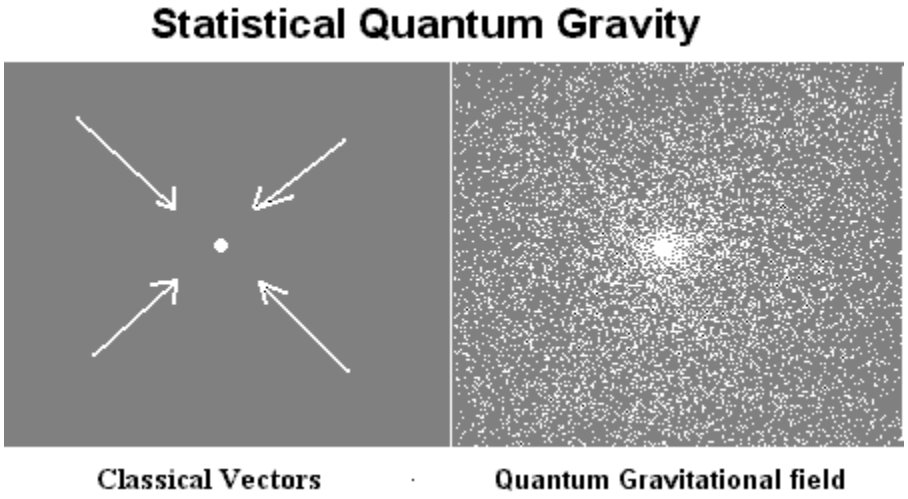


Fig. #9

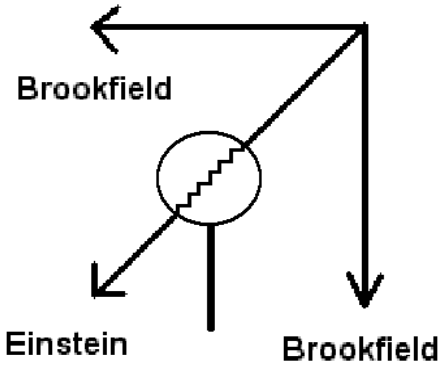


Fig.#10

While the Einstein vector is not linear or quantizable, the proposed Brookfield vectors are. While Einstein's curved topology is in conflict with quantum topology the Brookfield 2D subspace is not.

If matter/mass does in fact damage spacetime then the question is what type of damage is occurring? In order to answer this requires us to know what kind of a structure spacetime actually has. This in turn requires us to know its building blocks (its inherent quanta). My best guess at this point is what might be called the "orthogonoton" or "orthogonality."

In this model matter has a tendency to neutralize these "orthogonalities." The neutralization of a single spacetime quanta or "orthogonality" produces a single annihilotonic ray that emerges from the gravitating object (with its other orthogonal ray being hidden in the matter dimension). Any standard gravitating object would produce countless such annihilotonic rays (see Fig #1). If these outward orthogonal rays were in fact

dimensionless -- having no thickness -- then gravitational forces would conform to the standard Newtonian model.

Because these rays have dimensionality (or more accurately, they have anti-dimensionality) these rays are really spacetime gaps that must be compensated for. This compensation produces the characteristic spacetime curvature and "light cone tilting" of Einstein's general relativity. Because Einstein's gravity is produced not directly here but as statistical sum of countless such anti-orthogonalities this theory is ergodic and is therefore consistent with thermodynamics and black hole dynamics. Putting this all together gives us an "ergodic theory of quantum gravity"

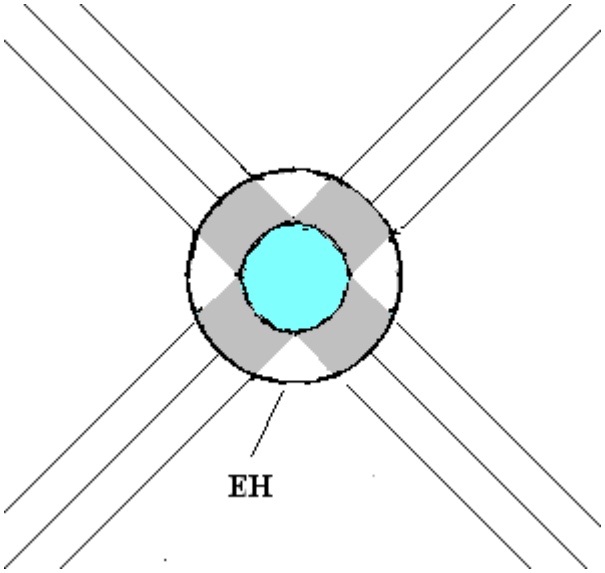


Fig. #11
A Schematic Two Dimensional Diagram of a Black Hole.

The BH core (in blue) is a complex quantum superposition of both a "singularity" and an orthogonal "spreadularity." Spacetime (in white) can make it half way in, but no further. The black hole core is therefore a "gravitationally localized non-locality" or "a limited non-locality."
-- E*xcept in the case of an infinite mass black hole which would be an unlimited non-locality.* The core is a single quantum state similar to Bose Einstein condensate.

For the purpose of the following discussion I shall refer to three basic types or states of mass;

Three Basic Types of Mass

#1. Discrete mass/energy ({d}M)
#2. Spacetime-mass (*St*{m})
and
#3. Flat mass (black hole core mass).

The Salient Features of Matrix Quantum Gravity

I am proposing, that the minimum foundational unit or "quanta" for an infodynamic space-time-mass universe is that of an "orthogonality." The word "orthogonality" means both "at right angles" and "functionally independent." In a standard graph one has an "X" axis and a "Y" axis, both of which are "orthogonal" or independent of each other. I.E. movement directly along the "X" axis produces zero movement along the "Y" axis and vice versa.

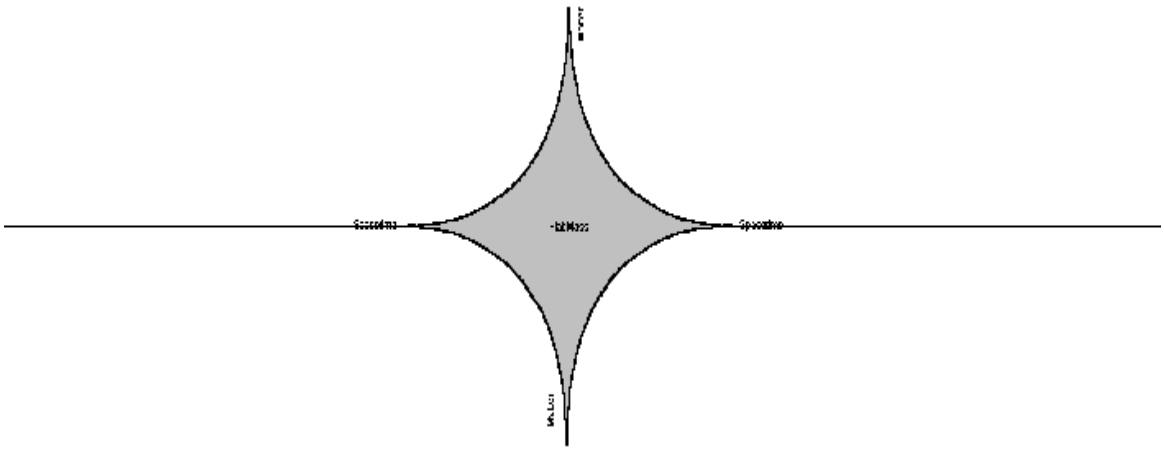


fig 12

Given the source of the universe in a black hole singularity, "orthogonality" or "independence" can never be perfect. Pure orthogonality is a platonic ideal. Imperfection or error at the matrix root is the key to both Second Laws and the law of Gravity. In order to maximize informational integrity, the matter oscillations and the space-time oscillations must be highly focused and differentiated, thereby minimizing the Spacetime Matrix Root Error (SMRE). However, in extreme situations such as black holes, the S-Matrix Root Error dominates and both space-time (mass) and discrete mass become unified into a single "flat mass" squared seen here as "M^2".

$$S_{bh} = \underline{M}^2 \times 2\pi (kG/\hbar c)$$

Eq.1

Beckenstein - Hawking equation showing only the "flat mass" as "M^2."

The eventual result of the gravitational systems, is a black hole in which mass and spacetime are merged. (Along with the loss of spacetime is the merging of orthodox quantum pure states into mixed states). The resulting "Expansion Equation" for the entropy {S} or "disorder" of a black hole is therefore;

$$\mathbf{S_{bh} = \underline{(d)M \times \mathit{St}\,(m)} \times 2\,\pi\,(\mathit{k}\,G/\hbar c)}$$

Eq.2
Brookfield Infodynamic Expansion.

Notice that Eq.2 is an expanded form of the Beckenstein - Hawking equation but where Eq.1 suggests one singular substance (M), devoid of information, Eq.2 suggests a possible infinite, binary expansion (of M). If "M" can be divided once, it can be divided again and again ad infinitum...

(d)mass <--- M^2 ---> *St*(mass)
Information Creation
Eq.3

My expansion also suggests the reversed case in which black holes are formed by two different modes, or polarizations, of primal matter (M).

#1. (d)mass ---> M^2 <--- *St*(mass) #2.
Information Loss
Eq.4

It is worth noting that, in terms of the black hole, my binary expansion of M^2 is both mathematically and physically irrelevant (I.E., "d" and "*St*" can be removed from Eq.2 leaving only M×M or M^2). Eq.1 therefore, is a better (more succinct) description of a black hole. I am not attempting to describe a black hole however, but instead a physical universe that contains information and that is also consistent with Einstein's relativity and the existence of black holes.

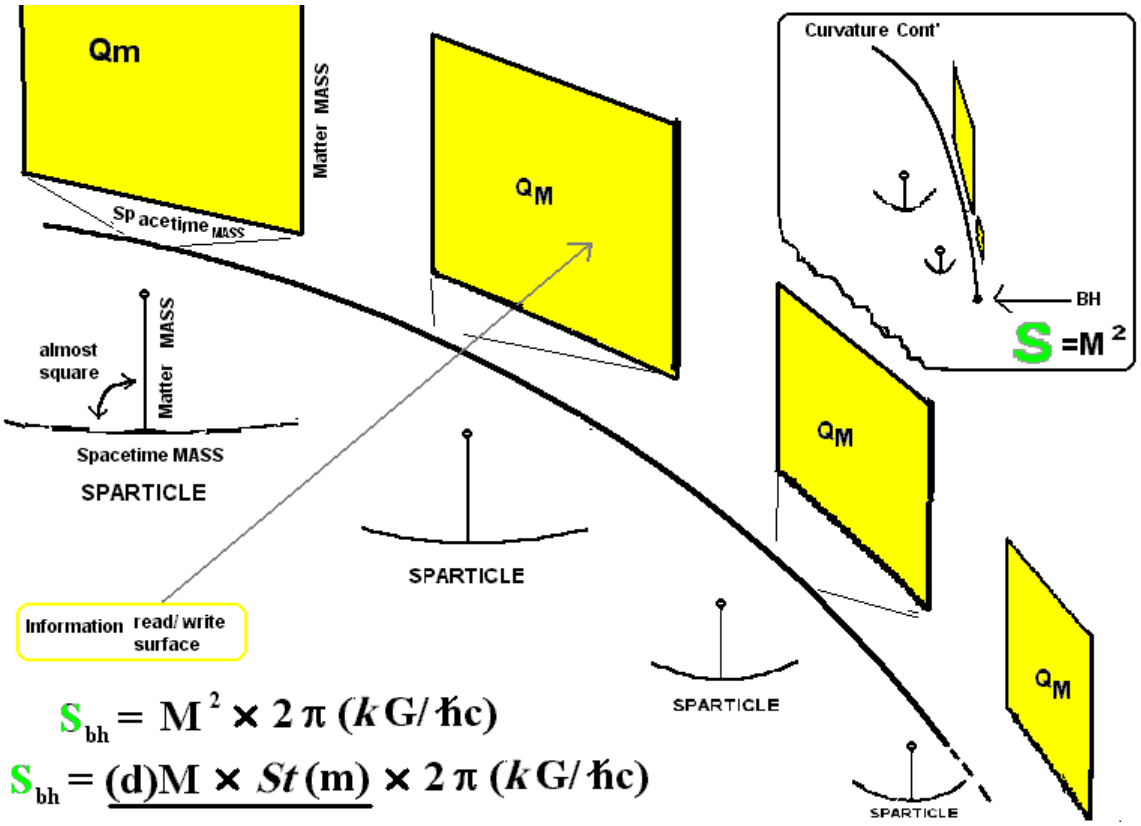


Fig.13

Each yellow square represents an entire spacetime. What is significant here is the "M^2" part of the Beckenstien/Hawking/Penrose equation. The rest of the equation merely represents the appropriate physical constants. Fig.13 shows the gradual loss of information read-write surface as each spacetime follows the curve down to singularity.

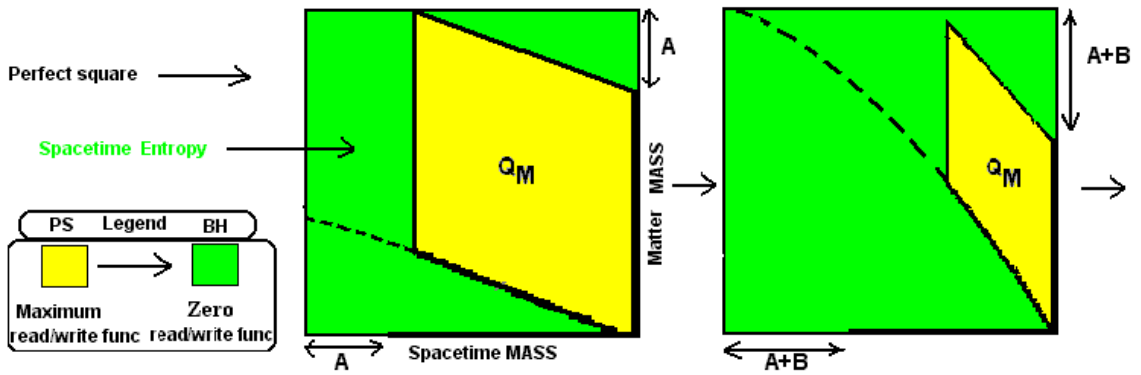


Fig. #14

Here we measure the entropy, not as photons per baryon, but as informational read/write surface loss. Because this square surface is a primal

form of information, this motion represents an ongoing loss of primal information (loss of matter-spacetime orthogonality).

The "S" in question represents the (super) entropy or **disorder** of the black hole. The merging of discrete mass ({d}M) and spacetime-mass (St{m}) in a black hole represents a loss of information and the reduction of discrete spacetime-mass information to its lowest possible level for the domain in question.

The formation of a black hole is an entropy increasing operation in which spacetime is dominated by matter and rendered matter-like. The key is in the equilibrious word "like" for this blending represent a loss of discreteness and subsequent loss of information. Both Second Laws can be modeled as gradual relinquishments of orthogonality. Gravity is modeled as a fundamental matrix root error that undermines (curves) the four dimensional spacetime-mass integrity.

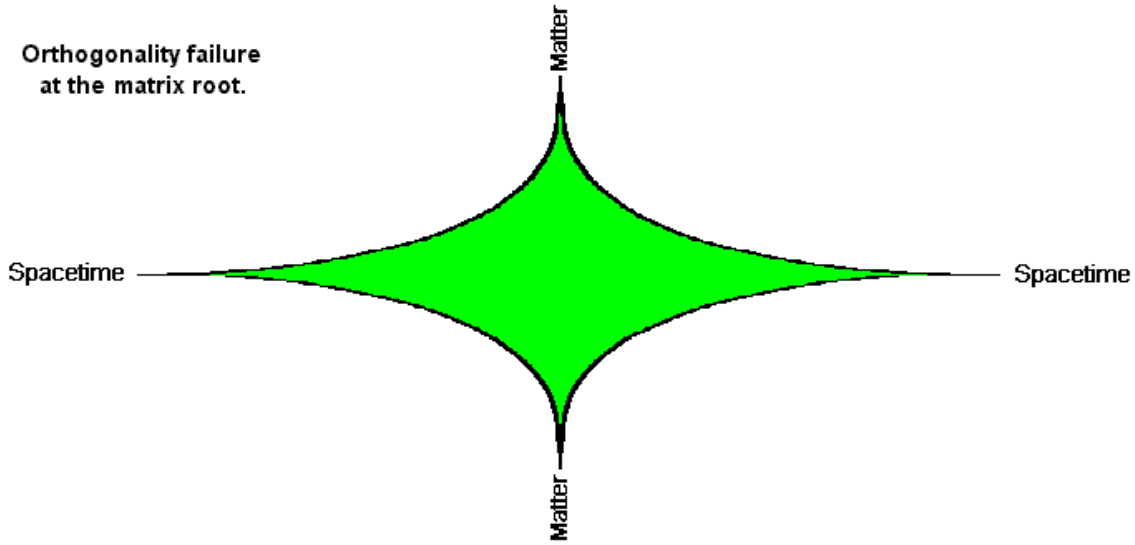
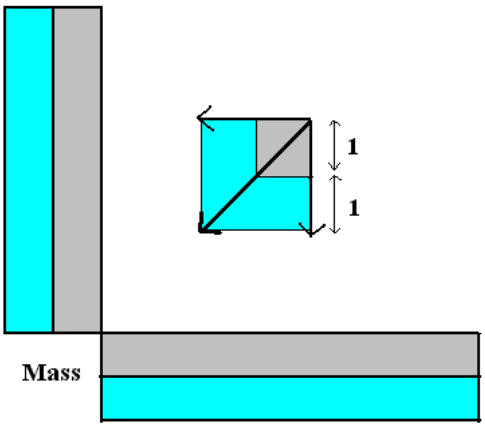


Fig. #15

Orthogonality failure is what produces gravity. The effect is most pronounced at the "matrix root" -- the closest meeting point between spacetime and mass.



The black hole event-horizon occurs where the mass induced annihilation rate is equal to the speed of light. Full annihilation and gravitational equilibrium however requires an annihilation rate of twice the speed of light. The increase in (anti)-area resulting from increasing the speed from one light speed to two light speed on a two dimensional surface, gives a vector area (blue +gray) of four times the original anti-dimensional area (gray).

Fig. #16

One times the speed of light is required to trap the light cone. Twice the speed of light is required to (trap and) close the light cone.

Converting from the anti-dimensional to positive dimensions gives the surface of the inner horizon as being 1/4 of the outer event horizon.

The quantum black hole with its non-local and (Stm) equilibrious core (in blue). Orthogonality annihilations summate to Einstein's gravitational acceleration vector. Annhilotonic activity at the event horizon annihilates spacetime at the speed of light whereas the core annihilates at twice the speed of light. Due to its purely equilibrious nature, gravitational acceleration at the core is zero. The area of the core (inner horizon) is 1/4 the area of the event horizon. S=A(EH)/4.

In a more complex situation with "mass-in-spacetime" being attracted by another "mass-in-spacetime" the attractive force is equal (at the Newtonian level) to the inverse square of the distance between the two masses ($F= m1+m2/d^2$). In the black hole case however the pertinent relationship is between mass and spacetime (not mass#1 and mass #2). The spacetime annihilation rate, being isolated to only one mass, is subsequently linear (m/d).

For an example one could imagine a bullet being fired directly into a black hole. This bullet however could not be fired faster than the speed of light, for this would contradict basic relativity. While the bullet with its attendant spacetime, can indeed traverse the event horizon (that annihilates spacetime at one light speed) the bullet's spacetime could never traverse the inner horizon (annihilating spacetime at two times the light speed).

While the mass of the bullet must indeed bend the bullet's relativistic spacetime framework very slightly, this effect is utterly minimal compared to the effect of the black hole's mass. Moreover, such bending is not

pertinent in the two dimensional spacetime (X) mass (Y) interaction and co-destruction being discussed here.

$$S_{bh} = \frac{A}{4} \times \left(\frac{k c^3}{G \hbar} \right),$$

Beckenstein Hawking Equation..

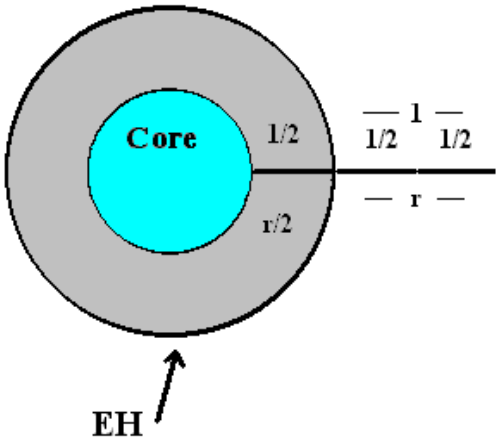
$$S_{bh} = \frac{A_{EH}}{4}$$

The pertinent entropy relationship...

$$S_{bh} = A_{IH}$$

Entropy is equal to the area of the black hole core -- the Inner Horizon (IH)

$$S_{bh} = A_{core} = M^2$$



The Graphic Depiction of Black Hole --
Fig.#17

The core, has one quarter of the surface area. The core represents the "flat mass" and the "circle of influence" of the singularity -- the area over which space-time-mass (and gravitational directionality) is singularized. The core also represents the "spacetimemass" entropy, or "disorder." From our point of view, as four dimensional hologram creatures, both the event horizon and the core can be pictured as "spheres" or "spheres of influence." In this case however the attendant volumes must be ignored, in particular the seeming "volume of core," for there is no dimensionality (no spacetime structure) at this level and nothing at all can be said. It is only the area of these spheres -- the "outward distance to which the destructive influence

extends into our space" -- that is pertinent. It is also this destructive influence that produces the spacetime-mass entropy or "super-entropy"

The Inner "Splattersphere."

Because gravity is the result of mutual spacetime-mass interference and because there is a limit to spacetime destruction (singularity) there must (in my model) exist a zero gravity core to every black hole ("gravity" here defined as a limited, directionalized, but not complete, mass-spacetime interference). The space from the event horizon to the inner horizon however, is gravitationally hyperactive and increases (assuming insufficient effective back-gravity) to the maximum possible level at the inner horizon. The threshold of the core thus represents the black hole's inner splattersphere"-- a word similar to "stratosphere."

The root word "splat" singular, is derived from the sound that a flying insect makes when it hits the windshield -- or the sound that a flying human makes when landing without a parachute. "Splatter" is the plural form and can be produced by either increasing the amplitude of moist projectiles or by decreasing the number of functioning parachutes.

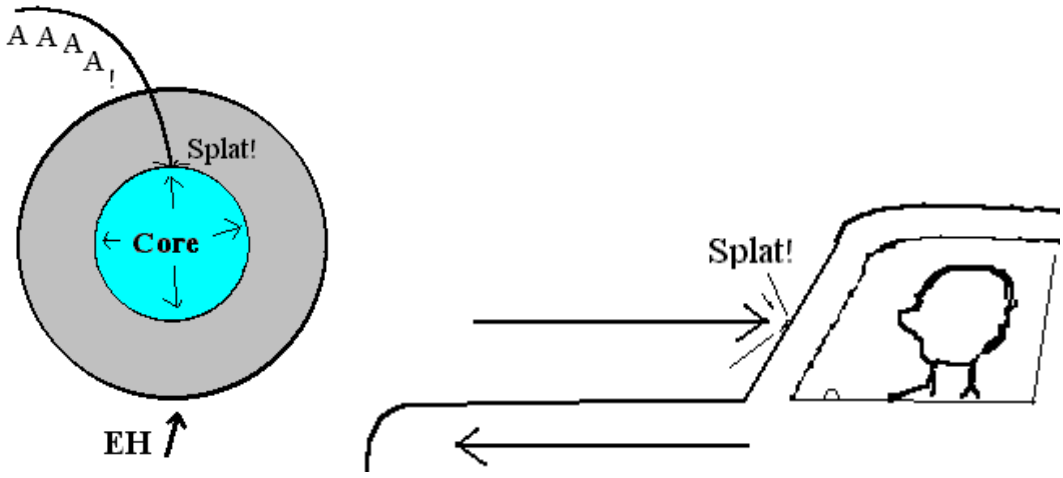


Fig #18
A brave astronaut (with his attendant space-time) discovers the inner splattersphere and a moving car is slightly decelerated by an insect approaching equilibrium (pure splatter).

As we can now see, the problem with the traditional black hole model is that the mass therein was assumed to be utterly central and point-like --

and therefore to have no built in "reach." This led to question as to how the EH area could possibly represent entropy (over/4). When mass and spacetime are unified (in my model) however one does not get a point, one gets a massive, non-local annihilation surface area -- a "splattersphere" (as seen from our 4 dimensional perspective).

The black hole core (S) is a gravitationally constrained (but internal gravity neutral) space-time-mass non-locality (primal equilibrium-- primal disorder). The addition (and subsequent destruction) of more matter (to an orthodox singularity) simultaneously adds (destroys) more spacetime (spreadularity/reach) providing an effective singlularity/spreadularity composite. One could say that matter is destroyed -- being turned into "reach." And spacetime is destroyed -- being turned into "singularity" or "localization." More accurately, however the two characteristics (along with all contents) attain utter undifferentiated equilibrium (hyper-splatter) or "primal equilibrium" in the core of a black hole.

The moon is a splattersphere (as can be seen by its cratering) just as is the earth and the sun. The difference with a black hole is that it is a hypersplattersphere. In a black hole, gravity has the power to bundle spacetime, infuse it with mass and thereby "splatter" it into oblivion (equilibrium). Far form being a cosmic orphan therefore, my theory brings black holes back into the larger family of cosmic "splatterspheres."

"Splatter" is not a scientific word. This article however is not written specifically for scientists. My hope is that interested lay-persons will also understand the gist of this article. The scientific word for "splatter" would be "equilibrium" or more specifically "thermal equilibrium." I am arguing here for a new and more primal kind of "equilibrium" that is attained in black hole singularities.

I am also arguing that "singularities" are not "hyper-points" or "hyper-contractions" but are instead equilibrious mixtures of both expansion (spacetime) and contraction (matter). It is not that the "brave astronaut" is being splattered per se but that the astronaut's spacetime mass framework is also being splattered -- with space-time being "mass-ified" and mass being "space-ified."

In terms the black-hole-dynamic "info-domain" only the spacetime-to-mass info-relationship is relevant and the "value added" "astronaut" is here irrelevant. Similarly, a CD with the one and only version of Microsoft Windows 2012 has an enormous "value added" quotient in the human financial and technological info-domain but in the thermodynamic infodomain it is equivalent to a blank disk.

--Part Two--

Cosmic Evolution

And the Iterating God Function

Toward a Unified Theory of "Anti-splatter"

(rhymes with "antimatter")

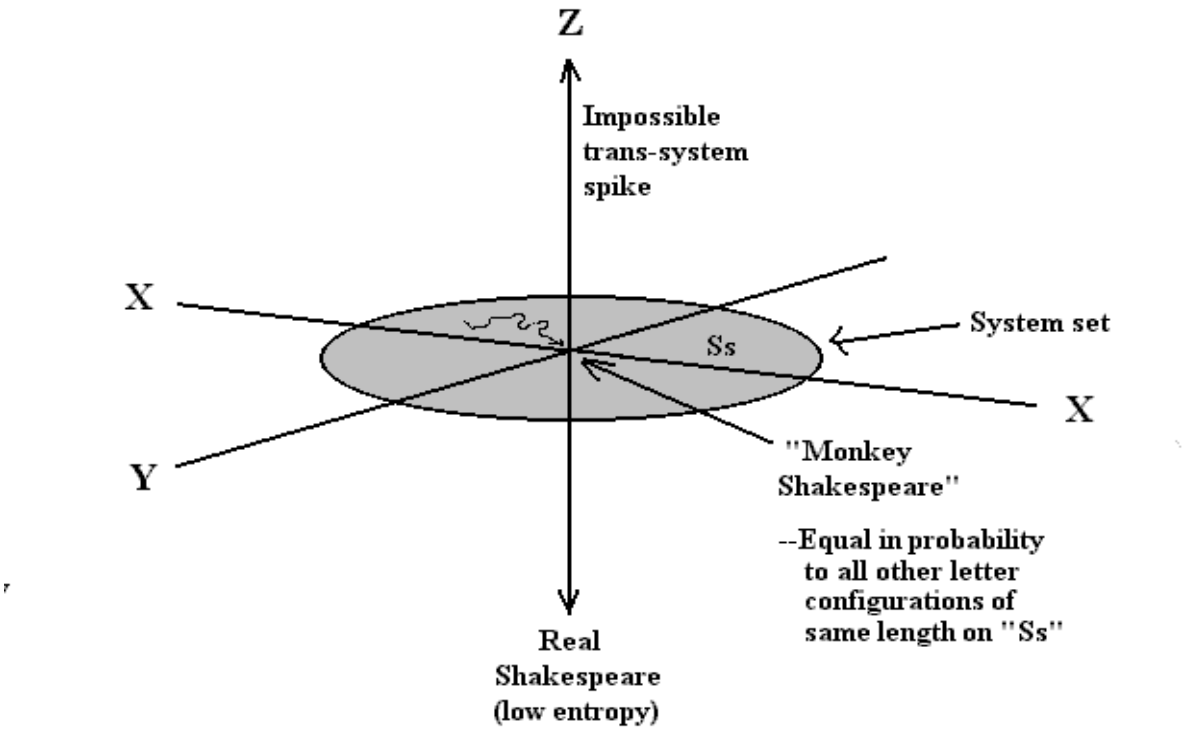


Fig. #19

The emergence (human amplification) of real Shakespeare (anti-splatter) here violates the indigenous equilibrious probability distribution of the monkey's random typing. The shakespearean letter configuration is seen here as a tiny dot dwarfed by the massive "flat literature" of "Ss." The emergence of "Z" axis (spiked probability) is impossible without intelligence. The typewriter, alphabet and monkey are also the product of "intelligent design" but are from different "info-domains" than that of "English literature."

The randomly meandering arrow on the gray flat surface represents a "random walk." This however is the incorrect search function for this particular system. This system is being "searched," not by a "random walk" but by a "random sampling" method. In both cases however, the pertinent topography is random and is therefore flat. "Real Shakespeare" is portrayed here as a spike (z axis). This is because the probability of finding

Shakespearean letter sequences in the local library is unnaturally high (spiked) as compared to almost all of the other (mostly gibberish) letter sequences available to the monkey-system.

So, while we now have a unified theory of cosmic splattering (cosmic devolution/GSL) we do not yet have a unified theory of anti-splatter (cosmic evolution).

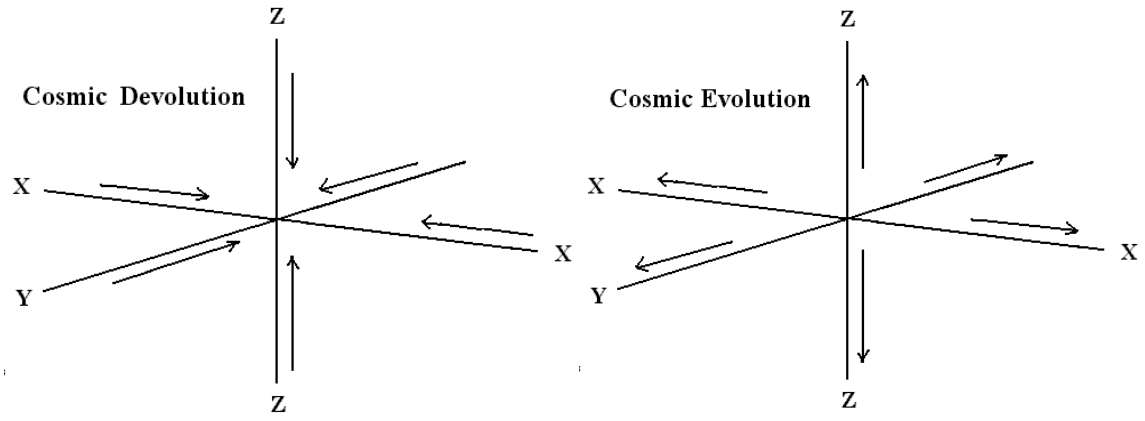


Fig #20

As with the emergence of real Shakespeare we are witnessing the emergence of meaning, creativity and subsequent probability spikes. When such spikes are not included in the pre-existing system's probability distribution an explanation is required. Such phenomenon are indeed evolutionary.

Gracefully Soaring Anti-Splatter

While it is indeed common for humans to claim that we have "mastered" or "conquered" flight, this depends upon just how low your standards of "flight" are. No self respecting bird would be willing to land at an airport, take a taxi to the telephone pole, shinny up the pole, rappel along the telephone wire to the desired location and then heave itself up onto the desired perch. Birds, who have indeed "conquered flight" will simply fly down and land on the wire.

The reason pilots have to "radio" the control tower before take off is to send out the message "for God sake, get out of my way! I am about to try to coax this insentient, flightless bucket of bolts to hurl flaming skyward." Birds, on the other hand, just take off whenever and wherever they wish. If another bird gets in the way during takeoff it presents no problem, they just swerve.

Birds fly fluently in the same way that we speak fluently. Someone who has "conquered" the English language does not need to radio a control tower saying "For God's sake, lookout! I am about to attempt another English sentence!" (Though in some cases this might be a good idea, particularly for politicians).

There is however a sense in which birds are not "natural flyers." When a hunter shoots a duck in the head, the duck does not fly on naturally but instead plummets immediately to the ground. If the pilot of a rigid fixed wing glider or a hot air balloon suffers a heart attack (and dies) these aircraft, being "natural flyers" do not immediately crash. In this same regard hydrogen and helium gasses, being lighter than air, are themselves "natural flyers." This however is, once again, a very low standard of "flying."

Any such low information "stochastic flying" is easily explained by reference to orthodox physical laws. What is not explained (by such stochastic processes) is complex, information rich, trajectories that have no antecedent in simple physical laws and processes. Genuine flight is an information rich manifestation of countless, complex and unique non-crashing (non-splattering) trajectories.

Only birds and insects have the genuinely "natural" ability to safely explore this complex "trajectory space." This space goes beyond the mere "up" and "down" of "natural" and "unnatural" flyers. Darwinian "natural selection" (law) and mere "survival advantage"(upward mobility) does not explain the information-rich complexity of the bacterial flagella. Helium-like "natural flight" and mere "altitude advantage" does not explain the information-rich complexity of bird flight. Intelligent design scientists are constantly addressing such subtle internal phenomenon that flagrantly defy mere "up" and "down" or the "life" and "death" of Darwinian mechanisms. For a concerned infodynamicists such as myself a "natural selection" explanation of complexity rings just as hollow as the "natural flight" of helium.

In the cases of "bird flight" and "English literature" we are witnessing the emergence of independent, stochastically impossible probability spikes (Z axis). Such spikes are not part of the underlying flat (x&y axis) "solution spaces." "Random mutation and natural selection" are bound by Darwinian gradualism. Random primordial slime is bound by thermodynamics. Cosmic singularities are bound by black hole dynamics. The behaviors of such systems are both determined and limited by their defining physical parameters. The only solution is a fundamental re-definition of the cosmos. That is, a fundamental re-definition of the true "nature of nature" is required.

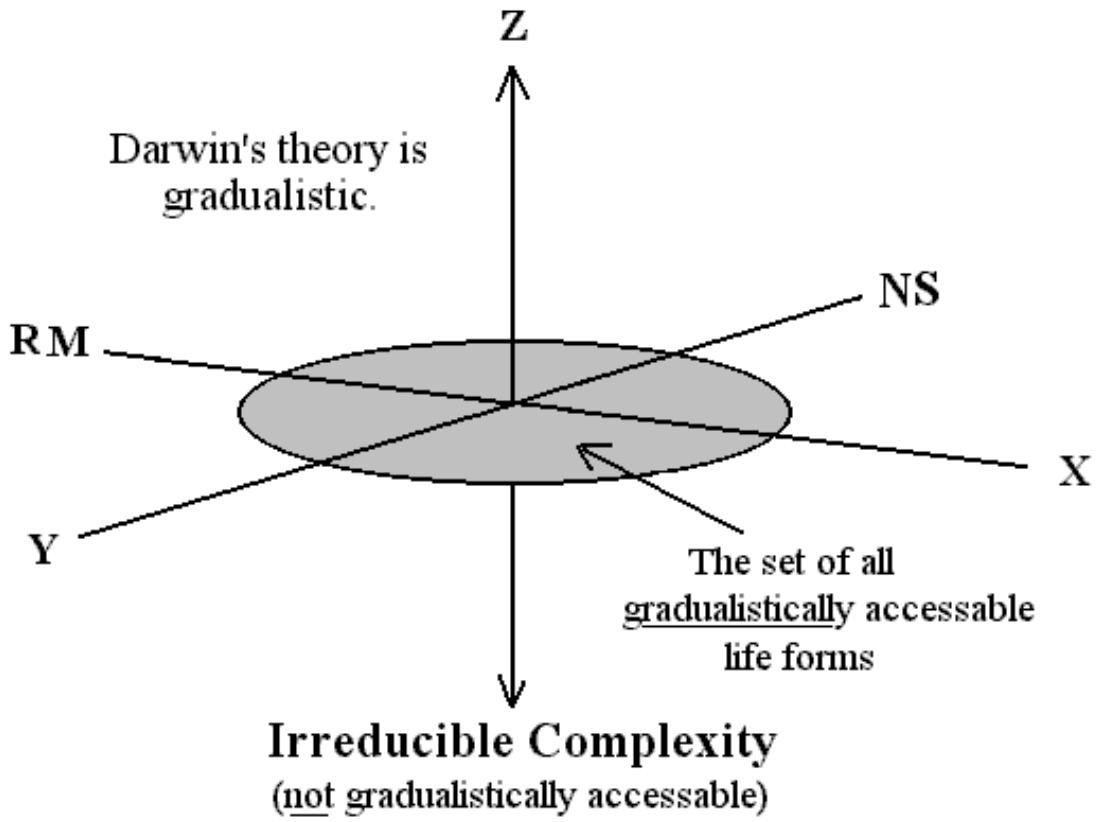


Fig.#21

The recent discovery irreducible complexity in biology has caused enormous consternation amongst orthodox Darwinists. Even though the combined effects of reproduction and natural selection can produce probability spikes, irreducible complexity is not a part of any Darwinian spike. In the *Origin of Species*, Darwin stressed that his theory is a gradualistic theory in which complex biological structures ("complex organs") must be capable of being formed by "numerous, successive, slight modifications."[2] Irreducible complexity could therefore be considered a gradualistically impossible "spike on spike." Alternatively, the combined contributions of random mutation and natural selection can be recalibrated and expressed as a large flat surface with IC appearing as a single forbidden (Z axis) spike (see Fig #21).

Unfortunately for the Darwinists, it only gets worse. Both of Darwin's functions "randomness" (as in "random" variation or "random" mutation) and "natural selection" are destruction(-) functions. "Natural selection" is in reality, natural selective destruction (functioning merely to destroy the unfit). "Randomization" is precisely what happens to an insect when it hits your windshield. Both of these splattering (-) function are useless for any

genuine theory of anti-splatter(+) or genuine evolution(+). Stochastic functions are information reducing.

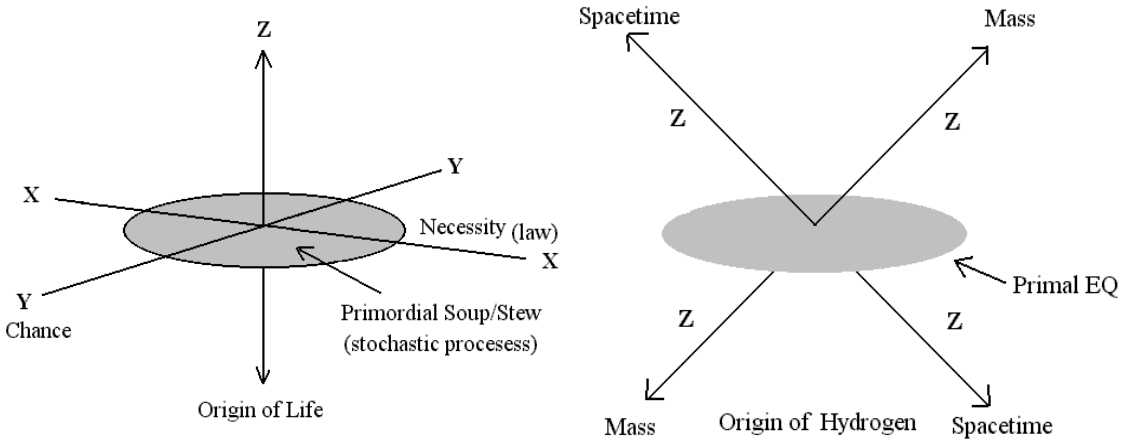


fig.#22

When emerging from primal equilibrium, both spacetime and discrete matter are dis-equilibrious Z axes.

The emergence of any "Z" axis is a severe problem for a purely materialist (X&Y only) approach. With regard to origins (origin of the universe, origin of life, origin of the species) materialist theories have not only come up empty, they have also taught us why, according to physical law, they must forever come up empty.[3] Quantum mechanics has its own "Z" axis problem. The antecedent for "the collapse of the wave function" is completely missing from the wave function! Any further refinement physical laws[4] such as the GSL will only clarify these physical limits making things worse (for the materialist approach). The abrasive, splattering, frictional nature of material itself is ubiquitous and utterly unavoidable. What is needed is a genuine, information producing, (Z axis producing), creative function.

In The Beginning

According to science, the universe began with an initial singularity. Also according to relativity, cosmic singularities (devoid of event horizons) are utterly stable (all trajectories lead to the core). Singularities are states of entropy maximums not entropy minimums. Our search for the source of low entropy would therefore appear at first to be hopeless. As I have argued however black holes can also be considered as states of highest equilibrium

and highly analogous to thermodynamic states of equilibrium. "Equilibrium" in physics refers to the most "settled down" state of a physical system in which all forces and features are utterly balanced and homogenized.

The purely physical approach however has consistently failed us with regard to origins. Another approach would be to think, not of a narrow physical equilibrium but as a broader existential primal equilibrium in which all of the forces and features of the universe (existence) must have equilibriously existed. Given that we exist and that we are conscious then consciousness must, in some form, be a feature and/or force of existence. I am proposing therefore that primal equilibrium be redefined to include an utterly equilibrious mixture consciousness and unconsciousness.

While this model may indeed offend materialists, there is no offense done here to the meaning of the word "equilibrium" -- I have added no "spike." Moreover, this initial state (being equilibrious, unlike the universe) can indeed come about "purely by chance." Materialism however, by always requiring the initial state to be purely material and purely dead has added a disequilibrious death (as opposed to life) "spike." The upshot of this is that without offending the meaning of "equilibrium" or Occam's razor we now have a semi-restless semi-conscious initial singularity with a genuine creative potential. The "Intelligent Designer" and the "engine of creation" is thus built into existence itself.

Super-Mandelbrotelian Iterations Over a Cosmic Hyper-complex Plane

In the early days of mathematics it was noticed that it was impossible (within the orthodox number system) to take the square of a negative number. (X x X = -1?) The solution was the assumption of an "imaginary" number axis and the subsequent "complex plane." With this expanded mathematical system in hand, countless "real" world problems are now routinely solved. This "imaginary" mathematics now serves as the basis for much of modern science. I am suggesting that a new "ID axis" and subsequent "hyper-complex plane" is now required to solve the recalcitrant problems of cosmic origins.

As with the standard complex plane, the cosmic hyper-complex plane includes all of our normal planes along with a fundamental non-local, iterative and propellant "ID axis." This "ID axis" is not now "a bearded Father-God in the sky" but is instead the (presently highly developed) conscious and creative dimension necessary initially to render primal equilibrium fully equilibrious. The fecundity of iterations over the orthodox

complex plane can be seen in the outworking of the Mandelbrot and Julia sets.[5] From the utter simplicity of primal equilibrium, the hyper-complex ID plane could (through countless iterations) develop and expand itself into the complex (Z axis) universe that we know today. Just as with matter and spacetime -- that can never be utterly separate -- no "material" substance or dimension produced within an iterating God function can ever be utterly dead. A least that is my unified theory. I have now grown tired of science however, and I am going to play my ukulele.

William Brookfield -- Cognitive Monistic Infodynamicist (and Ukeulist)

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1. See William Brookfield --2002 Part Three: "The Devolving Gas the Devolving Cosmos." http://www.iscid.org/papers/Brookfield_Devolution_120502.pdf

2. Charles Darwin, *On the Origin of Species*, facsimile 1st ed. (1859; reprinted Cambridge, Mass.: Harvard University Press, 1964), 189.

3. William Brookfield --2002 Part One: "*The Physical Incompleteness Theorem -- Verification of the Cosmic Arrow*." http://www.iscid.org/papers/Brookfield_Devolution_120502.pdf
&
William Dembski -- 2005 "*Searching Large Spaces: Displacement and The No Free Lunch Regress*." http://www.iscid.org/papers/Dembski_NoFreeLunchRegress_030505.pdf

4. William Brookfield --2002 Part One: "*The Physical Incompleteness Theorem -- Verification of the Cosmic Arrow*." http://www.iscid.org/papers/Brookfield_Devolution_120502.pdf

5. See perhaps -- *http://aleph0.clarku.edu/~djoyce/julia/explorer.html*