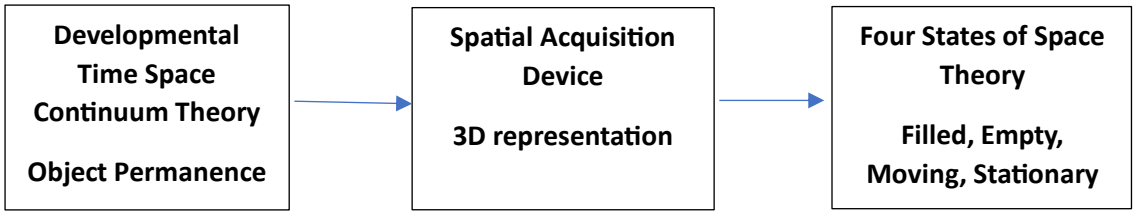
Quantum Holographic Theory of Physics and Consciousness (QHTPC)

I have introduced this theory in a previous post and all its elements but in different posts. In this post, I combine the various elements of the overall theory building off three separate theories I have proposed related to developmental psychology and physics. Here I have tried to depict how these separate theories could be combined. Rather than repeating what I have written in these other posts, please refer to them to get the details of each theory. The important aspect of this post is putting them together and how they build one off the other.

The key element is that the QHTPC is developmental in nature and there is an innate acquisition device that we have evolved as humans in understanding our surroundings. Which is a good thing but at the same time is very limiting in that we understand everything in a three-dimensional spatial orientation. Without this frame of reference all bets are off and a multiverse would become possible but it just ain't so when you are within the confines of a Spatial Acquisition Device. But that leads us to the Four States of Space Theory where motion, especially when it comes to empty space in motion, defines how we experience reality.



←----------Quantum Holographic Theory of Physics and Consciousness----------→

Please read the other posts along with this one to get the details for what I am proposing. All the key elements are described in those posts.

The key element of the theory is the combination of psychology and physics in determining how developmentally we acquire our notions of spatial awareness. Also, the introduction of object permanence is the light switch in moving from a quantum state to a more deterministic state. All dimensionality builds from the concept of object permanence, it is the starting point for the Spatial Acquistion Device, but it is also the switching mechanism from quantum mechanics to relativity. Once the Spatial Acquistion Device is set, the discovery of the four states of space is a given: space is either full (mass) or empty, and/or moving or stationary. Basically, with the four states of space, all the key concepts of gravity, time, energy can be defined and described by using these four states. The Quantum Holographic Theory of Physics and Consciousness can then be viewed within the above three theories combined in a sequential fashion.

Quantum Hologram Theory of Physics and Consciousness (QHTC) & the Spatial Acquisition Device

Richard Fiene PhD

November 2023

This short abstract will propose an additional element to the Quantum Hologram Theory of Physics and Consciousness (QHTC) called the Spatial Acquisition Device (SpAD). The QHTC needs a basic building block in how we organize and internalize our thinking about time and space. This basic building block can be found in Piaget's Cognitive Developmental Theory in which he demonstrates through a series of conservation experiments how children internalize the basic notions of time and space.

Piaget's theory has four stages: sensori-motor, pre-operational, concrete-operational and formal operations. All of us in our development go through these stages albeit not necessarily on the same time frame as has been demonstrated by research validating his theory. However, the invariance in the stages is solid. I have taken these stages and placed them along a spacetime continuum which will eventually lead us to the proposed Spatial Acquisition Device (SpAD).

The first stage focuses on sensori-motor (Birth-2yrs) learning in which the child learns via movement through space by raising their head, sitting up, rolling over, crawling and then by walking. The child experiences all the various dimensions of space from one dimensional space to three-dimensional space. A key component during this stage is the development of the concept of object permanence where an object continues to exist even

if it can no longer be seen. Prior to the development of object permanence, out of sight is out of mind, non-existent.

During the pre-operational stage (2-7yrs), the child begins the initial tasks of conservation and begins to internalize the concept and not being influenced by perception and how things change. Conservation of number occurs during this stage. In the concrete-operations stage (7-11yrs), the child moves on their conservation journey by acquiring conservation of area, length, weight, and volume completing their walk through the dimensions. Once the child has completed this dimension journey by internalizing these various levels of conservation when it comes to number, area, length, weight, and volume the Spatial Acquisition Device now governs how s/he will interact with the world on a spatial plane.

Let's return to the Importance of object permanence, Piaget's most important discovery. As far as the child is concerned prior to object permanence everything is a wave function and perceptual, not internally represented. Once object permanence takes hold it provides the basis of internalization and representation of external reality within the Spatial Acquisition Device. It is the beginning of the child's life arrow establishing the concept of linearity. Up to that point it is a non-linear relationship as far as the child is concerned.

The conservation experiments and the notion of figure-ground relationship and how children are perceptually bound is critical in their development. The ground part being the wave function which influences initial thinking and then object permanence comes into play and establishing one to one correspondence which moves the perceptual bound to internal understanding and doing this for 1D, 2D, and 3D. Number, area, and volume. Once

this occurs the SpAD is complete, but it all starts with sensori-motor and the child moving through space via stationary to raising their head, to crawling, to sitting, and then to walking as described earlier.

SpAD is similar to the Language Acquisition Device (LAD) as proposed by Noam Chomsky. It is hard wired into our circuity and just as the LAD is our template for language and linear thinking, SpAD is our template for understanding our surroundings and non-linear thinking. It is how we make sense of our three-dimensional framework. It is a framework, template for understanding but at the same time it is a limitation in how we interact with that world. The SpAD has evolved in humans over the millennium, and it is the filter that we use to our knowledge base and how we interpret the world.

For additional information about SpAD, please check out the following:
https://www.yumpu.com/en/account/magazines/edit/68498611

Richard Fiene PhD, Penn State University, rfiene@rikinstitute.com

Bohm's Quantum Mind and the Spatial Acquisition Device

Richard Fiene PhD

Penn State University

December 2023

This research abstract will build upon David Bohm's quantum mind and implicate order concepts at the intersection of developmental psychology and consciousness. David Bohm viewed quantum theory and relativity as contradictory, which implied a more fundamental level in the universe. He claimed that both quantum theory and relativity pointed to this deeper theory, which he formulated as a quantum field theory. This more fundamental level was proposed to represent an undivided wholeness and an implicate order, from which arises the explicate order of the universe as we experience it. Bohm's proposed order applies both to matter and consciousness. He suggested that it could explain the relationship between them. He saw mind and matter as projections into our explicate order from the underlying implicate order. Bohm claimed that when we look at matter, we see nothing that helps us to understand consciousness.

Bohm discussed the experience of listening to music. He believed that the feeling of movement and change that make up our experience of music derive from holding the immediate past and the present in the brain together. The musical notes from the past are transformations rather than memories. The notes that were implicated in the immediate past become explicate in the present. Bohm viewed this as consciousness emerging from the implicate order. Bohm saw the movement, change or flow, and the coherence of experiences, such as listening to music, as a manifestation of the implicate order. He claimed to derive evidence for this from Jean Piaget's work on infants. He held these studies to show that young children learn about time and space because they have a "hard-wired" understanding of movement as part of the implicate order. He compared this hard wiring to Chomsky's theory that grammar is hard-wired into human brains.

Bohm's notion of this "hard-wired" understanding of movement I am proposing is a Spatial Acquisition Device which is similar to Chomsky's Language Acquisition Device (LAD). Let me develop the Spatial Acquistion Device more fully borrowing from Piaget's theory of cognitive development as David Bohm suggested.

Jean Piaget has influenced cognitive theory with how children develop their concepts of space and time. The theory delineates a four-stage process of moving from sensori-motor to pre-operations to concrete operations and finally to formal operational thought. The developmental process is one of increasing complexity as the child internalizes and builds upon their concepts of

space and time. It is almost as if they have a Spatial Acquisition Device, similar to Noam Chomsky's Language Acquisition Device.

One of Piaget's most important discoveries is the concept of object permanence in which the child begins to understand that an object exists even when it cannot be viewed. Prior to object permanence when an object is removed from a child's sight, it no longer exists. This acquisition of object permanence occurs in the first year of life during a child's sensori-motor stage of cognitive development. The child develops the sense of being as having a permanent existence physically. So just as the child has learned about three dimensions physically through movement in the first two-years of life, the child begins a journey of internalizing how they learn about dimensionality over the next three stages of Piaget's theory in moving from one dimension to two dimensions and finally to three-dimensional space.

Piaget invented a very unique experiment to test for this acquisition called "conservation experiments" in which he devised experiments for one-dimension (number), two-dimensions (area), and three-dimensions (volume) (see the following chart):

Developmental Sequence to the Spatial Acquisition Device

Dimensionality	*Conservation Experiment*	*Stage of Piaget's Theory*
0 Dimension	Object Permanence	Sensori-Motor
1 Dimension	Number	Late Pre-Operational
2 Dimensions	Area	Concrete Operational
3 Dimensions	Volume	Late Concrete Operational

To further explain the above chart: the first stage focuses on sensori-motor (Birth-2yrs) learning in which the child learns via movement through space by raising their head, sitting up, rolling over, crawling and then by walking. The child experiences all the various dimensions of space from one dimensional space to three-dimensional space. A key component during this stage is the development of the concept of object permanence where an object continues to exist even if it can no longer be seen. Prior to the development of object permanence, out of sight is out of mind, non-existent.

During the pre-operational stage (2-7yrs), the child begins the initial tasks of conservation and begins to internalize the concept and not being influenced by perception and how things change. Conservation of number occurs during this stage. In the concrete operations stage (7-11yrs), the child moves on their conservation journey by acquiring conservation of area, length, weight, and volume completing their walk through the dimensions. Once the child has completed this dimension journey by internalizing these various levels of conservation when it comes to number, area, length, weight, and volume the Spatial Acquisition Device now governs how s/he will interact with the world on a spatial plane.

Let’s return to the importance of object permanence, Piaget’s most important discovery. As far as the child is concerned prior to object permanence everything is a wave function and perceptual, not internally represented. Once object permanence takes hold it provides the basis of internalization and representation of external reality within the Spatial Acquisition Device. It is the beginning of the child’s life arrow establishing the concept of linearity. Up to that point it is a non-linear relationship as far as the child is concerned.

This acquisition is invariant, it may occur at different ages for children, but they are not going to go from object permanence to area before going to number, for example. Recent research has demonstrated that Piaget’s stages may occur a bit earlier than suggested by the theory, but the invariance of spatial dimensionality has not been challenged. This is an important discovery since it could lead us to a Spatial Acquisition Device, which has implications in how we interpret the world. Are our brains prewired to interpret the world within three dimensions and if so, what could be the next logical step in understanding the relationship between space and time. For example, is object permanence the switch in moving from a non-deterministic (quantum) world to one that is deterministic (relativistic).

It is possible that object permanence could be a solution to quantum physics and psychology related to consciousness, but there is no scientific consensus on this yet. Some physicists believe that the concept of object permanence could help to explain the phenomenon of wave function collapse, which is a key concept in quantum mechanics. Wave function collapse is the process by which a quantum particle's wave function, which represents all possible states of the particle, collapses into a single state when it is observed. Some physicists believe that this collapse is caused by the conscious observer, and that the concept of object permanence could help to explain how this happens.

In psychology, object permanence is the ability to know that objects continue to exist even when they are not visible. This ability develops in children around the age of 7 months, and it is thought to be a key milestone in cognitive development. Some psychologists believe that object permanence could be related to consciousness, and that the ability to understand that objects exist even when they are not visible is a fundamental aspect of consciousness.

Spacetime Being Replaced by the Four States of Space

Richard Fiene PhD

December 2023

This abstract will propose replacing spacetime with a new theory of space involving four states of space as depicted in the below matrix: Four States of Space. Just as spacetime advanced our understanding of space and time, the four states of space provide a simpler theory of reality where only space is needed because time is conceived as empty space in motion. The Four States of Space theory is a more parsimonious theory as it relates to the fundamental building blocks of reality. And it is a direct outgrowth of the Spatial Acquisition Device.

Let's walk through the Four States of Space matrix in attempting to build this theory. The four states of space are the following: Filled (Mass), Empty, Moving, and Stationary. Filled space is all objects, such as stars, planets, your desk, cars, houses, etc. Empty space is the expanding universe where objects are not present. It is not truly empty, space is never totally empty but for arguments sake, it is empty in comparison to filled space. Space is moving or it is stationary. It was always thought that mass moved through empty space until it was discovered that the universe is expanding which means empty space is moving constantly. The bottom line is space is dynamic, not a backdrop that reality is painted on.

4 States of Space	**Filled**	**Empty**
Moving	**Gravity**	**Time**
Stationary	**Black Hole**	**Singularity**

Now let's turn our attention to the interactions of the four states and what these interactions mean. When filled space (mass) is moving gravity comes into play. It is influenced by the size of the mass, its motion and its effect on empty space. It's that delicate balance between how it moves and how empty space lets it move. Empty space when it is moving, our expanding universe, is time. Time, in and of itself, is an illusion, what is really passing is empty space. No two instances are the same because empty space has expanded, and we find ourselves at a different place in the expanding universe. When filled space (mass) has reached a stationary stage it is a black hole because gravity has taken over and under its own weight has collapsed into a black hole. When empty space is stationary that is the singularity within a black hole in which time (space in motion) no longer exists. Space gets turned on its side and is no longer recognizable. This is when the quantum comes into play in understanding a singularity.

Developmental Time/Space Continuum Theory: The Dimensionality of Space and If Time is Space in Motion: A Technical Research Note

Jean Piaget has influenced cognitive theory with how children develop their concepts of space and time. The theory delineates a four-stage process of moving from sensori-motor to pre-operations to concrete operations and finally to formal operational thought. The developmental process is one of increasing complexity as the child internalizes and builds upon their concepts of space and time. It is almost as if they have a Spatial Acquisition Device (SAD), similar to Noam Chomsky's LAD – Language Acquisition Device.

One of Piaget's most important discoveries is the concept of object permanence in which the child begins to understand that an object exists even when it cannot be viewed. Prior to object permanence when an object is removed from a child's sight, it no longer exists. This acquisition of object permanence occurs in the first two years of life during a child's sensori-motor stage of cognitive development. The child develops the sense of being as having a permanent existence physically. So just as the child has learned about three dimensions physically through movement in the first two-years of life, the child begins a journey of internalizing how they learn about dimensionality over the next three stage of Piaget's theory in moving from one dimension to two dimensions and finally to three-dimensional space.

Piaget invented a very unique experiment to test for this acquisition called "conservation experiments" in which he devised experiments for one-dimension (number), two-dimensions (area), and three-dimensions (volume) (see the following chart).

Dimensionality	***Conservation Experiment***	***Stage of Piaget's Theory***
0 Dimension	**Object Permanence**	**Sensori-Motor**
1 Dimension	**Number**	**Late Pre-Operational**
2 Dimensions	**Area**	**Concrete Operational**
3 Dimensions	**Volume**	**Concrete Operational**

This acquisition is invariant, it may occur at different ages for children but they are not going to go from object permanence to area before going to number, for example. Recent research has demonstrated that Piaget's stages may occur a bit earlier than suggested by the theory, but the invariance of spatial dimensionality has not been challenged. This is an important discovery since it could lead us to a Spatial Acquisition Device (SAD), which has implications in how we interpret the world. Are our brains pre-wired to interpret the world within three-dimensions and if so what could be the next logical step in understanding the relationship between space and time. For example, is time (T) just space in motion (Sm) as depicted in the following formula: ***T = Sm***. This idea and its potential implications are being developed in a way as suggested in the following section of this technical research note in attempting to

develop a deep structure within epistemology regarding space and time between the physical and cognitive worlds.

The Developmental Time/Space Continuum Theory: The Implications if Time is Space in Motion

The Developmental Time/Space Continuum Theory has gone through several revisions and enhancements since being first proposed in 1975. Over the past five decades it has moved from being a cognitive theory to more of an epistemology theory dealing with time and space as both physical and psychological concepts.

Picture two triangles, one a right-angled triangle, the other an isosceles triangle imbedded within the right-angled triangle. One of the triangles is space (right angled) the other is time (isosceles)(see figure at end of this narrative). As space increases or decreases in speed, time slows down. Now picture at the end of the space triangle there is a singular point where space is a singularity and is stationary. Time as depicted in the isosceles triangle shows time slowing down as it approaches the same singular point. The same is true with the triangles at the other end of the continuum where space is moving at least or close to the speed of light and time as depicted in the isosceles triangle has slowed to a crawl.

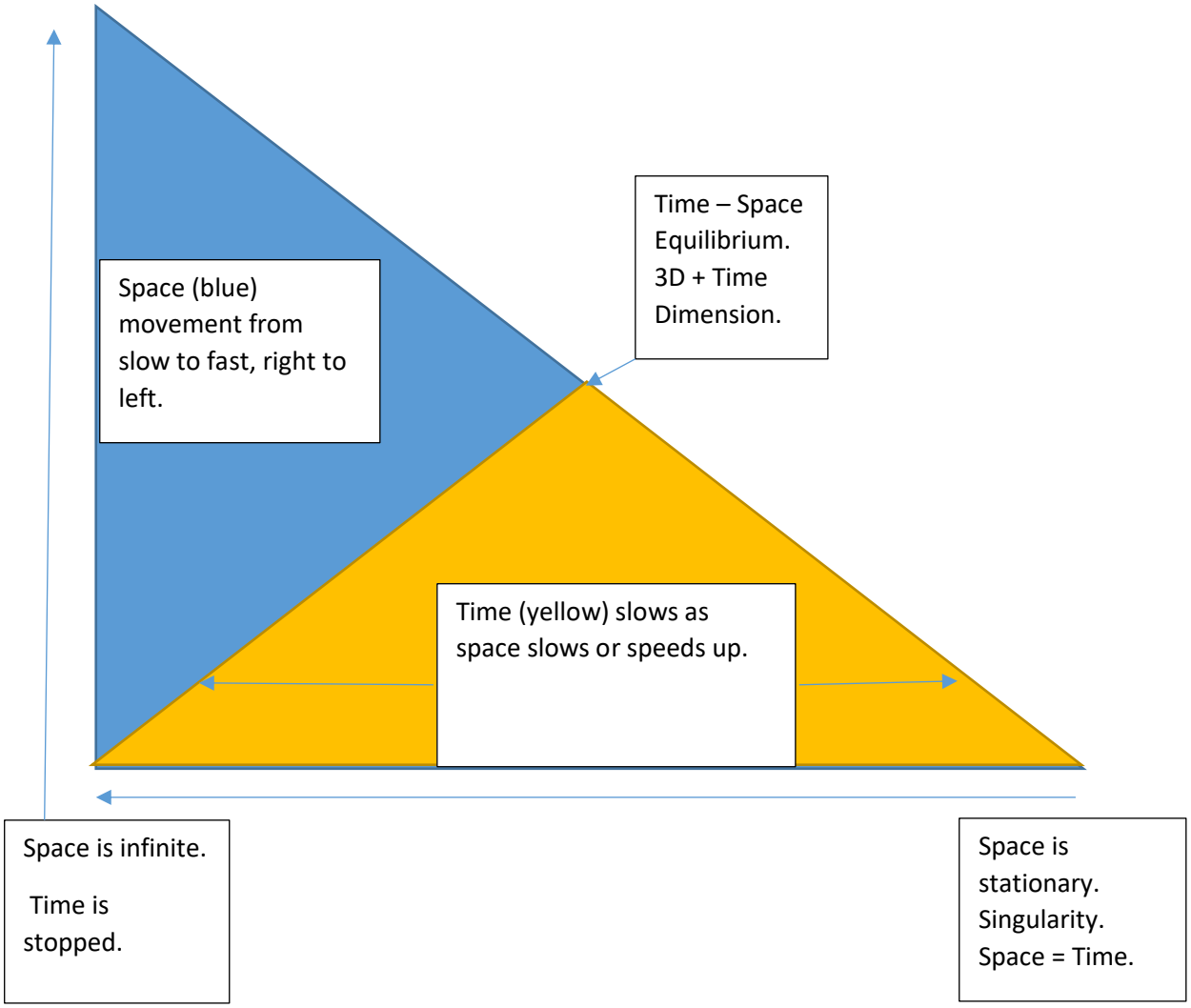
The stationary space represents a black hole as a singularity where time has lost meaning and different events could occur at the same time, such as having a cat that is both alive and dead. Space equals time. When time has become stationary, space as represented by filled space, Mass, is moving at or close to the speed of light and is transformed into Energy.

With these two imbedded triangles, both intersect at some point depending on how fast or slow space and time move. This intersection is our world, it is our reality, where the three dimensions of space and the dimension of time coincide.

I have suggested in previous iterations of this theory that black holes are the anchors to our universe and keep it from expanding out of control. Go back to the right-angled and isosceles triangles. At the beginning of the universe (The Big Bang) the time triangle dominates while the space triangle is at a minimum. Energy dominates with stars being born. It is only when they begin to die off and form black holes that the universe begins to slow down and a shift begins with the two triangles and the space triangle begins to grow larger and larger while the time triangle grows smaller and smaller until the stationary space singularities act as a drag on the universe and it gradually goes into the Big Collapse. And the universe does it all over again.

With this model, it supports the notion of multiple realities but in more of a sequential fashion rather than concurrent. As the universe regenerates itself over and over again in Big Bangs and Big Collapses it provides the opportunity when time and space intersect to form new realities, just not at the same time. The only way for that to happen where two realities can exist at the same time is when space is stationary and time does not exist which occurs in a singularity.

Time = Space in motion (T = Sm)



Technical Research Note, Fiene, March 2020

Outline Notes on The Four States of Space

Richard Fiene, Ph.D.

July 2020a3

The proposed Four States:

1) Stationary Space
2) Space In-Motion
3) Filled Space (Mass)
4) Empty Space

The Implications of the proposed Four States of Space:

- Space is stationary = singularity, no time.
- Empty space in motion = time.
- Filled space in motion = energy.
- Interaction of filled space and empty space = gravity.

These states and implications are summarized in the following matrix:

Four States of Space	**Filled Space**	**Empty Space**
Stationary Space	**Singularity**	**No Time**
Space in Motion	**Energy**	**Time**

Space: A Unified Field Theory

Richard Fiene, Ph.D.

October 2020

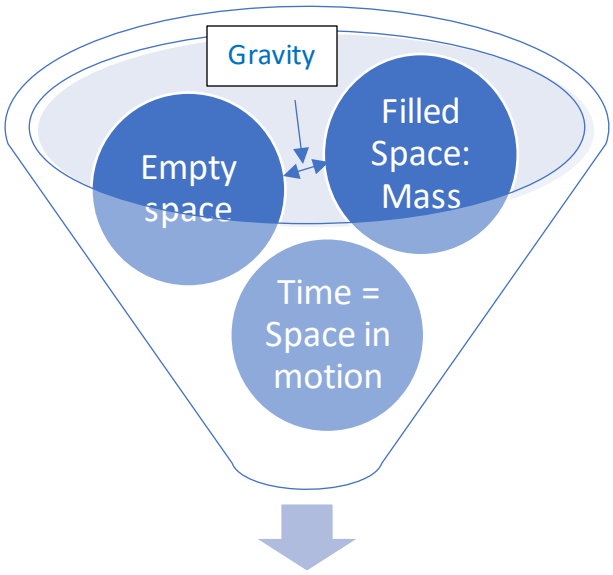
I am proposing space as a unified field theory attempting to provide a bridge for relativity and quantum field theory. This will be a philosophical treatise and not a mathematical presentation. This is from the perspective of a psychologist who has a research interest in how we develop our notions of time and space from birth to adults.

I am proposing that what we are experiencing or have developed concepts to understand may all be part and parcel of space just in various states. I am hoping that in viewing space in this unified manner may provide a catalyst to moving us to a new level of understanding the very large (relativity) and the very small (quantum).

Let me start with some basic concepts about space. First, space can be filled (mass) or it can be empty (massless). Second, space can be stationary (singularity) or in motion (time). Third, filled space can interact with empty space and is manifested as gravity. Space when it is stationary, it is non-linear, it is a point, it is discrete, a singularity. Black holes are the only example of space being stationary. Time is infinite when space is stationary. Space becomes linear when it moves and time can come into existence. Space now becomes continuous moving from its discrete packet state and has dimensionality. Thinking of space as both discrete and continuous helps us to deal with relativity and quantum field theories within the same paradigm.

The universe is inflating, expanding with energy overcoming gravity which is attempting to pull space into a stationary resting mode. This will continue until the number of black holes overpopulate and gravity overcomes the energy causing the expansion. Think of black holes as punctures in our universe which act as anchors keeping the universe from expanding uncontrollably. But a point will come when the sheer volume of the black holes will exceed the energy level and the universe will begin to collapse into the single singularity and a resulting big bang will reboot the universe.

Also, it is possible to think of space as both a particle being stationary (singularity) and as a wave being in motion (time). The same when space is filled (particle) or empty and is massless (wave). The speed of light is still a constant. Empty space is still warped by filled space and its resulting interaction is a gravitational wave.



Singularity: No time, Stationary space and gravity.

Four states of space: In motion or Stationary; Empty or Filled (Mass).

The Four States of Space

The 2 x 2 matrix is an attempt to organize this new theory of space and to classify its proposed four states: space in motion or stationary; and space as filled (Mass) or empty. Once the matrix is constructed, the implications are displayed so that the intersection of motion (velocity) and filled space (Mass) is momentum. Stationary space and filled space (Mass) is object permanence. Empty space and motion (velocity) results in the creation of time; empty space and stationary space is a singularity.

Four States of Space	***Motion (Velocity)***	***Stationary***
Filled (Mass)	Momentum	Object Permanence
Empty	Time	Singularity

To continue with the above 2 x 2 matrix, the following additional implications can be proposed in which object permanence begins to move will result in acceleration. The interaction between filled space and empty space will create gravity: expanding in empty space; contracting in filled space. When object permanence and a singularity result in a black hole. A singularity interacting with time can present the notion of the big bang or big bounce. Object permanence moving to the time quadrant moves from the random to the linear. And lastly momentum intersecting with a singularity would develop the twin parallel of mass + energy and dark matter + dark energy.

Object Permanence --> Momentum = Acceleration.

Filled Space x Empty Space = Contracting & Expanding Gravity.

Object Permanence x Singularity = Black Hole.

Singularity --> Time = Big Bounce or Big Bang.

Object Permanence --> Time = Random to Linear.

Momentum --> Singularity = Mass + Energy to Dark Matter + Energy.

Intersection of Momentum + Time + Object Permanence + Singularity = Entanglement.

Outer Boundary of Momentum + Time + Object Permanence + Singularity = Hologram.

Fiene, (2020, 2022). ***Four States of Space and the Spatial Acquisition Device*****, RIKINotes**

Our Expanding and Contracting Universe: Building off the Four States of Space

This post will follow up and build off a previous post on the four states of space. In the four states of space it is conjectured that the basic building blocks of the universe can be dealt with by only utilizing space as a concept. In that theory, space is organized by a 2 x 2 matrix into space as empty, filled, moving or stationary. This post attempts to further simplify that 2 x 2 matrix into a dichotomy of space as either contracting or expanding. Let's be as parsimonious as possible and reduce four states to a dichotomy.

Research has inferred that the universe is expanding. Let's take that assumption and apply it to the 2 x 2 matrix model and the theory of space. Does the expansion of space apply to empty space while contraction applies to filled space (mass) being determined by gravity? An added concept is as empty space is moving/expanding that this is our definition of time (Empty space in motion = time). And is the contraction of filled space (mass) ultimate result a black hole where gravity is at its ultimate as defined by a singularity where time no longer exists because pure space is truly stationary.

Is it possible to reduce the theory of space as defined by its four states to the delicate balance between the dichotomy of expansion and contraction? Think of our universe as a single slice of infinite flat possibilities within a sphere which expands out from the center in all directions but reaching an other limit as gravity overtakes expanding empty space (black holes are greater than the number of stars) and then contracts to a singularity and repeats the whole process all over again. Another random single flat slice within the sphere.

Quantum Relativity

Two previous posts introduced the Theory of Space as consisting of four states. This post applies the specific concept of time as empty space in motion from the Theory of Space and substitutes that concept within the General Theory of Relativity. When the General Theory of Relativity was proposed it was not known that the universe was expanding, it was assumed that the universe was in a steady state. The Theory of Space takes into account that we live within an expanding universe, constantly moving.

$$dt/dr = +/- 1 / (1 - (2GM/r))$$

In the above formula, replace ***dt*** with time = empty space in motion (***t = esm***) and how does that change how we think about the result. Prior to this adjustment we were tripping over the changes in time and space as defined within a black hole; now we are just dealing with the contraction and expansion of space within a black hole as a

singularity. As filled space becomes more dense, empty space approaches infinity. There is no need for time, just space.

This adjustment can then be extended to the quantum level since we are dealing with a singularity which combines filled (mass) space with empty space, the ultimate contraction and expansion of space. That is the missing piece of the equation. Once time is replaced by empty space in motion we have a singular model for dealing with relativity and quantum mechanics. It was time that was the major stumbling block to combining quantum mechanics with relativity.

Another thought related to black hole singularities. It has been hypothesized that the universe is a hologram. What if, the black hole singularity is a hologram? How would that change our thinking about spacetime and entanglement?

Four States of Space Theory

Richard Fiene PhD

Penn State University

February 2024

This research abstract updates previous papers which introduced the Four States of Space Theory (FSST). The FSST has been presented in the past because it is a more parsimonious model for presenting some key components of the physical universe. By getting back to basics and rebooting it provides a new framework for dealing with certain concepts that appear at odds in relativity theory and quantum mechanics. The below table (Four States of Space Theory) presents the four states of space as a more clear-cut model. Four separate but interrelated concepts are framed within a spatial dimension where space is viewed from four vantage points: Moving, Stationary, Filled (Mass), and Empty. Each will be explained more fully below.

In the Classical Paradigm, space and time were viewed as independent of each other and absolute entities. Everything that occurred within a static ether of sorts. The theory of relativity changed all that in showing how spacetime was more accurate and special relativity moved our understanding of filled space and united it with empty space via gravity. Along with the theory came the introduction of black holes in which gravity became predominant and filled space collapsed upon itself. Everything was fine in the larger context of our universe but when we extended this thinking to the quantum level, spacetime began to break down.

Four States of Space Theory	In Motion	Stationary
Filled Space	Gravity	Black Hole
Empty Space	Time	Singularity

Enter the four states of space theory to provide a more succinct explanation of previous phenomenon and a potential link to the quantum level, at least at the philosophical level. Filled space is basically mass, the planets, stars, you and me, etc.... When filled space moves within empty space gravity is the result. Mass is created by gravitational attraction and when it moves it distorts empty space and empty space determines how filled space will move.

Empty space in motion equals time. Time does not exist but is rather the expansion of empty space via the big bang. The universe is not static as was initially proposed in the classical model and in relativity theory. The universe is expanding and is expanding at an accelerating rate.

Time is a creation of convenience and works very well in describing the past, present, and the future, but it isn't real. What is real is the expansion of empty space which the universe has been doing since its very beginning.

At the opposite end of the continuum is when filled space becomes stationary where gravity becomes predominant the mass collapses upon itself which happens with particularly massive stars. These stars become black holes where everything is attracted to this massive gravity entity. The filled space is stationary but there is still movement because empty space is still moving and expanding.

It is the next level where empty space becomes stationary within a singularity. This is where filled space and empty space become indistinguishable one from the other. This is when the quantum level comes into play where space that has been measured horizontally suddenly switches its orientation and becomes perpendicular to the horizontal and is vertical. It introduces a multi-dimensional approach in which what appears as a singularity from a horizontal orientation becomes a new dimension on a different plane by switching its orientation. This can occur in an infinite number of random perspectives, introducing uncertainty related to position and momentum.