

COSMOS MIND AND MATTER: Is mind in spacetime?

Stuart Kauffman and Sudip Patra, September, 2024

We attempt in this article to formulate a conceptual and testable framework weaving **Cosmos, Mind and Matter** into a whole. We build on three recent discoveries, each requiring more evidence: i. **The particles of the Standard Model, $SU(3) \times SU(2) \times U(1)$, are formally capable of collective autocatalysis.** This leads us to ask what roles such autocatalysis may have played in Cosmogenesis, and in trying to answer, Why our Laws? Why our Constants? A capacity of the particles of $SU(3) \times SU(2) \times U(1)$ for collective autocatalysis may be open to experimental test, stunning if confirmed. ii. **Strong evidence, now established at 7.5 sigma, now suggests that matter can expand spacetime. This process may elucidate Dark Matter, Dark Energy and Inflation and require alteration of Einstein's Field Equations.** Cosmology could be transformed. iii. **Evidence at 6.49 Sigma suggests that mind can alter the outcome of the two-slit experiment.** If widely and independently verified, the foundations of quantum mechanics must be altered. Mind plays a role in the universe. That role may include Cosmic Mind.

Mind and Quantum Gravity

In his remarkable book, *Mind and Cosmos*, Thomas Nagel (2012) urges a vast overhaul of science in which mind is central to our understanding of reality. Roger Penrose (1989), in his own remarkable book, *The Emperor's New Mind*, **proposes a fundamental link between quantum gravity and mind**. Among his major points are: i. Mind is not algorithmic. ii. Quantum gravity concerns a collapse of two spacetimes in superposition to a single spacetime when a specific energy threshold is surpassed. iii. Conscious experience arises upon this collapse.

We will build upon Penrose's intuition that mind is somehow associated with quantum gravity. We would note, in passing, that on Penrose's view, consciousness is epiphenomenal in the sense that it arises upon collapse of two superposed spacetimes to one spacetime, but it plays no role in the becoming of spacetime itself, nor a role in later events in the universe. For example, this consciousness bears no relation to the possibility of a Responsible Free Will.

Ten Topics

This article includes ten main considerations: 1. Ontologically Real Potentia and the Unmanifest; 2. Nonlocality as Fundamental; 3. Res potentia, Res extensa, and Actualization; 4. Mind and Qualia, Mind is not in Spacetime; 5. Quantum Vacuum = Potentia not in Spacetime = Cosmic Mind not in Spacetime; 6. Mind can Actualize Potentia; 7. Why “My Mind”?; 8. Each embodied mind is coupled bilaterally to the Quantum Vacuum that is Cosmic Mind; 9. Responsible Free Will; 10. Law versus No Law.

Ontologically Real Potentia

All classical physics is based upon Aristotle's Law of the Excluded Middle and Law of Non-Contradiction. Logically, the statement, "A and Not A" is a contradiction, so False.

Superpositions in quantum mechanics evade these two Aristotelian Laws. Schrodinger's superposed cat is simultaneously alive and dead. C. S. Peirce noted that Actuals and Probables obey the Laws of the Excluded Middle and Non-Contradiction. Possibles do not obey these two laws. Thus, "The cat is simultaneously alive and dead" is a contradiction, so false. In contrast, **"The cat is *possibly* alive and simultaneously *possibly* dead" is not a contradiction.** **Pierce's point about Possibles, Potentia, is sufficient. We can interpret *quantum superpositions as ontologically real potentia.***

Heisenberg (1958) clearly suggested that the quantum states are *potentia* that stand "ghost-like between an idea and reality." It is common in quantum mechanics to talk of possibles. We shall take, with ancient Indian philosophy and Heisenberg, the step to state that potentia are ontologically real. **On this interpretation quantum "measurement" is an actualization that converts *possibles*, to true/false *actuals*.**

Syadvada

Ancient Eastern philosophies include the concept of “Unmanifest.” We note here that ‘unmanifest’ is close to the concept of Res potentia. A particular Eastern philosophy (notably one sect of Jain philosophy, Syadvada. **This view holds that unmanifest, not in spacetime, is equally ontological as true/ false states which are in spacetime.** Such philosophies can be written in a multivalued logic set up, where along with true false binaries; unmanifest is equally a valid judgment. Combinations of these three conditions can generate seven propositions (Syadvada) which are mutually exclusive of each other. Recently Ghose and Patra (2024) have proposed a coherent contextual logic framework based on it, such that foundational problems/ paradoxes in quantum mechanics might be addressed if the latter is provided a similar contextual framework. That contextuality-complementarity is a central feature of quantum mechanics (also of cognitive science/ philosophy of mind) is well known, but a concrete framework can be provided by such non-binary logics.

Quantum States as Potentia *not* in Spacetime

In previous and rather parallel publications, **it is shown that this interpretation of quantum superpositions as ontologically real explains:** **i. Which way information; ii. Null measurements; iii. “No facts of the matter between measurements”; iv. Spatial non-locality; v. Why, when one among N entangled parties is actualized, the amplitudes of the remaining N-1 entangled particles alter instantaneously.** The capacity to answer these standard mysteries of Quantum Mechanics does not prove, but it suggests that this interpretation of quantum mechanics deserves to be taken seriously (Kauffman 2016).

Quantum mechanics is formulated in Hilbert space. If we may interpret the quantum state as potentia, then **Hilbert space represents ontologically real potentia.**

We reach a fundamental choice: **Are ontologically real potentia *in* spacetime? Are ontologically real potentia *not in* spacetime.** While it may be possible to consider potentia as located *in* spacetime, **we here take the alternative path: Potentia are *not in spacetime.*** In this choice we echo the Syadvada sect of Jain philosophy.

Non-locality as Fundamental

Non-locality, now loophole free, won the 2022 Nobel Prize in Physics (Ghose and Patra, 2024; Kastner et al., 2018). **Essentially all our theories in Cosmology take locality, spacetime, as fundamental (Nobel Prize in physics 2022, 2022; Kent et al., 1965; Susskind, 2006; Rovelli, 2008). However, there are no longer valid a priori grounds to take locality, spacetime, as fundamental (Kauffman 2022).**

We choose the alternative path: Non-locality is fundamental, locality, spacetime, is not fundamental (Kauffman 2022, 2024).

If we choose non-locality as fundamental, then no theory that requires spacetime to be fundamental can itself be fundamental. This is profoundly consequential: **General Relativity cannot be fundamental**, it requires, even defines, “locality” (Nobel Prize in physics, 2022). **String Theory** cannot be fundamental (Susskind, 2006), **Loop Quantum Gravity** that arose by quantizing General Relativity in the absence of matter, cannot be fundamental (Kent et al., 1965). Moreover, the **AdS/CFT duality and Holographic Principle also cannot be fundamental** (Kauffman 2022). They both assert that gravity in the D dimensional “bulk” is dual to a conformal theory that is local on a D-1 dimensional surface.

A Theory of Quantum Gravity Based on Nonlocality

In a prior publication one of us has proposed **a theory of quantum gravity based on non-locality as fundamental**. The basic steps in the theory begin with N entangled coherent particles from $SU(3) \times SU(2) \times U(1)$ in Hilbert space, hence as ontologically real potentia. A metric in Hilbert space can be defined using the sub-additive von Neumann entropy, VNE , between each pair of entangled variables. VNE obeys the triangle inequality and is a Norm, so can serve as a metric.

Because potentia do not obey Aristotle's Law of the Excluded Middle and Law of Non-contradiction, and because decoherence does not eliminate a "fringe" of potentia, the theory is based on sequential *actualization* of four mutually entangled particles. With the postulate of "remember" this process yields a successive construction of adjacent old and new tetrahedra that creates a growing four-dimensional Minkowski spacetime.

A new question: “Did the Universe Construct Itself?”

In a recent paper, Kauffman and Guerin (2023) report the discovery that **the particles of the Standard Model, $SU(3) \times SU(2) \times U(1)$ are *formally capable of collective autocatalysis***. With the single working hypothesis of “**Delay**”, the capacity for collective autocatalysis yields a theory in which the Universe starts with no matter and no spacetime, steals particles and energy from the vacuum, and it does construct itself by sequential actualization of four mutually entangled particles in Hilbert space. **The theory gives rise first to baryogenesis, breaking the matter antimatter equilibrium equiprobably, and then the emerging particles construct a growing three-dimensional Minkowski spacetime whose growth is a model for the unknown physics of Inflation.**

There are very large advantages to a theory of cosmogenesis that begins with no spacetime and no matter. i. There is **no Initial Singularity**. ii. **The Past Hypothesis**, the early universe somehow started in a very low entropy state, is automatically answered because the entropy of the initial universe is 0. iii. The universe starts from a **unique initial state**, not some ensemble of states. iv. The **low gravitational entropy** of the universe is answered. These are major issues in the standard theory of cosmogenesis, Lambda CDM.

The Universe is a Kantian Whole

We define the concept of a *Kantian Whole*. *In such systems, the Parts exist for and by means of the Whole*. All living organisms are Kantian Wholes, including the reader. You exist by means of your heart, liver, and lungs. These exist by means of being Parts of you, the Whole (Kauffman, 2016).

On the theory of Cosmogenesis presented in “**Did the Universe Construct Itself?**” (Kauffman and Guerin, 2023), *the ontologically real Potentia in Hilbert space, not in spacetime, mutually actualize one another to successive actual events that construct Minkowski spacetime. But Actual Events Exist. Then the entire universe is a Kantian Whole, where the Parts, particles and spacetime, exist for and by means of the Whole Universe.*

Beyond Lambda CDM: Matter Constructs/Expands Spacetime

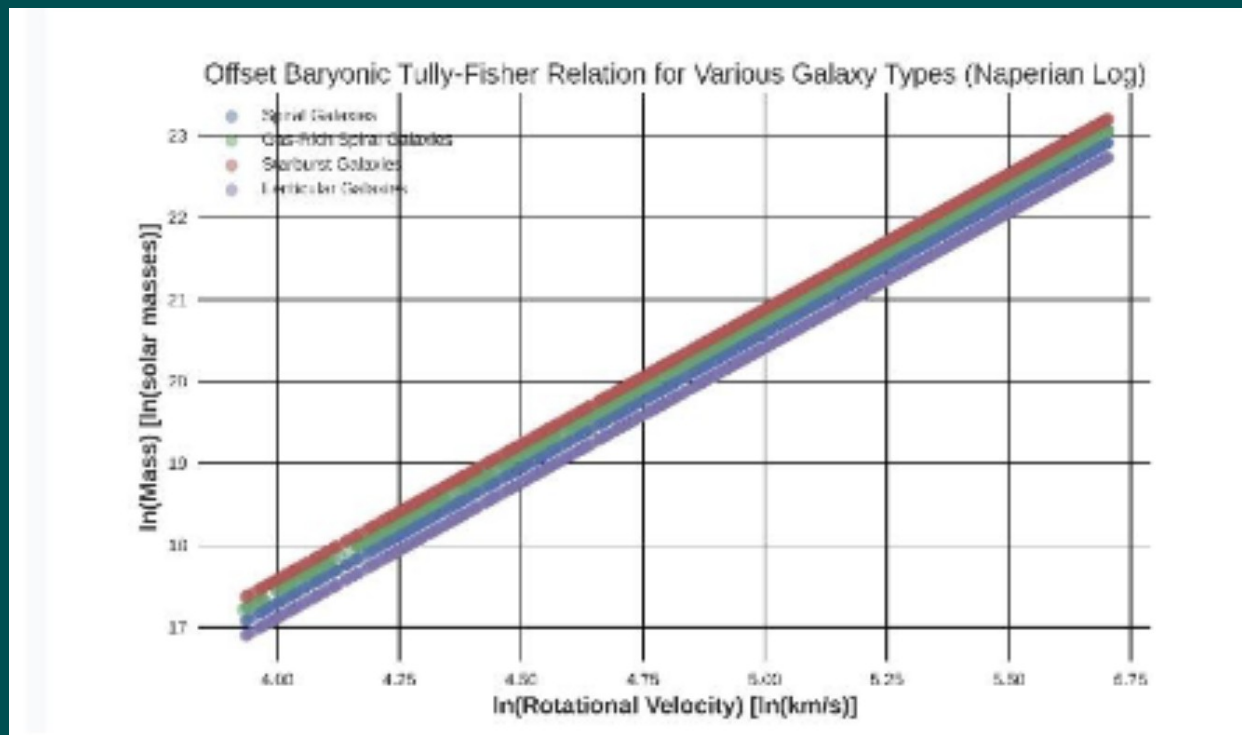
Striking new evidence is just emerging that **matter expands existing spacetime**. Independently **Kauffman (2024)** and **Marongwe (Marongwe, (2017); Marongwe and Kauffman, 2024)** have proposed **that matter density in any locale expands spacetime at an exponential rate proportional to its fourth root: $M^{1/4}e^{Ht}$** . Such a theory must predict that **for two galaxies of the same mass, the one that has existed longer has constructed more spacetime so must rotate faster than the galaxy that has existed less long**.

Figure 1 below shows this data for a set of over **4000** galaxies in the Baryonic Tully-Fisher Relation. A **clear monotonic, indeed exponential, trend is exhibited in which older galaxies do rotate faster than younger galaxies of the same mass**. The increased rotation velocity is proportional to the age of the galaxy and galactic mass, $M^{1/4}e^{Ht}$. **The statistical significance of these data is confirmed at 7.5 sigma. Our results explain galaxy and cluster rotation curves.**

These data do reach a significance at 5 sigma or higher. Thus, they go beyond, and they also seem to pose a major challenge to the standard model of Cosmogenesis, Lambda-CDM.

Emperical testing of 4000 Galaxies with Stuart Marongwe

Test for all horizontal lines.
Test for all vertical lines.



Retest using disjoint or overlapping sets of galaxies to obtain the Baryonic Tully Fisher Relation.

Testing for 5 Sigma should be possible.

THE PREDICTIONS ARE CONFIRMED AT 7.5 SIGMA, $P = 6 \times 10^{-12}$

Galaxy Type	Mean of ln mass	Standard Deviation	offset	Age/Gyrs
Starburst	21.0264	1.6090	0.2877	2
Gas-Rich	20.9792	1.6036	0.2405	8
Spiral				
Spirals	20.7387	1.6090	0.0000	10
Lenticular	20.5564	1.6090	-0.1823	12

The answer is **YES**, we now have strong evidence that matter does construct spacetime.

We may indeed have to

Uniting Dark Matter and Dark Energy

Our results strongly suggest that matter exponentially constructs or expands spacetime at a rate proportional to its fourth root: $M^{1/4}$.

This implies a possible union between Dark Energy and Dark Matter. Dark Energy is the slow creation of spacetime though-out the universe by dilute homogeneous matter. Dark Matter is the more rapid creation of spacetime by matter clumped into galaxies and galactic clusters.

The Hubble Tension should be sourced only by the difference between the faster and slower creation of spacetime. Hubble Tension: H_0 is smaller if measured in the early universe CMB where there were no galaxies or galactic clusters. H_0 is larger in the later universe as galaxies and galactic clusters form. Thus, the theory predicts the existence of a Hubble Tension.

Use of the data in Figure 1 predicts an actual quantitative value for the Hubble Tension of 2.26 km/sec/Mpc. The observed value is $73.4 \text{ km/sec/Mpc} - 67.8 \text{ km/sec/Mpc} = 5.6 \text{ km/sec/Mpc}$.

Res potentia and Res extensa and Actualization.

We here are pursuing the implications of the interpretation of quantum mechanics as ontologically real potentia, not in spacetime. Call these potentia, Res potentia. Actual events exist in spacetime. Call these events Res extensa. On this view, quantum measurement converts Possibles to Actuals. Call this Actualization (Kauffman, 2016).

Res potentia, Res extensa and Actualization is not a substance dualism. Potentia are not substances because they do not obey Aristotle's Law of the Excluded Middle and Law of Non contradiction (Kauffman, 2016).

Res potentia, Res extensa, and Actualization are the first new idea concerning Mind and Body since: i. Descartes' Res cogitans and Res extensa, a substance dualism. ii. Spinoza's single substance Monism with physical and mental aspects. This became dual aspect Monism. iii. Idealism with Berkeley, a single substance. iv. Materialism, a single substance, Res extensa. None of these familiar ideas about mind and body has potentia (Kauffman, 2016). *Because Res potentia, Res extensa, and Actualization are not a substance dualism, it does not inherit the Mind – Body Problem.*

The hypothesis of Res potentia, Res extensa and Actualization invites a testable scientific role for Mind: *Mind Actualizes Potentia*.

Stunning new evidence now supports **“a role for Mind in “collapse of the wave function.”** We describe this briefly here and return in more detail below. Dean Radin and a number of his colleagues have carried out the **standard two-slit experiment** (Kauffman and Radin, 2022). The experimenter asks the subject to: **“Try to alter the intensities of the central dark and light bands” in the two-slit experiment.** The results are positive, the effect is weak. However, averaged over **28 independent** repetitions of the experiment the results are now powerfully significant at **6.49 Sigma**. This means that the results would arise by chance 1 in 4×10^{11} times, one in 400,000,000,000. **This is powerful statistical evidence that mind does play a role in Actualization of quantum potentia.** Clearly, these results need further expansion by independent investigators. Major claims require overwhelming evidence.

Pending such further supporting evidence, this is evidence that Mind can have and did play a role in the becoming of the Universe.

Mind and Qualia: Mind is not in Spacetime, Qualia are in Spacetime.

Several independent bodies of evidence and considerations suggest that Mind is not in Spacetime, but conscious experiences, Qualia, are in spacetime.

As we have discussed, Res potentia, Res extensa, and Actualization do not inherit the Mind-Body problem. The results of Radin and his colleagues support a role for mind in actualizing potentia. The spots on the screen in the altered outcome of the two slit experiments are clearly actuals in spacetime.

Stuart Kauffman and Andrea Roli, in “What Is Consciousness?” (Kauffman and Roli, 2023), present grounds to conclude that conscious qualia arise upon collapse of the wave function. The discussion hinges on the **human capacity to tinker, to jury rig.** Jury-rigging, finding novel uses for the same object, is not a deductive process. From the use of an engine block as a paper weight it is not possible to deduce that its sharp rigid corners can be used to crack open coconuts. **The Universal Turing Machine is purely syntactic and algorithmic. It is not capable of jury-rigging outside of the ontology of properties and inferences with which it is programmed.**

Multistep Jury-Rigging is Not Algorithmic

Humans easily carry out multistep jury-rigging, where no steps can be deduced from one another. **Such a process is not a search “uphill” on a definable “success landscape.” There is no local clue in this multistep jury-rigging that one is closer to the solution.** The authors conclude that **humans achieve such successive jury rigging because Mind is quantum, entangles with the world, then “I collapse the superposed wave function to a single state that I experience as a qualia,” which contains, in a holistic way, insight into the solution of the jury -rigging problem** (Kauffman and Roli, 2023).

Chalmers and McQueen (2022) in a similar vein, suggest that **qualia cannot be in superpositions so play a role in collapse of the wave function.** They do not consider Res potentia, Res extensa and Actualization, but rather standard dualisms (Kauffman and Radin, 2023).

Mind is not in Spacetime: Human Cognition Surpasses the Tsirelson Bound

Fascinating evidence suggests that Human Cognition surpasses the Tsirelson Bound (Kauffman and Patra, 2023; Kauffman and Roli, 2023). The data are significant only at $p = 0.001$, so are not yet convincing. We ask however, how could the claim possibly be true. **The Tsirelson Bound arises in quantum mechanics as an upper limit on the correlations that can be found, $2 \times \text{square root } 2$. This Bound is stated in the context of Special Relativity and a finite speed of light, hence Continuity of Action. *The Tsirelson bound can easily be surpassed if Mind is not in Spacetime, so is not limited by a finite speed of light, or Continuity of Action* (Kauffman and Patra, 2023). These experiments are very inexpensive. Were results to become significant at 5 sigma, they would truly warrant serious consideration. In the meantime, these results hint that mind is not in spacetime.**

Qualia are not Caused -> Mind is not in Spacetime

Strong evidence supports the claim that human cognition is *contextual* (Aerts and Arguelles, 2022; Kauffman and Patra, 2023; Ghose and Patra, 2024). These results imply that *cognition is not caused. Bluntly, qualia are not caused.*

Based on the data that qualia are not caused we make *the following inference*: i. Qualia are not caused. ii. Actualization of the wave function is not caused. iii. *Therefore, qualia arise by actualization of the wave function.* iv. Quantum mechanics is not local. The wave function is not in spacetime. v. *Therefore, Mind is not in spacetime, and qualia are actuals in spacetime.*

The above inference is not direct. We here choose to adopt it as true.

Quantum Vacuum = Potentia not in Spacetime = Mind not in Spacetime.

We are led to a strong claim that links the major points above. **The quantum vacuum consists in Potentia that are not in spacetime. But this is identical to Mind is not in Spacetime and thus Mind is precisely the potentia that constitute the quantum vacuum.**

This claim constitutes *Cosmic Mind*. **The quantum vacuum is not in spacetime, is Mind, is One.**

We return to this below.

Only Mind Actualizes Potentia.

We return to the results mentioned briefly above by Radin and his colleagues. **Mind can actualize potentia, mind can “collapse the wave function.”** The current status of these results altering the intensities of the central light and dark band in the two-slit experiment when a human “tries to do so”, now stands at **6.49 Sigma**. The effect is weak, but it would arise by chance one in 4×10^{11} times. **For the first time since Newton, Mind can have and is playing a role in the becoming of the Universe** (Liddle, 2015; Kauffman and Radin, 2022).

While these results need to be further extended by many independent experiments, **we accept this claim as TRUE.**

Accepting the “Radin claim” as true drives a choice. i. *Mind is sufficient to collapse the wave function but not necessary.* In this case we must imagine some second “cause” or way to mediate collapse of the wavefunction.

ii *Mind is necessary and sufficient to actualize the potentia that are the wave function. Only mind actualizes potentia. We here make this choice as a postulate.*

Further Testing that Mind Mediates Actualization: *Less*

“Classical Slits”
We noted above the results achieved by Dean Radin and his colleagues. The effects are present but weak. Might it be possible to test the capacity of the human mind to alter the outcome of the two-slit experiment with a **stronger effect**? Perhaps:

The material used in the two slit experiments and into which the slits are cut is itself “classical matter.” Consider then Buckminsterfullerenes. These are crystals of 60 carbon atoms. Anton Zeilinger has demonstrated that beams of “**Buckyballs**” interfere so are not “fully classical”, (Nairz et al., 2003).

Consider then constructing the material in which the two slits are cut by molecularly simple material, perhaps such as linked Buckyballs, or short and longer ring peptides with perhaps 6 to tens of amino acids per ring. These are feasible experiments. They would test this: **If the materials into which the slits are cut are less or more classical, (more or less able to interfere), would the effect of Mind “trying” to alter the intensities of the central dark and light band increase as the slit material became less classical?**

If YES, this supports the claim.

Why is it “My Mind”?

We suggested above that **Mind is not in spacetime** and is identical to the quantum vacuum as potentia. **Yet “my” experiences are “my experiences.” How can these claims be united?**

If we take nonlocality as fundamental, locality – spacetime – is not fundamental. The theory of quantum gravity we have discussed proposes that non-locality is Hilbert space and is also the quantum Vacuum. If this is true, we must ask what a mapping from NOT in spacetime to loci in spacetime might be. **In the theory we present, von Neumann Mutual Information between entangled particles provides a metric in Hilbert space. The theory maps these to a construction of spacetime by four mutually entangled particles. By this mapping, closely entangled particles will construct themselves into neighboring loci in spacetime. Because the molecules in *me* are unique to *me*, and unique also in *my* life history, and all the molecules have a quantum fringe that constitutes part of the quantum vacuum, when **actualization, hence qualia occur, they will tend to occur in *my* embodied self. *My* experiences arise in *me*, and they are in *my* mind.****

Each embodied Mind is coupled to the Quantum Vacuum Cosmic Mind bilaterally

If we accept the claim that Mind is not in Spacetime, yet that my experiences, actual qualia, are my experiences due to actual events in my embodied self, the actual events arise in molecules in my embodied self. These molecules all have quantum fringes to their behaviors. Hence, those quantum behaviors are part of the quantum vacuum that is Cosmic Mind. **Each embodied Mind is reciprocally coupled to the Cosmic Mind.**

“Mind is One.” – Erwin Schrödinger, *Mind and Matter* (Schrödinger, 1958).

Responsible Free Will

“How can I have Responsible Free Will? Stones do not!” For the first time since Newton, the possibility of responsible free will is not ruled out. On determinism, e.g. Newton, we cannot have free will. The next state of the brain is determined by the current state. There is nothing for mind to do, and no way for mind to do it.

If mind is quantum I can have free will but not responsible free will. I pick up the hammer and kill the old lady, but it was random. I am not responsible.

If Radin and colleagues are correct (Kauffman and Radin, 2022), I can try to alter the outcome of the quantum actualization, and by trying I do alter it. Responsible Free Will is not ruled out. If we demonstrate that the effectiveness of Mind to alter the outcome of the two-slit experiment increases if the slit material is made of material that is less classical, this conclusion will be enhanced.

“Of course I have responsible Free Will, what is wrong the stones?”

Let us stand the familiar question on its head. “Of course I have responsible Free Will, what is wrong the stones?” Once asked the start of an answer is that the matter in me is far more complex than that in a quartz crystal. I have complex proteins and other molecular structures.

Suppose the extent of Responsible Free Will increases with the quantum complexity of the molecules in system. This hypothesis will be strengthened if the effectiveness of Mind in the two-slit experiment increases when the slit material is less classical.

In support of the hypothesis that responsible Free Will evolved is the Conway and Kochen **Strong Free Will Theorem** (Conway and Kochen, 2009) proving for an entangled pair of electrons that: i. Nothing in the past of the universe determines the outcome of measurement; ii. There is no cause for measurement; iii. *The electron decides with Free Will to become either Up or Down upon measurement. **This remarkable theorem makes a claim about “decide.”*** **The range of choice for the electron is very limited.** It can choose to become Up, or to become Down. **Presumably, the range of choices for very complex matter will be very much wider.**

Law versus No Law: A Profound Puzzle

Kauffman and Roli: A Third Transition in Science? 2023 J. Roy. Soc Interface:
No Law.

Law versus No Law: A Profound Puzzle.

Ergodic on short time scale versus Non-Ergodic on vast time scale.

Stable Statistics versus no stable statistics.

Law versus No Law.

Law: Energy and Work as the Constrained Release of Energy into a Few Degrees of Freedom. **Happenings.**

Versus

No Law: Responsible Free Will, Preference, Choice, and Doing by an

Discussion and Further Work

The aim of the present article is to formulate a coherent conceptual framework that links Cosmos, Matter, and Mind. We believe we have done so. In each of the ten steps we have taken, we have tried to be clear about our specific choice between alternatives that arise at each step.

The consequences of the choices we have made are rather stunning:

Potentia are ontologically real and constitute the quantum vacuum as well as Mind. Hence, there is Cosmic Mind.

The universe starts as pure potentia and Mind, outside of spacetime and without matter, and the universe constructs itself. Because the actual Parts, particles and spacetime, exist for and by means of the Whole universe, the Universe is a Kantian Whole. Mind is central to the emergence of the universe.

The consequences of the choices we have made are rather stunning:

Mind converts Possibles to Actuals. Mind makes the Unmanifest Manifest.

The quantum vacuum is not in spacetime and is identical to Cosmic Mind.

Living organisms are embodied, yet via the quantum aspects of the complex matter composing living organisms; each Mind is embodied in a specific organism and is coupled in both directions to Cosmic Mind.

All matter has Responsible Free Will. The extent of Responsible Free Will increases with the complexity of matter. An electron has free will choice to become UP, or to become Down. Responsible Free Will evolved in living organisms with the complexity of the matter by which each organism is embodied. All living cells are coupled to Cosmic Mind.

Conclusion

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We have attempted to formulate a partially testable framework embracing Cosmos, Mind, and Matter. In our framework, the universe starts as Potentia, the laws of particle physics, and Mind. Mind, by actualizing potentia, helps construct the universe which, with Cosmic Mind, is a Kantian Whole. There are rather remarkable similarities to the Vedanta of ancient India.

References

1) Stuart Kauffman and Sudip Patra

LINK Cosmos Mind and Matter Is Mind in Spacetime Biosystems

[Cosmos MIND and matter: Is mind in spacetime? – ScienceDirect](#)

NB There are errors in the references that will be corrected in a re-publication in November 2024

2) Stuart Kauffman and Andrea Roli

Link A third transition in science

<https://royalsocietypublishing.org/doi/10.1098/rsfs.2022.0063>

THANK YOU

The Emergence of Life

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