

Quantum Mysticism and its Scientific Implications

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Abstract: *The relation of mysticism with deep sciences is no mystery. Quantum mechanics have even deeper roots embedded in the mystic and spiritual interpretation of existence. There are different schools of thought in science of spirituality but quantum explanations are the one closest to mystic existence of everything. In this article we explain the quantum mysticism as understood by many scientists like Albert Einstein, Niels Bohr, Erwin Schrodinger and more specifically David Bohm. The Copenhagen interpretation and case of the Schrodinger's cat would be presented and its latest and modern implications would be discussed as in quantum biology, microbiology, different processes like metamorphosis and their relationship with mysticism, spirituality would be discussed in detail.*

The purpose of the paper is purely to introduce the new interpretation of mystic sciences and their modern implications in general. This newly introduced science of spirituality isn't well known among masses trying to understand spirituality. The neurological aspects of spiritual life of a person would be presented for the better understanding of this science as a whole.

Key Words: *Quantum Mechanics, Science, Mysticism, Spirituality, Neurology.*

Introduction:

Quantum mysticism is a set of metaphysical beliefs and associated practices that seek to relate consciousness, intelligence, spirituality, or mystical worldviews to the ideas of quantum mechanics and its interpretations. Quantum mysticism is considered by most scientists to be pseudoscience or quackery. But there are other scientists who believe in the reality of quantum mechanics and hence mysticism. The idea of quantum mysticism was first transformed in the early 20th century when Max Planck developed a quantum theory. Soon after Erwin Schrodinger developed a theory which in reality laid down quantum mysticism's foundations and proved it to be much more than pseudoscience.

What is Reality?

One of the biggest questions in the quantum world is regarding the existence of reality. What in real is real? What reality means and how the existence is realistic to the beholder or unrealistic to the object. What do

we actually mean by reality? A straightforward answer is that it means everything that appears to our five senses – everything that we can see, smell, touch and so forth. Yet this answer ignores such problematic entities as electrons, the recession and the number 5, which we cannot sense but which are very real. It also ignores phantom limbs and illusory smells. Both can appear vividly real, but we would like to say that these are not part of reality.

We could tweak the definition by equating reality with what appears to a sufficiently large group of people, thereby ruling out subjective hallucinations. Unfortunately, there are also hallucinations experienced by large groups, such as a mass delusion known as koro, mainly observed in South-East Asia, which involves the belief that one's genitals are shrinking back into one's body. Just because sufficiently many people believe in something does not make it real.

The Matter:

Nothing seems more real than the world of everyday objects, but things are not as they seem. A set of relatively simple experiments reveals enormous holes in our intuitive understanding of physical reality. Trying to explain what goes on leads to some very peculiar and often highly surprising theories of the world around us.

Here is a simple example. Take an ordinary desk lamp, a few pieces of cardboard with holes of decreasing sizes, and some sort of projection screen such as a white wall. If you put a piece of cardboard between the lamp and the wall, you will see a bright patch where the light passes through the hole in the cardboard. If you now replace the cardboard with pieces containing smaller and smaller holes, the patch too will diminish in size. Once we get below a certain size, however, the pattern on the wall changes from a small dot to a series of concentric dark and light rings, rather like an archery target. This is the "Airy pattern" – a characteristic sign of a wave being forced through a hole.

In itself, this is not very surprising. After all, we know that light is a wave, so it should display wave-like behaviour. But now consider what happens if we change the set-up of the experiment a bit. Instead of a lamp, we use a device that shoots out electrons, like that found in old-fashioned TV sets. A better example can be given in the famous Double Slit Experiment (Which We'll discuss later).

Consciousness:

Descartes might have been onto something with “I think therefore I am”, but surely “I think therefore you are” is going a bit far? Not for some of the brightest minds of 20th-century physics as they wrestled mightily with the strange implications of the quantum world.

According to prevailing wisdom, a quantum particle such as an electron or photon can only be properly described as a mathematical entity known as a wave function. Wave functions can exist as “superpositions” of many states at once. A photon, for instance, can circulate in two different directions around an optical fibre; or an electron can simultaneously spin clockwise and anticlockwise or be in two positions at once.

When any attempt is made to observe these simultaneous existences, however, something odd happens: we see only one. How do many possibilities become one physical reality?

This is the central question in quantum mechanics, and has spawned a plethora of proposals, or interpretations. The most popular is the Copenhagen interpretation, which says nothing is real until it is observed, or measured. Observing a wave function causes the superposition to collapse.

However, Copenhagen says nothing about what exactly constitutes an observation. John von Neumann broke this silence and suggested that observation is the action of a conscious mind. It’s an idea also put forward by Max Planck, the founder of quantum theory, who said in 1931, “I regard consciousness as fundamental.”

Existence:

Philosophers are not being rude when they describe the approach most of us take as naive realism. After all, when they cross the street on the way to work, they tend to accept implicitly – as we all do – that there is an external reality that exists independently of our observations of it. But at work, they have to ask: if there is, how can we know?

In other words, the question “what exists?” reduces, for what in philosophy passes for practical purposes, to questions such as “what do we mean by ‘know’?”

Plato had a go at it 2400 years ago, defining “knowledge” as “justified true belief”. But testing the justification or the truth of beliefs traces back to our perceptions, and we know these can deceive us.

Two millennia later, René Descartes decided to work out what he was sure he knew. Legend has it that he climbed into a large stove to do so in warmth and solitude. He emerged declaring that the only thing he knew was that there was something that was doubting everything.

The logical conclusion of Descartes’s doubt is solipsism, the conviction that one’s own consciousness is all there is. It’s an idea that is difficult to refute.

“IT IS DIFFICULT TO REFUTE THE IDEA THAT CONSCIOUSNESS IS ALL THERE IS”

The Double Slit Experiment:

Any student of physics, and in particular quantum mechanics will tell you that reading articles in the media that concerns any element of quantum physics can be a minefield. Ideas are frequently misunderstood or purposefully misrepresented. This is never truer than when Young’s Double-slit experiment is presented as evidence that the presence of a human being can fundamentally change the behaviour of matter at a particle level. The double-slit experiment and the odd behaviour of particles when ‘observed’ is often used in support of the idea that the human mind can fundamentally alter matter. In addition to this, it’s also frequently used to support the concept of mind-body duality. The idea that consciousness can somehow exist away from the material that consists the brain, and even linger after that material is long gone.

Parapsychologist Dean Radin, said in an interview:

*“Anyone who’s witnessed **the double slit experiment** — which demonstrates that light behaves differently depending on how we observe it — can appreciate that in some (spooky) way we don’t yet understand some of the most fundamental aspects of reality, especially the role of consciousness in the physical world.”*

The fundamental error here is applying the meaning that the word ‘observe’ holds in general parlance, to how it is used when describing a scientific experiment. In general parlance, we take the word ‘observe’ to

mean what we ‘see’. To a scientist, this definition is extended to anything that can be recorded by a piece of equipment. Any piece of data can be an observation. An observation, especially in quantum mechanics (in which a system’s properties are described as ‘observables’) is anything that can be measured. So when quantum physicists describe ‘observing’ a particle passing through a slit what they actually mean is that a measurement was taken. It doesn’t imply that they were watching the experiment progress or even present at all whilst it was conducted.

Albert Einstein:

Albert Einstein deliberately and repeatedly expressed his general religious views. But what were his views of mysticism? His statements on the subject were few, relatively obscure, and often misunderstood. A coherent answer requires setting those statements in historical, cultural, and theological context, as well as examining Einstein's philosophical and religious views. Though the Einstein that emerges clearly rejected supernatural mysticism, his views of “essential” mysticism were—though largely implicit—more nuanced, more subtle, and ultimately more sympathetic than “mere appearance”.

Niels Bohr:

Some authors have described Niels Bohr as “never being open to anything transcendental.” Wolfgang Pauli, on the other hand, spent many years trying to persuade Bohr to admit to a kind of mysticism. This study offers support to Pauli's claims. First, a distinction between what is vague on the one hand, and what is necessarily circular on the other, clarifies the work of Bohr. This discussion leads to comments on Bohr's attitude towards the mutuality of spirit and matter and of reason and mysticism. Finally, some reflections are made about the relevance of Bohr's covert transcendental philosophy for theological endeavors.

Erwin Schrodinger and his Cat:

"Schrodinger's Cat" was not a real experiment and therefore did not scientifically prove anything. Schrodinger's Cat is not even part of any scientific theory. Schrodinger's Cat was simply a teaching tool that Schrodinger used to illustrate how some people were misinterpreting quantum theory. Schrodinger constructed his imaginary experiment with the cat to demonstrate that simple misinterpretations of quantum theory can lead to absurd results which do not match the real world. Unfortunately, many popularizers of

science in our day have embraced the absurdity of Schrodinger's Cat and claim that this is how the world really works.

In quantum theory, quantum particles can exist in a superposition of states at the same time and collapse down to a single state upon interaction with other particles. Some scientists at the time that quantum theory was being developed (1930's) drifted from science into the realm of philosophy, and stated that quantum particles only collapse to a single state when viewed by a conscious observer. Schrodinger found this concept absurd and devised his thought experiment to make plain the absurd yet logical outcome of such claims.

In Schrodinger's imaginary experiment, you place a cat in a box with a tiny bit of radioactive substance. When the radioactive substance decays, it triggers a Geiger counter which causes a poison or explosion to be released that kills the cat. Now, the decay of the radioactive substance is governed by the laws of quantum mechanics. This means that the atom starts in a combined state of "going to decay" and "not going to decay". If we apply the observer-driven idea to this case, there is no conscious observer present (everything is in a sealed box), so the whole system stays as a combination of the two possibilities. The cat ends up both dead and alive at the same time. Because the existence of a cat that is both dead and alive at the same time is absurd and does not happen in the real world, this thought experiment shows that wave-function collapses are not just driven by conscious observers.

Einstein saw the same problem with the observer-driven idea and congratulated Schrodinger for his clever illustration, saying "this interpretation is, however, refuted, most elegantly by your system of radioactive atom + Geiger counter + amplifier + charge of gun powder + cat in a box, in which the psi-function of the system contains the cat both alive and blown to bits. Is the state of the cat to be created only when a physicist investigates the situation at some definite time?"

Since that time, there has been ample evidence that wave-function collapse is not driven by conscious observers alone. In fact, every interaction a quantum particle makes can collapse its state. Careful analysis reveals that the Schrodinger Cat "experiment" would play out in the real world as follows: as soon as the radioactive atom interacts with the Geiger counter, it collapses from its non-decayed/decayed state into one

definite state. The Geiger counter gets definitely triggered and the Cat gets definitely killed. Or the Geiger counter gets definitely not triggered and the cat is definitely alive. But both don't happen.

In summary, quantum state collapse is not driven just by conscious observers, and "Schrodinger's Cat" was just a teaching tool invented to try to make this fact more obvious by reducing the observer-driven notion to absurdity. Unfortunately, many popular science writers in our day continue to propagate the misconception that a quantum state (and therefore reality itself) is determined by conscious observers. They use this erroneous claim as a springboard into unsubstantial and non-scientific discussions about the nature of reality, consciousness, and even Eastern mysticism. To them, "Schrodinger's Cat" is not an embarrassing indication that their claims are wrong, but proof that the world is as absurd as they claim. Such authors either misunderstand Schrodinger's Cat, or purposely twist it to sell books.

David Bohm:

Bohm approaches this analysis of reality from the perspective of a scientist, a Quantum Physicist, though traditionally, the description of reality as consisting of these three levels of subtlety exists only in the mystically derived metaphysical systems. Conventional empirical science does not ordinarily describe reality in terms of these three causal levels. To do so would entail the acknowledgment of a Divine Source, a supernatural and noumenal causal agent, which would fly in the face of science's professed empirical bias. Physics, as an area of scientific study, delves into the microphysical in the study of Quantum physics, but it has never allowed for the positing of a source of physical reality from outside of the natural (physical) realm; nor does it ever assume a subtle intermediate ideational realm. The suggestion of any such invisible or supernatural causal realm underlying the Material world would flatly contradict the empirical requirements of science. So, as we can see, science does not provide a clear conception of the original causal Source of the universe, and yet it does provide a means for the objective confirmation of its materialist theories through empirical proofs. Metaphysics, on the other hand, with its three-leveled causal progression, does posit a plausible Source for the manifest universe, though it does not provide any objective confirmation through empirical demonstrations, but only a convincing subjective confirmation through what is known as "mystical experience." I, for one, having directly experienced that subjective (mystical) confirmation, must side with the metaphysical systems (and with David Bohm) in asserting that there is indeed a subtle ideational level of reality underlying, forming, and supporting the Material World.

It is an integral but non-physical continuum, the origin of which is a yet subtler noumenal dimension, a “Super implicate Order” which we may regard as ‘the transcendent Absolute’, ‘the One,’ or ‘the universal Consciousness.’

If we accept that the three metaphysical levels of subtlety do indeed exist as simultaneous constituents of our Reality, we have to ask, ‘How is that three-leveled constituency compatible with the traditional scientific theory of the origin of the universe by means of the Great Radiance (the Big Bang)?’

It is a question that reminds us of the unfathomably complex mystery faced by anyone attempting to comprehend the Divine creation. In the sudden universal manifestation known as ‘the Big Bang’ or ‘Great Radiance’, God’s inherent Creative Power did not manifest simply as matter-bearing Light but, clearly, was suffused in some manner with divine Consciousness. The fact that Life and Consciousness appears in creatures evolved from that Light gives indication that the wave-particles which constitute the material constructs of that budding universe had to be permeated and ordered by a noumenal Intelligence, a subtle-level dimension, not particularized, but continuous, and conscious. And yet, how can we comprehend it? Who indeed can begin to imagine the complex wizardry of the Divine Mind in forming and constituting this amazing extravaganza that is our universe? The poor human mind is helpless to conceive it. In the past, religious writer shave suggested that God imparted His breath, and thereby His Consciousness, directly into the mouths of the original humans, thus giving them a living soul; others suggested that it seemed more likely that God’s Spirit was in some way imparted to

All of Creation. But there has never been a concurrence of opinion as to how this was accomplished. But here’s an explanation that should be considered: Let us agree to assume that the divine Thought produced by the Divine Mind, which manifested as The Great Radiance—that burst of divine Light which became our phenomenal universe—occurred

Within the all-pervading Consciousness that is the Absolute One. And because that spreading universe is within that divine Consciousness, it is evident that the entire universe is thereby permeated and wholly governed by that divine Consciousness, just as the thoughts existing within our own individual minds are pervaded and governed by the consciousness of those minds. Such an evident explanation obviates the need to invent any further machinations by which God may have imparted Life and Consciousness to His Creation. Having been gifted by God with divine vision and having seen into the hidden realm where all is one conscious continuum, where the only identity is that one all-inclusive Consciousness, I have to declare that, underlying this many-formed world of separate distinct entities and personalities, is a Divine Reality

in which nowhere is there any separateness, in which there is only the one 'I' manifest in and as everything everywhere. How, then, can we know It? How can we experience It? This indivisible continuum of Consciousness can be known by our human intelligence only when we are brought by God's grace to a higher subtler level of consciousness. Only then is it possible to perceive It. There is no other way to know It. It has not time-space coordinates but is revealed only in the unfathomably clear depths of the Divine Mind.

"Relativity and, even more important, quantum mechanics have strongly suggested (though not proved) that the world cannot be analyzed into separate and independently existing parts. Moreover, each part somehow involves all the others: it contains them or enfolds them.... This fact suggests that the sphere of ordinary material life and the sphere of mystical experience have a certain shared order and that this will allow a fruitful relationship between them."- David Bohm

According to the mystics who have seen into the nature of reality, the one absolute Consciousness is the Source and Cause of all phenomena, manifesting the universe by Its Creative Power in a manner similar to the way an individual consciousness projects a thought within itself. This Divine Thought contains implicit within it the entire design and evolution of the universe, from its initial coming into being to all the refinements and transformations necessary in the process of its ultimate evolutionary development. And since that Divine Thought is projected in a field of Consciousness, that Thought is itself permeated by Consciousness, lending consciousness to all its elements.

Metamorphic Mysticism:

Mystical experiences are ineffable, thus defining mysticism itself is a difficult feat. To aid in the construction of a definition of mysticism it is imperative to break down the unique elements of a mystical experience and try to give examples of where we can see all of these elements interacting. Genealogy was chosen as a methodology that could intertwine the mystical and with its highly historic roots to highlight these interactions more clearly. Still, trying to delineate mysticism through genealogy was missing something; Michel Foucault's genealogy makes possible the exploration of the extraordinary through the mundane. The best way to explore mysticism would be to avoid highly religious or spiritual connotations and instead consider aspects of mysticism that can be identified through the secular. This thesis utilizes William James' definition of mysticism and begins by breaking down and defining these elements of a mystical experience of being ineffable, possessing a noetic quality, having transiency, and invoking

passivity. These critical points emphasize mystical elements through comprehensive secular case studies. Choosing these case studies required a close relationship with mysticism for these experiences to be identified, this is how art was chosen as a starting place. Then choosing a time period where it would be possible to examine more secular artworks, the idea of the 1960's contemporary field of Land Art was decided upon. This paper explores sixteen different artworks divided into five separate Foucauldian genealogies encompassed by different themes of Land Art. Overall this work seeks to confirm the prominent nature of mysticism and touch on the implications of radical empathy and human compassion in our current time.

Conclusion:

We learnt that the mystic sciences offer a great deal of purchase to the spirituality and insides of the reality of things. The rollover of these sciences may not primarily help in developing a broad spectrum thesis in finding a divine notion to spirituality but it certainly gives the framework amid experiments and experiences that the spiritual working of life sciences are very closely related to the mystic world of wonders and wows.

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3. 'The transcendent Absolute,' 'Supreme Cause,' or 'universal Consciousness,' is the uncreated Source, beyond time and space, the Godhead, the imperceptible and inconceivable Self of all.
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