



QUANTUM PHYSICS AND CONSCIOUSNESS

by Muktananda

The link between quantum physics and the evolution of consciousness entered the public discourse in 1975 when physicist and philosopher Fritjof Capra published his New York Times best seller *The Tao of Physics: An Exploration of the Parallels between Modern Physics and Eastern Mysticism*. It is a *tour de force* of philosophical and scientific mastery laying out the physics of quantum mechanics and drawing parallels with the Vedas of Hinduism, the I Ching of China, the Buddhist sutras, the Greek philosophy of Heraclitus and Pythagoras, Sufism and even the teachings of Carlos Castaneda's fictional Yaqui sorcerer Don Juan. It is a must read for those interested in exploring this subject.

Quantum physics has opened-up an unprecedented glimpse into the interrelatedness of everything in the universe. The revelations of quantum mechanics echo the wisdom and teachings of mystics and enlightened masters throughout the ages. That ancient wisdom holds that we are one energetic body grounded in pure unconditional love. This paper is my contribution to this unfolding discourse. I write, not as a physicist, which I am not, but as someone who is keenly interested in leading-edge cosmological research.

In such endeavors it's good to remember the adage coined by semanticist Alfred Korzybski: *The map is not the territory*. Understanding something is not the same as experiencing it or being it. Nevertheless, a map may be helpful when navigating unfamiliar territory. This paper, then, is a map. It is designed to help us better understand the scientific basis of quantum mechanics and how it may inform and deepen our conscious awakening.

CLASSICAL PHYSICS VS QUANTUM PHYSICS

To fully appreciate the link between quantum physics and consciousness, it's important to understand in layman's terms what quantum physics is and how it aligns with what mystics

and Vedic scholars have been saying about the nature of reality. Therefore, I begin this exploration by distinguishing the fundamental difference between classical physics and quantum physics. Whenever we speak of Isaac Newton or Albert Einstein, we are speaking of classical physics. As such, we are not taking into account the insights of quantum mechanics, which is the physics of very small particles. If, for example, you want to calculate the orbit of the moon, classical physics works just fine. Quantum mechanics has little impact there. Or if you want to predict a solar eclipse, quantum mechanics doesn't apply. There are many interesting problems in physics where the quantum impact is so modest that you don't need to take it into account. Classical physics seeks descriptions of reality that are based on certainty. Its theories and mathematical equations allow us to accurately predict the behavior of things. The worldview of Newton and Einstein was that of an orderly universe of cause and effect.

Within classical physics Einstein realized that Newton left something out about gravity. Although Newton developed the mathematics that enabled him to calculate the effects of gravity with great precision, he was unable to figure out how gravity actually worked. How does the sun - ninety-three million miles from Earth - somehow affect the earth's motion? How does the sun reach out across empty space and exert its influence on the planets? Newton wondered what that mysterious force was.

Einstein set out to solve this problem - to figure out the "why" of gravity. It was this question that led him to his brilliant theory of general relativity: namely, that the medium that transmits gravity is space itself. To Einstein the mass of an object (e.g., the sun) causes the fabric of space to curve and that curvature of space communicates the force of gravity. In other words, the mass of an object tells space how to curve and that curvature of space tells mass how to move. There is no mysterious force that binds the earth's orbit to the sun. A train, for example, doesn't know where it is going. It simply moves along the railroad tracks laid down for it. The tracks determine the train's direction. Similarly, Earth doesn't know where it is going. It doesn't need to know. It simply follows the curvature of space created by the mass of the sun. Einstein discovered the "why" of gravity and, in doing so, advanced classical physics while maintaining the logical and orderly universe he so cherished.

At about the same time that Einstein was developing his general theory of relativity, a group of physicists including Neils Bohr, Max Plank, Erwin Schrödinger and Werner Heisenberg were engaged in ground-breaking research into the quantum world of subatomic particles - electrons, protons and neutrons (subatomic quarks weren't discovered until 1968). Einstein's

physics addresses the domain of the very large. Quantum physics focuses on the domain of the very small. What Bohr and others discovered shattered all their conceptions of an orderly and predictable universe. According to quantum mechanics, the universe itself is a game of chance ruled by probability. All the matter in the universe is made up of atoms and subatomic particles that are ruled by probability. Quantum mechanics dashed all expectations for a description of reality that is based on certainty.

According to quantum mechanics, a proton is simply a wave of infinite possibilities until it is observed. When you measure a particle, you force it to relinquish all the possible places it could have been and select the one possible location where you find it. A subatomic particle can exist simultaneously in multiple locations. It is pure possibility until it is measured - that is, perceived by the mind. Only then, and not a moment sooner, does it drop into reality as we know it when it acquires fixed coordinates of time and space. The implication is that matter may not exist in the absence of an intelligent perceiving subject. Thus, the nature of reality is inherently fuzzy. It was this discovery that led Heisenberg to develop his now famous "Uncertainty Principle." Einstein could not accept this premise and vigorously argued against it. When Einstein said to Bohr, "God does not play dice with the universe," Bohr retorted, "Stop telling God what to do."

QUANTUM ENTANGLEMENT

One of the most bizarre predictions made by quantum mechanics is entanglement. If two particles are entangled with each other and one of the particles is measured "here" not only is *it* affected, but that same measurement also affects its entangled particle no matter how far away it is ... whether next door, on the moon, or in the Andromeda galaxy. In other words, when you measure one entangled particle, you affect the state of the other particle even though there is no obvious connection between the two of them. Moreover, if they did communicate, such interaction would almost certainly violate the *constant speed of light* premise upon which Einstein's special theory of relativity is based. To Einstein, the phenomenon of entanglement was so inconceivably weird that he called it "spooky action at a distance" and he worked tirelessly to disprove it, ultimately without success.

Quantum entanglement means that an action in one place can have an instant effect anywhere in the universe as if there is no space between them. It also means that particles only take on physical properties when we observe them. That is why quantum entanglement appears to make no sense. Yet the phenomenon of quantum entanglement was proven

beyond a reasonable doubt in an experiment conducted in 2017 by physicists from MIT and the University of Vienna. If you are interested in learning more about this experiment, Google “Cosmic Bell Experiment” in which researchers engaged polarized-entangled photons whose measurement settings were determined by the wavelength of photons from high-redshifted quasars whose light was emitted billions of years ago.

Theoretically, quantum entanglement makes bilocation and teleportation possible as in Star Trek’s “Beam me up, Scotty.” It is theoretically possible because we are made up of particles. In fact, we are constituted of more particles than there are stars in the observable universe – that is, trillions of trillions of particles. Imagine two quantum converter stations, one located in Los Angeles and the other in London. The converter station in Los Angeles scans all the particles in my body, which are entangled with paired particles in London. The entangled particles of my body in Los Angeles instantly affect the properties of the entangled particles in London. Hence, I am instantly reconstituted within the quantum converter station in London. It’s not as if the particles travelled from Los Angeles to London. Entanglement allows my quantum state to be instantly extracted in Los Angeles and reconstituted in London down to the last particle. So now I find myself in London as an exact replica of myself. Of course, to quickly scan trillions upon trillions of particles would require quantum computing power that science has not yet developed but is theoretically possible.

A THEORY OF EVERYTHING

Physicists are researching how quantum entanglement may lead to a single unified theory of physics. A unified theory of the fundamental forces that brings together general relativity with quantum mechanics is and has been a major goal for physicists for over a century. Theodor Kaluza was one such physicist who wanted to discover how a single master equation representing a unified theory would explain how the universe works. Kaluza’s research and field equations led him to conclude that there must be five dimensions of space, not just the three we are all familiar with.

Brian Greene, a professor of mathematics and theoretical physics at Columbia University, followed up on Kaluza’s research, which led to his ground-breaking discoveries in the field of string theory. String theory may yet prove to be that elusive “theory of everything” uniting all matter and forces into a single theoretical framework. It describes the fundamental basis of the universe as tiny vibrating strings or loops of energy rather than as particles. As such, they are smaller than quarks. According to the theory, everything that exists is made up of

these tiny vibrating strings. Just as the strings of a cello vibrate differently depending upon the note that is being played, so too do the tiny strings of string theory take on different properties when they vibrate at different frequencies.

But there's a catch. The math of string theory concludes that extra, and as yet unobservable, dimensions of space must exist, and far more than the five in Kaluza's model. The shape of these extra dimensions determines how their tiny strings vibrate. The strings, in turn, determine how the universe behaves. In short, just as DNA determines the genetic inheritance of living beings, quantum entanglement may be the fundamental organizing factor for all matter in the universe. Furthermore, string theory opens the door, not just to extra dimensions of space, but to a diverse multiverse as well.

String theory suggests that space itself is actually created by the tiny quantum world. Therefore, space as we know it emerges from networks of entangled quantum particles. It then follows that if space as we know it disappears, so too does the paradox of entanglement. This phenomenon has led some physicists to speculate that we may live in a universe, not of *matter* but of *motion*. All forms of energy, whether particles, atoms, photons, or fields such as the electromagnetic field, are manifestations of motion. In fact, space and time themselves would seem to be simply *aspects* of this motion. As a result, many scientists today are shifting focus from space and time (which Einstein considered to be the building blocks of the universe) and looking toward quantum entanglement for a more profound understanding of how the universe works.

THE HOLOGRAPHIC UNIVERSE

Robert Dijkgraaf is a theoretical physicist, string theorist and the director of the *Institute for Advanced Study* at Princeton University. He posits the idea that in a holographic universe, space and time are created by entangled particles on a sphere of infinite circumference. What we see and call "reality" is nothing more than the projection of quantum bits (qubits) onto that sphere as if it were a movie screen. And just like a movie, it creates the illusion of the 3-dimensional universe we experience. Quantum entanglement could be what forms the true fabric of the universe.

Taking it one step further, quantum mechanics predicts that every possible outcome actually happens - only most of them happen in other universes parallel to our own. Reality goes beyond the one universe that we see; it plays out in multiple universes. It's possible we live

in a cosmology of multiverses where all possibilities live. This is the new frontier of quantum physics.

LINEAR TIME VS. NON-LINEAR TIME

We find ourselves at an interesting juncture. We know that quantum mechanics works because it has been verified by countless experiments. The equations of quantum mechanics have ushered in the digital revolution that has produced lasers, transistors, integrated circuits, smart phones and quantum computers. It is the foundation upon which the entire field of electronics and artificial intelligence is based. Yet, it is difficult to explain “why” it works. It is akin to Newton’s dilemma about the “why” of gravity. He knew how to calculate the effect of gravity, but he did not know why gravity behaved as such. Similarly, we know that quantum mechanics works, and that quantum entanglement is real, but it is difficult to comprehend “why” that is so.

Classical physics is easier to understand because it is related to our lived experience honed over eons of evolution in a 3-dimensional universe that operates in linear time. As hunter-gatherers on the savanna, we learned to anticipate the speed and direction of our prey in order to kill it with a spear or an arrow. Newton’s laws of motion simply provided the mathematical equations necessary to calculate with great accuracy the speed and trajectory of that motion, whether it be the short distances needed for hunting, or the great distances needed to send a probe to Mars. Tell me where the moon is today, and I can use Newton’s equations to tell you where it will be tomorrow. In classical physics, prediction conforms to the observation. Over millennia we have come to embody this intuitive skill since it is absolutely necessary for functioning in a 3-dimensional world that operates in linear time. In other words, our intuitive minds are Newtonian in structure.

It is precisely for this reason that we have such difficulty comprehending quantum mechanics. Quantum mechanics feels counter-intuitive because our minds have not yet developed the facility for operating intuitively in non-linear time. Why? Because our survival does not appear to depend upon that kind of counter-intuition. To understand quantum mechanics, we must go beyond the boundaries of the paradigm in which we have been immersed for eons. It is our immersion in that paradigm that shapes our perception and notions of common sense. As essayist and novelist Anaïs Nin says, “We don’t see things as they are, we see them as we are.” Understanding quantum mechanics will only happen when we stop privileging the

world we see and, instead, learn to view the world as it really is, not just intellectually, but as an embodied way of being.

QUANTUM PHYSICS AND THE VEDAS

On July 21, 2016, an article by The Krishna Path was published in the science journal Uplift entitled *Did Quantum Physics Come from the Vedas?* It points out that Werner Heisenberg, Niels Bohr and Erwin Schrödinger all read from and greatly respected the Vedas, the ancient Indian Sanskrit texts on spirituality. They elaborated on these books of wisdom in their own language of mathematics to better understand the ideas found throughout the Vedas, referred to in Sanskrit as Brahman, Paramatma, Akash and Atman.

Walter Moore in *Schrödinger: Life and Thought* (1989) quotes Schrödinger as saying, "Some blood transfusion from East to West is necessary to save Western science from spiritual anemia." Schrödinger found that Vedanta (the conclusion of Vedic thought) teaches that quantum consciousness is singular in that all happenings are played out in one universal consciousness. Nirvana is a state of pure blissful knowledge. It has nothing to do with the individual. The ego is an illusion. Schrödinger, in speaking of a universe in which particles are represented by wave functions, said, "The unity and continuity of Vedanta are reflected in the unity and continuity of wave mechanics, which is consistent with the Vedanta concept of *all in one*."

While he was working on quantum theory, Heisenberg went to India to lecture and was the guest of Rabindranath Tagore, also known by his sobriquet Gurudev. Tagore was a polymath, poet, musician, artist and Ayurveda researcher. They spoke about Indian philosophy which helped Heisenberg with his work in physics because it showed him that all his new ideas were not crazy. He realized that the Vedas subscribed to similar ideas.

I AM PURE CONSCIOUSNESS

Since we now know that bilocation and teleportation are theoretically possible, it begs the question, "Am I, in essence, just a lump of protons, neutrons, electrons and quarks?" Is the Muktananda who was teleported from Los Angeles to London really "me?" According to quantum mechanics, it is not the physical properties contained in those particles that makes me "me." It is the information those particles contain that makes me "me." It is the information in the form of qubits that is teleported. If that is the case, am I nothing more than an

amalgamation of digital information being holographically projected onto a 3-dimensional illusionary universe? And what exactly is that information? My spiritual studies and experience lead me to conclude that it is the information contained in our akashic record - the blueprint of our dharma, or our life's purpose. The akashic record is a compendium of all human events, thoughts, words, emotions and intent ever to have occurred in the past, occurring the present, or that will occur in the future. Our akashic memory or "akash" can be awakened in us because it is encoded in a non-physical plane of existence known as the mental plane.

Those of us on a spiritual path have heard it said by many spiritual masters: *I am not my body; I am not my mind.* Well, if I am not my body nor my mind, what am I? In essence, I am pure consciousness. My life in a physical body living in 3-dimensional linear time is simply one aspect of the multi-dimensional nature of my being. My essence plays out simultaneously on many planes of reality. No one plane constitutes the whole "truth" in and of itself.

Quantum physics leads us to conclude that the 3rd dimension (our physical universe) is, in and of itself, an illusion. That means that the current paradigm of self that most of humanity embodies is ungrounded because it is perceived as the totality of what we are. We can never understand who and what we truly are from within that paradigm. That is why so much of what passes for transformation today may be characterized as a futile effort to make this illusionary self more comfortable. Why? Because it only addresses a symptom of our dissatisfaction, not the fundamental challenge we, as humans, face. When the novelty of our new and improved transformed identity wanes, the fundamental issue reappears in another guise. Authentic transformation only occurs when we learn to step out of the illusionary paradigm of the 3rd dimension and embrace our true identity as multi-dimensional beings. To do so requires self-awareness. That is why mystics and enlightened masters throughout the ages claim that self-awareness, as in "know thyself," is the key to liberation.

I view the 3rd dimensional world from the paradigm of transcendence (the 5th dimension). This perspective enables me to see more clearly how fear and separation impact such factors as creativity, innovation and identity. By shifting the "observer" we are, we can operate from this new level of consciousness. The regular practice of meditation facilitates a process in which our ego-based *doer* quiets down thereby *allowing* quantum consciousness to fill the void. That is why self-transcendence is not something our ego can *do* or *achieve*.

Viktor Frankl, in *Man's Search for Meaning* (1993), said that self-transcendence always points to something other than itself. In that state, we become aware not only our fullest potential but the fullest potential of all human beings. There is nothing we can "do" to get from the 3rd dimension to the 5th dimension. We must get out of the way and "allow" 5th dimensional energy to enter our being. This shift in attunement creates a space in us that allows the voice of our inner-knowing or intuition to surface such that we can listen and respond to it.

When an enlightened master with esoteric knowledge bilocates, as did Jesus when he appeared before a few of his close disciples following his death, he or she does not require a quantum converter station. Such masters are in full command of their multi-dimensionality. It is not their physical body that bilocates. It is their light body that manifests in the 3rd dimension. It is held in place by conscious intent. They are appearing *in* this 3-dimensional world, but they are not *of* it. This is the conscious manifestation of a principle of quantum mechanics where one can be here and there at the same time.

Quantum physicists are deepening our understanding of what the 3rd dimension is and how it works, but those same physicists are conducting their research from within the paradigm of the 3rd dimension itself. They are expanding our intellectual understanding of "reality," but that knowledge is not the same as being it. As I said, the map is not the territory. We can only "be" it when we embrace our true nature as multi-dimensional beings who are simultaneously *here* in the 3rd dimension and *there* in the 5th dimension - our higher self's light body. That latent possibility requires committed spiritual practice where we go beyond the confines of the intellect and enter a state of quantum consciousness.

Annie Besant, in *A Study in Consciousness: A Contribution to the Science of Psychology* (1880), contends that most people live unconsciously because they are unaware of a state of consciousness where there is no "before" and no "after", no "past" and no "future", only the eternal present. Therein lies true peace which brightens into joy and transcendental bliss. Most people are unaware of their full potential because they believe that the 3rd dimension constitutes their only reality. They have forgotten that we are spiritual beings who chose to have a human experience. We are not humans striving to have a spiritual experience. We took physical birth to honor our dharma (our purpose for taking birth). We serve humanity and our souls by emanating the love and light that we truly are.

A JOURNEY OF THE HEART

A true path of awakening always connects us with our heart because it is grounded in love. So, where does love fit into our quantum discourse? To answer that question, I find it helpful to distinguish between love that is emotionally based and experienced as a feeling and unconditional love that is experienced as a state of transcendental bliss. We humans are fundamentally emotional beings. The limbic brain, which is the seat of emotionality in mammals, has been evolving for 66 million years, triggered by the mass extinction of dinosaurs. It is the limbic brain that allowed for the evolution of loving and nurturing behavior. Emotionally based love, therefore, represents a major development in our evolution because it awakens us to our essence, which is love.

When we fall in love with someone, it may feel as though we want to merge with that person. Sometimes we are successful, most often we are not. Why? Because emotionally based love is transactional and, therefore, conditional. It is driven by an unconscious desire to re-discover some or all of the people to whom we were attached as children. As such, we are subconsciously asking our beloved to correct all the wrongs that our parents and others inflicted on us when we were youngsters in their care. It is a desire to return to the past while simultaneously attempting to undo the past. This paradox and the unconscious expectations it evokes are often too much to ask of another, especially as they themselves are also dealing with these same basic issues. Moreover, we tend to mis-label emotionally based romantic infatuation (which is often hormonally driven) as love. In time it diminishes and may turn to indifference or possibly even hate when we realize that the other person is unable or unwilling to fill the void inside of us - a void that stems from not knowing who or what we are.

Unconditional love and compassion, on the other hand, are essential components of wisdom and self-knowledge. Fritjof Capra points out that unconditional love finds its strongest expression in the ideal of the Bodhisattva, a fundamental precept of Mahayana Buddhism. A Bodhisattva is a highly evolved human being on the way to becoming a Buddha. He (or she) does not seek enlightenment for themselves alone but has vowed to help all others achieve Buddhahood before entering *nirvana*. It is based on a conscious decision to return to the illusionary world of the 3rd dimension in order to show the path of liberation to others. This non-ego-based decision reflects an understanding that there is no separate individual self. A love that knows no conditions flows from that state of quantum consciousness. It embraces all of creation from inanimate objects to plants, animals and all of humanity.

The challenge and the opportunity, therefore, is to bridge the gap between the conditional love in which most of us are immersed, and our deep desire to experience unconditional love. Transformation occurs as we traverse this territory. But there's a catch. We will only bridge the gap if we connect with our heart. The heart knows that the territory we are traversing is a path of love and surrender. We must let go of our ego-based self's desire to be in control and allow our heart to guide us. When we reach that point, we can discard the map because the mind has surrendered. The heart will guide us from then on.

In my experience, most successful people, regardless of their chosen career, acknowledge that they wouldn't be where they are without the helping hand of countless others along the way. It's no different when our chosen path is spiritual mastery. Quantum consciousness makes us aware that we are all connected. There is no better way to experience this truth than to be on this path with others. We can't do it alone. We need the support of a loving community committed to the following spiritual practices:

- Sadhana: Sadhana is a Sanskrit word that refers to daily meditation usually practiced with a mantra - a sacred sound or phrase that vibrates at a higher frequency energy. We are, in essence, light, vibration and sound (divine harmony). Speaking about meditation as a practice, however, is somewhat of a paradox because we really can't "do" meditation. By stilling or quieting the mind, we "allow" meditation to do us. In that quiet, peaceful state, we allow ourselves to be bathed in light surrounded by divine harmony as we breathe in sync with the primordial vibration of the universe.

- Satsang: Satsang is a Sanskrit word that means being in the company of truth. It is a sacred gathering of people who engage in spiritual discourse, often accompanied by chanting and group meditation.

- Seva: Seva is a Sanskrit word that means engaging in selfless service to one's spiritual master or guru, and/or to help alleviate the suffering of humanity.

By immersing ourselves in these practices, our lives became aligned with our dharma or purpose. Of course, the journey is made that much easier if we are blessed to have a Bodhisattva or an enlightened master illuminating the path.

As conscious human beings we access the higher frequency energy of the unified quantum field with our illuminated minds and purified hearts emanating unconditional love. As pure

consciousness we exist everywhere since space and time as we once knew them no longer exist. From that state of quantum consciousness, all things are possible.

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