Quantum Entangled Consciousness and the Hermetic Philosophic Laws of the Universe

Dr Niikee Schoendorfer PhD MHS BHS ND Dip Ed

Postdoctoral Research Fellow, Institute for Intuitive Intelligence

The physics revolution for more than 100 years has been challenging the very underpinnings of much of the accepted science theory preceding this time, and still to date. Many questions remain so far unanswerable due to their very nature, defining the undefinable.

Is the universe material or mental? Is everything that exists interconnected and affected by everything else? Is it possible to determine precisely what things are or is all that exists created through observation? Can we exist simultaneously or perhaps not even exist the way we know it at all?

The first Hermetic Law of mentalism suggests that 'All is mind', in that everything is created by observation, by a thought and that 'All is one'. Through this interconnectedness, the Universal Law of vibration implies that everything affects everything else simultaneously. This conjecture defies classical physics in that an effect cannot occur before its cause and challenges the old Newtonian model of causality where all effects must have specific causes.

Quantum Physics proports to be on its way in solving the nature of these mysteries.

Quantum mechanics studies the properties of energetic behaviour at the scale of atoms and subatomic particles. Before its advent, scientific theories only supported the physical properties (physics) of larger molecules, which according to quantum, no longer apply once smaller scale particles are being observed.

According to famous physicist and mathematician Sir James Jean (1877-1946) 'the stream of knowledge is heading towards a non-mechanical reality; the universe begins to look more like a great thought than like a great machine. The mind no longer appears to be an accidental intruder into the realm of matter…'(1). Here, Jean is suggesting that what is being demonstrated in the quantum realm is that 'All is of the mind', in fact, does take precedence over matter and influences how matter is being created!

What follows is a review of the most reproduced and pinnacle experiments, concepts and theories in the field of quantum science, along with an interpretation related to the Hermetic Laws which are thought to have originated in ancient Egypt dating back beyond 36 000 BCE. These philosophical teachings were shared in the great temples throughout the region and onto Ancient Greece and the Libraries of Alexandra, where they have been associated with legendary minds like Pythagoras, Aristotle and Socrates. Later these same teachings were reflected in Florence during the Renaissance during the 1400-1600 CE, sprouting famous intellectuals such as da Vinci, Michelangelo, Shakespeare and Copernicus. This period was thought to have emerged to the rediscovery of ancient Greek texts and the emergence of humanism, among others.

The Unified Field

In 2010, Vendral described an informational theory of the universe where everything including us, is made up of information. Quantum's unified field theory (1993) adds that the interconnected universe is a field of non-local information, not limited by space-time and entangled within everything all at the same time (2). This unified field is thought to be derived from the entanglement of electromagnetic fields of molecules and constitute this interconnected information web. According to Hermetic Philosophy and its law of mentalism, 'All is one', concurs with these findings.

Beyond the quantum, biological organisation on all levels on this planet is also thought to occur due to electromagnetic field communication, in that various parts within a living organism use coherent states of electromagnetic frequency to continue to function cohesively even when separated (3). We see this playing our for example when flocks of birds or schools of fish move in unison or annual migrations within species, again as if 'All is one'. Electromagnetic fields exist within and affect everything from single small chemical reactions to the self-organisation of entire ecosystems (4). These factors are aligned with the Universal Law of Correspondence, where 'As above, so below' describes what happens in the microcosm so to happens within the macrocosm, via these constantly being interconnected and in co-communion.

Human consciousness, including self-awareness and intelligence, has also been implicated in this electromagnetic unified field theory, attributed to the brain's magnetic field created by its dense population of magnetite crystals, combined with its neural electrical system (5). In theory, this web of electromagnetic fields is what makes up this greater unified field, again supporting the universal law of mentalism in that 'All is one'. So, *is everything that exists interconnected and affected by everything else?*

Entanglement

Albert Einstein in 1935 wrote his well versed paper, calling it 'Spooky Action at a Distance' in light of his frustration in trying to explain how it might be possible for entangled particles to remain connected, even over great distances. This is one of the great quantum mysteries where measuring one part of the entangled particle elicits instantaneous effects on the other, no matter where it is situated. This defies the causal laws of classical physics where an action must precede each reaction, causing the reaction to then occur after action and not simultaneously as we see with quantum entangled particles.

Entanglement theory proports that when any previously connected particles are separated, they will still maintain connection that is not affected by space or time. For example, particles may have what's termed superposition, meaning that they can exist in multiple states at once. They have a magnetic spin property where they can spin either up or down at the same time, until they are specifically observed or measured. At that moment in time, they will assume a definite direction. This is the 'spooky' part!

Much of the early quantum theories were developed mathematically, although more recently have been supported by experimentation and relevant data collection. Entanglement theory has been investigated experimentally in several alternative scenarios and continues to be easily replicated in laboratories all over the world.

Wiseman et al (2005) were able to rigorously verify this entanglement phenomenon, by splitting a single photon and observing a change in one part, because of actual measuring or observing the other at a distant site (6). What this experiment and theory validation shows is that molecules remain connected even through separated, supporting the 'All is one' interconnectedness suggested in the Law of mentalism.

Researchers in the Netherlands measured 245 pairs of entangled electrons, separated across the university campus some 1.3km apart. They found that each electron was in fact influencing its entangled partner, where when one was manipulated and measured spinning a certain direction its pair across campus immediately flipped, to maintain a balanced equilibrium despite no longer being in physical contact (7). These studies show that space or distance and time has no relevance in the quantum sized reality. They also suggest that the space that our reality occupies only exists in its perceived form due to observation or measurement. Back to the original questions, '*Is it possible to determine precisely*

what things are or is all that exists created through observation?' '*Is the universe material or mental?*'

In 2001, Juan Maldacena added onto the original work of Einstein and Rosen (1935), demonstrating a revolutionary conclusion suggesting that entanglement is what binds space-time together. He concluded that 'Space-time is really just some geometrical manifestation of entanglement, whilst its continuity which seems to be something very solid, could come from the ghostly properties of entanglement' (8) This premise suggests that linear time as it appears, may only be a hallmark of our continued observation of the same patterns of existence, supporting the Hermetic Law of mentalism in that 'All is mind'.

While working on entanglement and what he termed the holographic principal, Susskind (2008) wrote 'quantum entanglement is a form of information and so space-time is merely a manifestation of quantum information' (9). His work built on from that of Smolin (2000) which describes the universe as a network of holograms, with each hologram containing information about all others. Smolin also proposed that space was only a channel of information from observer to observer (10). This holographic theory might explain how particles instantaneously know about information that is happening at any given time at any location, separated only by the 'observation' that there is in fact a distance between.

This paper will come back to considering holograms once further pivotal quantum physics principles have been more fully introduced.

Robust efforts by top physicists have produced theoretical evidence that networks of entangled quantum states, described as qubits, weave the space-time fabric. These entangled qubits are thought to create geometrical networks in space with an extra dimension, beyond the number of dimensions that the qubits live in (11). This might explain how particles can exist simultaneously bidirectional and settle to take a specific form when measured within the specific dimension where the observation is taking place. This theory may also support speculation of

multidimensionality as existing simultaneously rather than as past and future occurrences.

The existence of what is termed as virtual photons have been identified within quantum mechanics. These photons are thought to be exchange particles for electromagnetic (unified field) interactions, where every photon spends some time as a virtual electron and also, it's mirror virtual positron. So, one particle can become a pair of heavier (virtual) particles, then quickly re-join into the original particle as if nothing had happened (12). Are these virtual particles existing simultaneously in another dimension and exchanging their relative positions under observation or measurement? And to add one of the original contemplations '*Can we exist simultaneously or perhaps not even exist the way we know it at all?*'

Wave or Particle

Termed the quantum measurement problem (QMP), is the peculiar effect that occurs when quantum sized particles behave differently under observation or not. This violates the basic modern scientific method principles that the world is directly measurable through observation and that these observations have no influence over what is being measured.

The wider implications of this on much of the way that scientific research is conducted is astounding and may be a reason why quantum science is regularly disregarded by the mainstream. If matter cannot be accurately observed relating to its behaviour, then it cannot be controlled and manipulated by mechanical force alone. Considering the supporting evidence thus far that the mind has the potential to influence matter, other confounding factors which are rarely considered in scientific research, have the potential to interplay with results of measurements in any given moment, rendering them inaccurate.

Since the advent of the infamous quantum physics double slit experiment, where matter does in fact act differently when measured or not, many scientists have attempted to go deeper in explaining the highly repeatable results that show waves of possibility become reduced into particles under observation. A full explanation of this experiment is beyond the scope of this paper and it is encouraged to read further details in one of the many interpretations available, if this experiment is unfamiliar.

Hypotheses that are being considered in the physics community vary from one end of the spectrum to the other where subjective reduction, meaning that the observation does affect the result, to beliefs that there is no reduction even occurring at all despite the supporting evidence (13).

QMP has been creating waves through the physics community for centuries, since its original inception by Thomas Young in 1801, with many varied renditions and some even attempting to 'trick' the wave into not knowing it is being observed, but to no avail! The holographic universe appears to know all and simultaneously.

In the 60's physicists like Jordan, Wigner and Pauli theorised that aspects of consciousness like attention, awareness and intention are foundational in deciphering the QMP, with Jordan writing 'Observations not only disturb what has to be measured, they produce it. We compel the particles to assume a definite position. We ourselves produce the results of measurements' (14).

Since this time there has been a strong view by many, of the role of consciousness in the QMP, with the opposing fraction strongly in resistance, holding to the fact that the physical world was here long before human consciousness evolved to observe it! (15)

These 'observations' have been experimentally investigated beyond direct measurement, to extend to pure observation, that being whether the group of participants in another room were focusing their attention toward or away from the double slit experiment. Interestingly, the group of experienced meditators were

found capable of producing statistically significant results in the difference between when they were focusing towards and away from the experiment ie. collapsing or reducing the wave function into particle behaviour. Results from non-meditators and the control group with no observation both documented, no difference to chance (16). This highlights that focus needs to be maintained at some level to constitute observation, relating to the capacity to influence the nature of matter or reality.

Despite the yet unanswerable of these mysteries, one thing is fairly clear and that is if any information is gained about the path of a quantum sized molecule, the interference pattern produced by the wave function collapses with the information being measured or observed.

If observation is then responsible for producing a set outcome, do infinite waves of possibility continue to exist within our own lives if we stay open to what else might be possible? Do we then collapse waves of possibility then when we focus either on the perceived positive or negative aspects of a potential future event? Does our capacity to hold focus or intentionality influence outcomes?

Consciousness

Considering the possible role of consciousness in the outcomes of our reality, another theory is discussed, being that ‘if the self-aware fabric of reality can in fact be modulated through attention and intention, then the very act of focusing on the double slit system may be what is collapsing the wave’ (15). This idea is based on panpsychism, derived from ancient Greek schools of philosophy, which is controversial (of course) but openly considered within branches of modern-day philosophy of the mind.

The effects of intention and attention on outcomes has also been studied experimentally. Radin (2008) investigated the effect of intention from a human

'sender' on the autonomic nervous system of a distant 'receiver'. Skin conductance of the receivers, as an indicator of nervous system activation, was measured during intervals of compassionate intentional focus and not. Results demonstrated significant differences in skin conductance during the test periods, with larger and more sustained variations in the group pairs that were previously trained in intention, versus those that were not (17). This study again supports that the capacity to better focus, in this study through prior training, produces an additive effect on the outcomes.

A myriad of varying experiments have been conducted looking at the effect of conscious intention of humans on the influence of random number generators, with a summary of findings in a report issued by the US National Research Council, documenting that the overall results could not be explained by chance (18). This once more suggests that conscious intention is in fact able to affect outcomes and again supports the universal laws.

In his well-known experiment, Rene Peoc'h (1995) conditioned baby chicks to believe that a randomly moving robot was their mother, having them follow it around at a young age. When the chicks were placed in a transparent cage away from the robot, the robot rather than continue its random pathways, tended to spend excessive time in the vicinity of the chicks. When the chicks were removed, the robot again followed random trajectories. The experiment was repeated with 80 different groups of 15 chicks and demonstrated significance and repeatability in majority of the trials (19).

Several studies have documented the effects of good intentions between human participants, where one person focuses on a candle and indicates when their mind wanders, whilst the other in another room focuses on supporting the first with their focus. Between 11 studies with a total of 576 single sessions measured, the positive effect of benevolent intentions was supported across all studies (20).

Bradley (2006) investigated the success of repeat entrepreneurs and found that practices of focused intention and attention on a desired outcome was one of the highest predictors of repeated success in the entrepreneur participants. The group theorised that the biological energy activated through passionate attention, attuned them to the desired outcome or objects unfolding pattern of activity and thus its future potential. To explain further, as we have seen, the body creates fields of energy at various frequencies and that these fields can influence the field of potential energy. As the heart generates the most powerful electromagnetic field, utilising a heart focused state increases the attentional resonance with the incoming quantum level information from the object of interest (21).

Holographic Universe

According to Di Biase, consciousness informs our universe through quantum information and entanglement, influences matter, energy and space-time. His theory synthesises previous work and suggests that 'This non-local quantum-holographic cosmos manifests itself through a quantum-holographic transpersonal consciousness, indivisibly interconnecting the human brain to all levels of the universe (22). Much contemporary physics points to the universe as a quantum holographic entangled reality and its very fabric, a quantum information web. It is theorised that entanglement of our quantum-holographic consciousness with the fabric of space-time, explains the wave particle phenomenon being collapsed by observer consciousness (8). It might also explain how intuitive information is received through seemingly non-local access, via the web of holographic information that exists in everything within the greater unified field.

Pribram (1991) described his theory of a holographic consciousness and further demonstrating experimentally that the patterns of the brains electromagnetic activity consist of quantum holographic non-local information. This

mind-brain-universe entanglement model is like that of Schrodinger's famous foundational wavefunction mathematical equation (23).

Bohm and Hiley (1993) proposed the Quantum-Holographic Theory of the universe, where the organisation of the cosmos occurs through non-local information, they termed holomovement. These quantum field fluctuations are thought to determine the behaviour and motion of a quantum potential based on the information it carries about its environment (24). This theory aligns with the Hermetic Law of correspondence and the resultant effects of the vibrational resonance held within and its interrelationship with the outside environment.

The work of Pribram (2011) also supports the universal laws stating 'when a potential is realised, information becomes unfolded into ordinary space-time appearance. In the other direction, the transformation enfolds and distributes the information by the holographic process.' (8) This proposes that our specific thoughtforms unfold in the 3D physical reality through the law of mentalism, while enfolding or remaining as waves of potential, imprinting our personal electromagnetic field hologram as described by the Hermetic Law of vibration.

When we consider the potential of a much greater reality, what is possible is so much more than the basic black and white causal reality that we have been previously taught. As our awareness grows and more information comes to light, it is probable that we will all be living a much different existence in the years to come as we learn how to better participate with more of what is available to us through the quantum universe.

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