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* AMARANTH Vol. E.1.1:   An Electronic zine by Larry Cornett *
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QUANTUM MAGIC

REALITY AS DESCRIBED BY QUANTUM MECHANICS

In quantum mechanics, reality is described by waves defining the probabilities of different outcomes from the same interactions. These waves manifest as what we have been taught to call matter, energy, particles, and/or waves when observed.

These probability waves overlap and continue forever. The interactions between different entities constitute a single structure of linked wave patterns, so that the entire universe can be thought of as an unbroken whole. The waves form a matrix, with all parts of the system affecting all other parts. Non-local relationships exist between parts of the system that are distant from each other [1]. It is impossible to distinguish two particles of the same type in a region of space in which they may be found simultaneously [2]. Particles loose their individual identity in such regions. Thus, the physical universe is fundamentally unified.

The basic equation of non-relativistic quantum mechanics is Schrodinger's Wave Equation [2]:

$$i\,h\,(p)Q\,/(p)t = -\,h^2/2m\ \mathrm{Delta}\ Q + V(x,y,z)\,Q$$

satisfying the normalizing condition:

$$\int_{\text{over all space}} |Q|^2\ dx\ dy\ dx = 1$$

where:

h = 6.63E-34 joule sec / (2 pi)

pi = 3.14...

V(x,y,z) = Potential energy, as a function of coordinates x, y and z

m = Mass

t = Time

(p) = Partial derivitive of

Q = Wave function of the particle, where Q dx dy dz is the probability that the particle may be found in the volume element dx dy dz at a particular time. Values of Q are components of the "state vector."

Values of Q are quantum mechanically defined states and constitute components of the "state vector." These quantum mechanically defined states define the probabilities of various results from quantum mechanically defined interactions [2]. In one orthodox interpretation of quantum mechanics, a system exists simultaneously in all quantum mechanically possible states until an observer (or apparatus outside the system) interacts to "collapse" the state vector" and obtain an observation.

Quantum mechanical systems can go from one configuration to another instantly, without passing through any states in between. Quantum mechanical movement is discontinuous, with all actions occurring in discrete amounts (quanta).

Schrodinger himself discovered one of quantum mechanics' more distinctive features: whenever two systems interact, the mathematical waves that represent the two systems do not separate but remain linked. The link does not drop off with distance and the link acts instantaneously at both locations, but the specificity of the link can be diluted through interactions with other objects [7].

WHAT UNDERLIES QUANTUM MECHANICS?

There are lots of hypotheses on the nature of the underlying reality described statistically by quantum mechanics.

- Some scientists are content with the hypothesis that there is no more subtle structure than the probability waves described by quantum mechanics; and reality, at its most basic level, has a large amount of randomness whose limits are described by the quantum mechanical wave function, making the wave function itself the fundamental reality. This is called the probability doctrine. It asserts that such indetermination is a property inherent in nature and not merely a profession of our temporary ignorance, from which we expect to be relieved by a future better and more complete theory [2].

- Einstein speculated that there must be some underlying mechanism, some hidden variables, that uniquely determines the outcome of the interactions quantum theory can only statistically predict.

- J.S. Bell showed mathematically that, if such a mechanism exists, and the math of quantum mechanics is strictly correct, hidden variables must not have any functional dependence on the separation of events in space and time [3].

- According to David Bohm, from both a consideration of the meaning of the mathematical equations and from the results of

experiments, particles can be understood as projections of a higher-dimensional reality. This reality can not be accounted for by any force of interaction between independent entities, but can be understood as a process of enfoldment in a higher dimensional space [1]. Information within the quantum wave determines the outcome of the quantum process. This information is potentially active everywhere but only actually active when and where it enters into the energy of an observed particle, implying that all particles have complex inner structures [10].

- Recently, superstring theory has been proposed, describing a ten dimensional webwork of space-time at an incredibly small scale (1E-33 cm) underlying the phenomenon described statistically by quantum mechanics, relatively, particle physics etc.

Some scientists consider speculation about the nature of the underlying reality to be irrelevant, since the predictions of quantum mechanical equations match the statistics of the results of experiments. To the best of my knowledge, experiments have not been performed that unambiguously distinguish between these alternative world-views. On the other hand, experiments have been proposed; and some work is underway to check some predictions of superstring theory. Eventually, from the results of experiments, some of these hypotheses may be screened out and others elevated to the level of scientific theory.

We are one and the same as the structures that underlie the matter and energy that we manifest as; and that structure is continuous, interconnected, and non local in nature. Whatever the underlying structure behind the interconnected wave pattern described by quantum mechanics (if any), we are that.

QUANTUM MECHANICS AND CONSCIOUSNESS

Getting back to established scientific theory, normal waking consciousness occurs when the nerve cell firing rate (synaptic switching rate) is high enough to spread out the waves associated with electrons to fill the gaps between nerve cells (synaptic clefts) with waves of probability of similar amplitude. This is described mathematically by the quantum mechanical mechanism of tunneling. These waves are interconnected throughout regions of the brain through resonances, resulting in a large, complex, unified, quantum mechanically defined resonance matrix filling a region in the brain. The waves are interconnected with each other and with information storage and sensory input mechanisms within these regions of the brain.

The nerve cell firing rate (v') at which this occurs has been modeled mathematically by Evan Harris Walker (at the U.S. Army Ballistics Center at Aberdeen Proving Ground) and corresponds to the threshold between waking and sleeping consciousness in people and animals. For normal waking consciousness to exist, the synapse transmission frequency for the brain (v') must satisfy the condition:

v' must be greater than or equal to $N^{2/3}/T$

where:

N = The total number of synapses in the brain (in humans, about 5E11)

T = Synaptic transmission delay time (the time interval required for the propagation of the excitation energy from one synapse to another)

This theory ascribes consciousness to an association of the events occurring at any one synapse with events occurring at other synapses in the brain by means of a quantum mechanical propagation of information. The sense of individual identity is an aspect of the continuity of the wave matrix residing in the brain [4].

QUANTUM MECHANICS AND PSYCHOKINESIS

By merely observing a phenomenon (resonating ones brain with it) one can affect the outcome, since the physical mechanisms in your brain are part of the wave matrix described by quantum mechanics. The information handling rate in resonance determines the amount of effect, along with the elapsed time of resonance and the probability distribution of the phenomenon you are observing [5]. According to Evan Harris Walker, quantum mechanical state selection can be biased by an observer if [5]:

$$W_Q \, te \text{ is greater than or equal to } -\text{Log}_2 P(Qo\text{-}Qi)$$

where:

P(Qo-Qi) = Probability that state Qi will occur by chance alone

W_Q = Information handling rate in process in brain associated with state vector selection (bits/sec)

te = Elapsed time

Q = Overall state vector

Qo = Initial physical state of system

Qi = State that manifests "paranormal" target event

The effect of consciousness is incredibly small on macroscopic

systems; but it can be measurable when it occurs on quantum mechanically defined and divergent systems, where a slight change can amplify itself as it propagates through the system. The effect is about 1E-17 degrees on the angle of the bounce of cubes going down an inclined plane. Changes in the angle of bounce result in changes in displacement of the cubes that increase about 50% on every bounce, and the effect is measurable after many bounces [6]. The theory successfully and quantitatively modeled the differing amounts of displacement observed in experiments on cubes of different weights and weight distributions [5].

Walker also modeled information retrieval in "guess the card" experiments. Simple, classical, random chance would predict a smooth, binomial curve for the probabilities of getting the right answer versus the number of subjects making successful predictions at these probabilities. Walker's model predicts that the curve would have peaks at certain levels of probability of getting the right answer above those predicted by chance alone. Experimental data showed peaks at the locations modeled. However, more people were successful at the higher probability levels than Walker's model estimated. This is considered to be evidence of learning enhancement [5].

SCIENTIFIC THEORY

Mr. Walker's ideas and equations would only be hypotheses if it weren't for the fact that they have been tested experimentally and found to predict the results of experiments with reasonable accuracy [4,5]. The evidence meets the usual rules of proof for scientific theory, and this makes Walker's equations legitimate scientific theory.

The non-local underlying wave patterns beneath manifestations of matter and energy that we hold in common with our surroundings allow us to influence reality and to obtain information about it using the power of the mind. This underlying interconnecting pattern is the very stuff of consciousness and manifests, not only as matter & energy, but also as psychokinesis, precognition and other phenomenon that are only now beginning to be recognized and embraced by some theories of modern physics.

IMPLICATIONS OF QUANTUM CONSCIOUSNESS THEORY

Deflections caused by consciousness are not caused by force or energy in the conventional sense; but by something more subtle, namely effects within the underlying wave structure out of which matter and energy are manifestations (collapse of the state vector) [5].

To psychically obtain information about a target or to psychically influence events, one has to have one's brain resonating with aspects of reality interconnecting the brain with the target. The more one's brain resonates with non-local aspects of reality connecting with a target, the more

communication and direct influence one can have on it.

The more fundamentally diverse the potential outcomes of a process targeted are, the more effect one gets from resonating ones brain with it [5]. Also, the more small changes in the system tend to amplify as larger changes in the end result, the more effect one can get. This provides an explanation of why patterns exist within seemingly random events and why successful magic often results in a chain of synchronicities.

For a given subject (performing under optimum conditions and having no difficulty visualizing the nature of the experimental target nor psychological aversions to the target), the magnitudes of the results obtained in tasks to affect the readings on measuring devices (such as magnetometers, radiation detectors, Josephson effect devices, balances, etc.) can be related to one another by calculating the probability of the reading based on the standard physical principles of quantum mechanics [5].

The sporadic nature of psi phenomena can be explained as a matter of outside observers randomizing the process, causing dilution of will data channels and randomizing the results [5]. Thus, the need for secrecy in magical operations.

One can no longer maintain the division between the observer and observed or between consciousness and the physical world. Rather, both observer and observed, along with both consciousness and the material world, are merging and interpenetrating aspects of one whole indivisible reality [1].

Whatever the subtle level of reality underlying matter and energy, we are that (including our consciousness). If hidden variables exist, we are the hidden variables. It has been theorized that consciousness is an inseparable aspect of this underlying reality. When our awareness connects with the deepest layer of reality interconnecting everything, we may experience the level of consciousness beyond time and form reported by many mystics. It is this non local structure that we share with nature that makes it possible to "attune to nature," to psychically participate in nature, and to live in accordance with it.

What we are usually aware of (normal waking consciousness) is a relatively superficial movement in the order of things. Behind the things we are aware of in waking consciousness are a vast array of less strongly linked phenomena. This latter realm is commonly called the unconscious (and parts of it the subconscious). The unconscious is not very accurate, since it forms a kind of ground of consciousness [8]. Our awareness can link with this ground of consciousness to gain information and to influence events.

THE GODS, GODDESSES AND NATURE SPIRITS

At this point, I diverge from theory and describe some plausible

hypotheses. Consciousness, at a fundamental level, is associated with the continuity of the underlying structures out of which matter and energy manifest. Everything shares this continuous structure; therefore everything has consciousness to some degree (though not necessarily normal waking consciousness).

Quoting from Evan Harris Walker (4): "Consciousness may exist without being associated with either a living system or a data processing system. Indeed, since everything that occurs is ultimately the result of one or more quantum mechanical events, the universe is 'inhabited' by an almost unlimited number of rather discrete, conscious, usually non-thinking entities that are responsible for the detailed working of the universe. These conscious entities determine (or exist concurrently with the determination) singly the outcome of each quantum mechanical event, while the Schrodinger equation (to the extent that it is accurate) describes the physical constraint placed on their freedom of action collectively."

In shamanic and in religious practice, one resonates with other intelligences to get their assistance, inviting them to join in the work at hand. These intelligences can be thought of as consciousness resonance matrices. Some may be localized, as we are (such as other biological intelligences, plant divas, power spot spirits, some deities, etc.); and some may be non localized (spirit animals in the other world, some deities, etc.).

The personalities of the Gods, Goddesses and spirits that many practitioners of religion relate to can also be thought of as consciousness resonance matrices. They can be very non-specific and disperse, or very specific (such as the Orishas and other deities that can manifest in full possession of those who invoke them).

QUANTUM MECHANICS AND MAGICAL RITUAL

Consider a typical structure of magical ritual and its quantum mechanical explanation:

- Purify one's mind and one's surroundings, freeing them of interfering resonances, quieting the static so that one can get a clear and strong resonance on the target desired.

- Achieve a non-localized state of consciousness, often by resonating ones mind with ones inner being, with the Earth, the sky, and ones surroundings.

- Meditate on the elements (Earth, Air, Fire, Water) representing non-local essences. This helps your mind to resonate powerfully non-locally.

- After reaching out with one's mind and connecting its resonance pattern intimately with the non-local web of wave patterns connecting everything, invoke deities whose natural function is related to the purpose of your ritual. If successful, this connects your mind to a powerful,

established, non-localized, intelligent resonance matrix that (hopefully) joins in the magic.

- Focus on the target of the work, connecting with the target.

- While connected with the target, visualize the end result desired, thus creating a resonant template for the phenomenon one wants to achieve.

- Energize the resonance through dance, drumming, chants, pure channeling of will power, or other means.

- Release the energy into the target while strongly visualizing the target achieved (energizing the resonance in the target).

- Ground, removing ones mind from the direct, resonant link with the target, so that the patterns you have set in motion in the target can continue with minimum interference (to throw a ball, one has to let go).

- Thank and say goodbye to the intelligences one works with, thus disconnecting ones mind further from other resonance matrices.

There are other forms of magic, and much more detail to the forms I described. There are also ethical considerations. This paper provides a description of some aspects of the integration of quantum mechanics with magickal thinking, but it does not cover everything.

SO WHAT?

To read about theories of magic is like reading about sports. You may pick up a few ideas; but to become proficient, you must participate and play the game. People have been teaching and performing magic for thousands of years, without the benefit of quantum theory. Many magicians have had to separate their scientific training from their magical practice. Now, magical theory has been merged with scientific theory, and more of the mind of those trained in science can resonate with magic. Also, critics of magic can be shown the scientific theory and data validating it, to show that there is more to magic than superstition.

I have not seen any other quantitative scientific theories that explain the results of experiments on psychokinesis, extrasensory perception, and consciousness as accurately as Walker's theory, or that give as satisfying of an explanation of the synchronicities that I, as a worker of magic and a scientist, have observed from personal experience. This is not to say that these ideas represent ultimate truth, that alternative theories no not exist, or that flaws will not be found and that alternative theories will not replace them. I would welcome hearing from others who have additional information and insight into the applicability and limitations of the theories of modern

MULTIPLE UNIVERSES?

One interesting hypothesis is that of multiple universes. As I understand it, this hypothesis states that all of the alternative possibilities allowed by quantum mechanics actually occur, but in different universes. Magicians can interpret their magic as moving their awareness between these alternative universes. I have never seen the multiple universe theory set up mathematically in a way that would allow it to be quantitatively tested, using physical measurements (like was done with Mr. Walker's theory),

It would be interesting to determine if and to what extent the multiple universe hypothesis can be integrated with Mr. Walker's theory. Consciousness, acting at a gross level, seems to be relativistic - something experienced by observers relative to their frames of reference. Consciousness, at its ultimate level, seems to be subtler than time and location.

When two observers see the same thing, they both may have certain experiences in common, they both may affect the thing observed, and they may report some of the events the same and some differently. Experience may be categorized in a multiple universe mode and/or in a single universe mode. If would be interesting to know which mode is most useful for various purposes.

It is obvious that some people have such a different personal perception of reality as to be seemingly out of touch with the world we experience around them. Their self-world image becomes more important than anything, and they adjust their memories and perceptions to meet whatever emotional needs they have at the time [9]. Delusions of personal reality and the high probability that such realities are real for the person experiencing that reality can result in interesting questions about what is real and what is unreal.

Although the universe may be a seamless whole, most physicists describe it in two different modes, depending on whether things are being observed or not [7]:

- A classical, mechanistic mode for the definite attributes of observation, and

- A statistical, mathematical, quantum mechanical mode for the wave patterns described by quantum mechanics.

David Bohm has begun to develop new terminology that integrates both the process of observation and quantum theory [1].

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I used WordPerfect to write this article, and I used CompuServe B protocol, Procomm 2.4.1 and an Everex Evercomm 24 modem to transmit it. I don't know how to transmit Greek and many mathematical symbols with this software and hardware. As a result, I had to use non-standard symbols in the equations. Any suggestions?

Note that "E" in numbers like 5E11 stands for five "times ten to the" eleventh power.