Article

Exploring Consciousness Perception within Reference Frameworks

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Abstract

Consciousness defines our awareness of the world. Many theories of consciousness exist, yet its nature remains elusive. This article explores the assumption that only one type of conscious awareness of experiencing reality exists. We discuss Einstein's reference frameworks and examine evidence from parapsychology. I put forward a framework to investigate whether there are two potential types of awareness of reality; (1) everyday awareness and (2) cross-reference experiences, such as Out of Body Experiences. In addition, we make a case for classical models of the brain being incomplete using examples from general anaesthesia, mental health and consciousness research. Furthermore, we make a case for quantum mechanics principles influencing our conscious experiences. If cross-reference experiences can be proven, it supports the scientific reductivism argument that the true nature of physical reality is quantum in nature.

Keyword: Consciousness, reference frameworks, quantum mechanics, paranormal.

1. Introduction

Philosophers have investigated consciousness for thousands of years, yet there remains a great deal of mystery around the nature of consciousness. Currently, many consciousness theories exist. Therefore, no accepted theory exists (Doerig et al., 2020). Nevertheless, many unknowns remain about its nature, such as its relationship with the brain and whether the brain solely generates consciousness or whether there is a degree separate from the brain (Searle, 1998). At the heart of consciousness is how we experience the world.

It is common for many academic papers to describe consciousness without exploring the full consciousness experience. For example, in the psychological literature, topics are often described as alternative consciousness. There are five considered causes of alternative consciousness; spontaneously, physically or physiologically induced, pharmacologically, psychologically induced, and diseased (Vaiti et al., 2005). One fundamental assumption in the psychological and scientific literature is that alternative consciousness has no basis in physical reality, i.e., a product of the mind or a hallucination.

The assumption that alternative states of consciousness have no basis in reality, has been questioned by people's experiences close to death (Osis & Haraldsson, 1972; Moody, 1975). Furthermore, Stevenson (1983) distinguished between hallucinations and idiophany (all unshared

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experiences). Therefore, it is natural to ask whether these alternative states of consciousness are accessing another mechanism of observing reality or just hallucinations generated by the brain. This paper provides a theoretical and practical framework to explore whether more than one perception of reality is open to humans.

Traditionally, there is a distinction between public and private consciousness. In public awareness, there is often an agreement about whether two events occurred, i.e., two people can agree if a table is in a room. In this article, we call these co-existence frameworks. In this case, there is an agreement on the reality of a table. The other type is a private experience in that if a person thinks about a table in a room, there is no way a second person can confirm that the table exists. We can call these single reference frameworks. It is assumed that only public consciousness is related to physical reality.

The theoretical basis of the argument lies in the famous debate between Bohr (1935) and Einstein et al. (1935) on the nature of physical reality. Classical/Newton physics is observing the behavior of objects in space-time and is often underpinned by how we perceive the world. These often underpin empirical science but assume that human perception accurately reflects reality. However, quantum mechanics experimental evidence that defies classical physics logic, such as entanglement, quantum tunneling, and interference pattern (Hey & Walters, 2003; Horodecki et al., 2009). Both classical and quantum mechanics physics are incredibly successful at predicting experiments but have different theoretical principles.

How quantum mechanics and classical theories treat space-time are fundamentally different. For example, classical physics treats space-time as fundamental, whilst quantum mechanics has the concept of nonlocality (Fiscaletti & Sorli, 2008; Gallego et al., 2012; Hiley, 2001; Popescu, 2014). Therefore, we argue that if consciousness is fundamentally classical/biological driven, there should not be any experiences outside the human body. However, if physical reality and consciousness are fundamental quantum mechanics, there is the potential to experience another type of reality. In this article, we explore our conscious awareness of space-time via Einstein's concept of reference framework.

We put forward a framework to explore whether private experiences, such as Out of Body Experiences (OBEs), can validate the perception of another location to their physical body. If these experiences can be validated, it suggests at least two types of conscious awareness of reality rather than the assumption that what we perceive is the only reality. Therefore, suggesting that the nature of physical reality and consciousness are quantum in nature.

2. Exploring consciousness perception of Space-time via reference frameworks

We start with Einstein's (1916) thought experiment to explore our perception of space and motion. Person A is on a train, and Person B is on a station platform. As the train passes through the station, person A drops an item and asks to describe the object's path to the floor. Person A would say the object would fall straight to the ground. However, Person B would explain that the item fell in a curve due to the train's momentum. This thought experiment is that observing a

point depends on the person's reference framework, and there is no 'true' universal view of the world.

By further expanding on the thought experiment, we can hypothesize that evolutionary principles can explain discrepancies in the above thought experiment. The earth is moving through space and spinning on its axis. Nevertheless, consciousness remains stable, and we cannot perceive the earth's motion directly. It appears the Sun and Stars are moving, but we remain stable. Consciousness awareness has evolved to make life easier for functioning rather than a true reflection of reality. There is only a minor discrepancy when motion is involved in conscious perception. Only in recent human history can two observers perceive motion differently, demonstrating the illusion of perceiving space.

Russell (1915) argued that two concepts of time are required to describe time: mental and physical time. The distinction can be related to the feeling of now. Mental time is a shared consciousness experience with two concepts of tensed (past, now, future) and tensless concepts (earlier than, simultaneous, later than; see Primas, 2003). McTaggart (1908) suggested that no complete, consistent account of time is possible, and our experience of time is unreal. However, there is a consistent perception of time that appears to be an illusion, for example, time appears quicker as we get older, but in reality, it is constant (James, 1886). Furthermore, the concept of now is absent in classical and quantum mathematical formulations (Primas, 2003). We further explore time in Einstein's (1916) thought experiment about simultaneously.

A train travels through a station when both ends of the train are hit by lighting simultaneously. Person A sits on the train while Person B is on the station platform. Both are asked which part of the train was struck first. Person A said the front of the train, while Person B said both hits simultaneously. Both are correct despite the different viewpoints. Einstein used this to demonstrate general relativity principles that the world needs to be viewed as individual reference frameworks rather than an absolute reality. Therefore, Einstein's thought example suggests that how we perceive time differs from the reality of time.

The principle of general relativity suggests that a mass of an object will influence time. This can be demonstrated with atomic clocks at different heights from the earth's surface (Chou et al., 2010). The further away from the surface, the quicker the clock will run. This is not a faulty clock but a demonstration of Einstein's thought experiment that time measurement is based on reference frameworks. Unfortunately, there is no universal definition of time across the three different physics genres.

Here, Einstein sums up his thoughts on space-time towards the end of his life. "A human being is a part of the whole, called by us' Universe,' a part limited in time and space. He experiences himself, his thoughts, and feelings as something separated from the rest, a kind of optical delusion of his consciousness. This delusion is a kind of prison for us, restricting us to our personal desires and to affection for a few persons nearest to us. Our task must be to free ourselves from this prison by widening our circle of compassion to embrace all living creatures and the whole of nature in its beauty. Nobody is able to achieve this completely, but the striving

for such achievement is in itself a part of the liberation and a foundation for inner security (Einstein, 1950, cited by Schwartz, 2015, page 254).

A concept of how mammals observe space-time is called the specious present. The concept of the specious present was developed by Clay and reported by William James (James, 1886). The specious present is related to our experience of the present and can vary in length. Perhaps the best example is a moving spot is moving in a circle. The eye will only notice the spot's motion if it goes around slowly enough. At a certain point, if the spot goes around faster enough, it will appear as a circle. At the heart of the concept is that different species will have different concepts of observing space and time. Therefore, Einstein's thought experience suggests that the concept of universal perception of space-time does not exist.

We can explore the concept from Einstein's general relativity principles of a person's reference framework. Traditionally, consciousness is thought of as an awareness of the world (physical world) and an inner world (thoughts of a person). We suggest three types of reference frameworks to explore consciousness. These are (1) Co-existence Frameworks, (2) Single Reference Frameworks, and (3) Cross Reference frameworks.

Co-existence frameworks describe our conscious awareness of the physical environment and represent our everyday awareness experiences. In this state, consciousness represents the physical environment, and a shared experience often corresponds to another person's physical reality. For example, if you physically throw water on a fire, it will affect the fire. This materialistic reality is the basis for classical science, i.e., you can observe and validate theories with the physical environment. However, we explore Einstein's thought experiment of distance and simultaneously that there are disagreements with observations in the physical environment, which are generally irrelevant in the everyday experience. However, this explores the question of perception of the world to the hypothetical true reality. This is related to the collective consciousness.

Single reference framework- These are consciousness awareness of real experiences to the person but cannot be witnessed by another person or validated, i.e., thoughts, dreams, or hallucinations. The moment they are observed, they are real consciousness experiences but have no physical reality. For example, if you imagine throwing water on a fire, it will not affect the physical environment, nor will anyone witness or validate the person's experience.

In addition to everyday thoughts, a single reference framework can be considered alternative states of consciousness (See Vaiti et al., 2005). All these experiences cannot be observed by another person, which defines the single reference framework, i.e., a person cannot observe another person's dreams. There are two hypotheses for alternative states of consciousness experience. The first is that the brain generates them and are not considered to have a basis in reality, i.e., they are independently generated and, therefore, not linked to any physical reality. The second hypothesis is that they can be verified experiences outside the experiencer's physical body location. These can be identified in the third type of reference framework.

Cross-reference framework- These are single reference frameworks that evidence exists of a reality different from the person's physical location. It is best demonstrated in an example of a Near-Death Experience.

Cook, et. al. (1998) gives an example of a cross-reference framework:

"I was standing there in the middle of the room and distinctly saw my dead body lying upon the bed... I started to leave the room and met one of the physicians, and was surprised that he said nothing to me, but since he made no effort to stop me, I walked out into the street where I met an acquaintance of mine, Mr. Milton Blose. I tried to greet Mr. Blose by hitting him on the back, but my arm went through him... It was impossible for me to attract his attention... I saw that he went across the street and looked into a shop window where a miniature Ferris wheel was on display". Mr. Blose confirmed that he was looking at a Ferris wheel at the time. (Cook et al., 1998, page 385).

Cross-reference frameworks are rare but are theoretically important in studying consciousness. It challenges the assumption that co-existence awareness is the only access to the physical environment. In the above example, it is difficult to explain this experience within a classical model of the mind. However, applying general principles of quantum mechanics of nonlocality and the principle of consciousness gives a framework to understand such concepts.

3. Exceptional Experiences

We explore parapsychology evidence for cross-reference framework experiences. Generally, parapsychology is often considered controversial due to its nature. However, various scholars have argued that there are similarities between quantum mechanics and parapsychology (Walach et al., 2014; Walach et al., 2016). In this context, it gives a starting point in our framework for exploring consciousness and the nature of physical reality.

Einstein famously quoted quantum mechanics as "spooky action." Alan Turing (1950) described extrasensory perception as the main difference between the mind and the machine. A group of scientists and scholars set up paranormal societies in the 1880s to explore phenomena that did not fit into the materialistic view of science at the time. For over 140 years, books have been written documenting paranormal evidence, including; Phantasms of the Living (Gurney et al., 1886), Human Personality and its Bodily Death (Myers, 1903). Noble prize winner Richet (1929) published Thirty Years of Psychic Research. More recently, Real Magic by Dean Radin (2018). However, the field has its critics (Alcock, 2003). We have divided this section into four sections; (1) perception of space, (2) perception of time, (3) consciousness as a field, and (4) communications.

3.1 Perception of Space

An important consideration is the human experience of space and time. In human cognition, we perceive them as two independent concepts. However, Einstein's general relativity has linked both space and time together. In theoretical physics, models exist for existing dimensions, such as string theory (Gross et al., 1985; Witten, 1995) or nonlocality with quantum entanglement (Brookes, 2017; Gauger et al., 2011). There are two hypotheses to explore in the consciousness experience; (1) our cognitive perception is a true reflection of reality, and (2) our cognitive illusion in which cross-references experiences can exist.

In this section, we explore three areas of parapsychology related to cross-reference frameworks. First, we consider evidence from three topics of cross-reference frameworks, such as remote viewing, Out of Body Experiences (OBE), and Near-Death Experiences (NDE), that can provide evidence to discuss cross-reference frameworks. If these topics are to be proven, it will provide evidence of an extension of human perception beyond the classical model and suggestive of the nature of physical reality being quantum in nature.

3.1.1 Remote Viewing

Remote viewing is the alleged ability of an observer to perceive points of space and time different from the physical body's location. Therefore, giving an evidence base to the co-existence framework. The most extensive remote viewing research program came from a US government research program. The Stargate program ran from the mid-1970s to the mid-1990s. The first successful experiments were published in mainstream scientific journals (see Puthoff & Targ, 1976; Targ & Puthoff, 1974). Both described statistically significant results. Although, they have been criticized for methodological flaws in the early studies (Wiseman & Milton, 1998).

The Stargate remote viewing research program was evaluated by two research groups, Mumford et al. (1995) and Utts (1996). Both came to different conclusions about remote viewing, but both agreed on statistical evidence that cannot be accounted for by methodological flaws. Other researchers associated with the review suggested that the program demonstrated success in experimental and twenty years of field research (see May 1995; May 1996, May 2014). In addition to the freedom of information act in the United States of America, thousands of operational results of remote viewing of intelligent targets are known (see Marwaha, 2021).

Other remote viewing experiments have investigated remote viewing outside the government environment, such as archaeology and financial markets. For example, Schwartz (1980) examined the use of remote viewing against techniques used by archaeologists at the time. Remote viewing provided more accurate information than archaeological techniques (Schwartz, 1980). Kolodziejzyk (2012) tested associated remote viewing in financial markets, found small but significant effects, and the project made just under $150,000.

The estimated proportion of people who can successfully perform remote reviewing is 1.5% (Lantz & May, 1988). Within the Stargate program, a training program developed potential

remote viewers' skills (see Hubbard & Langford, 1986). A central technique of good remote viewing practice is reducing or managing conscious thoughts that could affect remote viewing sessions (see Schwartz, 1980). The training of remote viewers is suggestive that the focus is to reduce co-existence information and enter into another type of consciousness.

One of the leading remote viewers on the Stargate Project was subject to neurophysiological monitoring during remote viewing sessions. As a result, Persinger et al. (2002) found an unusual 7hz spike and slow-wave activity over the occipital lobes. This research further evidences remote viewing accuracy and neurological measures within the brain. Also, there is a potential to enhance remote viewing with magnetic fields (Persinger et al., 2002).

Some evidence exists for remote viewing in intelligence services, archaeology, and financial markets. However, remote viewing is not 100% accurate. The debate focuses on whether there is enough evidence to suggest there is evidence for remote viewing (Mumford et al., 1995; Utts, 1996; Putoff, 1996). However, a widely cited piece of evidence comes from former President Carter, who described an operation to recover a Soviet Union crashed plane via remote viewing as the strangest thing he encountered as the President (see Targ, 2019). It is difficult to ignore if operational results are successful. If remote viewing is accepted as a genuine phenomenon, it strongly suggests a type of cross-references framework experience.

3.1.2 Out-of-Body Experiences (OBE)

An OBE is an experience in which a person perceives the world from a location outside of the physical body (Alvarado, 1989). Unlike remote viewing, OBE generally occurs spontaneously and not deliberately. The estimated prevalence rate for OBEs is around 12% of the population (Blackmore, 1984). Below is an example of an OBE.

"The 59-year-old female respondent suffered a stroke three years previously and was left with hemianopia. She reported once feeling very frustrated while watching television and then suddenly seeming to be walking on the window ledge". (Irwin, 1989, page 56).

A common theme of OBE is that it reports more vivid than a dream and is generally more likely to occur when the person feels physically relaxed and mentally calm (Twemlow et al., 1982). However, we have also seen in our example cases in stressful situations. Therefore, we cannot conclude anything definitive based on a person's state of mind. Nevertheless, most OBEs (70%) have some visual content (Terhune, 2009).

There are strong neurological and psychological associations with OBEs, such as higher somatoform dissociation, self-consciousness, lower confidence in the physical self, and temporal lobe instability (Braithwaite, et al., 2010; Bünning & Blanke, 2005; Murray & Fox, 2005). Therefore, the debate between biological and quantum states might be false. In that, both might be part of the processes influencing one another. Furthermore, people who experience an OBE observe the world from another perspective outside of the body, suggesting a cross-reference framework experience.

3.1.3 Near-Death Experiences (NDE)

An NDE is when a person survives a close-to-death experience, sometimes involving a cardiac arrest. There are nine common experiences; (1) hearing the news of their death, (2) feeling of peace and quiet, (3) a noise, (4) a dark tunnel, (5) being out of the body, (6) meeting others who have passed away, (7) a bright light, (8) coming back and (9) telling others (see Moody, 1975; Parnia et al., 2014; Schwaninger et al., 2002). Despite the common features, there are cultural differences, and every person's experience is unique (see Groth-Marnet, 1994). The prevalence rate for NDE is between 4% of the general population and 33% of hospital samples (Greyson, 2003; Knoblauch et al., 2001*;* Parnia et al., 2014).

NDE does provide evidence for cross-reference frameworks. We provide two examples. The first is described by Morris and Knafl (2003), demonstrating awareness of the physical environment despite being in a comma.

"There was a penny on top of one of the cabinets, but you have to climb up to see it," And happened to mention to the other nurse who talks about things like I do. And she actually looked up there and found it". (Morris & Knafl, 2003, p 155)

Von Vommel (2004) gave another example of NDE where information was obtained supporting co-existence reference frameworks. "During my cardiac arrest I had an extensive experience (...), and later I saw, apart from my deceased grandmother, a man who had looked at me lovingly, but whom I did not know. More than 10 years later, at my mother's deathbed, she confessed to me that I had been born out of an extramarital relationship, my father being a Jewish man who had been reported and killed during the Second World War, and my mother showed me his picture. The unknown man that I had seen more than ten years before during my NDE turned out to be my biological father." Von Vommel, 2004, p 120).

Two general theories explain NDE, spiritualism or hallucination (Seigel, 1980: Blackmore, 1996). However, a strong argument against the hallucination hypothesis is the existence of a co-existence reference. Besides, NDE is not affected by the type of medication intervention (van Lommel et al., 2001). Therefore, by describing NDE within a co-existence framework, cannot be explained by any biological/cognitive theories thus leaving us with a quantum mechanics system.

NDE is not the only phenomenon related to death. These can include deathbed visions, where the person close to death experiences seeing deceased loved ones just before they die (See Osis & Haraldsson, 1972; Gibbs, 2010; Morita et al., 2016). In addition, terminal lucidity is when a person with limited mental or language capacity becomes more articulate/ aware of their surroundings before they die (see Nahm, 2009; Nahm et al., 2012). Finally, as a person becomes closer to death, the rate of dreaming of deceased relatives increases, which provides comfort for the experiencer (Fenwick et al., 2009; Kerr et al., 2014). All of the experiences described around dying people suggest potential cross-dimensional communication and evidence to investigate cross-reference framework experiences.

The three types of research described in this section (remote viewing, OBE, and NDE) are evidence of cross-reference framework experiences. We argue that studying these phenomena from purely a cross-reference point of view can provide evidence of consciousness and physical reality being quantum in nature. Speculating on the nature of these phenomena suggests that reducing biological input into consciousness allows consciousness to operate at a purely quantum level, such as biological death in NDEs, a meditative state in remote viewing, and feeling relaxed in spontaneous OBEs.

3.2 Perception of time

First, dealing with mental time, we argue with reference frameworks that there is no universal perception of time. Therefore, each individual will have their experience of "now". These thought experiments are suggestive that "now" is a cognitive illusion. The first experimental research around the perception of time found a neurological signal a second before the person reports the feeling of 'now' (Libet et al., 1983). There appears to be strong evidence to support neurological response about 500ms before a conscious experience (Libet, 2002). So, the "now" we experience is not a physiological event within the brain. No standard theories of present-day physics explicitly reference the "Present" (Filk & von Muller, 2009).

Experimental tests have explored the concept of perception of time. Bem (2011) tested the perception of time in four types of experiments; (1) precognition detection of erotic stimuli, (2) participants avoiding negative stimuli, (3) retroactive priming, and (4) retroactive habituation. Overall, only one of the nine experiments investigating precognition was not successful (Bem, 2011). A followed up meta-analysis of 90 experiments since the original study found a similar effect size of .20 (Bem et al., 2016). This is aligned with our thoughts on mental time that there is no universal time and differences between physiological and consciousness experience of now.

There are some real-life examples of so-called precognition. Some famous examples include people predicting the Titanic sinking (Stevenson, 1960) and identifying a body washed up on the beach (Hasting, 1983). An estimated of the prevalence of precognitive dreams is 21.7% in the general population (Para, 2013). Despite the famous cases, most precognitive dreams are about trivial matters (Para, 2013). There are two interesting areas to explore with precognitive dreams. Firstly, the person can distinguish between normal or precognitive dreams and the accuracy of precognitive dreams.

The experience reports that precognitive experiences are different from ordinary dreams. Describing precognitive experiences as usually clearer, more vivid and more emotionally intense (Para, 2013). Perhaps the word 'dream' is misleading, considering the self-report measures clearly distinguish experiences. Nevertheless, if people can distinguish between dreams and precognitive dreams, it indicates a different type of consciousness awareness.

The second area worth exploring is the accuracy of the dreams. There are no studies that can accurately assess self-report precognitive dreams. There are two main issues. One time frame we expect the precognition to come true is not accurately defined. Secondly, it assumes that the

future is fixed rather than probabilistic. However, this can only be confirmed if the accuracy of the dreams can be accurately assessed. But, evidence from self-report accounts are that people are also more likely to recall precognitive dreams that come true than those that do not, making self-report measures problematic (Watt et al., 2014).

Despite the limitations of self-report measures of precognition, some experimental evidence for precognition exists (see Rauscher & Targ, 2001). Theoretically, no accepted definition of space and time combines classical and quantum physics. However, there is experimental evidence from Bem (2011; 2016), and self-reported precognition suggests a cross-reference framework experience. Furthermore, humans experience a general flow of time in one direction (see Stapp, 2004). Therefore, the argument is that the flow of time is a cognitive illusion, and the true nature of time is how it is treated within quantum theory. For example, we perceive time to move faster as we age (James, 1886).

3.3 Consciousness as a field

The two previous sections discussed cross-reference experiences. In this section, we discuss evidence of consciousness as a field, as its relationship with quantum mechanics and parapsychology**.** One of the foundations of quantum mechanics is interference experiment that is suggestive of consciousness's influence on photons. In the experiment, a single electron is fired from a gun, it will go through one of the slits and form a pattern on a back screen. If the electron is observed, the pattern forms as predicted by a solid object. However, if the electron is not observed, it behaves like a wave pattern. The interference effect has been widely observed (see Eichmann et al., 1993). Research into individual differences in performance in the interference experiment has received mixed results (Radin et al., 2012; Wallezek & von Stillfried, 2019)

There have been other experimental studies in parapsychology that support the concept of consciousness as a field. Therefore, suggestive of quantum mechanics as the foundation of physical reality. Three areas have been tested within the paranormal literature to offer support to consciousness being a field that can influence its environment, which includes; (1) staring phenomena, i.e., you think someone is watching you, and then you turn around, and someone is looking at you, (2) influencing a person's attention and (3) poltergeist phenomena. All of these, if confirmed, can demonstrate evidence of a conscious field, sometimes known as PSI.

An estimated 70-97% believe they had an experience of sensing someone watching them and, when turning around, noticing someone looking at them (Sheldrake, 2001). A meta-analysis of laboratory experiments into staring demonstrated a statistically significant effect but with a small magnitude (Schmidt et al., 2004). Interestingly, whether the researchers were skeptics or believers influenced the results despite having the same protocol (Schlitz et al., 2006). Demonstrating statistical effects can rule out coincidences accounting for these experiences, but others have questioned the methodology behind PSI experiments (Alcock, 1991; 2003).

Variation to the staring experiments is researched to investigate whether a nonlocal person influences another person's attention. In a typical experiment, a sitter would be asked to

concentrate on a task while a helper in another location would try to support the sitter via thoughts. Most research find a small but statistically significant effect (Braud et al.,1995). Most experimental research on mental influence on the environment comes from Russia. An overview of Russian research by May & Vilenskaya (1992) reported that people's thoughts/fields could affect both animals, self-report effects, and physiological measures in humans.

The third type of real-world case of a human field affecting the surrounding environment are poltergeist cases. Traditional poltergeists can have many phenomena, including electromagnetic interferences, moving objects, and unexplained sounds. Thousands of poltergeist cases have been documented across time and cultures (Gauld & Cornell, 1979: Roll, 2004). There are two types of poltergeist phenomena: haunting locations and person-centered poltergeist phenomena. Our focus is on the person-centered poltergeist cases as it directly links a person's neurological and psychological profile and the phenomena.

In person-centered poltergeist activity cases, there are similarities in psychological and neurological profiles (Roll, 2003). The person at the center of the poltergeist has neurological abnormalities, including epilepsy (Persinger, 1985). Recent cases have strongly linked psychological and neurological profiles to poltergeist behavior and the role of counseling in reducing poltergeist activity (Kruth & Joines, 2016; Roll et al., 2012). Electromagnetic forces appear to have a role in poltergeist activity, but its function remains unclear (Kruth & Joines, 2016; Kokubo et al., 2004; Roll, 2003).

Two personal-centered poltergeist case examples have demonstrated that they could be treated to reduce the side effects of poltergeist activity (Kruth & Joines, 2016; Roll et al., 2012). In these cases, the person at the center of the phenomena wanted to stop and had some neurological issue. It is unknown why a particular profile causes poltergeist phenomena in one person but not another. However, the interaction between electromagnetic fields and the prominent person's neurological and psychological profiles is central to these cases. Conceptually, it seems an extension of the interference experiment.

These cases suggest that consciousness operates as a field outside the body. Evidence exists for electromagnetic fields (ultraweak photon emission) emitted from the living systems (see Dotta & Persinger, 2012; Schwabl & Klima, 2005). In addition, electromagnetic fields from a person can influence cells and are related to photon emissions (Dotta & Persinger, 2011; Karbowski et al., 2012; Persinger & Lavallee, 2010). Persinger et al. (2013) asked volunteers to imagine a white light or not in a dark room. When the participants imagined the white light, the person emitted photons and magnetic energy. This supported Hu and Wu's (2006) hypotheses of quantum spin consciousness theory (see Persinger et al., 2013).

Persinger et al. (2008) tested the role of magnetic fields and physiological response. Before the experiments began, four pairs of strangers met and remained within one meter of each other for one hour, twice per week, and for four weeks. After this period, participants were tested in a closed chamber and were exposed to 6 (five minutes) different complex magnetic fields. Participants were asked to imagine walking to and being near the other person. The researchers

found that the person monitored sensed the person who also received changes in magnetic fields and had significantly elevated scores for anger, sexual arousal, and emotional states.

Other follow-up research focused more on nonlocal communication in living cells. For example, Dotta et al. (2011) conducted two experiments. The first experiment had one set of aggregate cells occasionally receiving flashing lights while another group was placed in a dark room. The aggregate cells receiving flashing lights evoked photon emissions in cells in the darkroom, but only if both groups of cells shared the same magnetic field configuration.

Perhaps the most substantial research came from the former Soviet Union around mental interactions with the environment (Karnbach, 2013; May & Vilenskaya, 1992). For example, there are over 4,000 references on the biological effects of magnetic fields, with over 2000 around the nervous system (see Kernbach, 2013). In addition, in the Soviet Union in the 1970s, a commission to investigate psychic phenomena found sufficient evidence to conclude that the phenomenon existed (Kernbach, 2013).

There appears to be evidence supporting the consciousness field outside the human body. We present evidence from the interference experiment, self-report of staring, meta-analysis of laboratory experiments demonstrating small but significant effects, and person-centered poltergeist cases with individuals with similar neurological and psychological profiles. A speculative argument can be made that most individuals can influence photons, but as the objects increase in size, only people with similar neurological and psychological profiles can influence the objects.

3.4 Cross-reference framework communication

The final area of parapsychology we explore is nonlocal communication, particularly telepathy. The first systematic evidence for telepathy occurred in the 1930s (Rhine, 1934). A typical experiment would ask a sitter to guess what card will appear next. Out of 90,000 trials, they found significant effects that could not be explained by chance. Further observations showed that the longer the tests went on, performance declined in some people, fatigue, lack of sleep, and illness all affected performance, and significant variations across people who could produce the phenomenon consistently (Rhine, 1934).

The most extensive research program investigating telepathy was the Ganzfeld experiments, with over a hundred experiments. The design protocol would involve the sitter being asked to go into a mediative state and report what a sender was communicating in a different room. A meta-analysis by Bem and Honorton (1994) found a hit rate of 32% in forced-choice experiments compared to a chance level of 25%. Follow-up meta-analyses have found statistically significant results (Bem et al., 2001; Williams, 2011). However, telepathy is not without its critics (see Milton and Wiseman, 1999).

There are individual differences in performance on telepathy tasks, such as psychological profile or whether a person is known to the person (Goulding, et al., 2004; Watt, 2006). A meta-analysis of Ganzfeld studies between 1992 and 2008 found that selecting participants performed better

than non-selected participants (Storm et al., 2010). The individual differences reported suggest a real phenomenon rather than an experimental artifact.

Further development of telepathy protocols is the measuring of brain activity during telepathy. Some experiments have shown a physiological response in the receiver's brain during telepathy (see Kernbach, 2013; Standish, et al., 2003; Persinger, et al., 2003; Hinterberger, 2008). Demonstrating the physiological, biological effect, and quantum principles suggest consciousness operating across both systems.

There is some evidence for telepathy in everyday experiences, such as (1) predicting who calls had positive results (Sheldrake & Smart, 2003), (2) twins can have a telepathic link (Brusewitz et al., 2013), and (3) pets can read their owner's mind (Sheldrake & Smart; 1997). In addition, there is experimental evidence for telepathy in everyday life (see Sheldrake & Smart, 2000; Sheldrake & Smart, 2003; Sheldrake & Avraamides, 2009; Sheldrake et al., 2009). The research often shows a small but significant effect, but other researchers have failed to replicate everyday telepathy experiences (Schmidt et al., 2009).

There is a body of evidence to support the concept of telepathy. Research has demonstrated significant effects and categorized personal differences on performance in telepathy experiments. The impact of physiological measures and phenomena that biological/cognitive theories cannot account is suggestive of consciousness in a biological/quantum model. In the paranormal literature, numerous self-report and experimental procedures can only be explained if consciousness has elements of quantum mechanics influencing its behavior. Therefore, suggestive of further evidence of cross-reference framework experiences.

Alan Turing, in 1950 wrote, "These disturbing phenomena seem to deny all our usual scientific ideas. How we should like to discredit them! Unfortunately, the statistical evidence, at least for telepathy, is overwhelming. It is very difficult to rearrange one's ideas to fit these new facts in. Once one has accepted them, it does not seem a very big step to believe in ghosts and bogies. The idea that our bodies move simply according to physics' known laws, together with some others not yet discovered but somewhat similar, would be one of the first to go. This argument is to my mind quite a strong one. One can say in reply that many scientific theories seem to remain workable in practice, in spite of clashing with ESP; that in fact, one can get along very nicely if one forgets about it. This is rather cold comfort, and one fears that thinking is just the kind of phenomenon where ESP may be especially relevant." (Turing, 1950, p 450).

The question is, how should scientists and philosophers treat exceptional experiences? In this section, we presented evidence of the existence of cross-reference experiences. Treating evidence at face value supports cross reference framework and at least another type of perception of reality. At worse, the evidence presented questions the assumption that only one perception of reality should not be assumed.

4. Are classical models complete?

In this section, we examine three topics whether classical/biological theories can explain the brain. First, we can test whether classical physics models of the brain are adequate using proxy measuring to explain general anesthesia and mental health. General Anaesthesia is the most successful methodology for turning on and off consciousness awareness. Secondly, Mental Health is predominately a conscious experience, with poor mental health significantly impacting the person and with the extensive literature on treatments. Thirdly, is whether classical-based theories can explain consciousness. If current biological/cognitive models are sufficient to explain these three areas, it goes some way to suggest that the concept for biological/cognitive models of consciousness is correct. On the other hand, if there are gaps in these indicators might mean something is missing from the current approach to explaining the brain and mind.

4.1 The Mental Health Experience Problem

An underexplored area of consciousness theory is the role of mental states. Using the treatment for depression as a proxy indicator for treatments in mental health, we can explore the effectiveness of theories. A recent study researching the effectiveness of pharmacological and non-pharmacological treatments for mental illness ranged from 42% to 55% (see Dunlop et al., 2017). Also, treatments appear to be slightly more effective if combined rather than on their own (Arnow & Constantino, 2003). The type of therapy seems less important than the person engaged in an active therapeutic program (Khan et al., 2012). There is a lack of understanding of why some work for some and not others (see Cohen & DeRubeis, 2018; Khan et al., 2012).

A criticism of the drug treatments for mental health disorders is the drug lag problem, i.e., the abnormalities in chemicals in the brain are normal after a short period of time, but the user only reports improvement 2-3 weeks later (see Machado-Vieira et al., 2010; Wickens, 2000). Therefore, it is suggestive that drug treatments indirectly impact the mental state. Kirsch (2019) has argued that drug treatments are less effective than psychotherapy and result in more relapses. Many scholars have argued that a new theoretical approach to mental health is needed (see Machado-Vieira et al., 2010; Malinauskas & Malinauskiene, 2019; Schaumberg et al., 2017; Rocca et al., 2014; Tanner-Smith et al., 2013).

Perhaps one of the most interesting findings is that there is little difference between biological and cognitive therapies in mental health treatment rates. An argument that has existed since William James and was further developed by Sperry is that conscious thought can influence neurobiology (See Sperry, 1969; 1987 & 1991). In addition, evidence supports biofeedback and the placebo effect (Velmans, 2002). This can be seen in Cognitive Behavioral Therapy, which has the same impact as pharmacological treatments. Therefore, the assumption that consciousness is just a by-product of neurons does not fit with the evidence from mental health treatments, parapsychology, and cross reference framework.

4.2 General Anaesthesia

For over 150 years, general anesthesia has been at the center of the medical world, enabling life-enhancement interventions. The process involves giving a person some drugs, which would make the person unconscious, and then awakening a person by controlling chemicals induced into the brain. This is suggestive that the drugs involved can control a person's consciousness awareness.

It is estimated that 1-2 per 1,000 have awareness during general anesthesia, irrespective of the general anesthesia techniques (Sebel et al., 2004). As expected, common reactions to these experiences are a feeling of helplessness, terror, pain, and an inability to communicate, all of which can lead to post-traumatic stress disorder (Osterman et al., 2001). Unfortunately, no theory can explain why some individuals will have conscious awareness during the procedure. This small error rate raises two outcomes; (1) the approach is correct, but further work is needed for general anesthesia to reduce error rates, or (2) conceptually, there is a missing piece of the jigsaw regarding theories of consciousness.

At the start of the 20th Century, Meyer and Overton correlated the potency of general anesthesia drugs with solubility in a non-polar hydrophobic medium similar to olive oil (see Craddock et al., 2015: Franks & Leib, 1990). However, a problem existed for the lipid hypotheses that the potency and lipid solubility is correct for specific compounds, but there are exceptions to the rule (see Krasowski, 2003). Furthermore, other researchers found that proteins mapped onto anesthetic target sites in animals better than Lipids (Franks & Leib, 1990).

Despite the effectiveness of general anesthesia in its application, it is unclear how different drugs create the aesthetic state (See Craddock et al., 2015). Many chemicals are involved in many different types, and there is no requirement for specific chemical groupings (Franks & Leib, 1990). Modern-day general anesthesia uses various drugs to create an aesthetic state (Brown et al., 2018).

One of the latest theories of general anesthesia is the involvement of quantum mobility theory. It suggests that consciousness is derived from quantum channels, which involve microtubules, which we discuss more in quantum theory (see Craddock et al., 2015). In addition, Emerson et al. (2013) research with tadpoles indicates the role of microtubules in general anesthetics. The theory suggests that actions inhibit quantum dipoles, energy transfer, and electron mobility, producing an aesthetic state.

In a study of Xenon, isotopes on consciousness awareness without nuclear spin are less potent than those with nuclear spin (Li et al., 2018). The authors conclude that nuclear spins are a quantum property, therefore, are consistent with theories that implicate quantum mechanics in consciousness (Li et al., 2018). However, it is to be determined whether quantum mechanics will provide a better theoretical understanding and better treatments in the future.

Anesthesia is an accepted medical intervention, but a complete theory is still allusive due to; (1) theories of general anesthetic being driven by explaining how drugs work rather than being

driven by an accepted theory, (2) many chemicals can produce the same loss of conscious awareness, which is suggestive chemicals only indirectly affects consciousness, and (3) it is estimated that 1-2 per 1,000 a person has conscious awareness during general anesthesia drugs, but there is no theory to understand why these people become consciously aware. Nevertheless, the research is suggestive of a gap in classical theories.

4.3 Biological/ Cognitive theories of consciousness

In this section, we explore biological and cognitive theories of consciousness. Perhaps one of the most important questions is why humans evolved consciousness. The first theory we explore is based on Darwin's theory of evolution (Darwin, 1871). The Neural Darwinism theory (NDT) is a theoretical framework to connect biology and psychology within evolutionary mechanisms. NDT implies that selection, reproduction, and mutation generate organisms' adaptive behavior (McDowell, 2009). Central to NDT is the brain is an organism that can adapt to its environment. It is often debated whether adapting to the environment is random or non-random (see Cairns & Foster, 1991; Hall, 1990; McFadden & Al-Khalili, 1999). If non-random is suggestive of more a field theory of the environment.

NDT suggests that the brain did not evolve as a set of instructions but from a selection process upon variation. The world becomes labeled as two interactive variations (see Edelman, 1993). The first is at the embryonic and postnatal stages of neural groups. Secondly, alternations in synaptic strengths during animal activity yields adaptive behavior. According to some NDT supporters, the variation within the brain structure would exceed a machine that could perform to produce the same function (Edelman, 1993).

Seth and Barrs (2005) evaluated the NDT across 16 recognized findings of consciousness research. The NDT could account for 6 out of 16, moderately for 6 out of 16, and needs development in four areas (Seth & Barrs, 2005). Despite not being a complete model of consciousness, it does provide helpful information that a complete theory needs to include; (1) why the brain and consciousness evolved to produce what we have today and (2) the variation within the brain structure may exceed machine performance, then the computer/ machine analogy would be incorrect.

A successful approach to consciousness research is the neurological correlates of consciousness (NCC). This framework has successfully established the relationship between neural activity, brain zones, and consciousness (see Tsuchiya et al., 2015). One of the most consistent findings with consciousness research is the accuracy of the relationship between the state of consciousness and EEG recordings. During awake consciousness, it is a higher state. Furthermore, the EEG patterns can distinguish between awake and non-awake consciousness (see Niedermeyer, 1999). In addition, there is a slow wave high amplitude pattern in states such as deep sleep and general anesthesia (Baars et al., 2003). Therefore, providing reliable evidence of an interaction between the brain and consciousness.

The second consistent findings in NCC are the association between consciousness within the brain structure. Baars (2005) suggests that the frontoparietal could have a relationship with

consciousness based on three results; (1) in the awakened state, Conscious stimulation leads to frontoparietal activation, but unconsciousness doesn't, (2) in an unconscious state, sensory stimulation is associated in the sensory cortex, but not frontoparietal regions, and (3) consciousness resting states show high frontoparietal metabolism. It is suggested that neural correlates of consciousness are primarily localized to a posterior cortical hot zone (Koch et al., 2016).

The underlying mechanics of EEG measurements do not rule out quantum mechanics. An analysis of EEG signals using the Hilbert transforms provided evidence of intermittent spatial patterns of amplitude and phase modulations of carrier waves that repeatedly resynchronize at near-zero time lags over long distances (Freeman & Vitiello 2008). If neural interactions are by axodendritic synaptic transmission should impose a distance-dependent delay on EEG oscillations, but it does not (Freeman & Vitiello 2008).

The rise of the neurological correlates of consciousness approach leads to the development of the thalamocortical system theory of consciousness (Baev et al., 2002; Ching et al., 2010; Llinä et al., 1998; Ward, 2011). The theory suggests that the thalamus is the central hub in the cortex that can communicate with one another (Llinä et al., 1998). It is also linked to alpha waves related to the unconscious state (Ching et al., 2010). This brings together the observations about brain wave patterns to the structures within the brain, which might be fundamental in a complete model of consciousness.

Other theories, such as Global Workspace Theory (GWT), describe neurons' architecture and the brain's structure in explaining consciousness (Baars, 2005). GWT predicts various mainstream cognitive and neurological areas based on associations between consciousness and brain functions. For example, Shanahan (2006) developed an architecture to control a simulated robot based on information flow from GWT. At the heart of distinguishing between NDT and GWT is that cognitive architecture can describe consciousness accurately.

Another theory of consciousness is the Adaptive Resonance Theory (ART). ART is a cognitive/ neural theoretical approach to describe how the brain categorizes, recognizes, and predicts objects (Grossberg, 2013). ART has been developed over the last 20-30 years to predict human and animal perception and cognition (Grossberg, 2013). It has similarities with NDT in that the brain is adapting to the environment but built upon the NCC approach. However, at its foundation is the assumption that biology and algorithms can explain conscious experiences.

The electromagnetic field theory proposes that conscious experiences are identical to specific electromagnetic frequencies generated by neural activity in the brain without quantum mechanics (Pockett, 2012). The correlation between consciousness experience and monitoring of brain activity with EEGs supports it. In addition, there are often correlations between awareness and magnetic fields generated by the brain (McFadden, 2002). This consciousness theory suggests that certain fields can distinguish between conscious and non-conscious magnetic fields (Pockett, 2012).

One of the problems for biological/cognitive theories of consciousness is explaining the discrepancy between the quality of input from the environment and the richness of consciousness experience (see O'Regan & Noe 2001). The sensorimotor adaptation theory suggests visual filling-in occurs within the brain (see Degenaar & O'Regan, 2015; O'Regan & Noe, 2001). There is strong evidence for this 'filling in' based on evidence of illusory visual contours (see Eysenck & Keane, 2000). Therefore, implying that there is a discrepancy between perception and the representation of the environment. Any theory needs to account for the quality and stability of consciousness despite insufficient quality information and selective experiences, i.e., you do not notice yourself blinking until someone points this out.

One of the difficulties generated is the problem of the poor environment input and a consistently rich conscious experience. In order to address the problem. The Higher-Order Thought Theory (HOT) suggests two levels of processes within the brain. The first-order states view consciousness as determined by the environmental input. The HOT theory is suggestive that this is not enough to produce conscious awareness, and a higher order of process is needed (Lau & Rosenthal, 2011). LeDoux and Brown (2011) have argued that HOT can be applied to emotional states. At the core of the hypotheses is that cognitive/biological associations with consciousness can explain consciousness.

Another alternative suggesting extra processing within the brain to produce consciousness is the recurrent processing theory (RPT). In RPT, the unconsciousness functions of feature extraction and categorizations are mediated by feedforward sweep, while conscious processes related to perceptual organizations are meditated by recurrent feedback (see Lamme, 2020).
Several experiments have tested the recurrent processing theory. For example, Auksztulewicz et al. (2012) used somatosensory detection tasks that monitored the brain. In this section, we argued that classical models of consciousnesses, mental health, and general anesthesia are incomplete. In the next section, we explore whether quantum mechanics offers any solution.

5. The case for quantum mechanics within the brain

So far, we have made a case for classical models being incomplete and an evidence base for cross-reference frameworks. In this section, we make a positive case for quantum mechanics supporting the central thesis of quantum mechanics influencing the brain. We know that classical mechanics fails at the atomic level and is superseded by quantum mechanics (see Stapp, 2004). The argument is that thoughts, mental health, and consciousness cannot be perceived from a materialistic perspective, so quantum mechanics should be explored (see Schwartz et al., 2005, Stapp, 1999; Walker, 1970). This naturally leads to the logical argument that, if they exist, it would be at the quantum level. At the simplest level, we know consciousness exists, and if it operates below the atomic level, there is an argument that quantum mechanics should govern the rules of its behavior (see Stapp, 1999, 2004).

Quantum mechanics fundamentally differs from our perceptions of the world and classical theories. Thus, making quantum mechanics counterintuitive. One is the treatment of spacetime. In quantum mechanics, there is the concept of nonlocality. This is demonstrated by

entanglement, where one system can influence another but at a distance (Gühne & Tóth, 2009; Horodecki et al., 2009). Classical theory assumes that spacetime is fundamental, but quantum theory does not (Hiley, 2001). Therefore, we should not assume that our perception equals an actual reality. It could equally be quantum mechanics as the true nature of reality, which is supported by a cross-reference framework.

Due to the nature of quantum mechanics, not being intuitive has led to many interpretations. The most accepted interpretation is Copenhagen, which Bohr and Heisenberg developed. Other interpretations include the many worlds theory (Everett (1957), Bohm's Implicit Order (Bohm, 1990), and Transactional interpretations (see Crammer, 1986; 1988). This paper does not seek to solve the debate but to make readers of non-quantum mechanics background that the nature of quantum mechanics has different interpretations.

Therefore, it is unsurprising that quantum mechanics has been proposed as the most likely scientific explanation to explain parapsychology. The Generalised Quantum Theory (GQT) suggests relaxing some definitions and restrictions can keep core elements of quantum theory while applying it to other systems (see Walach & Schmidt,2005; Walach et al., 2016; Walach et al., 2014; Walach & von Stillfried, 2011). Its basis is that a Weak Quantum Theory could apply quantum mechanics less restrictedly but with equal precision (see Atmanspacher et al., 2002). Furthermore, the evidence of cross-reference framework experiences suggests that physical nature is quantum in nature.

5.1 Evidence for quantum mechanics in biological systems

Despite the range of interpretations of quantum mechanics, there is emerging evidence of quantum mechanics in biological systems. In the early 21st Century, a new division of research around quantum biology emerged (see Al-Khalili & McFadden 2014). Evidence has been found of quantum mechanics having a meaningful effect on photosynthesis (see Sarovar et al., 2010; Scholak et al., 2011; Panitchayangkoon et al., 2011; Zhu et al., 2011). Also, quantum mechanics have been demonstrated in migratory birds (see Hogben, et al., 2012, Hiscock et al., 2012; Gauger et al., 2011). There is increasing evidence of quantum mechanics in animals and plants (Craddock et al., 2014). A growing body of evidence suggests quantum states operate in the biological temperature range (Mavromatos, et al., 2002; Sahu et al., 2013).

In a review, Brookes (2017) highlighted four living processes that might be considered quantum: a reaction mechanism, a sensory signal, a transfer of energy, and an information encoding. The review highlights the potential that a protein motion may support coherent oscillations (Brookes, 2017). In addition, the quantum mechanics effects observed range from tunneling, quantum coherent superpositions, and entanglement (Brookes, 20017).

5.2 Theories of quantum mechanics within the brain

One of the great difficulties of classical models of the brain is a failure to match our experience to the neurological functions (Cohen & Dennett, 2011; Noë & Thompson, 2004; Vitiello, 2015).

Numerous arguments suggest that classical approaches to the brain/consciousness are incomplete and quantum mechanics are needed (see Beck & Eccles, 1992; Penrose, 1995; Stapp, 1995).

One of the first proposed quantum coherence in biological systems was Fröhlich's (1968) and (1970). The papers demonstrate that under appropriate conditions, a concept similar to Bose-Einstein condensate involves communicating between cells at a distance. The role of quantum coherence would involve bringing all neural activity so that the brain acts like one. The Bose-Einstein condensate is the fifth state alongside solids, liquids, gasses, and plasma. However, in the Bose-Einstein Condensate, particles will act like one close to absolute zero temperature. Therefore, if these states exist in nature, they must demonstrate that they can operate in the biological temperature range.

Arguments have been made that the Bose-Einstein condensate is involved in the learning and memory process. Ricciardi & Umezawa (1967) suggest that information from outside is coded within the brain, and since the requirement for memory stability, the code should be later transferred to the group state of the system. The suggestion is that this is achieved via condensation to the ground state (Ricciardi & Umezawa, 1967). The function of this state is to regulate brain dynamics. (Ricciardi & Umezawa, 1967).

One of the proposed Quantum mechanics that influences brain functions is quantum tunneling. It is argued that neither chemical, electric, nor magnetic fields are too weak to trigger collective neuronal activity (Freeman & Vitiello, 2008). A theory of operation of synapses of the brain is proposed that involves quantum mechanical tunneling at the synaptic cleft (Walker, 1970). An argument put forward of quantum tunneling in the process of exocytosis (Beck and Eccles, 1992). The Quantum model of the brain can account for neuronal synchronized oscillations and their rapid sequencing (Freeman & Vitiello, 2008).

Another theory that is attracting attention is the quantum spin theory of consciousness. The model proposes quantum entanglement in which spin processes in non-spatial and non-temporal pre-spacetime imply interconnectedness and play an important role in biology and consciousness (Hu & Wu, 2006). Centered in the theory of quantum processes is phosphorus, which serves as a qubit during quantum entanglement (Fisher, 2015). Perhaps the biggest debate of quantum mechanics is whether entanglement can happen at higher temperatures (Hartmann, Dür, & Briegel, 2006).

The question of mind/matter remains a fundamental question that remains unanswered. However, if quantum mechanics is the underlying process, then neuroactivity could be the outward material manifestation (Atmanspacher, 2012; Atmanspacher & Fach, 2013; Hiley, 2001). Alternatively, there is the dualism argument that the mind/matter are separate systems interacting (Atmanspacher, 2012; Primas, 2003). There are many interpretations of dualism, including neural monism, holistic dualism by Pauli & Jung, Russell's neutral monism, Bohm's implicate order, and naturalistic dualism (see Atmaspacher, 2014).

One of the most debated theories of consciousness is The ORCH theory of consciousness (Hameroff, 1994; Hameroff & Penrose, 2003; Hameroff & Penrose, 2014). ORCH theory that

consciousness depends upon the biologically orchestrated coherent quantum process in microtubules. Consciousness occurs in the objective reduction of the quantum state (Hameroff & Penrose, 2014). Central to ORCH theory describes the physical nature of Einstein's general theory of relativity and the fundamental theory of matter by quantum theory (Hameroff & Penrose, 2003).

ORCH suggests conscious experience occurs due to the self-collapse of the wave function based on quantum states having their own spacetime geometries (Hameroff & Penrose, 2003; Penrose, 1996). Hameroff (2014) describes ORCH theory as regulating neuronal membrane and synaptic activity and connecting brain processes to fundamental spacetime geometry. In addition, there is an element of microtubule decoherence interacting with neurophysiology (Hagan et al., 2002).

Central to brain function is the receiving information from the environment to form a plan of action to respond to the environment (Schwartz et al., 2005). The basis of quantum theory is information (Stapp, 1999). The integrated information theory starts with personal experience and is central to the theory (Tononi & Koch 2015). It begins with essential priorities of an experience from which it derives physical properties rather than the brain (Tononi et al., 2016). It starts from the experience with five phenomenological axioms; (1) intrinsic existence, (2) composition, (3) information, (4) integration, and (5) exclusion. However, like most theories, it does not explore consciousness operating outside of the traditional view of science.

The newly emerging theory that consciousness is quantum in nature still has three major technical problems (Stapp, 2004). The first quantum theory is primarily a theory of atomic processes, whereas consciousness is connected with brain activity. The second problem is that quantum mechanics is the study of atomic processes and is not designed to describe a biological system. Finally, the orthodox Copenhagen interpretation of quantum theory for a set of rules for calculating expectations and not a description or picture of reality (Stapp, 2004). The challenge for dual aspects remains how consciousness, mind, and phenomenal experience are related to the brain and physical world (see Atmaspacher, 2014). Perhaps the biggest challenge for quantum theory is to provide evidence of how it arises or functions (Chalmers, 1995).

5.3 Quantum Mechanics in Human Cognition.

It is argued that quantum theories such as quantum probability, entanglement, and nonlocality better describe human cognition than classical theories (Pylkkänen, 2015). These include decision-making, ambiguous perception, probability judgments, order effects, and memory (Pylkkänen, 2015). There are two distinct differences between classical and quantum mechanics principles. Complementarity (some psychological measures are sequential and are influential by order) and superposition (some psychological states cannot be measured with definitive values, but all values have the potential to be expressed (Busemeyer et al., 2015).

One of the main differences between classic and quantum cognitions is in probability judgments. In classical theories, a person is in a solid state and assigns a probability to a particular judgment and cognition at that time. In contrast, the quantum account allows a person to be in an indefinite state called a superposition state at each moment (Wang et al., 2013). As a

result, human probability judgments often conflict with classical logical theory P (A&B) and cannot exceed the probability of its constituents. Often in research, this is found in personality judgment, medical prognosis, and political forecasting (see Tversky & Kahneman, 1983). However, the quantum theory fits better with research into probability judgment (Pothos & Busemeyer, 2013; Khrennikov, 2015, Tversky & Kahneman, 1983; Wang et al., 2013).

In addition to human probability judgment, quantum principles have been applied to explain order effects (Atmanspacher & Römer, 2012). It is argued that how the information presented affects the probability judgment is a type of interference experiment (see Busemeyer, et al., 2009). Also, human perception and cognition of ambiguous figures follow quantum rather than classical rules (see Conte et al. 2009). "The presence of quantum-like interference indicates that quantum mechanics has a role in the dynamics of mental state" page 99 (Conte et al., 2009).

The two-stage gambling game and the Prisoner's dilemma game demonstrated quantum probability over classical theories and provided a better framework for modeling human decision-making (Pothos & Busemeyer, 2009). In addition, bistable perception has been suggested to be quantum in nature, producing the quantum Zeno effect (Atmanspacher et al., 2008; Atmanspacher et al., 2004). Finally, there is evidence for quantum effects in human cognition, such as contextuality, interference, entanglement, and emergence (see Aerts et al., 2013).

The functioning of the whole brain appears not to be significantly affected by the functioning of the single neuron (Vitiello, 1995). This further supports the Libet (1983) experiment that the physiological and actual experience of "now" are separate. In addition, this can be applied to general observations about the human experience. For example, when talking to older adults, They often say that they feel like I am 21, but their body feels old. Therefore, we could speculate that consciousness experience is timeliness that is often out of step with the body's condition. Nevertheless, we are talking about the discrepancy between our experience and reality. Enough evidence suggests that neuropsychological research into brain mechanics is incomplete (see Schwartz, et al., 2005).

6. Conclusions

At the heart of this paper is the profound question of whether how we perceive the world is an illusion or an actual reality of nature. We have argued that how we sense the world can be viewed by our everyday experience, on which classical theories are based. In addition, we have argued that cross-reference experiences provide an alternative awareness of physical reality based on the quantum world. A key question for science is how to treat evidence from cross-reference experiences. If we dismiss these experiences, there is a real risk of never understanding the nature of reality or consciousness. Using a reference framework, allows scientists can explore these questions by rejecting or accepting cross-reference experiences.

We have argued a positive case for quantum mechanics influencing the brain. In addition, we created an opposing argument that materialism/classic physics cannot fully explain the brain with

topics for general anesthesia and mental health. Therefore, we argue that parapsychology experiences are a manifestation of physical reality and consciousness being quantum in nature. Although, it should be stressed that it is a framework rather than having an exact theory of the mechanics behind the phenomena. At its heart, cross reference framework experiences, if proven, suggest the physical nature being quantum.

Speculating on the nature of cross-reference framework experiences such as remote viewing and NDE, we can suggest that spacetime is also a field that is not fundamental. These experiences should not be seen as sitting outside of science but can be used to understand the brain's nature further. Cross-reference framework experiences suggest consciousness moving outside of the perception of spacetime into another field in which quantum mechanics can be used as a framework for understanding the experience. Therefore, suggesting the classical view of spacetime is just a representation of consciousness experience and not an accurate fundamental representation of reality, which is quantum in nature. It is not the first time this has been proposed, such as quantum hologram (Michell. 1999). Naturally, consciousness fits into quantum in nature because it does not fit into the traditional four states of matter, and there is evidence of quantum mechanics influencing biological processes.

Implications for accepting Quantum Mechanics in Psychology

The acceptance of quantum mechanics within consciousness will have implications for models of the mind and psychology. Despite a large body of evidence in psychology and neuroscience, how the brain works remains primarily unresolved (Allefeld et al., 2009). McDowell (2009) has argued, "Psychology, encouraged in modern times at least in part by the Kuhnian misprision of revolution in science, has lurched from paradigm to paradigm in search of solid footing, but each foothold has proved disappointingly precarious." (McDowell, 2009, p 365). Theories of both biological/cognitive do not necessarily describe what is happening within the brain but only build upon a description of the classical physics research paradigm.

A new theoretical psychology framework might be able to explain observations, such as the drug lag problem, a complete theory of general anesthesia, a new perspective of interpreting the so-called paranormal phenomena, and a theory of why combined treatments for mental health work better rather than a single framework. In addition, it will provide a theoretical basis for why some spiritualist practice forms a basis for preventative mental health such as mediation and mindfulness.

If proven correct of cross-reference framework experiences and quantum mechanics within the brain, the principles outlined in this essay will create a new psychology paradigm. First, it would suggest that no abstract concepts exist in psychology models, and everything would have a classical or quantum physics explanation. Second, it would explain why cognitive experiences are an illusion, a model to explain nearly all paranormal phenomena and explanations for mental health treatments are similar despite being completely different, i.e., they all indirectly affect the quantum mental state. Third, it would explain the observation that older adults feel the same as they were 21, despite the biological aging process.

The case is made that any theory of consciousness needs to include biological and quantum levels. Cognitive and neuroscience have shaped most biological theories without exploring potential evidence for quantum principles. If accepted, the consciousness experience may follow quantum mechanics rather than classical logic. However, a range of research rarely cited in cognitive/biological models supports the role of quantum mechanics principles in consciousness research.

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