

# **Self and Consciousness: Mind and Matter**

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## **ABSTRACT**

A scientific relationship between self and consciousness: mind and matter is still not clearly known in science because of lack of concrete human data that would enable us to objectively explain it. Findings and discoveries in quantum physics are reviewed in this study on the relationship between self and consciousness: mind and matter. On the basis of the above review and the author's personal experiences of valid and undeniable precognitive dreams that strongly suggest the inner self's potential power transcending the time phases of the past, present and future and the existence of timeless and non-local consciousness world of reality, the author proposed a theory of "ultron"- "logotron" that would possibly explain the relationship between self and consciousness: mind and matter.

Keywords: Self; Consciousness; Mind; Quantum Physics; Entanglement; Confucianism; JeongYeok; Precognitive Dream; Probacent Model.

## 1. INTRODUCTION

A scientific relationship between self and consciousness: mind and matter is still not clearly known in science because of lack of concrete human data that would enable us to objectively explain it (Penrose 2007; Penrose,Hameroff&Kak 2011; Hawking 2001; Bohm 2006; Laszlo 2008; Gusnard 2007).Consequently, scientists have been investigating to find objective proofsrelated to their relationship.

The self is the agent being the source of consciousness, and responsible for the thoughts of mind and actions of body of an individual, enduring through time.

### 1. 1. The Science of Self, Mind and Body

The author had unusual personal experiences that difficult mathematical problems were not solved in his manifest consciousness but could be unexpectedly clearly solved in his subconscious mind(Chung 2009). The author published the solution of the math problem in the International Journal of Biomedical Computing (Chung 1995). The math problem was regarding a general "probacent"-probability equation that expresses a relationship among intensity of stimulus, duration of exposure and occurrence of response in biological phenomena (Chung1960;2013).

The author proposed a theory that there are in human individuals two selves, one, the inner self (the true self, spirit) and one, the physical self (the false self) that coexist in one individual person (Chung 2009;2012). Kelly McGonigal (2012) describes that one individual has two minds or two selves, naming "I WILL" and "I WANT" selves.

More recent researches in neuroscience using functional magnetic resonance imaging (fMRI) discovered that the prefrontal cortex (PFC) of the human brain performs cognitive control, emotion regulation, moral self-control, control of impulsive behavior and guiding brain activities with future goals and rules(Miller and Cohen 2001; Greene et al. 2001; Ochsner et al.2002).

The author (Chung 2012) published a theory regarding the scientific relationship among self, mind and body based on the above described findings that a human individual, the self is composed of the inner true self (spirit) and the physical false self that would fade and disappear at death of the body. The inner self has free will, will power, cognition, reason,

morality, creative power, mathematical computation, future plan and high goals, behavior control, emotion regulation, and memory retrieval, supervising the physical self/body that senses through sensory organ systems and responds to the external world. The inner true self is the independent and indestructible spirit in an individual. The physical self is dependent upon and associated with the brain and body, and is impulsive, behaving for pleasure-desire and instinct for living. The inner self controls the physical self/body by interacting with the prefrontal cortex of human brain.

Scientific relationships and interactions between self and consciousness: mind and matter in the neurons of the prefrontal cortex are not clearly understood (Penrose 2007; Penrose, Hameroff and Kak 2011; Penrose & Hameroff 2011; Gusnard 2007; Bohm 2006).

### **1. 2. Quantum Physics**

All physical processes in the physical world are based on particles and forces (Hawking 1996). All particles are in fact waves (Hawking 1996, ;2001).

A wave-particle duality of electron proved by Thomas Young and Richard Feynman's double-slit experiments has not been explained (Aczel 2003; Nichol 2006). According to David Bohm (2006), this phenomenon suggests that an electron seems to have consciousness, interacting with the environmental background field of space. This is a transformation for a wave to a particle, and vice versa like an organism than interacting parts of an inanimate machine (Nichol 2006).

Matter, energy and mind are different aspects of the unknown, unbroken flowing movement of totality, the wholeness. Consciousness may be the essential nature of the universe and a more subtle form than matter of the universe (Bohm 2006). The totality, the wholeness is nonlocal and timeless. Contents of consciousness are called by Bohm "information". The author names "information" "logotron", 言子 in this study (Greek: logos).

### **1. 3. Valid Precognitive Dreams of the Author**

The author had unusual but valid precognitive dreams during the World War II and the Korean War that saved not only the author but also other people (Chung 2009; 2012). The author's personal experiences could have important scientific and philosophical implications.

### 1. 3. 1. A Precognitive Dream in Prison during the World War II

In 1944 during the World War II, Korea was under the suppressive colonial Japanese government when I was a medical student. I joined an underground organization, the Hyeopdong Party for Korea's independence movement. The movement was detected by the police in December 1944. I was imprisoned after interrogation and inhumane torture in the Seodaemun Prison in Seoul in January 1945.

There was a typhus epidemic, infecting many prisoners. I heard that quite a number of patients died of typhus. I was one of the patients and placed in an isolation room without any treatment. I suffered high fever, headache, loss of hearing and vague consciousness. I eventually recovered from typhus fever and was transferred to a general prison cell.

One night in June 1945, I had an unusual dream. An old man wearing a gray Korean coat suddenly appeared in front of me. I fell to the ground face down and asked him, "When shall I be released from prison?"

He answered instantly, "**The date is the thirty first**". Then, the old man disappeared, and at the same time I woke up from the dream. I believed that I had experienced a precognitive dream of a revelation from heaven. I began to wait for the thirty-first day of next month July.

I whispered my dream to my Korean roommate who was a member of the Hyeopdong Party. After this event, days passed, and there was no special events or news with regard to my legal case. Eventually the thirty-first day of July came. I was suddenly ordered to appear in the court. I met the Japanese prosecutor, Ei Kurokawa, who handled the Hyeopdong Party case.

He said to me, "For the last month, when I came home after finishing my daily work, your name suddenly came across my mind. I have kept thinking of you. I have been led to reconsider your case of the independence movement. I do not understand why I kept thinking about you every evening." He continued, "I have made up my mind today. There have been no cases in the past in which the accused detainees involved in any underground independence movement with suspected offenses against the security laws like you students who joined the student organization of the independence movement, were all released. I have taken legal action so that all the other students except you have already been released from prison on probation. I had intended that only you among the students involved in the illegal independence movement should be continuously incarcerated and prosecuted in the upcoming trial."

He said, "However, although there have been no similar cases in the history of the prosecutor's office, I have made up my mind today, after one month of unusually difficult deliberation. I'm going to release you from prison today."

It was incredible that I was actually released from the Seodemun Prison the night of July 31, 1945.

Was it a coincidence? It was an experience beyond my comprehension. Since then, I have come to absolutely believe that the dream in June 1945 was a revelation from heaven. Two weeks later on August 15, 1945, Korea was liberated from the thirty-five-years Japanese colonial rule forever, following Japanese surrender to the Allied Forces (Chung 2009).

### **1. 3. 2. Precognitive Dream in North Korea during the Korean War**

#### **1. 3. 2. 1. Outbreak of the Korean War**

On June 25, 1950, the Republic of Korea (ROK) was suddenly invaded by North Korean enemy forces. ROK forces and the government were forced to retreat south by the advancing, ruthless North Korean forces (Gruenberg 1959). Many Seoul citizens lost opportunities to flee Seoul. After the UN Security Council unanimously passed a resolution to denounce the lawless aggression of North Korea and to provide military aid to South Korea, the US-led United Nations forces came to South Korea to block the advance of the North Korean forces and to save the Republic of Korea.

#### **1. 3. 2. 2. Forced Transportation to the North and Experiences in the Early Part of the Korean War in North Korea**

I lost a good chance to take refuge to the south. I was one of hundreds of South Korean physicians forcefully transported from South Korea to North Korea. My group of six South Korean physicians was sent to Hamhung, North Korea and ordered to treat patients at the Hamhung Provincial Hospital.

Air raids involving machine-gun strafing by US fighter planes and by scores of US B-29 bombers were daily getting severe. Each time siren signals of air raid ceased, hospital relief teams were dispatched to the bombed areas to rescue wounded civilians.

### **1. 3. 2. 3. Revelation in a Dream, Escape from North Korea, and Return to South Korea**

One night in September 1950, I had an unusual dream. I saw a wall calendar with a black printed number of the date in the middle of white paper. The number was a crystal-clear **13**. That seemed to indicate that the date of the coming thirteenth day of October would be an especially important and critical day. The calendar disappeared, and I saw a night scene. In the darkness of night, I was walking in one direction with other people in a line.

I looked around both sides of the road. There was a flowing river on the left side, and a mountain on the right side. While walking, I told a nearby nurse, "If we pass the thirteenth day tonight, we will survive and have good days ahead. Let's be patient. We have hope".

The nurse who walked beside me appeared glad to hear me say it. After talking to the nurse, I woke up. I felt that the thirteenth day would be the coming October 13. I awaited especially the thirteenth day of the next month, October. I believed that if I pass October 13 without any difficult events, I would have good days thereafter. Next morning I actually told my dream to my South Korean physician colleagues.

The great historical battle at Inchon Harbor involving landing by UN and South Korean forces on September 15, 1950, recapture of the capital, Seoul, crossing the 38<sup>th</sup> parallel on October 9, and the northward advance of UN and South Korean forces, totally changed the situation of the war in the Korean peninsula (Gruenberg 1959).

One day a North Korean nurse confided me that she was listening to South Korean radio news secretly every night. She said, "According to the radio news, UN and ROK forces have advanced to Wonsan. They will be near Hamhung in a few days." What she said was startling news to me. The day she confided this to me was probably October 11, 1950. The community was lacquer-black dark with the complete control of lighting at night. I opened a window of the classroom (in daytime it was used as an outpatient clinic) to see the night scene of nature outside. I could see black-looking mountains under the starlit sky. As I recognized daily changes in situation on the battlefield on the basis of the secret information, I began to feel strongly a strange wonder and joy because my dream appeared to be becoming a reality in terms of the date and the war situation. The thought crossed my mind that we might see a true phase of the universe that would transcend the specific time phases of the past, present and future when the great mind behind the far, dark-appearing mountains of nature would fuse into one mind with the little, clear minds residing within our human small bodies. On the

night of October 12, I opened the window of the classroom as before. I saw the dark night scene of nature outside. I felt especially that night a very close and dear feeling for the far, black mountains. I realized that the special dream was transforming into a reality. I felt my heart beating strongly. Immeasurable joy mixed with wonder was springing in my bosom. I began to believe strongly in heaven's grace and help.

The next day was finally October 13, the day I had been waiting for. An unexpected event took place. The entire staff of the Hamhung Provincial Hospital gathered at the hospital campus that evening to prepare to retreat north, following the order of the communist agent. Scores of North and South Korean doctors, nurses and non-medical staff members then started to retreat north on foot in a formation of lines, leaving the hospital and Hamhung City in the darkness of night.

I got out of Hamhung City for the first time. All of the hospital personnel were walking in lines on a dark road leading north. I looked around at the surrounding natural scene while I walked. The Sungchun River was on my left side, and mountains were on my right side. It was an amazing event. The night scene and the date exactly matched the landscape and the number thirteen on the wall calendar in my dream a few weeks earlier. The coincidence of the dream and the reality was unbelievably extraordinary, and it convinced me that the special dream was a precognitive dream and a revelation from heaven.

I spoke to a nurse who was walking beside me, as I had done in my dream, I said, "Hello. If we pass the thirteenth day tonight, we will be free. Let's be patient. We will have good days from tomorrow." The nurse was glad to hear me say it. I did not tell her about my dream. I just talked similarly in reality as I had done in my dream. I felt inexpressible joy and hope while I was walking.

We reached the playground of an elementary school in a village in the north around midnight, after walking scores of miles. We were told to take a temporary rest there. At that time we six South Korean physicians determined to take advantage of this opportunity to flee toward the south. We promised that each person would go back to Hamhung and gather at Dr. MyungHak Kim's hospital in the city. We left separately in groups of two. My partner and I began to walk toward the south along ridges between rice fields in the dark night. We had to avoid any villages. We found another group of two South Korean physicians. They joined us, and we continued our forced march. The sun rose in the morning. We were able to pass

uneventfully a police branch office in a village. We encountered apparent refugees heading south. Getting close to them, they turned out to be two South Korean physicians, one North Korean physician, several North Korean nurses of the Hamhung Provincial Hospital, and one North Korean army officer wearing hospital inpatient clothes who was a patient at the same hospital. They joined us, making a total of eleven or twelve people. We all continued to walk south. Littering both sides of the road were numerous dead bodies of North Korean soldiers and civilians killed in the war. The scene of carnage was terrible on October 14, 1950.

Countless retreating North Korean foot soldiers in formation, straggling soldiers, and civilian refugees were on the road, heading north. Among the crowd of people, ours was the only one group — making its way to the south, in the opposite direction.

We saw North Korean troops stationed at a location far ahead of us. A guard with a bayonet-fixed rifle was standing on the road in front of the troops. The area that we had to pass looked fierce and brutal. We moved toward the last front line of the Korean War that our group had to pass through.

I asked my senior physician to go in front of our group. He declined and advised me to go ahead of us. No one wanted to go in front, leading us.

I thought to myself about this difficult situation. When I recalled the special dream of revelation that I had dreamed in the previous month, and the fact that I had acted in reality similarly to my actions in the dream, joy, faith, and courage spontaneously arose and filled my heart. I would not die here because heaven was helping me. There would surely be some job that I would be obliged to perform in the future. I had unshakable faith and peace of mind to go ahead of us for the sake of our group.

Alone, I went close to the North Korean rifleman. The guard questioned me as expected. "Comrade, where are you going?"

The following words came out smoothly and uninterrupted from my mouth, without my thinking in advance, "Yes, I am a physician working at the Hamhung Provincial Hospital. Those people over there are physicians and nurses working together at the same hospital. Here is my I.D. card."

After showing my I.D. card, I continued to speak. "As a matter of fact, all of the hospital staff members evacuated the hospital yesterday and retreated north. There is some medical equipment and supplies left at the hospital. We are going back and will bring them with us."

I answered with a calm attitude. The guard stared at my face. He appeared to trust my answer and attitude. He allowed me and all of my group to pass the guard line uneventfully. I had no doubt of heaven's help when I got the guard's permission. We all safely passed the most dangerous front line.

On October 15, we visited Dr. MyungHak Kim's hospital in the city and spent several days. We went to Wonsan Harbor by a ROK army truck where our group of South Korean physician refugees boarded the US Navy LST ship. We finally arrived at Pusan Harbor of South Korea. Our six Korean physicians followed the dream with faith and could safely return from North Korea, an autocratic communist country to South Korea, a free democratic country, passing the frontline of the war. The dream helped not only me but also other people in the war (Chung 2009).

The above special predictive dreams that are verified as true seems to strongly suggest the work of the author's inner self and further to reveal a possible glimpse into an unknown, timeless and nonlocal consciousness world of reality, i.e. the invisible spiritual world (Chung 2009 ; 2012).

#### **1. 4. Quantum Entanglement**

Chien-Shiung Wu and Irving Shakhov (1949) produced positronium that released two photons. David Bohm and Yakiv Aharonov (1957) first recognized quantum entanglement in their analysis of results of Wu and Shakhov's experiment. John Clauser and Stuart Freedman (1972) produced experimental evidences of entanglement.

Alain Aspect and his collaborators in 1980s, Nicholas Gisin in 1990s and Andrew Watson in 1997 clearly observed in their experiments that the speed of transmission of mutual effect between two entangled was faster than the speed of light (Aczel 2003; Penrose, Hameroff & Kak 2011; Laszlo 2007; Watson 1997). The instantaneous influence between two photons or electron twins with same quantum states violates the speed of light according to Einstein's theory of relativity (Quantum Spookiness). The phenomenon of entanglement proves that the EPR paradox theory of locality is incorrect and quantum theory of non-locality is correct (John Bell's theorem; Aczel 2003).

Roger Penrose and Stuart Hameroff (2011) proposed the Orch OR theory with microtubule quantum computations to explain interactions between mind and matter within neurons of brain.

Eugene Wigner proposed a hypothesis that conscious intervention of an observer can cause the collapse of the quantum wave function and this determines contents of the brain (Stapp 2011; 2013). In John von Neumann's theory of emergent dualism, some conscious agent intervenes upon the state of the brain and does conscious choice, controlling the mind-body connection in the brain (Stapp 1999; 2011; 2013). The von Neumann-Heisenberg orthodox quantum mechanics supports the dualism in quantum physics. The author infers that the agent seems to be the inner self of human being.

Interactions between self and consciousness: mind and matter are not clearly understood in science. There seem to be, to my knowledge, no articles in the literature that clearly explain the relationship between self and consciousness: mind and matter.

In this study, the relationship is investigated and an attempt is made to explain it.

## 2. MATERIALS AND METHODS

(1) Findings and discoveries in modern science, quantum physics, string theory, especially entanglement in the arena of mind and matter are reviewed (Penrose 2007; Penrose, Hameroff & Kak 2011; Griffiths 2005; Stapp 1999; 2011; 2013; Tong 2009; Ochsner et al. 2002; Schwartz et al. 2005; Close 2011).

(2) Philosophical teachings of major religions, especially the Eastern Confucian philosophy are reviewed and compared with quantum physics. Confucian philosophy is described in the I Ching, the Book of Changes (William, 1967) and Jeong Yeok, the Book of Right Change (Kim 1885; Yi 1990; Chung 2009; 2010).

(3) Review of some of relevant personal experiences of precognitive dreams of the author is included in this study.

Comparison of characteristic aspects of the author's proposed theory of ultron- logotron and quantum physics is done. Interpretation, theoretical reasoning and imagination are carried out to reasonably explain observed findings, precognitive dreams, entanglement, and

proposed theories regarding the scientific relationship between self and consciousness: mind and matter.

### 3. RESULTS

#### 3. 1. "Ultron", 極子

In Confucian philosophy, all things are created by power of the Creator, the Non-Ultimate, the Great Ultimate. The Great Ultimate created Two Forms, 兩儀, Yin and Yang, the two primary basic elementary particles that are represented by a solid line (—) and a broken line (- -). The author names Yin and Yang "yin-ultron", 陰極子 and "yang-ultron", 陽極子, respectively. All things of the universe are generated by movements of "ultrons", 極子 (Capra 1999; Chung 2009).

Table 1 shows comparison of characteristic aspects of the ultron-logotron theory and quantum physics. Basic elementary particles, ultrons, 極子 would be analogous to strings of string theory. The ultrons are the building blocks of matter of the physical world. The yang- and yin-ultrons are positively and negatively charged, respectively.

**Insert Table 1 here.**

Findings in quantum physics are postulated to be applicable to the ultron.

The ultron is postulated to have a property of particle-wave duality.

The electric charge,  $e_{\text{yin}}$  of yin-ultron may be  $-1e < e_{\text{yin}} < 0$ .

The electric charge of yang-ultron,  $e_{\text{young}}$  may be  $0 < e_{\text{young}} < +1e$

The ultron mass,  $m_{\text{ultron}}$  may be  $0 < m_{\text{ultron}} < \text{mass of electron}$

If external force comes to a region of space, the regional space will be excited and pulsate, and then a hidden vertical pair of particle-antiparticle emerges in it, causing material actualization of real particle and antiparticle, creating matter.

The author infers that when a matter and antimatter collide and disappear, becoming virtual matter and antimatter, consciousness in the excited state superpositioning to each of the pair will disappear and become a virtual consciousness in the ground state. If the above is true, then it would imply that particles of matter would have a triple property of particle, wave and consciousness (Bohm 2006).

If a mental force is presumably created by the self, it will strike the regional space that could excite virtual consciousness in the ground state to become consciousness in the excited state, creating conscious mind (Chung, 2009). Mind and matter are interrelated and interconnected (Capra 1999; Chung 2009).

### 3. 2. "Logotron", 言子

Table 2 shows comparison of characteristic aspects of "ultrons and "logotrons". The author names "information" that is described by David Bohm in his quantum theory "logotron", 言子.

Logotrons in this study represent contents of consciousness of mind in humans such as thoughts, feelings, colors, sounds, concepts of all things of the universe that may be expressed by words (Greek: logos).

Logotrons are virtual particles, massless and have probably a triple property of particle, wave and consciousness, and have possessing inherent force, and having a property of spreading in space as well as remaining at an original, regional point in the holographic space. The wave propagation, if emitted from the logotron is postulated instantaneous in the non-local holographic space.

#### **Insert Table 2 here.**

The empty space is postulated to be not void but filled with invisible and intangible energy and force, virtual ultrons and logotrons (virtual matter and consciousness), and further infinite power and love of the Creator God. It is said in the Bible (Johan 1: 1-3 King James Version), "In the beginning was the Word, and the Word was with God, and the Word was God. The same was in the beginning with God. All things were made by him, and without him was

not made any thing made that was made." There seems to be an agreement between the Bible and the ultron-logotron theory.

### **3. 3. Interactions between Ultron and Logotron**

Figure 1 illustrates Feynman's space-time diagram of interactions between ultron and logotron. Mental-force-carrying "mentalon" exchanges between ultron and logotron, creating resonance-like effects, and perhaps exchanges between logotrons as graviton exchanges between ultrons of matter. The conscious mind of the inner self of an individual person has power to generate mentalon as well as logotrons with free will and free choice. Mentalon is virtual force like graviton; it has two states: the ground and excited states. The author infers that the quantum states result from the incoming neural stimulus in the neurons of human brain, then OR (objective reduction) occurs (the quantum wave function collapses) when the physical self and the inner self have conscious perception through quantum computations in the microtubule automata (Penrose & Hameroff 2011). In the quantum state of the prefrontal cortex of human brain, the quantum wave function collapses when the inner self who is an observer and does conscious cognitive action with free will and free choice, and with attention, efforts, thoughts and planning in the inner self's mind; then logotrons in the excited state are generated from the ground state, generating conscious cognition in the inner self's consciousness (Fig. 2a) (Stapp 1999; 2013; Kafatos, Tanzi & Chopra, 2011; Schwartz et al. 2005; Ochsner et al. 2002). The self (the true inner self) has power in the conscious mind to choose logotron in the excited state from its ground state, changing the quantum state of the logotron with free will, free choice, attention and intention, guiding actions (Stapp 1999; Chung 2012). Ultrons in the excited state are generated by mentalon originated from the inner self's conscious mind (Fig. 2b) (Schwartz et al. 2005; Ochsner et al. 2002). Figure 2b illustrates processes at the interface between mind/consciousness and brain. Existence of mentalons can be empirically recognized by their effects in the external world resulting from interactions between mind and matter in the PFC of human brain. In this matter-mind process, mentalons participate in generation of conscious mind (**Fig. 2a**) and vice versa (**Fig. 2b**). M line shows its origin on the left side with an apparent slightly upward right direction but is actually horizontal and parallel to the space axis, indicating instantaneous speed in space-time (**Fig. 2a and 2b**) (Penrose, Hameroff & Kak 2011).

**Insert Fig. 1 here.**

#### **4. DISCUSSION**

Valid and undeniable predictive dreams of the author are strongly suggestive of existence of a timeless and nonlocal consciousness world of reality and the inner self's potential power of transcending the time phases of the past, present, and future (Penrose, Hameroff and Kak 2011). In the history of the United States, one of the great presidents, Abraham Lincoln had dreams of his death 13 days before he was assassinated (Joseph 2001; 2011). According to Joseph, certain cognitive capacities are well developed in just a few people.

There are numerous reports of individuals who claim to have precognitive dreams of future events that took place (Joseph 2011). Cindi Welch (2003) describes in her book that time frames and dates in precognitive dreams, at least for her had been rather unreliable. There seem to be no articles of cases of precognitive dreams in the literature that the author has read and researched that have a description of a prediction of an exact date when future actual events would take place in the near future beyond twenty-four hours of the dream.

Results shown in Table 1 seem to reveal parallels between the ultron-logotron theory and quantum physics, and to be supported by findings and discoveries in quantum physics.

There seems to be a considerable agreement between the ultron-logotron theory and the Orch OR theory of Penrose and Hameroff (2011) or the orthodox quantum mechanics of von Neumann-Heisenberg (Stapp 1999; 2011; 2013). Jeffrey Schwartz, psychiatrist (1999; 2005) reported his successful clinical treatment of patients with obsessive compulsive disorder (OCD) with training to do their own willful redirection of his attention away from intense urge associated with pathological activity in the basal ganglia, strongly suggesting that thoughts of patients can change pathologic states of the brain, and further that the inner true self as the observer, the inner self's mind analogous to the measuring instrument, and the state of the brain as the observee constitute a unified mind-brain system in the human PFC. There is another concurrent quantum event in the brain.

The human individual, the self is composed of the inner self and the physical self/body. Consciousness of both selves coexists in superposition. The quantum state in neurons of brain

is inferred to produce consciousness in the physical self as well as the inner self at quantum levels most presumably as described in the Orch OR theory of Penrose and Hameroff (2011) and the von Neumann-Heisenberg orthodox quantum mechanics. When OR (the wave function collapses and decoherence from coherence quantum state takes place) occurs at the moment of interaction between conscious mind and brain at quantum levels, then two conscious minds of both the physical and inner selves occur with conscious perception in the brain neurons. In the PFC where the conscious mind of the physical self is controlled by the inner self, the physical self would perceive the object, for example, an apple in a possibly genetically determined way or for pleasure and instinct for living without free choice (a fruit and appetite) at quantum levels. In contrast to the above, the inner self independently intervenes and probes in the way of probably limitless concepts (logotrons) in scientific, biological or philosophical meanings etc. (a fruit, nutritional, good diet and even Newton's discovery of gravity etc.) and chooses a conscious mind (logotrons) with free choice at quantum levels and controls the physical self's conscious mind. The author infers that both the Penrose-Hameroff Orch OR theory and the von Neumann-Heisenberg orthodox quantum mechanics are correct descriptions regarding relationships between self and consciousness: mind and matter because the human self is inferred to be composed of two selves, i.e. the inner self and the physical self/body (Chung 2012). Therefore, relationships and interactions between self and consciousness in the brain seem to be non-dualistic with Orch OR theory in the human brain in general and also dualistic with the von Neumann-Heisenberg quantum mechanics in reality in the prefrontal cortex. If Orch OR dysfunction occurs, then the perceptive and cognitive impairments and apparent loss of consciousness would occur (Penrose & Hameroff 2011; Staff 1999; 2011; 2013).

This seemingly dualistic reality in the prefrontal cortex of human brain is analogous to driving a car in which the driver is the inner self and the car (the steering wheel, engine and body) is the physical self/body. The driver drives and guides the car with free will and free choice, and the car corresponding to the brain-body that was made operates, obeying physical laws of classic physics corresponding to the physical self's conscious mind without freedom but under the control of the driver. The inner self that knows the physical laws and has power of making a car controls the physical self/body at the quantum level.

All ultrons and logotrons are postulated to have been created in the Big Bang. The ultrons are the building blocks of matter of the physical world; the logotrons are the building blocks of consciousness. The logotrons are not experimentally observed but their existence is understood by their effects and their self-awareness in the self-consciousness.

Table 3 shows comparison of maximum numbers of shell electrons in seven orbital shells, K-Q of atoms that are reported, and formula-derived numbers in quantum physics or in the current ultron-logotron theory. The formula expressing those numbers of electrons in quantum physics is  $2n^2$ ;  $n=1, 2, 3, 4, 4, 3$  and  $2$  in the seven shells. The formula of the ultron-logotron theory is  $n \pm 2$ ;  $n=0, 10, 20, 30, 30, 20$  and  $10$  in the seven shells. There is a complete agreement between those numbers (Wikipedia, 2013b).

**Insert Table 3 here.**

The inner self can create mental force in conscious mind. Mental force seems to be the fifth force that may be added to the four known forces, gravitational force, electromagnetic force, weak and strong nuclear forces of the physical world (Cabanac, Cabanac and Hammel 2011). The experimentally observed entanglement phenomenon (Aczel 2003; Penrose 2007; Penrose, Hameroff & Kak 2011; Laszlo 2007) seems to be explainable by a process of instantaneous influence between two entangled virtual quantum logotrons in consciousness as one of triple properties of the two particles with same quantum states. A change in one particle immediately causes a change in the other particle in nonlocal faster than light communication.

Telepathy observed in identical twins could be explained on the basis of quantum entanglement between same quantum states of twin brains (Playfair 2002; Ibrison and Hathaway 2011; Laszlo 2007; Chung 2009). Telepathy is neurological entanglement as a mode of communication. Precognitive dreams are dream-mediated telepathy. In remote viewing, interactions occur between entangled virtual quantum logotrons in the self's conscious mind and in nature.

It is inferred and believed that the Conscious Mind of the Creator God has power of creating all things of the universe, matter and consciousness; and further is the source of the self of the humanity who are parts (children) of the Creator God. Therefore, the inner true self, a co-

creator has inherent potential power of generating conscious mind (logotrons) and virtual particles of mental force (mentalon). The inner self most presumably independently exists from matter or any quantum states that are created. The physical self is probably to exist in consciousness as one of the triple properties of matter of the human brain. Biological behavior is in essence independently controlled and determined by the inner self, the co-creator with free will and free choice in the mind-brain system ( Stapp 1999;2011; 2013; Chung 2009; 2012).

The author infers that the Creator God who is omniscient and omnipotent has the solutions to calculate probabilities of outcomes of exact movements of all things in the cosmos created by Him (and including ongoing, continuous creation) in the Cosmic Consciousness. Memories of all events in the human ancestral histories and information of all objects of our Universe are stored as logotrons in the timeless, nonlocal and holographic universe in the Cosmic Consciousness at quantum levels (Joseph 2011; Mitchell & Staretz 2011; Bernstein, Schild, Saniga, Pracna and Perkins 2011; Laszlo (Akashic Field) 2007). When the inner self's mind unites with the Cosmic Consciousness through concentration, prayer, meditation or enlightenment, and seeks and chooses logotrons in the Cosmic Consciousness, precognitions, retrocognitions and extrasensory perceptions (ESP) of telepathy, clairvoyance, remote viewing would be possible. Joseph (2011) describes the space of the Cosmic Consciousness in terms of quantum continuum. Everything of the universe is interconnected. Joseph also describes that ancestral memories are stored as genetic memories in DNA of the genetic code that would make precognition, retrocognition and ESP possible. The author infers that the physical world and the consciousness world coexist in superposition at every point of the holographic universe that has infinite capacity for quantum holograms. The consciousness world is further inferred to exist in superposition with the spiritual world. Bernstein, Schild, Saniga, Pracna, Nelslusan and Perkins (2011) describe the eight-dimensional space-times ("quantum vacuum") composed of omnipresent frequency space-time embedding conventional 4-D space-time in nature. It seems to suggest that the conventional and the frequency space-times ("quantum vacuum") correspond to the physical (ultron) and the consciousness (logotron) worlds, respectively.

Valid precognitive dreams as an undeniable fact, and entanglement as experimentally accepted science knowledge known to the humanity seem to provide concrete human data

that would possibly explain a scientific relationship between self and consciousness: mind and matter, and further presumably the coexisting parallel spiritual world superpositioned to the physical and the consciousness worlds. Predictions of future and quantum entanglement are unexplainable by reductionist view alone that contends consciousness as an epiphenomenon. It seems inferable that the valid precognitive dreams have nothing to do with previous memories and knowledge stored in the human brain. The human inner true self, the spirit most probably exists independently from the brain and matter (Kafatos, Tanzi & Chopra 2011; Chung 2012).

The deeper structure of quarks and electrons of the physical world is not experimentally observed. According to David Tong (2009), theoretical physicist at the University of Cambridge, "there is no experimental evidence that string theory is the correct description of our world".

The ultron-logotron theory would need further research for its verification.

## 5. Conclusion

Modern quantum physics and the Eastern philosophy, especially Confucian philosophy in the arena of basic elementary particles of matter and consciousness of mind, and personal experiences of valid precognitive dreams of the author are reviewed in this study.

The following "ultron"- "logotron" theory regarding the scientific relationship between self and consciousness: mind and matter is proposed:

- (1) A human individual, the self is composed of the inner self and the physical self/body. The physical self is false and would fade and disappear at death of the body. The inner self is the true self (spirit) and controls the physical self/body, and would continue to live beyond death. The inner self controls the physical self/body by interacting with the prefrontal cortex (neurons) of human brain
- (2) Valid and undeniable precognitive dreams of the author's personal experiences and quantum entanglement strongly suggest the inner self's potential power transcending the time phases of the past, present and future, and existence of a timeless, nonlocal and holographic consciousness world of reality.

(3) The “ultrons” are the building blocks of matter of the universe. The “logotrons” are the building blocks of consciousness of the human mind. The “logotrons” are virtual particles. The “ultrons” and “logotrons” interact each other with mental-force-carrying “mentalon” in neurons of human brain. Mentalon exchanges between logotron and logotrion or logotron of self’s consciousness and logotron of consciousness superpositioned to particles of matter.

(4) Entanglement could be explained by mental-force-carrying mentalon that exchanges between two entangled virtual quantum logotrons in particles or logotron in conscious mind and logotron in particles of matter at quantum levels.

(5) Valid and undeniable precognitive dreams and experimentally accepted entanglement in quantum physics seem to possibly provide concrete human data that might explain a scientific relationship between self and consciousness: mind and matter.

(6) There seems to be parallels between the “ultron-“logotron” theory and quantum mechanics from the ontological perspectives, and a close agreement between the “ultron”-“logotron” theory and the Penrose-Hameroff’s Orch OR theory or the von Neumann-Heisenberg’s orthodox quantum mechanics that seem to be correct descriptions and applicable to both the inner self and the physical self/body of humanity, respectively on the basis of the human individual self composed of two selves, one, the inner self and one, the physical self.

The “ultron”-“logotron” theory would need further research for its verification.

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Table 1. Comparison of characteristic aspects of the “ultron” –“logotron” theory and quantum physics.

Characteristic aspects	The “ultron”-“logotron” theory	Quantum physics
Basic elementary particle	Yin- and yang-ultron	Quarks and electrons
Form (– –) line	A solid (—) and a broken closed (o) string	An open (~) and a
Movement advance, retreat, expansion, contraction	Join, movement, stillness, pinch, join, spin oscillation	Split, fission, break,
Property of particle, wave and consciousnessconsciousness*	Triple property particle, wave and	Triple property of
Energy	Yes	Yes
Force	Yes	Yes

\* David Bohm’s quantum theory.

Table 2. Comparison of postulated characteristic aspects of “ultrons” and “logotrons” .

Characteristic aspects	Ultrons	Logotrons
Element of	Physical matter	Conscious mind
Nature	Physical	Conscious (spiritual)
Creation and the co-creator (self)	Created by the Creator	Created by the Creator
Property and consciousness	Triple: particle, wave and consciousness	Triple: particle, wave
State	Real and virtual	Virtual
Interaction between themselves nuclear forces	Graviton, electromagnetic force, weak and strong	Mental-force-carrying mentalon
(Speed of transmission light)	(Maximum speed of	(Instantaneous)

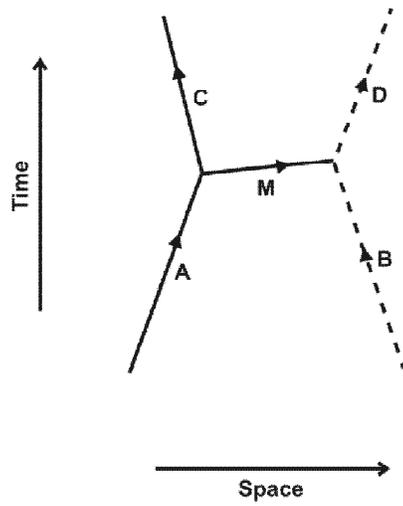
Table 3. Comparison of maximum numbers (N) of shell electrons of orbital shells in atoms in reported (wikipedia 2013b), quantum physics and the "ultron"- "logotron" study.

Orbital shell	K	L	M	N	O	P	Q	
Maximum Number of electrons (N) reported	2	8	18	32	32	18	8	
Quantum physics	$N = 2n^2$	2	8	18	32	32	18	8
$n$	1	2	3	4	4	3	2	
The "ultron"- "logotron" study	$N = n \pm 2$	2	8	18	32	32	18	8
$n$	0	10	20	30	30	20	10	

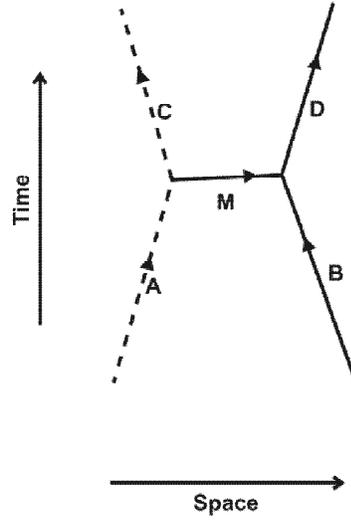
Figure 1. Feynman's spacetime diagram of interactions between "ultron" and "logotron".

a: A – Real ultron in the excited state in the neuron of the prefrontal cortex caused by incoming stimulus. C – Real ultron in the ground state after collapse of the quantum wave function when the self controls (observes). B – Virtual logotron in the ground state in the neuron of the prefrontal cortex. D – Virtual logotron in the excited state when the self observes and cognizes. M – mental-force-carrying "mentalon" exchanging between ultron and logotron.

b: A – Virtual logotron in the excited state in the self's conscious mind in the neuron of the prefrontal cortex. C – Virtual logotron in the ground state after exchanging mentalon between the logotron and ultron in the neuron. B – Real ultron in the ground state in the neuron of the prefrontal cortex. D – Real ultron in the excited state in the neuron after exchanging mentalon between logotron and ultron. M – mentalon. (see text).



**a**



**b**