Exploration

Propagation of Thoughts in the Field of Consciousness as Quantum Waves

Narendra D. Sharma*

Abstract

I (consciousness) am, therefore, I think. Hence, there is a direct relationship between 'Consciousness' and 'Thought'. This could be better understood if a concept of 'Field of Consciousness' is invoked. It is conjectured that the concept of 'Fields', may be helpful in understanding the propagation of 'Thoughts' (considered as 'Energy'), in the 'Field of Consciousness'. If this view is acceptable, then it may be worthwhile giving a mathematical expression to this abstract phenomenon of 'Field of Consciousness', linking it with 'Thoughts'. The 'Thought Waves' which are the energy waves, actually are the 'Quantum Waves - the Waves of Probability', a concept similar to one hypothesized by Schrödinger and Max born in continuation of Louis de Broglie's hypothesis in 'Quantum Theory'. Thought waves will have a 'Wave Function'. For a thought to materialize, it would be necessary for the 'Wave Function' to collapse in one's mind.

Keywords: Consciousness, electromagnetic field, thoughts, quantum wave.

Introduction

During late seventeenth century, Isaac Newton while laying the foundations of 'Principles of Mechanics' developed an idea of 'Gravitational Force' between two bodies, which later culminated into the concept of force being experienced in 'Gravitational Field'. The issue of forces between charges, magnetic poles and current carrying conductors could also be resolved once it was realized through scientific reasoning and imagination during the second half of the eighteenth century that it was neither the charges nor the particles but actually the 'Field' in the space between charges and particles could only describe the physical phenomenon. It took final shape during nineteenth century with the efforts of many European physicists working on newly evolved idea of 'Field', and 'Force experienced in an Electric and Magnetic Field'. This finally culminated into the concept of 'Electromagnetic Fields', the equations of which were summarized by Maxwell. Similar, it is conjectured that the concept of 'Fields', may be helpful in understanding the propagation of thoughts in the 'Field of Consciousness'.

Rene Descartes (1596-1650), a French philosopher, mathematician and scientist is considered as one of the most influential thinkers in the history of western philosophical thought, also known as the 'Founder of Modern Western Philosophy'. Descartes developed the conceptual

* Correspondence: Narendra Dutt Sharma, Former Controller, Bhabha Atomic Research Centre, Mumbai.
Email: ndsharma57@gmail.com

foundation of 'New Mechanical Physics', and tried to explain everything in the created world external to human beings. His method of systematic doubt also impacted the subsequent development of philosophy. He argued that, 'The Sciences must be founded on Certainty', and wrote, 'Rules for the Direction of the Mind'. *Descartes said, 'I think, therefore I am', one of the most famous statement, but, by making this statement, Descartes put 'Thought' before 'I', that means 'Thought' before 'Consciousness'. He probably made one of the biggest mistakes in the history of western philosophical thought. How could 'Thought' be considered in existence before 'I' exist? If 'I' am not there, who will think?* Descartes is also known as the father of 'Mind-Body' problem, separating these two entities and thus creating a philosophy of 'Dualism' of 'Mind and Matter'. He also said that all the objective principles of physical sciences should be expressible in mathematical language. It created a divide among the subjective and objective thoughts, considering the objective thought only to be the subject of science. This was probably the beginning of a divide between scientific thought and contemporary philosophy. It concluded in providing a new dimension of thought to the western world, finally leading to materialism over a period of time.

Influenced with such thoughts, Sir Isaac Newton (1642-1727), an English Physicist and Mathematician laid the foundations of 'Principles of Mechanics', popularly known as 'Newtonian Mechanics', which also became the foundation of scientific thought in 'Physical Sciences', for next two centuries. In essence, this was rise of 'Mechanical World View'. It was thought that the most important force is the 'Newton's Gravitational Force'. Looking from the 'Classical Mechanics' point of view, this concept was applicable to all branches of physics where various phenomenon were explained by the action of attractive or repulsive forces depending upon the distance between entities. Even in case of kinetic theory of matter, this mechanical view embraced the phenomenon of heat leading to a successful picture of the structure of matter.

However, serious difficulties were encountered when an attempt was made to apply this mechanical world view in order to define the electrical and optical phenomenon. In case of moving charge acting upon a magnetic needle, the force does not depend only upon the distance but also upon the velocity of the charge. It was also found that the force acts perpendicular to the line connecting the needle and the charge which neither attracts nor repels! Similarly in case of optics, 'wave theory' found acceptance against corpuscular theory of light. If viewed from a mechanical concept, it meant as if the waves are spreading in a medium, consisting of particles, with mechanical forces acting between them. Then question arose that what is the medium through which light spreads and what are the mechanical properties of the medium? Since it was getting difficult to reduce the optical phenomenon to the mechanical view unless this question is answered, the mechanical view was completely given up. The older 'mechanical world view' was rejected in favour of some newly evolving concepts. This new

concept which appeared on the horizon of understanding of physical sciences since the time of Newton, probably one of the most important concepts, was that of 'Field'.

Imaginative thoughts of great minds such as Coulomb (1736-1806), a French physicist, Oersted (1777-1851), a Danish physicist, Gauss (1777-1855), a German mathematician, Ampere (1775-1836), a French physicist, Ohm (1789-1854), a German physicist, and Faraday (1791-1867), an English physicist and a 'Natural Philosopher', led to the concept of 'Field', and 'Forces experienced in a field'. This newly evolved idea not only proved to be most successful in explaining the forces experienced by the charges or the magnetic poles but finally culminated in the concept of 'Electromagnetic Fields', the mathematical equations of which were summarized by a great Scottish physicist Sir James Clark Maxwell (1831-1879). Maxwell's equations described the structure of 'Electromagnetic Fields' governing the electric, magnetic and optical phenomenon. The idea of 'Electromagnetic Waves' as a carrier of 'Energy' brought a new thinking in the world of physical sciences. It may be interesting to mention here that the pioneering work of Heinrich Hertz (1857-1894) demonstrated the existence of 'Radio Waves' in 1887 (with the inspiration from the work of Herman von Helmholtz (1821-1894) and Maxwell) and showed that the velocity of radio waves is equal to the velocity of light. Hertz thoughts inspired a new subject of 'Electrodynamics' which put an end to all the unnecessary arguments about 'action at a distance'. A new concept of 'Fields' was thus introduced to explain those phenomenons of nature that were hitherto not satisfactorily explained. This has been discussed by the author in detail in one of his very recent publications. [1]

Forces experienced in Fields

It has been established that two bodies experience a 'Force' among them in a 'Gravitational Field' of these bodies, the force being directly proportional to the masses of these two bodies and inversely proportional to the square of the distance between them. This force is mathematically represented along with a 'Gravitational Constant', as propounded by Isaac Newton (1642-1727). Similarly, two electric charges experience a force (attraction/repulsion) in an 'Electric Field' established between these charges, the force being a function of the magnitude of these two charges and inversely proportional to the square of the distance between them. Likewise, two magnets experience a force in a 'Magnetic Field', established between these two magnets again depending as a function of their magnetic pole strength and inversely proportional to the square of the distance between them. In an identical fashion, two current carrying conductors experience a force in an 'Electromagnetic Field' set up between them depending on the magnitude of the two currents and inversely proportional to the square of the distance between them. In all these cases the force is being mathematically represented with an appropriate constant of

proportionality. Maxwell's equations of 'Electromagnetic Fields', thus, mathematically summarize the entire phenomenon taking place in these fields.

Einstein had presented his "General Theory of Relativity" in 1915. The theory of relativity actually arose from the field problems. The old theories were full of inconsistencies and contradictions and hence Einstein found need to ascribe new properties to the Space-Time continuum, which is supposed to be the canvas where events take place in this physical world. Space-Time continuum was given even a deeper meaning by "General Theory of Relativity". It was no longer restricted to inertial co-ordinates. It even took into account the issue of gravitation. The new structure was formulated for the gravitational field. The gravity arises from 'warping of space' and hence gravity found a new definition as the "curvature of Space-Time continuum". Geometry was also playing important role now in the description of physical world. General theory of relativity amalgamated all the four dimensions of space and time. *The theory also strengthened the concept of 'Field' in understanding the behaviour of physical world.* Einstein had also predicted the presence of 'Gravitational Waves', which have been detected very recently. A new concept was introduced to help understand the nature of 'Physical Reality' in a better manner.

Therefore, this subject could be viewed in following fashion. If there is a single entity, it creates its own field. To experience force, it needs another entity which will also have its own field. Therefore, the force between these two entities could be experienced as a virtue of interaction of these two fields. The nature and magnitude of the force experienced depends on various physical parameters as explained above.

Thoughts and the Field of Consciousness

'Thoughts' have been considered as 'Energy' in eastern philosophical and spiritual concepts. Thoughts of entity 'A' will establish a field of consciousness of entity 'A'. These thoughts could however propagate independently in an all pervading 'Field of Cosmic Consciousness'. Similarly, if there is an entity 'B', the thoughts of entity 'B' will also establish its own field of consciousness. These thoughts could also travel in the 'Field of Cosmic Consciousness' in a similar fashion as that of entity 'A'. The two thoughts could however interact through their respective thought waves propagating in their respective fields of consciousness, these two fields being in interaction, thus, creating an effect on these two entities in a fashion depending on the nature of thoughts, positive or negative. If an entity 'A' is in a state of 'Thoughtlessness', it will then not be affected by thoughts of any other entity, however, the entity 'A' will still continue to be in a 'Field of Cosmic Consciousness'. Actually the 'Field of Consciousness' of entity 'A' then merges with the 'Field of Cosmic Consciousness', which is all pervading in the universe.

The concept of 'Field of Consciousness' has already been developed by the author in one of his recent publications [1]. This idea was evolved in reference to the concept that human emotions do create physical reality and that this mechanism may be happening in the 'Field of Consciousness', where any phenomenon is not limited by the established theory of 'Space-Time', conceptualized by Einstein more than a century ago. It was also emphasized in that deliberation that the entangled particles instantaneously reflect the same action or state, even if they are separated by any distance whatsoever.

Equations of the Field of Consciousness

Let us denote the 'Field of Consciousness' by 'F_{con}'. The propagation of thoughts takes place in this field. We could also define the thoughts as 'T_h'. Now, we formulate two equations as follows;

$$\nabla \times F_{con} = T_h \quad (1)$$

$$\nabla . F_{con} = 0 \quad (2)$$

The equation 1 means that the 'Thoughts' (like current) are propagating through a field defined as 'Field of Consciousness' (like a magnetic field). Similarly, equation 2 means that the 'Field of Consciousness' is only a medium in which the thoughts propagate. At any point in space pervaded with the field of consciousness, the thoughts input is equal to the thoughts output.

'Field of Consciousness' cannot generate any thoughts as such, but is only a medium for the propagation of thoughts. Thoughts are generated by the individual entities. This could also mean that in the absence of thoughts in either of the entities i.e. in a state of 'thoughtlessness', there may not be any interaction of field of consciousness of that specific entity with the field of consciousness of another entity. It appears to be true, because if one is in the vicinity of a sage under deep meditation, who is in a state of so called 'thoughtlessness', it may not be possible to establish any kind of contact with him, because he is in contact with the all pervading Cosmic-Consciousness. His consciousness has now merged with the 'Supreme Cosmic Consciousness'.

These two equations could then be called as, "The Equations of Field of Consciousness".

In this discussion, these equations have been evolved on the basis of Maxwell's equations derived for 'Electromagnetic Fields', using Ampere's Circuital Law and Gauss's Law, which are normally represented as follows;

$$\nabla \times H = J \quad (3)$$

$$\nabla . B = 0 \quad (4)$$

Where, B and H are magnetic flux density and magnetic field intensity respectively, both being related through a constant known as permeability of the medium. The factor J is current density.

The equation 3 is the representations of Ampere's circuital law without addition of 'Maxwell's factor'. The equation 4 represents Gauss's law. Gauss's law states that there are no magnetic mono-poles possible, and the total magnetic flux through a closed surface is zero, which also means that flux entering at a point/surface is equal to the flux leaving the point/surface. The Ampere's circuital law on the other hand, signifies that the magnetic field induced around a closed loop is proportional to the electric current enclosed by the loop.

Similar concept has been evolved and discussed by the author in a recently published paper where the subject of synchronization of our brains during conversation has been elaborated [2]. It was discussed that this phenomenon of inter- brain synchronization happens in the 'Field of Consciousness'. This was also outlined there that an obvious question may now arise in the intellectual minds whether 'F_{con}', and 'T_h' are measurable in quantitative terms (as the empirical science demands), since these have been only understood qualitatively as of now. But, it could be considered that once the mathematical equations are formulated for such an abstract phenomenon, this possibility could also be worked out in future.

It was also pointed out in the same article [2] that these concepts could be further extended once the 'Thoughts', are considered not only as 'Waves', but 'Quantum Waves - the Waves of Probability', exactly as discussed in 'Quantum Theory'. This being so, one could then apply some advanced mathematics to work out the equations further. One could even develop 'Wave theory of Quantum Consciousness'.

Thoughts as Quantum Waves – the Waves of Probability

The 'Thoughts' indeed are the 'Quantum Waves – the Waves of Probability', something similar to one hypothesized by Schrödinger and Max Born in 'Quantum Theory'. In continuation with the work of Louis de Broglie and with the understanding of dual nature of electron as a particle and a wave considered as a quantum wave, Schrödinger had developed the mathematical treatment of the subject commonly known as 'Wave Mechanics'. The Schrödinger's equation actually represents a physical system consisting of an observing system and the observed system. The observed system is a wave function, which is the wave component of the wave/matter duality as postulated by Louis de Broglie. As per the de Broglie hypothesis, not only electron but every object in this universe is both a 'particle' and a 'wave', the wave part being represented by the Schrödinger's wave equation, the wave being observed by the observing system. Schrödinger's wave equation is a generic equation which represents only 'Standing' Waves' and not 'Travelling Waves'. Schrödinger's wave equation represents all the possible standing wave functions in the universe, the main variables of this wave equation being time and energy.

Therefore, if the correct variables for a particular observed system are given as input, the Schrödinger's wave equation will represent that wave function. If input is the energy variables of the electron wave, the Schrödinger's equation will then represent the electron wave function over time. Normally, it is simpler to understand the energy structure of electrons and some such other micro objects; therefore it is possible to apply the Schrödinger wave equations to these wave functions. Macro objects have much more complex wave functions (but they do have a wave function) and it may be quite difficult to input their variables to create the Schrödinger's wave

function. It could, however, be said that the Schrödinger wave equation is applicable for any simple or complex wave function. The other aspect of the physical system of the Schrödinger's wave equation is the observing system. When the observing system interacts with the observed system at any given time, the wave function of the observed system collapses to only one of the logical possibilities at that given time.

Max Born clarified through systematic mathematical treatment that these 'Quantum Waves', which are associated with a 'Wave Function' are actually the 'Waves of Probability' and not the waves of material as thought by Schrödinger, answering to the question that 'waves of what?'. These quantum waves, therefore, are statistical predictions; the waves of probability being nothing but a likely outcome. The quantum waves merely define the potential location which could be occupied by a particle. Probability wave is neither an event nor a phenomenon; it is just a description of likelihood of an event or phenomenon to occur. It was, therefore, considered that the particle exists only in a blurry state of possibility until its wave function collapses during observation. The object's behaviour could only be defined as probabilities. The object actually could therefore assume a particular motion or place only on the collapse of its wave function.

In a similar fashion, 'Thought Waves' are the 'Quantum Waves' which could be considered as the 'Waves of Probability' – only a statistical prediction associated with a 'Wave Function'. When a thought is generated by an entity 'A', this thought could take a shape only when its wave function collapses in one's mind. This is the reason that while one may generate innumerable number of thoughts every time, only few thoughts may take shape depending upon the energy of thoughts and the collapse of its wave function in one's mind. Similarly, when an entity 'A', generates any thought about an entity 'B', or for any number of other entities for that matter, the thought will take a material shape again only depending upon the energy level of the thought wave and most importantly, whether the wave function of that thought has collapsed in the mind of entity 'B' or any other entity for that matter.

Until the collapse of the wave function, the thought will only remain in the blurry state of possibility of that event to occur. Therefore, it could be said that any thought will take the material shape only and only when one allows the wave function of that thought to collapse in one's mind. These thoughts need a medium and propagate in the 'Field of Consciousness' of that particular entity creating the thought. This field of Consciousness of an entity 'A' could interact with the field of Consciousness of entity 'B', or any number of other entities for that matter. However, a field of Consciousness of any entity is superimposed on the 'Field of Cosmic Consciousness', pervading the entire universe.

Conclusions

In this article, first the concept of 'Fields', which arose during late eighteenth and nineteenth century to describe the physical phenomenon of 'Forces in a Field' has been discussed. On the basis of such established concepts, an idea of 'Field of Consciousness' has been conjectured, which has been given a meaning for the propagation of 'Thoughts' considered not only as 'Energy' but also the 'Quantum Waves – the Waves of Probability'. It has also been concluded that the 'Thoughts' could propagate in the 'Field of Consciousness' as 'Quantum Waves'. 'I am,

therefore I think' is the most profound statement in the Eastern philosophical thought. There are only two profound entities in the universe, 'Thoughts', and 'Consciousness', and everything else is simply a manifestation of those.

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