

**“Not Two” - The Mind, Where is It? “ritam bhara pragyam”  
(in the plane of the absolute):**

An introduction to David Bohm’s Quantum Theory of ‘Implicate Order’ and Samkara’s Advaita Vedanta, with supporting references to Russel Targ’s research into ‘remote viewing’, and J. Krishnamurti’s dialogues on truth

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**Introduction**

This paper will introduce unique and relatively new work done in Quantum Theory (QT) by leading Western physicist David Bohm, and compare this to the core principles of the ancient Indian Philosophy of Advaita Vedanta (AV) as articulated by 8th Century Philosopher Samkara.

I focus on the implications of Bohm’s ‘Implicate Order’ for human consciousness or the human ‘Mind’, which according to the Oxford Dictionary, is defined as “the seat of consciousness, thought and volition”.

The comparison between West and East, present and past is most instructive to philosophers and indeed each and every one of us who uses the mind to seek knowledge and wisdom of Truth. While QT relies on mathematical methods, complex spatial models, advanced physics and the use of sensitive scientific instrumentation, AV relied not only on observation and reasoning, but also on insights gained through meditation. As we shall see, the conclusions are excitingly similar!

I will also make reference to two other relevant works, that of physicist Russell Targ, from his book *Limitless Mind* and, from the teachings of J. Krishnamurti taken from his biographical work by Pupul Jayakar. Dr. Targ’s research into extra-sensory perception supports Bohm’s Theory of Implicate Order. Krishnamurti was an extraordinary individual with a ‘quantum mind’.

I quote extensively from these works to demonstrate the commonality between the IO of QT and AV.

While writing this paper I practiced Kundalini Yoga, the Yoga of awareness. The question before emptying my mind at the start of each session was - where is the mind? Appended to this paper are several rough sketches of my own insight into the locus of the Mind (the sketches will be introduced with the paper at the symposium).

Before I start, I want to make a few points about QT.

A ‘quantum’ is a very small unit of energy, but how small? Certainly smaller than you can imagine, in the range of  $10^{-17}$  to  $10^{-34}$  meters! Most of us cannot see things smaller than  $10^{-3}$  meters which is a millimeter. So we are talking about millions, billions and trillions of times smaller than the eye can see, when we speak of quantum ‘particles’. When we speak of the speed of light we are talking about  $300 \times 10^6$  meters per second.

The quantum dimension is infinitely small as is the distance to the stars infinitely large.

Quantum Theory can be summarized in three propositions:

- 1) at the sub-atomic scale very little can be determined with 100% precision however, accurate predictions can be made about the probability of any particular outcome.
- 2) One has to work with probabilities because it is impossible to describe all aspects of a particle at once (e.g. speed and location).
- 3) Energy (such as light and heat) is transferred in 'quantum' packages. Light therefore has a dual character, it is observed to behave both as a particle and as a wave.

Quantum theory denies the mechanistic (Newtonian) conceptual framework which upheld the notion that the 'mind' is of such a nature that it can have absolutely nothing to do with the laws of matter.

A Western scientific understanding of consciousness was not possible before QT because its predecessor "Newtonian" or "Classical" Physics was based on Descartes division of the universe into 'matter' and 'spirit'. Neurobiologists for example, had always assumed that the brain and its parts functioned like classical objects and that 'quantum effects were negligible'. Neurobiologists came to the conclusion that physics could not be used to explain consciousness. Classical physics breaks down in the quantum realm and is not able to explain thought.

### **David Bohm and the "Implicate Order"**

David Bohm, an American, was one of the leading quantum physicists of our age. He died recently. He lectured and researched at University of California, Berkley, The Princeton Institute for Advanced Studies and was Professor of Theoretical Physics at Birkbeck College, University of London. During his later years he linked his capacity as a physicist with his formidable knowledge of the philosophy of science to develop an ontological basis for Quantum Theory.

"The relationship of mind and matter is approached based on the causal interpretation of the quantum theory, in which an electron, for example, is regarded as an inseparable union between a particle and a field. This field has however, new properties that can be seen to be the main sources of the difference between quantum and classical (Newtonian) theories. These new properties suggest that the field may be regarded as containing objective and active information and that the activity of this information is similar in key ways to the activity of information in our ordinary subjective experience".

Of QT Bohm said "elementary particles are actually systems of extremely complicated internal structure, acting essentially as amplifiers of 'information' contained in a quantum wave".

Bohm has evolved a new and controversial theory of the universe, what he calls a "new model for reality" called the 'Implicate Order" (IO).

The IO is an ultra holistic cosmic view. In principle, “every individual element could reveal detailed information about every other element in the universe”. At the core of the IO is the “unbroken wholeness in the totality of existence as an undivided flowing movement without borders”.

He says “everything is enfolded into everything”. Bohm refers to this unknown and indescribable totality as “Holomovement”. The manifest world Bohm refers to as the “explicate order” a secondary derivative that flows out of the IO.

Bohm breaks down the IO into three categories:

The first, a “continuous field”. Bohm compares this to a TV screen displaying an infinite variety of explicate forms. The second category is a super quantum wave function acting on this field. He says “this field is related to the continuous field as the original quantum wave is related to the particle”. It is more complex, more subtle. He calls it a “super field” or “information” that guides and organizes the continuous field. Bohm compares this to a computer which supplies information and directs the forms on the TV screen. The third category Bohm sees as an underlying cosmic intelligence which supplies the “information” - the “player.” Bohm sees these three in a closed “feed-back loop” which goes from the TV screen to the computer to the player and back to the screen.

“The whole universe is in some way enfolded in everything and each thing is enfolded in the whole...under normal conditions of ordinary experience there is a great deal of relative independence of things...this enfoldment relationship is not merely passive or superficial but rather, is active and essential to what each thing is.... It follows that each thing is internally related to the whole and therefore to everything else.... The ‘explicate’ which dominates ordinary experience as well as classical physics appears to stand by itself...but actually cannot be explained fully apart from its ground in the primary reality of the implicate order.”

He goes on: “It takes only a little reflection to see that a similar sort of description will apply even more directly and obviously to the mind, with its constant flow of evanescent thoughts feelings, desires and impulses which flow into and out of each other, which in a sense, enfold each other - as for example, we may say that one thought is implicit in another, noting that this word literally means ‘enfolded’.”

“The general implicate process of ordering is common both to mind and matter.”

“The Implicate Order is still largely a general framework of thought...it lacks a well defined set of general principles that would determine how the potentialities enfolded in the IO are actualized as relatively stable and independent forms in the explicate order.”

“All action is in the form of definite and measurable quantities of energy, momentum and other properties called ‘quanta’ which cannot be subdivided”.

“Fields can be represented mathematically by certain expressions called potentials. In Classical (Newtonian) physics the effect of this potential on a particle is proportional to the intensity of the

field. The 'quantum potential' depends only on the form and not on the intensity of the quantum field. Therefore even a very weak quantum field can strongly affect the particle (the cork could bob far from the source of disturbance in water)."

"There is a strange new property of 'non-locality'...under certain conditions particles that are at macroscopic orders of distance from each other appear to be able, in some sense to affect each other, even though there is no known means by which they could be connected."

All of this can be summed up in a new notion of "quantum wholeness" which implies that the world cannot be analyzed into independently and separately existent parts'... such wholeness means that in an observation carried out to a quantum level of accuracy, the observing apparatus and the observed system cannot be regarded as separate. "Rather each participates in the other to such an extent that it is not possible to attribute the observed result of their interaction unambiguously to the observed system alone."

The theory of the Implicate Order connects everything with everything else. In principle, any individual element could reveal "detailed information about every other element in the universe." The central underlying theme of Bohm's theory is the "unbroken wholeness of the totality of existence as an undivided flowing movement without borders."

It is the collective consciousness of mankind that is truly significant for Bohm's IO. It is the collective consciousness that is truly one and indivisible, and it is the responsibility of each human person to contribute towards the building of this consciousness of mankind.

Bohm says "subatomic particles such as electrons are not simple, structure-less particles, but highly complex, dynamic entities." He rejects the view that their motion is fundamentally uncertain or ambiguous; they follow a precise path, but one which is determined not only by conventional physical forces but also by a more subtle force which he calls the "quantum potential". The quantum potential guides the motion of particles by providing "active information" about the whole environment.

For Bohm the universe is in a state of "process" that continuously recycles forward into a "greater mode of being and consciousness". Bohm believes in a special "cosmic interiority" which is the IO. He says "everything that is and will be in this cosmos is enfolded within the IO". He says "'what is', is always a totality of ensembles, all present together, in an orderly series of stages of enfoldment and unfoldment, which intermingle and inter-penetrate in principle through out the whole of space."

With regards to consciousness, Bohm sees this as more than the brain processing information but rather as "information that enters into consciousness." Bohm considers the human individual as an "intrinsic feature of the universe", which would be "incomplete" in some sense "if they did not exist". Because of the growth of knowledge and wisdom, humans participate in the IO. According to him, "the IO is getting to know itself better". He says "the individual is in contact with the IO. The individual is in contact with humankind yet is the focus of something beyond humankind.

Bohm believes that the individual who uses “inner energy and intelligence” can transform mankind. He says in the depths of the IO there is a “consciousness deep down...of the whole of mankind” which is indivisible.

For Bohm consciousness is the exchange between the explicate and implicate orders. Bohm says that if intelligence is an “unconditioned act of perception” then it cannot be grounded in “structures such as cells, molecules, atoms and elementary particles”. For Bohm “intelligence is at the very core of the IO”.

I am going to stop here with Bohm. I believe I have communicated Bohm’s Theory of IO to give you an idea of where QT places the locus of the Mind. I want to remind you of course that the Implicate Order is a theory. It is not proven. It is an interpretation of the universe based on the observed but unexplained behavior of subatomic energy, by perhaps one of the most all-round and complete minds of our time. What is clear is that he has articulated a conceptual basis for a non-dualistic theory of the relationship between the Mind and Matter.

I wish to say one other thing about David Bohm, he refused to testify during the McCarthy era in USA against his colleagues in front of the “Un-American Committee”. He also refused to work on ‘the bomb’.

Now I want to turn to the work of another physicist, an American called Russel Targ, author of *Limitless Mind*. In doing so I want to show how Bohm’s Implicate Order is manifest in research into extra-sensory perception.

### **Russel Targ**

Russel Targ is a Physicist involved in extrasensory perception for more than 30 years. He worked in the Stanford Research Institute in California. He says that “the principal finding of this research is that there is no known spatial or temporal limit to our awareness”.

“Remote viewing is a process in which you can quiet your mind and inflow information from anywhere in the world.”

We live in a “non-local” reality, which is to say that we can be affected by events that are distant from our ordinary awareness.

Remote Viewing (RV) is an example of non-local ability, it allows people to describe, draw and experience objects and activities anywhere on the planet contemporaneously or in the near future. He says “although we do not understand how it works, there should no longer be any doubt that most of us are capable of experiencing places and events that appear to be separated from our physical bodies by space and time.”

One of the interesting factors that inhibit RV demonstrated by Targ’s research, is “prior knowledge of target possibilities, absence of feedback or use of mental analysis.” Factors that enhance RV include “seriousness of purpose, feedback after the trial and trust.” Experienced viewers learn to improve their performance by becoming aware of their “mental noise” - from memory and imagination and filtering it out.

The term “analytical overlay” is the term for the process of contaminating our direct experience of a target with our analysis of the images based on our imagination and memories of similar images. This “mental noise” was referred to in the Dzogchen Buddhist tradition as “conditioned awareness”.

Research in perceptual psychology shows that what we consciously experience is the ratio of the perceived signal to the mental and environmental noise. By avoiding naming and analysis and by becoming aware of our lifetime conditioning we can learn to “see with naked awareness” and greatly increase the “signal-to-noise ratio of our observational process.”

In theory, how remote viewing works, is that the viewer is examining his or her own small, low resolution, local piece of the four-dimensional space-time hologram.

Russel Targ suggests that consciousness can affect non-local space through the process of intentionality, which is fundamental to any goal-oriented process including the retrieval of memory. His experiments show that “there is no significant decline in the accuracy of any kind of ESP with increasing distance between the viewer and the object viewed ... it is no more difficult to look a short distance into the future than it is to describe a present time hidden target ... it is very unlikely that any kind of electromagnetic field is involved in carrying ‘psi’ signals.”

Targ admits that they do not know how ESP works. He believes that the answer cannot be found in the “two value” logic of Aristotle” - the logical system basic to western analytical thought. In two value thought, we frame our reality in questions like ‘Are we moral or immoral? Is the mind part of the body? Does God exist? Is light made up of particles or waves?’ None of the questions have satisfactory “yes” or “no” answers.

Another logic system proposed by the second century dharma master Nagarjuna has a four value system in which statements about reality can be (1) true (2) not true (3) both true and not true and (4) neither true or not true. According to Nagarjuna, the Buddha first taught that the world was true, then he taught that it was not true, then both true and not true and for the really advanced, he taught that the world was neither true nor not true.

The particle - wave paradox may well find its resolution in “four-logic”. Light fits Nagarjuna’s four logic: wave, not a wave, both a wave and not a wave and neither wave nor not a wave. Targ concludes that “we are awareness residing in a body”.

I will conclude on Russel Targ by noting that his research led him to Buddhism.

I will now provide a brief introduction to the core principles of Advaita Vedanta. In doing so, I will quote extensively from the book *Advaita Vedanta* by Eliot Deutch.

### **Advaita Vedanta**

The term “Vedanta” literally means ‘end of the Veda’. It refers within the Indian Philosophical tradition to the teachings of the Upanishads, the Brahma-Sutras and the Bhagavad-Gita and to their various systemizations.

Advaita Vedanta is the non-dualistic system of Vedanta expounded primarily by Samkara (ca. 788-820). Samkara's system is best labeled as "non-dualistic" rather than "monistic" to distinguish it from any position that views reality as a single order of objective being. AV is concerned to show the ultimate non-reality of all distinctions - that Reality is not constituted by parts, that in essence it is not different from the Self.

AV is more than a philosophical system as we understand it in the West; it is also a practical guide to spiritual experience. It is therefore as much a religion as it is a philosophy.

"There is a principle of utter simplicity ubiquitous in Nature. The wise realize it as silence divine. 'Brahman', the One, is a state of being. It is not a 'He', a personal being nor is it an 'It', an impersonal concept. Brahman is that state when all subject/object distinctions are obliterated. Brahman is ultimately the name given to the timeless plenitude of being."

"The term 'Brahman' first appears in the Rg Veda around 1200 BC in close connection with utterances thought to have special magical power. Originally, the term may have meant 'spell' or 'prayer'. Later in the Brahmanas, it came to mean that which stands behind the gods as their ground and source."

"Brahman is designated by Advaitins as 'saccidananda': as 'being' *sat*, 'consciousness' *cit*, and 'bliss' *ananda*. Brahman is experienced as pure unqualified being. In fact it alone truly 'exists' - which is to say that its manner of being is not comparable to the supposed existence of anything else."

"In saccidananda, the complex world of our ordinary experience disappears in the pure white light of spiritual simplicity."

"Human language has its source in phenomenological experience, hence it is limited in its applications to states of being beyond that experience. Logic is grounded in the mind as it relates to the phenomenal order, hence it is unable to affirm, without at the same time denying, what extends beyond that order."

"All determination is negation. To apply a predicate to something is to impose a limitation upon it, for, logically, something is being excluded from the subject. The 'Real' is without internal difference and, in essence, is unrelated to the content of any other form of experience. The real is thus unthinkable: thought can be brought to it only through negations of what is thinkable."

"The Samkhyan-type model of emanation consists of a progressive unfolding of various principles, such as mind and ego out of a primordial nature which then forms the basis of the gross and subtle objects that constitute the world."

"Advaitins explain the relation between Brahman and the world in terms of 'satkavyavada', the theory that the effect pre-exists in the cause and in terms of 'vivartavada', the theory that the effect is only an apparent manifestation of its cause.

“From the stand point of the Brahman experience, there is no question about or problem of creation, for in this experience or state of being there is no distinction between creator and creation: creation is a question and problem only from the standpoint of rational-empirical consciousness, from the standpoint of appearance, within which philosophizing takes place. The purpose of the Advaitin analysis of the relation between Brahman and the world is to lead the mind beyond the level of asking the question to the level of seeing the answer.”

“Vedanta has been presented to the West as a Philosophy that simply condemns the world to unreality. This is not the case. For Advaita, the world, from the standpoint of reason or subject/object consciousness, is neither real nor unreal; the world is an illusion only on the basis of an experience of the Absolute. The world cannot be an illusion to one who lacks that experience. Empirically reality is, in other words transcended only absolutely. Only from the viewpoint of the infinite does everything but itself appear as without substance, without independent reality and value. In short, “there is no reason to call the world unreal before the knowledge of the Atman has been attained” (Suresvara Sambandha Vartikka, as quoted by N.K. Devaraja in *An Introduction to Samkara’s Theory of Knowledge* (Delhi: Motilal Banarsidas)).

We can readily see the connection between Bohm’s ‘Implicate Order’ and AV’s ‘Brahman’. Now I want to turn to a most extraordinary individual - Jidhu Krishnamurti. I am going to again quote some of his teachings. He, in my opinion, is an example of a ‘quantum mind’. To say a little about him, he was ‘discovered’ by the Theosophical Society. He eventually removed himself from that Society claiming that all hierarchies obscured the search for knowledge. Krishnamurti was at his best when discussing topics in groups of people where ‘truth’ could be pursued through questions and answers. He died in 1986.

### **J. Krishnamurti**

“Can one observe without the past? Insight is instantaneous. Perception of totality is an instant perception. If that is so, what is the need for preparation?”

“Thought is not concerned with the totality of consciousness, only with parts of it. Consciousness is the totality of life, not only yours and mine but that of the animals, trees, nature.”

Krishnamurti spoke of a “state that comes into being from listening at great depth; where consciousness and its movement do not obstruct, a state where seeing is whole, inclusive, non-fragmented, a state of no movement from or towards; beyond matrix and all racial memories of man”.

“If the movement of memory in the brain could end, a whole new way of perception can emerge. It is like tapping the energy of the universe.”

“I see the saints, the people who starve, who torture themselves, who study great books, who meditate. I see that I am all that. Because they have done it my brain is part of that doing. Therefore I have done it. I don’t have to go through it all. I am humanity and what humanity has done, I have done.”

“We have operated with thought as the medium of action but we have not enquired into the origin of thought deeply.”

“Order is the beginning, the source of an energy that can never diminish. To investigate it there must be an investigation onto the senses and desire. That blessedness of order is when the mind does not have a single desire and when the senses are operating fully, totally.”

“Attention has no centre. Attention is flowing from itself. It is moving, never still. Attention is a movement to eternity.”

“My concern is for the brain, the mind can be completely free of all taint of knowledge.”

“There is no understanding of the teaching, only understanding of the self.” (This was what caused the split between Krishnamurti and the Theosophical Society).

“First of all one must observe, see with great care the mind and its functioning, listen to what is within and without: out of this arises sensitivity and in sensitivity there arises insight. That insight alone will wipe away sorrow.”

“The fact is that the energy in nature, the flow of this energy rarely touches the brain cells. There are so many obstacles one has built; that the flow from nature never seems to touch and create.”

“The brain is conditioned into thinking the actor is different from the action but, when one realizes that the actor is the action, then the whole outlook changes.”

“Insight is not a matter of memory, knowledge or time, which are all parts of thought. Insight is the absence of the whole movement of thought, time and remembrance, so that there is direct perception.”

“The part of the brain being used is conditioned by thought. Thought is always limited, conditioned to conflict. That which is limited must create conflict.”

“Mind is a totally different dimension that has no contact with thought. The brain that has been functioning as an instrument of thought has been conditioned and so long as that part of the brain remains in that state, there is no entire communication with the Mind.”

“Insight is possible only with the cessation of thought and time.”

“If one were really simple, from that simplicity one could understand the whole complexity of life. But we start with complexity and never see the simplicity. To end time-thought, to listen to the universe without sound, therein lies the Mind.”

“Movement is time. Movement is thought. Thought is a material process. There is no way of measuring physical time without movement. If there is no movement in the psyche as thought, the wheel of time ends. If there is no psychological movement, then movement is as in absolute space. There is no friction. When thought is quiet, without movement, then the psyche has no

time. When there is no movement as thought, there is no becoming. It is becoming that creates duality.”

“When the brain is silent the Mind operates. That is the intelligence of the universe.”

“An insight into the operation of limitation frees the brain from limitation. Insight can only arise when there is no memory, and so no time. When the whole brain is operating it has no direction. It is free from the past. Insight is Mind operating on brain.”

“In the West, dialogue has seldom played a part in awakening religious inquiry. Indian religious inquiry from the earliest times perfected dialogue as an instrument of probing the ‘within of things’. By using logic to its ultimate limit as a tool, it could free itself from logic and delve beyond.”

“In serious religious dialogue, the ear is open, energy is gathered, the senses awake, operating simultaneously, attention fills the mind. Held in attention the mind rests undifferentiated. From this ground all responses are possible. To participate at depth there must be listening at depth. In this state the questioner and listener lose their separate identities.”

“Physical time is sun rise to sunset, the covering from one point to another. Psychological time is to become something. Time is the whole process of evolution, both the physical and psychological.”

“I see the future as the past modifying itself in the present. That is time. I will do. I will become. Now is there a timeless action that is perception - action without interval?”

“The ‘now’ is all time, as past time, future time and present time. The now is ‘what is’. The whole of the past is in ‘what is’.”

“What is” has no intention of becoming.

“What is the state of the brain that sees perception and action as one?”

“Perception is free of time. Perception has no perceiver. Perception is the “now”. Perception is not of time. There is no “I will perceive”. Perception is timeless.”

“Attention comes when there is no anticipation and no memories.”

And finally, “Knowledge is always in the field of time.”

### **Conclusion**

So what do we get out of this? It is clear that the IO is essentially saying the same thing as AV.

All philosophers should meditate, as insight is gained through meditation.

We should stop teaching our children to fear god, but to love each other and all things.

We need to speak the truth more often about personal things, to free ourselves from the psychological distractions that internal conflict brings when we are not a peace.

War should not be considered an appropriate tool to attain peace. The civilized world should stand down from its 'war on terror'.

So where is the Mind? In the plane of the absolute! According to Nagarjuna,

It Is.

It Is Not

It Is and It is Not

It neither Is nor Is Not.

Results of meditation: (sketches presented)

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