

EXPLANATION OF THE MOST MODERN THEORIES OF NATURAL SCIENCE IN  
THE PERSPECTIVE OF INDIAN PHILOSOPHICAL  
LITERATURE.

## CHAPTER — III

EXPLANATION OF THE MOST MODERN THEORIES OF NATURAL  
SCIENCE IN THE PERSPECTIVE OF INDIAN PHILOSOPHICAL LITERATURE  
LITERATURE.

"Etadyonī bhūtānī sarvānī upadhārya,

Ahamkṛtsna jagatah prabhāvah plalyays Tathā".

--The B Bhāgavat Gītā VII, 6.

"Know that all beings have their birth in me, I am the origin of all this world and its dissolution as well".

Although the different traditions of India, which are based on mystical intuitions are different, their view of the world is essentially the same. Hindus may express his experience of the ultimate one in a different manner of that Buddhists and Jainas but the basic elements of the world-view of different traditions are one and the same.

These elements are also seemed to be the fundamental features of the world view emerging from the modern Western Science.

A comparative study of the diverse phenomena in occidental modern science and Indian philosophical literature will justify the view of unified theory of the world both in India and West.

The most important characteristics of the Eastern world-view is the consciousness of the unity and mutual interrelation of all materials and events; all the different phenomena of the Universe. All things are the inseparable parts of this Cosmic Whole; and difference between them is due to 'name' and 'form' (Nāma-rūpa) of the different manifestations of the Cosmic Whole. In Eastern traditions e.g., in hinduism it is called BRAHMAN; in Buddhism it is DHARMAKAYA and in Taoism it is TAO etc. Buddhism calls it TATHATA or SUCHNESS; as it is the superior one. This evident from the following quotation

it is TAO etc. Buddhism calls it TATHATA or SUCHNESS; as it the superior one. This is evident from the following quotation :-

"What is meant by the soul as suchness is the oneness of the totality of all things; the great all-including Whole"<sup>1</sup>.

In The basic oneness of the Universe is not only the central characteristic of the mystical experience; but is also one of the most important revelations of modern physics. At present it has become evident that at atomic level and also deep into the sub-atomic level this unification is observed. As we study the various models of sub-atomic physics, it will be evident that various modes of subatomic physics are centered round a basic inter-connected, interrelated and interdependent and they cannot be understood as isolated entities; rather only as integrated parts of the Whole.

Let us look again to the Universe, which has the same origin as UNITY and ONE. It means, literally, the totality of things is considered as a WHOLE. It is also strange to mark that the world WHOLLY derives from the same origin as HOLY : which reflects the deep mystical and metaphysical associations of Cosmology. Though, until the 20th. century, the study of the Universe as a Whole lay in the domain of religion and the scientific cosmology is the recent date; we find a close relationship between these two kinds of schools of thought.

The Universe is composed of lots (perhaps an infinitely) of dissimilar or identical systems. On a large scale we can think of the Universe is a collection of quantum fields. The fact that right across

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\* 1. Ashvaghosa; The Awakening of Faith, translated by D.T. Suzuki (open court, Chicago, 1900) pp-55.

the observable Universe we see the same sorts of objects is frequently taken for granted. Yet

The above mentioned discussion is made on the basis of the so-called Copenhagen interpretation of quantum theory which was developed by Bohr and Heisenberg in the late 1920s and still the most accepted model. Quantum theory reveals an essential interconnectedness of the Universe. It shows that we cannot decompose the world into independently existing smallest units. As we penetrate into matter, we find that it is made of particles, but these are not the basic building blocks in the sense of Democritus and Newton. They are merely idealizations which are useful from a particle point of view, but have no fundamental significance. Quantum theory forces us to see the Universe not as a collection of physical objects, but rather as a complicated web of relations between the various parts of a unified whole. This is the same as the Eastern mystics have experienced the world. This

The EPR experiments and its mathematical formulation in 1964 by J.S. Bell indicate that "at a deeper fundamental level the separate parts of the Universe are connected in an intimate way"<sup>1</sup>

David Bohm, the London physicist postulated in 1974, a new idea emerging out of Bell's Theorem- The Principle of Non-local Causes.

Bell's Theorem dealt a shattering blow to Einstein's position by showing that the Cartesian conception of reality as consisting of separate parts joined by local connections is incompatible with Quantum Theory" writes Fritjof Capra.<sup>2</sup> Henry Stapp sums up the situa-

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\*1. Zukav, Gary. "The Dancing Wu Li Masters" (New York, Bantam & Co, 1979).  
 2. Capra, Fritjof, "The Turning Point" (New York: Simon & Schuster, 1982. pp-83.

all the more powerfully. He says, "The theorem of Bell proves, in effect, the profound truth that the world of either fundamentally lawless or fundamentally inseparable<sup>1</sup>\*<sub>1</sub> Bell's Theorem, has in fact, laid the foundation for what Malic Kapec calls, "neodeterministic interpretation of contemporary microphysics".

Science now looks forward to a higher kind of determinism or 'Super-determinism' which rules, guides and determines the Universe at a deeper level. Gary Zukav explains:-

"In this case, we are led to superdeterminism. This is determinism far beyond ordinary determinism. Ordinary determinism states that once the initial situation of a system is established, the future\* of the system is also established, since it must develop according to inexorable laws of cause and effect. This type of determinism was the basis of the 'Great Machine' view of the Universe..... According to super-determinism not even the initial situation of the Universe could be changed. Not only is it impossible for things to be other than what they are, it is even impossible that the initial situation of the Universe could have been other than what it was. No matter what we are doing at any given moment, it is the only thing that ever was possible for us to be doing at that moment."<sup>2</sup>

Here is another quotation from the Bhāgavadgītā, "We need not look upon the whole cosmic process as nothing more than the unfolding of a predetermined plan, the unveiling of a ready-made scenario"

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\*1. log cit, pp-85. 2. Zukav, Gary, "The Dancing Wu Li Masters (New York) Marron & co. 1970) pp-318-319. 3. Radhakrishnan, S. "The Bhagavat Gita" Blackie & Sons (India) Ltd. Calcutta, 1977. pp-281.

THE HOLISTIC SCIENCE OF THE LIVING AND THE NON-LIVING  
INDIAN AND OCCIDENT VIEW.

"An elementary particles is not an independently existing analysable entity. It is in essence of a set of relationships that reach outward to other things."

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The distinction between the living and non-living ceases to exist for a human being who attained to the ultimate vision of Reality. This is the experience of saints, sages, and mystics of all countries and creeds; who could reach the superconscious state of mind; beyond this conscious and sub-conscious levels. The ancient Hindus knew it only too well. The pivotal teachings of the Upaniṣd like "Sarvam Khalū Idam Brahman" (all that exists is verily the Brahman; one existence Bliss- Absolute) or "Iśhavāsyam Idam Sarvam" (One must see everything enveloped in the Ultimate Reality); speak of this truth. Even the later ideas of Hinduism like "Antaaahsanjñān bhavett- itī Sūkha-dhūkha Samānvita" (Even the world of the non-living have with them the dormant feeling of sorrow and joy) indicates the highest state of Superconsciousness.

Such view of One immanent Consciousness for living and non-living had not been taken to be true; but in the world of scientific discovery in 20th. century this ancient truth is being recognized and supported in many different ways; though many kinds of experiment with the living lig like metals and mute world of plant-life.

HUMAN RESPONSE OF METALS AND PLANTS.

It is Jagadish Chandra Bose; the Indian scientist who

first proved by experiments that metals which are supposed to be inanimate objects; behave like plants or even human muscles. Bose in fact; established the connection between physics, botany and physiology.

In 1899, Bose began a comparative study of the non-living like metals and the animals. Experimentally he found that metals become less sensitive if continuously used but returned to normal after a period of rest. The discovery of this 'fatigue of metals' led Bose from the domain of physics to physiology and the boundary-line between the so-called 'Living and Non-living' became hard to ascertain. Physiologists listened with scepticism and doubt to Bose who demonstrated his experiments in the physics section of British Association at Bradford. Scientists saw with wonder the similar curves of muscles and metals; On May 10, 1910., Bose demonstrated all his experiments in England and concluded with the words:-

"I have shown you this evening autographic records of the history of stress and strain in the living and non-living. How similar are the writings. So similar indeed that you cannot tell one apart from the other. among such phenomena; how can we draw line of demarcation and say, here the physical ends; and there Physiology begins? Such absolute barriers do not exist ..... It was when I came upon the mute witness of these Self-records; and perceived on them one phase of a pervading unity bears within it all things - the note that quivers in ripples of light; the teeming life upon our earth, and the radiant suns that shines above - it was then that I understood for the first time little of that message proclaimed by me

ancestors on the bank of the Ganges thirty centuries ago". They who see but one in all the changing manifoldness of this universe unto them belongs Eternal Truth - unto none else".

Sir Robert Austin, one of the world's authorities on metals in those days; praised Bose for his faultless arguments, and said:-

"I have all my life studied the properties of metals and am happy to think that they have life".

Bose's discovery established the fact that all science is independent and leads to the knowledge of unity of life,. He wrote,

"The vast abode of nature is built in many wings,- each with its own portion. The physicists, the chemists and the biologists come in by different doors, each one his own department of knowledge and each comes to think that there is his special domain unconnected with that of any other. Hence has arisen our present division of phenomena into the worlds of ignorance, vegetal and sentient. This philosophical attitude of mind may be denied. We must remember that all inquiries have as their goal the attainment of its entirety".

After the discoveries of J.C. Bose and his interpretations modern science is gradually discovering that there is only one 'Consciousness' which pulsate in man, plants and even metals, in various ways. And the nature of this pulsation of life in the so-called non-living can be demonstrated not in one or two but a hundred different experiments.

#### THE BIOPASMIC BODY.

A Russian Electrical engineer-cum-amateur photographer

Semyon Davidovich Kirlian and his wife Valentina first made a successful photograph of the 'Strange Energy' which radiates from all living things. In their photos of leaves in a living plant "rays of energy" and "whirling fire-balls of light" appeared to shoot out of plant into space.<sup>1</sup> In the first Western conference on Kirlian photography and Human Aura, in the spring 1972 at N Manhattan's United E Engineering Centre, the Kirlian technique was successfully demonstrated by two scientists Thelma Moss and Kendall Johnson. William A. Teller, chief of the material science department at Stanford University, used the Kirlian technique to photograph 'aura' round a human finger-tip. Later on it was found that in Kirlian photograph the aura of the "Entire leaf" is found although some portion of the leaf was cut away before the photograph is taken. Teller thought that this photography did discover the holographic aura body of the leaf. Later on Kirlian photos of faith-healers indicated "some sort of energy flow the hands of the healer into the body of the patient."

Working on the Kirlian technique the Russian scientist Vladimir Inyushin summed up some of his new findings in 1968 in a long scientific paper. The biological Essence of Kirlian Effect. While Kirlian thought that the aura in his photography was used by the electrical state of the organism, Inyushin spoke of them as the 'biological plasma body' or the 'etheric' or 'astral' body of the ancients. In physics 'plasma' is defined as an electrically neutral; highly ionized gas composed of ions, electrons and neutral particles, which

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<sup>1</sup>1, Peter Tomkins and Christopher Bard, 'The secret life of plants' Penguin Books, 1974. U.S.A. pp-81 - 90.

has been called the 'Fourth state of matter'.<sup>1</sup>

Swami Vivekananda spoke of this aura of human body which is traditionally painted as halos round the head or face of divine personalities.

"Halos are the symbols of inner light and can be seen by the Yogi. Sometimes we may see a force as if surrounded by flames without erring"<sup>2</sup>

'The bioplasmic body' in its latest experiments, has emerged as a distinct 'energy body', a duplicate of the actual human body which has its own 'electromagnetic field.'. This is the SŪKSMĀ<sup>3</sup> SARIRA' or the finer body which the Hindus knew ages ago. This finer body is a combination of the 'vital sheath' (prāṇamaya Kōṣa) the mental sheath (manomaya Kōṣa), and sheath made of thoughts, ideas, and knowledge of the individual (Vijñānamaya Kōṣa); which lie behind this gross body of flesh, blood and bones. Dr. John Pierrakes, a psychiatrist who could visually perceive 'the energy body' around plants and animals and human beings, said that the energy coming out of the individual is 'a loving force emanated by consciousness!'

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1. loc cit. pp-183

2. Vivekananda, Swami. "Complete works. (Mayabati Memorial Edition vol. 8. pp-50

## (c) THE HOLOSTIC BACKGROUND OF EXISTENCE.

## INDIAN AND OCCIDENT.

From the discussion of 'Holographic Paradigm' we come across the term 'implicate Order' which is 'primary'; 'self-existent' and 'universal' 'an undentifiable' totality'. This is the ground for both 'life-explicit' and 'immanent matter' whose functionings go on in an 'unbroken and undivided totality'. This is recognized as the SELF or BRAHMAN; the substratum of all things - living and non-living, as described in Upanisads.

## REFLECTIONS OF THE HOLOGRAPHIC PARADIGM.

One of the simplest and most functional examples of the holographic paradigm is displaced in the expression of MANDALA. It is a sanskrit word which refers to a particular type of circular geometrically arranged drawing that it is frequently used as a focus for meditative self-expression act of the Universe, It is supposed the designer or Creator of each MANDALA seeks first to identify some particular pattern or experience from entire range of life, such as relationships between people's feelings of love or hate; history of civilization etc. Once the spectrum of experience is selected, it is then examined deeply until the artist could get the entire experience into its most elemental forms and dynamics. These basic relationships are then translated into symbolic pattern which are known together into the MANDALA drawing.

This symbol serves a number of purposes.

It exists as a thing on its own, a work of art, statement of beauty. It is also believed that when a person looks deep into the MANDALA; the person will not only experience the lines, flows and a statements of the arts, but in addition will begin to enter into a symbolic drama that the drawing offers. Thus the experiencer of the MANDALA comes to appreciate and understanding of the Universal context that the MANDALA has definitely captured. This is a perfect instance of the manner in which a particular aspect of life stands as a whole unto itself as a storehouse of information of some grandure, large whole. In this sense, the MANDALA is a HOLOGRAPHIC or WHOLE/ PART EPIPHANY.

Thus, it has become evident that this HOLOGRAPHIC PARADIGM may be treated as the another name of the monoistic or Advaitic (non-dualistic) philosophy of Vedānta, which Indian developed three thound years ago.

It is the practical application of tthis monoastic Vedānta. This can turn the scientists to a value-based culture of science.

## (D). THE FIELD OF LIFE.

## MORPHOGENETIC FIELD.

"When Rupert Sheldrake's book 'A New Science of Life' came out in England in 1981..... letters poured in. They still do, and they are mostly favourable to the new idea. And to even the most scientifically backward of people, the possibilities are intriguing beyond words".

M. Kernan, The Washington  
Post.

Just as the mechanistic approach fails to account for certain sub-atomic phenomena, Sheldrake believes it also leaves a number of disturbing and unsolved puzzles in his own field of biology. To explain the different biological phenomena Sheldrake proposes the existence of a new kind of field, a mysterious force that he says connects each individual with all other individuals in its species past. Sheldrake further suggests that each species has a "group mind" that may provide a scientific basis for the understanding certain psychic phenomena as well.

Since the last sixty years biologists are trying to conceive of a single force-field in a living organism. In 1960s M.S. C. Northrop and Harold S. Burr postulated this field as the Biogravitational or the L-field.

Rupert Sheldrake put forward a similar idea of Morphogenetic F Field on the basis of some of his successful experiments.

The path that ultimate led Sheldrake to formulate his

theory is similar in certain respect to the situation that conformed Bohm. In biology, as in quantum physics, the orthodox view is that phenomena such as living organism are nothing more than a complete machines, governed only the known laws of physics and chemistry. Sheldrake became troubled with what he perceived as problems - what is the central or ruling force-field inside the particular living organism which guides and whose power is manifested through the force-field of of the billions of molecules and atoms?

Formost among these is the problems of MORPHOGENESIS. The word comes from the Greek term MORPHE, meaning "form" and GENESIS; meaning 'birth'. Thus the problem of morphogenesis is the mystery of how living forms come into being. For example, we know from the mechanistic approach that DNA\* in each of our cells contains the coded information that describes how all of the parts in our body are put together. It is the conventional wisdom in science that th

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the DNA can therefore be thought of a blueprint.

What science does not know is what directs this blueprint make the decision that it seems to make. It is important to note the genetic blueprint in the cells that constitute any given organism are exactly the same. How does a cell know what it should become? How does a heart cell know to read only the information off the DNA that tells it how to become a heart cell? What force allows all of the building materials to read the blueprint, discern their own special suitable arrangement out of thousands of possibilities, and then align themselves into a house? This is the one of the problems of morphogenesis.

Another problem of morphogenesis concerns a phenomenon biologists call "regulation". Regulation is the ability of a developing organism to alter or regulates its own design if something unexpected happens to its original plan of development as in the case of a cell-mass divided at a certain stage of development identical twins are born and not a partial humanes. Just as each half of a hologram contains a complete version of the original image; so each half of a developing assemblage of cells contains a complete version of the original organism enfolded within it. The current mechanistic approach of biology has no explanation for this phenomenon.

A third unexplained problem of morphogenesis has do with with regeneration - the ability of many organization to replace or restore damaged areas. If one loses a leg, it can quickly grow to a new one. If a starfish is broken into peices can grow into a new starfish.

Once  
One again, as with a hologram, it seems that living

organisms possess a curious properties of wholeness.

It might not be absurd to think of a insulin field; or even of a swan as a quantum or unit in a swan field. But this may be just another way of thinking about morphic fields : any particular swan is a manifestation of the swan-morphic field.

Morphic fields may be comparable in status to quantum fields, then these may be said to have morphic fields, then these may be what are already described within quantum field theory. The Morphic fields of molecules may be already be partially described by quantum chemistry. But the morphic fields of all cells, tissues, organs and living organisms have so far been described only in vague and general terms. Something is known of their properties from the study of developing plants and animals, but the way in which this fields actually organize; the processes of morphogenesis remain obscure.<sup>1</sup>

In fine, the "morphic field" is only the "field" of the activities of Life-force inside a human body or living organism.

Swami Vivekanda explains for modern man the Indian idea -as of AKĀSA (Primal Matter) and PRĀNA ( Primal Energy) out of which, according to his theory, all the world of those of living and non-living come into existence.

"According to the philosophers of India, the whole Universe is composed of two materials, one of which they call ĀKĀSA. It is the omnipresent, all-pervading existence, It is the ĀKĀSA becomes the human body, the animal body, every form that we see, everything that can be sensed.

By what power is this ĀKĀSA manufactured into this

Universe? By the power of PRĀNA. Just as ĀKĀŚA it is the infinite, omnipresent, material of this Universe, so is the PRĀNA, the infinite, omnipresent manifesting power of the Universe. At the beginning and at the end of a cycle everything become ĀKĀŚA and all the forces that are in the Universe resolve back into the PRANA, in the next cycle, out of this PRĀNA. evolved everything that we call Energy that we call energy. It is the Prāna, is evolved everything that we call energy. It is the PRĀNA that is manifesting as the actions of the body, as the nerve current, as thought force.<sup>1</sup> Thus, the PRĀNA is the vital force in every being, Thought is the finest and highest action of PRĀNA.<sup>2</sup>

PRĀNA which is the life principle in the individual, is also the cosmic principle of Energy. The Upaniṣds speak of the identity of the microcosm and macrocosm; that which is manifested in the Universe as a whole with all its phenomena, finds complete expression on man as well, although in a miniature form. The Brihadāranyaka Upaniṣd says, "Prāna vai Brahman"--"Prāna is verily Brahman".<sup>3</sup>

Both primal energy and primal matter are only manifestations of projections of the 'One' Undivided substratum which Vedanta describes as Absolute Consciousness or Absolute Existence.

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1. Complete Works of Swami Vivekanda. (Mayvati Memorial edition)

2. Ibid. pp-150-151. 3. Bṛīhadārnyaka & Upaniṣd (IV, I, 3)

## SUPERDETERMINISM:- OCCIDENTAL VIEW

VS

INDIAN VIEW.

David Bohm, the London physicist, postulated in 1974, a new new idea emerging out of Bell's Theorem - the principle of Non-local causes.

"Bell Theorem dealt a shattering blow to Einstein's position by showing that the cartesian conception of reality as consisting of separate parts joined by local connection is incompatible with Quantum theory", written by F. Capra<sup>1</sup>. Henry Stapp sums up the situation all the more powerfully. He says., "The theorem of Bell proves in effect, the profound truth that the world is either fundamentally inseparable.<sup>2</sup> The Principle of Local cause will mean that when a man meets with an accident in New York, nothing is going to happen to another man in New Delhi. But, the new principle of non-local causes implies that whatever happens in our part of the Universe on a single entity has its effect which can probably be detected in any other part of the universe on a similar entity. Bell's Theorem, has in fact, laid the foundation for what Malic Kapec calls "non-deterministic interpretation of contemporary microphysics".

Science now looks forward to a higher kind of determinism

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1, Capra, Fritjof. The Turning Point (New York, Simon & Schuster 1982) pp- 2. Ibid, pp-86.

'or 'Superdeterminism' which guides and determines the universe at a far deeper level as Gary Zukav explains.

Ordinary determinism states that once the initial situation of a system is established, the future of the system is also established. Since it must develop according to inexorable laws of cause and effect. This type of determinism was the basis of the "Great Machine" view of the universe. According to Superdeterminism not even the initial situation of the universe could be changed. Not only is it impossible for things to be other than what they are, it is even impossible that the initial situation of the universe could have been other than what it was. Not only is it impossible for things to be other than what they are, it is even impossible that the initial situation of the universe could have been other than what it was. No matter what we doing at any given moment, it is the only thing that ever was possible for us to be doing at that moment.<sup>1</sup>

Zukav thinks that this super-deterministic model of Reality may be a Buddhist's idea, but he is also aware that this is the basic Hindu or Vedantic idea on which seers and mystics have lived dedicating their whole lives with complete surrender to the will of the Ultimate Reality. Zukav chooses the image of Kali of Hindus in order to explain this super-deterministic Reality<sup>2</sup> of modern physics.

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1. Zukav, Gary, *The Dancing Wu Li Masters*, (Flamingo Paperbacks) 1988) pp-318-19. 2. *Ibid*, pp-330.

"Eastern religion have nothing to say about physics; but they have a great deal to say about human, In Hindu mythology, 'KALI', the Divine Mother is the symbol for the infinite diversity of experience. Kali represents the entire physical plane. She is the brother, father, sister, mother, lover and friend. She is the friend, monster, beast and brute. She is our sense of accomplishment and our of doing the worthwhile. Our thrill of discovery is a pendant on her bracelet. Our gratification is a spot of colour on her cheek. Our sense of importance is the bell on her toe".<sup>1</sup>

In Sri Ramkrishna's life this Divine Mother Kali represents the Final Power. All-determining will in the Universe that both transcends and controls all free will of individuals. She is "Icchamāyee", the one whose will is law. She can and does veil our Knowledge of Reality by her power of Maya too whenever She wishes,

Bell's Theorem, Zukav thinks, compelling physicists to prod their intellects to lead forward, "They are dancing with Kali, the Divine Mother in Hindu mythology" writes Zukav. Vedanta calls the transcendent immutable Reality 'Brahman'. When Brahman is active - creating, sustaining and destroying, it is ultimately responsible for the so-called 'free will' of man.

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1. Log cit, pp-329.