

## **A Synthesis of Advaita Vedanta and Modern Physics on the ground of causal principle**

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**Causal Principle:** Every effect is caused. "Every event has a caused." This is known as the principal of universal causation. Some thinkers told that everything is strictly caused while others adhere to chance, randomness and probability to explain the functioning of the phenomenal world. The concept of cause arises in two different context is, empirical and cosmological. We observe empirical events; we try to know the doer of the event, the reason for which he did his purpose of doing and the antecedent state of the effect. We try to pinpoint the condition without which the event would not have occurred. This is the empirical context to which it is referred here. A few questions are asked about the universe as a whole, who created the world? What were the precursor materials of which the world was made? Were some instruments used in making the world? Why was the world created? What was the purpose of the creator in creating this world? This is the cosmological context in which causality is sought for. Since very ancient time, Indian philosophers have remained some respectable western Philosophers like A.J. Ayer, R.G. Collingwood and C.J. Ducasse have found usefulness in the causal concept, although it was logically unacceptable to them.

Of course, the empirical use of the cause-concept<sup>1</sup> cannot be undermined. Whether somebody is Bertrand Russell or Emmanuel Kant,

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he has to bother for the empirical use of cause when he suffers from tetanus, tuberculosis or leukemia. He does ask the doctor what the cause of the disease is. The world is empirical; life is empirical; pleasure and pain are empirical; and suffering is empirical. Hence anything empirical is not unimportant for us.

David Hume says that there is no such thing as a priori knowledge of causes. "There are no objects" Wrote Hume, "which by the mere survey, without causality experience, we can determine to be the causes of any other; and no objects, which we can certainly determine in the same manner not to be the causes."

This is an important point which has confused many philosophers. They have erred by mixing up two issues, in the causal principle and the empirical methodology of the identification of a specific cause of a specific action or effect. The empirical identification of the cause of an effect is not the business of philosophy. It is done through experience by controlled observation and intelligent analysis.

It is not correct to think that an effect has necessarily a single cause or a cause has a single effect. There may be single-cause, single-effect single-cause multiple-effects and multiple causes-single-effect relationship. The organism mycobacterium leprae causes leprosy in man. No other organism can cause this disease. This is an example of single-cause, single-effect. Alcoholism causes liver cirrhosis, hypertension and hyper acidity. This is an example of a single-cause, multiple-effect, virus infection, excessive smoking, excessive betel chewing, and excessive drinking or over exposure to radiation may cause cancer. This is an example of multiple-causes single effect.

**Concept of cause in Advaita Vedant:** 'Cause ' has been defined in different ways, with references to the concept of cause in Advaita Vedanta, a definition is furnished here :

"A Cause is an agent of an action, in which modification or

transformation may or may not be involved, or a precursor material which is modified into a product”.

The etymological meaning of the Sanskrit word Karana (Cause) is “That which acts”. Thus the agent of any action or the subject (Karta) of any activity is the cause that action. The term used in Advaita Vedanta for action is kriya. Action like sitting, walking laughing and sleeping does not bring about any modification or transformation. Action of becoming such as ‘Clay becoming pot’, ‘gold becoming necklace’ or ‘water becoming ice’ involves transformation or modification. If C becomes E, the product is E<sup>2</sup>. The Product is called effect in the causal theory. The effect is called karya in Advaita Vedanta. Transformation or modification may or may not be involved in a kriya or action. The agent (Karta) of an action, with or without involvement of modification or transformation, is the operative or efficient cause (nimitta- karana). In actions where modification is involved, the precursor substance which becomes the product is the substantial or material cause (upadana Karana).

All of the micro - world seems to be absurd. There is no law in the micro -world where every entity functions eccentrically as it takes. The quantum physicist asks himself; “what the reason of particle P1 is or P2 act in this way or that way? What is the purpose of such random action? What is the goal of the chaos? Why is this absurdity?” No satisfactory answer to these questions is available. And so the quantum physicist concludes that there is nothing causality.

Advaita Vedanta accepts the satkarya-vada of sankhya, but rejects the notion of transformation. To distinguish from the theory of transformation, Advaita Vedanta has got the theory of phenomenal appearance (Vivarta-Vada). Brahman is immutable, B remains as B; it never becomes non-B. Again, Brahman is non-dual, there being nothing second to it. We can talk about transformation when B becomes C, D, E or anything else. There can not be transformation when the non-dual

B remains as B. But, in spite of the fact that Brahman is immutable and there is nothing else other than the non-dual Brahman, we experience the world and its multiplicity. How do we explain this? Advaita Vedanta does it by the Vivarta-vada<sup>1</sup> there is no real transformation of the whole or part (Brahman is part less)<sup>2</sup> of Brahman into the world. The world is but an illusory appearance in Brahman. Multiple forms appear; a name is given to each form by the experiences. Thus the whole world of name and form (nama-rupa)<sup>3</sup> is not real in the absolute sense. The Vivarta world is empirical and relative (vyavaharika); it is not absolute (paramarthika).

There is a rope. It gives an illusory appearance of a snake. Here R is the substratum (adhisthana)<sup>4</sup> and S is its illusory appearance. According to Sankara's terminology, it is superimposition (adhyasa), one appearing as the attributes of another (anyasya anyadharma vibhas)<sup>5</sup>. The universe is superimposed on Brahman. But for this superimposition, there is no vivarta and there is no world.

**Causality in Quantum Physics:** Every event was thought to be caused in classical physics. Newton considered that it would be possible to predict the entire course of the future if we knew the position and momentum of every particle of the universe. The universe of Minkowski, the mathematics teacher of Einstein was determined. In the four-dimensional space-time co-ordinates, every object and every event are fixed; the past, the present and the future are all determined. Einstein believed in a deterministic universe and was very much reluctant to accept that God plays dice with the world.

In contrast to the classical physics, quantum physics became acausal. This idea started with Heisenberg's principle of indeterminacy. We cannot know the position and momentum of even one particle precisely. According to quantum physics, it would be impossible to predict the future. Even for the present, Heisenberg has said in his

paper," We cannot know, as a matter of principal, the present in all its details."

The conclusion of a causality derived from Heisenberg's principal of indeterminacy can also be obtained from the other findings of quantum physics- the wave mechanics, the Heisenberg -Born-Jordan matrices and Dirac's q numbers. In 1927 Niels Bohr presented the Copenhagen interpretation of quantum mechanics that altogether rejected the concept of causality, 'collapse of the wave function'. The Principle of Complementarity, the participatory universe, the many worlds hypothesis, the vacuum fluctuation, the inflationary universe and many such other notions of quantum physics could not accommodate the principal of causality.

Scientists working on particle physics observed particles appearing from nowhere and disappearing into nowhere; they noticed particles of higher masses originating from those of lower masses and vice -versa .The micro -world appears to be chaotic .Particles such about, collide against one another and such in other directions for further collision against others.Chaos prevails in the total scenario of the micro -world.

Appearance of a particle, disappearance of a particle, collision of particle P1 against particle P2, a particle traversing a particular path and in general, all events of micro - world occur randomly. In the world of particle, with which quantum physics is principally concerned, all events occur by chance alone .The world -be occurrence of an event has a probability, not a certainty. By means of statistical laws, one can predict the probability of the occurrence of an event. But that the predicted event must occur can not be foretold. Quantum physicist observes chaos in the micro -world; but amid chaos, statistical regularities are observed .Hence, acausality is accepted in quantum physics.

**Concept of Acausality in Advaita Vedanta :** Brahman is attribute-less and function-less. It does not change. Brahman, B, remains as B (B'!B'!B'!B'!B). Thus, There is no previous state of Brahman; it is unborn, beginning less and causeless<sup>6</sup>. Since Brahman is action less, it cannot be the efficient cause of any activity of the world<sup>7</sup>. Brahman does not undergo any sort of modification. Hence it does not give rise to any product. Thus Brahman is not the material cause of anything of the world<sup>8</sup> Brahman is endless<sup>9</sup> It continues to be B without any terminations. The concept of cause and effect is not applicable to Brahman which is acausal.

God is also causeless. Timeless Brahman is reflected in its power Maya and this cosmic, reflected consciousness is God. Since Brahman and Maya are timeless and without birth and death, so also is God. Nobody or nothing is the cause of God who is also not the material cause of anything, but God is not action less and attribute less. He controls Maya that operates. He creates, sustains and destroys the world, thus, he is the efficient cause of the world.

There are some references<sup>10</sup> in the scriptures, where Brahman has been considered as both the efficient and material cause of the world. Such scriptural statements may be interpreted in a figurative sense, Advaita Vedanta is non-dualistic. It accepts Brahman and nothing second to Brahman as reality. Thus, God and Maya are not second and third entities. There is no Maya without Brahman and so also there is no God without Brahman. For this reason, the causal role of God and Maya has been figuratively ascribed to Brahman.

Advaita Vedanta considers that action is not possible without efficient cause, that modification is not possible without material cause, and that causality is not applicable to the functionless, attribute less and changeless Absolute.

**Advaita Vedanta & Quantum Physics :** This is, however an erroneous conclusion. The non - dualist philosopher says that the concept of cause of Advaita Vedanta does not have anything such as purpose, reason, rationality, justifiability, objective and goal. The action may be rational or irrational, wise or absurd, purposeful or non - sensical.

If it is action, it has a doer and that doer is the efficient cause. If the action involves modification, a product is the out come of the action and the precursor of the product is the material cause of the action. The concept of cause does not entail anything else. Advaita Vedanta holds that God has no necessity of creating the world<sup>11</sup> and that it is merely for the sports (lila)<sup>12</sup> of God, who, as the magician, conjures the world magic. Maya is in the control of God. Maya conceals and projects, Advaita Vedanta, which considers the phenomenal world as the sports of God and as illusion, does not expect reason and justifiability of each and every action of each and every entity of the world. Although man is conscious, has consciousness is very much limited. Matter which is insentient has also very limited consciousness due to reflection of the universal consciousness. In spite of this fact that consciousness is reflected, even man is affected more by Nescience (avidya) than by knowledge. For every action to be reasonable and justifiable, the doer of the action must have full knowledge. Where is the question of sound reasoning and justifiability in the magical performance, illusory appearances and deluding functioning of Maya?

There is, however, a misconception about the lawlessness and causelessness of chaos. It has already been said that every action has cause, either efficient or efficient and material. Random actions are actions and hence have causes. There are also laws for random actions. The whole discipline of statistics has been developed to

discover the laws of chance action. A familiar example may be cited here to explain the order in chaos. The sex-ratio in the human society is ordinarily maintained at about 50:50. No individual regulates it; there is built in mechanism in Nature, by which it is self regulated in unison with the laws of probability of statistics. Ejaculated semen carrying millions of sperm enters the female genitalia. The sperm that first reaches the ovum and enters into the latter is the winner. The sperm that fertilizes the ovum may carry an X or Y chromosome, since each sperm contains either X or Y chromosome. Every ovum invariably carries an X chromosomes<sup>6</sup>. The fertilized zygote thus becomes XX or XY. The former combination gives rise to a female child and the latter a male one. Since a sperm has got 50 percent chance of carrying an X or Y chromosome, the probability of producing a male or a female baby in a large population is always 50 percent whether an individual fetus will be male or female can not be predicted before fertilization takes place. But the total sex-ratio in the population at large can be predicted with almost one hundred percent precision. The seemingly and race of the sperms in the female genital tract is chaotic. But below the surface of the chaos, order prevails. Whether some phenomenon occurs by following the binomial theorem of statistics of some other phenomenon follows the normal curve of error, it boils down to the fact that there is order (rta) in disorder (anrta). As Sankara has said order and disorder are coupled (satyanrta mithamikrtya)<sup>13</sup>. All the equations of quantum mechanics depict laws of Nature in mathematical language; the micro-world with which these laws are concerned is chaotic, but these laws present a picture of order. Laws and order are interrelated. There cannot be laws without order and vice-versa. Disorder is superficial, but order is deep; disorders superstructure, but order is base. Thus, it is not correct to say that the whole world is absurd.

The Marxist philosophers do not accept any cause of the world. In their view, there is no God, the world was never created. It ever existed in the past and it will ever exist in the future. It has already been discussed that the world cannot be eternal. Further, the cosmologists have already got empirical evidence for the beginning of the world and they are theorizing on the end of the world. The universe was born with the formation of the cosmic egg and started functioning with the big bang explosion. What was it before the cosmic egg was formed? The scientists do not have an answer. They express their dilemma, as is evident from the following paragraph:

On the far the side of the Big Bang is a mystery so profound that physicists lack the words even to think about it. Those willing to go out on a limb guess that whatever might have been before the Big Bang was, like a vacuum, unstable. Just as there is a tiny chance that virtual particles will pop into existence in the midst<sup>7</sup> of subatomic space, so there may have been a tiny chance that the nothingness would suddenly be convulsed by the presence of a something<sup>14</sup>.

Science has not solved this mystery. It will never solve as long as it remains confined to matter only. The scientists become escapists when they confront the problem of cosmogony. The concept of acausality that was erroneously deduced from the findings of quantum physics consoled the twentieth century materialists who were already afraid of the ghost of God. But escapism does not solve the riddle of cosmogony. Hence the mystery continues to be a mystery.

Of all religion and all philosophical systems, Advaita Vedanta is the only system that solves the mystery of cosmology and cosmogony. It takes care of all of science and presents an integral picture which answers all probable queries satisfactorily. This is the excellence achievement of mankind through Sankar.

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