

Modern Physics and Buddhism

“At the beginning, Nature set up matters its own way and, later, it constructed human intelligence in such a way that [this intelligence] could understand it.” [Galileo Galilei, 1632 (Opere, p. 298)].

The recent dialogues between the Dalai Lama and contemporary scientists from various disciplines raised a lot of interest in the study of the parallels between modern physics and Buddhism. Attempts have been made towards the comparative studies of various branches of science, studying parallels between modern physics; especially between quantum theory, cosmology and Buddhist concepts.

Prof Sisir Roy, a scientist from the National Institute of Advanced Studies (NIAS), Bangalore has attempted a critical analysis of the Quantum Vacuum theory and Alayavijnana philosophy of Buddhism, to explain the creation and existence of universe.

According to the quantum field theory, the evolution of the universe started from a true vacuum with perfect symmetry and cooled into our present vacuum state (called false vacuum), which may melt down again. The release of energy due to breaking of symmetry may explain the origin of the universe, popularly known as the Big Bang. Coincidentally, the Alyavijnana of Yogacara Buddhism has a similar theory. According to this theory, the state of consciousness is presented as an experienced mental phenomenon that can be accessed through the meditation. The primordial consciousness may be regarded as an ultimate ground state of consciousness, and it can allegedly be ascertained through the cultivation of contemplative insight. These relative and ultimate vacuum states of consciousness bear remarkable similarities with the definitions of relative and absolute vacuum states of space presented in contemporary physics. Here, the relative and absolute vacuum states correspond to false and true vacuum states.

Looking into the model of true and false vacuum from the angle of modern scientific aspects, each false vacuum is associated with different attributes like gravitational interaction, electromagnetic interaction, strong interaction and weak interaction. False vacuum are unstable and decay to true vacuum under certain physical conditions. Whereas, true vacuum is perfectly symmetric because of the presence of characteristics of electromagnetic fields, strong fields, gravitational fields. Under certain conditions, these dynamic potentialities give rise to the birth of universe and all living entities. Vacuum can be thought of as storehouse with some qualities like self-referential, self-tuning associated with it. So this vacuum is a dynamic substrate with aspects of consciousness. This dynamic nature of vacuum with memory of fields generates not only the structure of the physical universe but also the intelligent beings.

Roy further explains, “there exists twofold activity through which *ālaya* [consciousness] determines itself: Internally, it takes the form of a physical body with five sensory organs and a storehouse of its own potential and fields or seeds or *bijas* of its future modifications. One

can term this as the dynamic potentiality. Externally, it assumes the form of a physical universe which supports all living entities.

The ideal transformations of *ālaya* are known as its image aspect (*nimittabhāga*) and it continually perceives those self-manifested images or vision aspect (*darśanabhāga*). The perception aspect is known as the subjective pole of the *ālaya* related to the false vacuum. The appearance of the physical universe occurs due to development of universal bijas of the *ālaya* and that of individual physical body and its senses due to development of non-universal bijas.

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