

The Need and Significance of Modern Science

One thing I would like to make clear is that Ven Amchok Rinpoche, the Director of Library of Tibetan Works & Archives (LTWA) has come here and his purpose of visit is connected with a project about which I have been thinking for many years. It has been my wish that the learned scholars of the three "Central Seats" as well as the monks who are intelligent in study take keen interest in the various disciplines of modern science such as psychology, physics and astronomy. I have felt the need and importance of entering into discussion with those specialized in various fields of modern science, which shares close affinity with Buddhist philosophy and tenets. Then by working out a proper syllabus and a convenient time-table one can conduct classes or workshops to impart education in science.

I have previously expressed my wish that the LTWA shoulder the responsibility in taking the initiatives. Today Rinpoche has purposely come all the way and has also circulated a written information. I consider this a matter of great significance. Today, science means a most valid method of discovering truth; and this is what science does. Generally speaking, a genuine scientist always does his or her research objectively, free from any pre-conceived and biased notions or ideas. The field of their research, if compared with the wide scopes of Buddhist philosophy, has never been a vast one. Primarily, their field of interest has always been the external material world and not the inner cognitive mind.

The scientists categorize themselves into two groups, the "conservative" and "liberal." The conservative scientists mainly deal with things relating to mind and its psychic force. While material things constitute the main sphere of study for the liberal scientists. I think the main reason of this classification is because of the multiplicity and disparity of concepts and thoughts that comes up in the study of mind; and the difficulties faced in validating and measuring these conceptions ad infinitum.

The well-founded disciplines of modern science are the fields that are directly related to us (Buddhists). Generally speaking, even religions including Christianity which are widely practiced in the West, are labeled as mere "dogmas" by the modern scientists. Science on the other hand is recognized as a field of study that deals with the observed facts and the relationship amongst those facts. Indeed science has enormously influenced the life of people in this world through its study of chemical process, biological aspects and so forth. For example, when we become seriously ill, we go to hospitals, which we associate with "outsider's art of healing" to seek medical treatment. The hospital, through its modern techniques and appliances, makes correct diagnosis and proper medication possible. The methods of diagnosing diseases and prescribing medicines are based on experiences of a physician, and are not mere rituals based on teachings such as the Medicinal Tantra preached by Buddha Bhaishajya. Although it is undeniably true that there have been cases of wrong

diagnosis and medications. Also there are medicines and curative measures that relieve our pain and provide solace for a while, but turns detrimental in the long run. However the greatness of medical sciences is widely appreciated and has so far been successful in preventing and treating the deadliest of diseases that inflicts the life of all living beings. It is also sad that many living beings despite the progress in medical science succumb to illness and diseases.

Modern appliances and devices such as radio and audio-recorder, which we use in our daily life, are the products of ceaseless effort and experimentation of science and technology, rather than mystical clairvoyance or miracle powers. As a matter of fact, in this world, modern science is viewed as a field of study that searches for observed facts based on experimentation. Developments in the field of science and technology have had positive impact on the life of people living in this world. It has directly benefited the people by helping them live a better and more comfortable life.

As I have mentioned earlier, religions in general are viewed as ideologies based on belief in god as the almighty creator. From Buddhist perspective, these are considered as religion based on false reification. In terms of false belief, Buddhist teachings classify them into two-fold: false belief springing from reification, exaggeration of factual truth; and false belief stemming from repudiation, denial or under-estimation of truth. Of these, most of the religions are based on reified truths. By these words, I intend to relate that what exist in reality should be known, and what is known should be validated and well substantiated. Scientist took religion as ideologies that were unfounded and baseless, and hence do not see their teachings as complying to the true nature of phenomena's existence. Therefore, in the western countries, religion and science are viewed as completely paradoxical and antithetical with no common factors to share.

Since fifteen to twenty years back, out of fondness and interest for modern science, I have tried to make contacts with scientists. I have cherished this idea of learning the varied field of science even from my childhood days. Thereafter, I have tried to make contacts with those specialized in the field of science and technology. Some of my western friends aware of my interest have told me that science is an enemy of religion. I was also cautioned over my interest in science by explaining how it has been a cause to the ruin and destruction of many religions and faiths in the West. However, I was least affected by these warnings as I am confident over the fact that the teachings of Buddha, unlike others, are based on truth and reality.

In Buddhist teachings, when refuting opinions of the lesser schools in the process of establishing truth from facts and reality, the higher schools formulate their views based on logical reasoning and critical analysis, rather than citing words of the Buddha. In the process of reasoning and analysis, it forewarns the arisal of fallacies and consequences on clinging to the lesser views and ideologies. For example, when learning and teaching Tantra, we begin with the

basis of phenomena's existence, the means of transcending the paths by relying on the basis, and finally the mode of actualizing the results through dependence on the paths. Also in the general teachings of the Mahayana vehicle, the basis-two truths, the paths- method and wisdom, and the results- the two bodies of Buddha are explained. It also teaches how cultivation of spiritual paths and accomplishment of goals are attained by dependence upon the basis.

On that which is void of basis, no paths can be cultivated, no goals attained. Therefore, we should look for truth wherever it is prevalent. And truth found through this approach can definitely help develop our inner mind. It will eventually help us realize the fundamental nature of how all sentient beings want happiness and do not want suffering.

Confident of this fact, I got in touch with scientists, through which I became acquainted with many of them. In their treatment of material world, evolution of universe, and nature of chemical substances, I feel they are very precise and accurate in their analysis. For example, our [Buddhist] view extensively explaining subtle phenomena and time, especially the time division of snapping of a finger by a healthy person into 365 flickering instances, is extremely gross compared to that explained by the modern physicists. The treatment of time and energy by modern scientists are at a subtlest level possible. We also speak of atoms of different types and forms namely *lcags-rdul* (iron-particle), *chu-rdul* (water-particle), *ri-bong-gi-rdul* (rabbit-particle), *lug-rdul* (sheep-particle), and *glang-rdul* (ox-particle). These varying ranges of subtle particles are classified from gross to subtle- firstly *rdul-phra-rab* (atomic particle), then *rdul-phran* (Sub-atomic particles), followed by iron-particle, water-particle, sun-rays particle, hare-particle, and so forth. However, compared to the explanations of modern scientists, we realize these as being at a very gross level. Therefore, I feel the discoveries and revelations made by the scientists can certainly help us develop a better understanding.

Similarly, modern scientists can also benefit greatly from the teachings of the Buddha. Presently, the radical materialists in their investigation and experiment over subtle objects found out that nothing truly and ultimately exists. As they are unable to posit any truly existing object, they feel that true existence perhaps never exists. However, Buddha-dharma, since thousands of years before, through proper analysis and investigation, have proven the fact that when searched for, no single object of observation truly and inherently exist. It is recently that scientists have realized things lack of true existence, as it is unfindable when closely examined and searched. When they do not find it, they feel that everything existed as mere projection of our mind, hence drawing themselves close to the views of the *Cittamatrina* (Mind-only) school of Buddhism. At this juncture, they are in pure philosophy and not in the discipline of modern science.

These days, scientists, especially those who have reached a respectably high level of proficiency are turning towards philosophy. In the past, philosophy refers to a discipline wholly dealing with mind and conceptions. And science is recognized as a practical field of study that involves experimenting substantially existent material objects. However, these days their distances have become less. When the object of experiment or observation is beyond the reach of one's ability and perception and when even the inductive methods fail, scientists are left with no other options, but to take up philosophical approach based on study of logic and metaphysics. There are certain points where study and experiment fail and scientists are left with no clues to a problem and its cause.

From this point of view, the Buddhist principle of dependent-origination is worthy of our admiration as it explains phenomena's nominal or relative existence. Scientists' approach towards looking for the nature of phenomena had brought them to such a high level of understanding. Although these have been already explained by the Buddha and Nagarjuna, the scientists still deserve praise as they have discovered it through their own empirical reasoning and practical experiments over how things lack of true existence.

Scientists are especially taking interest in Buddhist philosophy and tenets, excluding the doctrinal teachings such as impermanence and liberation. For example, once I attended a seminar with many highly proficient and recognized scientists. In the first session, I saw some of them air their sense of discontentment and sarcastically asked what the religious practitioners have to discuss with the scientists. However, when I explained to them how Buddhism does not believe in the concept of a creator god, its negation of permanent, single and independent self; its negation of a self other than the aggregates; non-existence of true self; and how changes are brought about by their respective external and internal causes and conditions, only then did they start to see its significance. During the second session, with their increased interest in Buddhism, they expressed how its approach is totally different from other religions. In the third session and thereafter, they raised certain topics of interest and asked how it was viewed from Buddhist perspective. Out of sheer curiosity and amazement, they budged in between sessions and during tea-breaks, to discuss things of importance.

The highly intellectual scientists and deep thinkers are beginning to take interest in the eastern philosophy. Of these, some are exceptionally keen on studying Buddhism. By this, I do not mean all scientists have accepted us. Of the many, those who are aware of this fact and those unbiased indeed are taking interest in Buddhism. The conclusion they draw on Buddhism is that: "taking the matter of fact that science will develop greatly as it ushers into the 21st century, and if there is a religion that can develop with science, it could be none other than Buddhism." This is one thing.

As I have explained before, in many religion faith and wisdom are seen as completely disparate. According to these, faith is viewed as single-pointed devotion and are not conjoined or associated with wisdom. However, the teachings of Buddha, to everyone's amazement, explain the possibilities and advantages of generating faith conjoined with wisdom. Owing to these and many other qualities, people are embracing Buddhism.

Last year, I attended a seminar with some scientists in Dharamsala. There was one or two Chinese and Japanese. A middle-aged Japanese woman also attended the seminar then, not as a speaker but merely as an ardent observer. On the third day, following the first two days of discussions and deliberations, the woman expressed her desire to speak with me. She said, "I am a Japanese from the East. To this day, I have thought that religion and philosophy of the East are merely faith-oriented ideology and that which exist only for prayer's sake. I have never known it to be so profound and have never realized its power in observing phenomena's mode of existence." She also said, "I deeply regard western science as a discipline that highly values and establishes factual realities and which have the potential to practically benefit humankind. Taking into account my notion of considering eastern religion and philosophy as mere objects of our faith and prayer, I have felt that it served as an object of study for western science and philosophy and not vice-versa. Attending this seminar for two days, I was deeply moved to discover how eastern philosophy searches and establishes truth through rational analysis, similar to that of western scientists."

Considering this, I feel amazed by the ontological explanation given in the teachings on Middle Way philosophy and Valid Cognition by Acharya Diganaga and Dharmakirti especially sel-'jug, the eliminative perception and sgrub-'jug, affirming perception as elucidated in the Commentary on [the Compendium of] Valid Cognition (Pramanavartika; tshad-ma rnam-'grel) when teaching valid reasoning establishing the nature of phenomena. The Tirthika's concept of sPyi (generality), though refuted by Buddhists, is a result of their deep thinking and hence should not be taken lightly. Buddhist teachings explain sound and conceptuality as object of eliminative perception and not as affirming perception. These are not vague ideas as they are based on valid reasoning and infallible perception of a valid-cognizer.

The import of Middle Way philosophy and the teachings on Valid Cognition are of utmost importance and are significantly essential for pragmatic experimentation. The teachings of Buddhism in general and that of Mahayana in particular are laden with innate potential and significance. However, until today we have been unable to demonstrate its unique qualities and power to the world. When the potentiality and utility of Buddhism gradually manifest and come to light, I am certain that Buddhist scholars, who have mastered the Middle-Way philosophy, the teachings of valid cognition and other Buddhist literature for many years can play a major role in the explaining the Buddhist perspective as they possess the required knowledge and the requisite factors.

Western scholars are very particular in their research especially in many fields of studies including history. They are very precise and accurate in locating places and identifying dates in their research works. However, they are of no match to the dialecticians and logicians who contemplates and meditates on the profound teachings. Here, I do not intend to undermine the western scholars. On philosophical ground, I feel Buddhist masters are exceptionally great and their understanding immeasurably profound. Mastery over Tibetan language is an additional advantage as Tibetan language, with standardized terms and meanings is the richest existing language that can fully expound and interpret the teachings of Buddha. In spiritual and religious discipline, I feel Tibetan scholars are very good.

If asked what are the main detrimental factors that cause us to lag behind? I feel it is due to our lack of understanding in modern science, for which I feel the need of studying science extremely important. The aim of studying science is not to facilitate us with an opponent or an opposing view, but rather for finding truth. If there are any contradictory views in science, they can be taken as hypothesis for further study and analysis. For example, from the biography of great master Dharmakirti, we learn how he became a disciple and served a heretic master only to study their views and ideologies. We should also follow this uncommon method when studying modern science.

Although the ancient philosophies are valuable, some of these have disappeared and the remainings are irrelevant and impractical. Instead of studying old philosophies void of any relevance it would be wiser to study existing religion such as Christianity. The purpose of the study should not be to criticize or find faults in other religions, but to understand their differences. Understanding their differences strengthens and secures one's faith and devotion toward Buddha-dharma.

As mentioned earlier, if one could study modern science, which in its search for truth, have certain affinities with Buddhist philosophy and tenets, I feel they would start to generate a steadfast and deep-rooted faith in the teachings of the Buddha. This would further contribute in the preservation and dissemination of Buddha-dharma. Moreover, when introducing Buddhist teaching to the new generation of Tibetans, if we are able to present the views of both Buddhism and modern science by drawing their comparisons, I am sure the teachings would be more valid, practically scientific, and easily comprehensible. This is the best method of teachings that can generate belief and conviction in the mind of people.

Our community shall not remain as it is. There will be changes. Not only in the exiled community, but in future, when the Tibetans in and outside Tibet gather, then also there will be changes. The knowledge of science will be instrumental in the preservation, promotion and introduction of Buddhism to the new generation of Tibetans. Hence, it is very necessary to begin the study of science.

I feel it more proper if the initiatives are taken by the Library of Tibetan Works and Archives, Dharamsala, considering its relevance and relatedness with the objectives of the institute. Rinpoche will inform you of this in detail and you may indulge in discussions later. I have just mentioned the general key points that are in my mind.

During the times when battles were fought with the Chinese and the British in the Water-Bird and the Wooden-Dragon year, we considered "the yellow-haired westerners" the enemy of Buddhism, and had a very disgusting opinion of them. On the other hand, the Chinese emperors were held in great veneration by praising them as "the divine emanation of Lord Manjushri." Ultimately we are in the loss, having clung to this faulty opinion for a long time. Now the time has come for us to place our hope to the one whom we once referred to as "the enemy of Buddhism." No matter how lowly "the enemy of the Dharma" be, they respect freedom and democracy. They live in a state where the rule of law is supreme prevails. Contrary to this, the land of "the divine emanation of Manjushri" no longer experience freedom and democracy, nor the rule of law.

The modern science of today is a universal science, rather than that of the West as it once used to be. If those who have studied the Middle Way philosophy and teachings of Valid Cognition take up modern science, with the unending positive doubts and constructive curiosities, I am sure they can easily and swiftly gain a deeper understanding of the subject. Conversely, if the class comprise of students who have studied the Middle Way philosophy and teachings of Valid Cognition, I am certain that the teachers can develop a deeper understanding of the subject he or she has specialized.

His Holiness the 14th Dalai Lama
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