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## Professor DS Kothari's Reflections on the Parallelism between Epistemological Foundations of modern Physics and Indian Philosophical Thought — Part I : The Gita and Modern Physics:

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[My first meeting with *Dadaji*, as Professor DS Kothari was dearly known to us, began with a question. I was engaged to his grandson (Ranjan) and after the engagement ceremony we went to him to get his blessings. *Dadaji* asked me: "Who was Shri Rama's father?" I was taken aback at the question but when I replied that it was Dashrath, he was very happy and blessed us both. I soon learnt that he had this habit of asking simple questions to people to evoke interest in our ancient culture and heritage, especially the *Bhagvad Gita*.

About a week after our marriage (28 December 1987) my husband left for Syracuse, New York, US, to complete his PhD in Physics. I continued to stay in Delhi for some months and hence had an opportunity to come into close contact with *Dadaji*. I had never read the *Gita* before I met him. Just by being near him I felt an inner urge to study the book.

When I requested him to instruct me in the *Gita*, he readily obliged. He emphasized the importance of being regular, and agreed to sit with me every day from 4 to 5 pm and discuss the *Gita*. Soon others joined in the sessions. Among them was an old student of *Dadaji*, Dr RK Jaggi, now settled in the US. He came almost twice every year, for a few months each time, to be with *Dadaji*, and study the *Gita*. He also took extensive notes and wrote a few articles. In this articles, which is based on our notes and recollections, we have tried to convey some of the points that *Dadaji* often emphasized and explained to us. — S.K.]

*Gita*, 'The Song Celestial', is a direct dialogue between the Lord incarnate, Shri Krishna, and his

dearest disciple, Arjun. It is a book for transformation and not information. In 700 *shlokas* all questions for human exploration have been answered. Quite unlike modern textbooks, which are different for different age groups, *Gita* is a book which can be read by people of all ages and all intellectual attainments — from a novice to a *rishi*. The more one reads and meditates on the *Gita*, the more one finds that it reveals newer and deeper truths. *Dadaji* often said, "First awaken the faith, then the *Gita* will help you". He himself was a living example of this precept. In school he had studied Urdu and Persian, and when he retired at the age of nearly 67 he could not write his own name correctly in Hindi. He recited beautifully many *shlokas* from the *Gita* before learned audiences. He also insisted on our memorizing important *shlokas*, and this, most of us learnt to do, in a reasonable time.

Some of us raised a doubt, whether *Dharma* (he preferred this word to religion) and the *Gita* were not for retired persons and old people. He would remind us that Shri Krishna gave the deepest knowledge about one's duties to Arjun, the greatest warrior of his age, in the prime of his youth. It was not given to an old *rishi* or a man retired from life. Only a young man has the ability and zeal to imbibe the true knowledge about life.

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*Dadaji* regarded Gandhiji as the greatest 'karmayogi' of this age and often quoted him. He would impress upon us that Gandhiji had a highly scientific approach to all problems, by narrating various anecdotes from his life. He often quoted Gandhiji's words: "I regard the *Gita* today as the book par excellence of the knowledge of TRUTH". Science too is a search for truth. He would emphasize the fact that Gandhiji titled his autobiography as 'The story of my experiments with truth'. He always said that all the great religious teachers have insisted on a scientific approach to problems of life, and was very fond of quoting Lord Buddha: "Believe nothing merely because you have been told about it or because it is traditional or because you yourself have imagined it. Do not believe what your teacher tells you merely out of respect for the teacher. But whatever, after due examination and analysis, you find to be conducive to the good, the benefit, the welfare of all beings, that doctrine believe and cling to, and take it as your guide".

In the first chapter, the *Gita* describes the state of deep despair of Arjun. Even the great bow, *Gandiv*, which is a gift to him from Shiva and which he greatly venerates, is falling from his hands. It appears that such a state of deep despair is essential for receiving and assimilating the highest wisdom. *Dadaji* used to cite another equally significant example. Before Albert Einstein made his discovery of the General Theory of Relativity, regarded as one of the greatest achievements of the human mind, he was in a state of great despair. Einstein's son-in-law Marian Ogg<sup>1</sup> reports the following conversation with Einstein:

"Albert, how is it that you came to make this discovery?" "In a vision", he answered me.

"He told me that one day he had gone to bed in a state of discouragement so profound that no argument could put it to an end" ....

"When one reaches despair, nothing can help anymore, neither hours of work nor past success, nothing. All self-confidence disappears. It's over, I told myself, everything is useless. I haven't obtained any results ... And that's when the thing came about..."

"...And suddenly, as if printed by a giant printer, the immense map of the Universe clearly unfolded itself in front of me in a dazzling vision."

"That is when he came to a sense of peace".

## MATTER AND MIND

The *Gita* makes a clear distinction between matter and mind. It talks of *kshetra* (क्षेत्र) and *kshetrajna* (क्षेत्रज्ञ), (Chapter XIII, Verse 1), *dheha* (देह) and *dhehi* (देही) (Chapter II, Verse 30), *kshar* (क्षर) and *akshar* (अक्षर) (Chapter VIII, Verses 3 and 4). This distinction between the 'external world' and the 'internal world' is now generally accepted. The 'external world' is objective and science deals with it. The 'internal world' is the world of psyche, 'I', self, spirit or mind. It is subjective. *Dadaji* often quoted Hinshelwood, Wigner, Schrodinger and others on this. For example, Hinshelwood writes<sup>2</sup>: "To deny the reality of the inner world is a flat negation of all that is immediate in existence; to minimize its significance is to depreciate the very purpose of living; and to explain it away as a product of natural selection is a plain fallacy."

Science deals with phenomena that are related to space and time, matter and energy. The laws of physics apply to inanimate matter as well as to animate matter – they make no distinction between the living and the dead. Yet, as Einstein<sup>3</sup> said, "The most incomprehensible thing about the Universe is that it is comprehensible".

The laws of science do not apply to self. Self-control and moral experiments lead to the knowledge of the self. Moral experiments have the same place for the 'internal world' as physical experiments for the 'external world'. The concept of Truth or God or morality lies beyond science and can neither be proved nor disproved by reason. The views about mind or self are not a part of science. They are beyond science. To say 'beyond science' is not to imply anti-science or contradictory to science. This is an extremely important idea, and *Dadaji* quoted Sherrington, Penfield, Schrodinger and many others on this. For example, Sherrington in his book 'Man on his Nature' writes<sup>4</sup>: "The mental is not examinable as a form of energy. That in brief is the gap which parts psychiatry with physiology.... Thoughts, feelings, and so on are not amenable to energy (matter) concept. They lie outside Natural Science...."

There is an interaction between mind and matter, though there is no common territory between the internal and the external worlds. This interaction is beyond science. This has also been discussed in detail by Schrodinger<sup>5</sup> in his book 'What is life?'. We quote here Verse 26 of Chapter XIII of the *Gita*<sup>6</sup>:

“Whatever is born, the unmoving or the moving, O best of the Bharata’s, know it to be from the union of *kshetra* and *kshetrajna*”.

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