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आ नौ भद्राः कर्तवो यन्तु विश्वतोऽर्दब्धासो अर्परीतास उद्भिर्दः । (RgVeda) *Let noble thoughts come to us from every side*

Science-Spirituality Dialogue Scientific Advancement and Moral Responsibilities



A Discussion with
Prof. Charles H. Townes (right),
Nobel Laureate in Physics
and
Dr. T. D. Singh (left);
Physical Organic Chemist, Founding-
Director of Bhaktivedanta Institute

Dr. T. D. Singh (TDS) : What is your opinion about the social and moral responsibilities of scientists towards the well being of society? Sometimes scientific products are misused, not necessarily by scientists, but by some other group, as, for example, in the use of nuclear weapon by politicians. Do you think that allowing scientists to participate in making decisions of great consequence would help to control the misuse of science?

Prof. Charles H. Townes (CHT) : Scientist can certainly be helpful by participating actively in decisions about use of science and in trying to foresee the likely results of scientific discoveries. However, we must recognize that the results of scientific research are typically unpredictable. We must deal with problems as they appear, and in the human context of the time. One never knows just what good or harm a given scientific idea may produce. Consider, for example, Einstein's theory of relativity. One might say it was responsible for the atomic bomb, because it produced the idea of conversion of matter into energy. ... Atomic energy itself can produce much needed energy, of course, when used in right way. The consequences of scientific ideas are simply not predictable enough to allow careful prior decisions about its good or bad effects. ... The advancement of science as a whole and the consequent increase of mankind's potentiality poses ever more poignantly the problem of good and evil. Scientist can help society understand some of the technical aspects of problems. However, the choice between good and evil is a basic human one which must be made by society as a whole, and can only be wisely made if individuals act and society itself is based on appropriate moral principles.

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*11th AISSQ Conference on
"Mathematics and
Reality"*

*6th - 7th October 2018
IIT-Bhubaneswar, Orissa*



"To be able to survive the appropriate progress of his attainments, mankind of tomorrow will have to find in the development of his spiritual life and in the uplifting of his moral ideal, the wisdom not to abuse his increased forces."

— Louis de Broglie
Nobel Laureate in Physics

To Know about Life, Matter, and their Interactions is called Knowledge

... I think courses in moral philosophy are very valuable in colleges, universities or high schools. ... A broad education must certainly deal with philosophy, religion and ethics. ...

TDS: Recently in India, the change in the concept of living has become very visible. A shift of values seems to be developing among college students, who are very enthusiastic about modern ways of living. However, many concerned leaders say that India should develop both its spiritual and scientific culture. Do you have any message for the students in India?

CHT: Well, perhaps so. They certainly should value and appreciate their religious culture, and, of course, classical Indian culture has an important bearing on the meaning of life as well as on values. But also, people who study science are often at the same time thoughtful about the meaning of life and values. I would not separate the two. To separate science and Indian culture could be harmful, producing a dichotomy of choice to go either this way or that way. Of course, classical Indian culture bears importantly on these subjects. I don't think it is practical to keep scientific and spiritual cultures separate.

[Excerpt from the book, *Seven Nobel Laureates on Science and Spirituality*, Bhaktivedanta Institute, Kolkata]

On the Shoulder of Giants

Śrī Vedānta Deśika

(A Vaiṣṇava Saint-Poet)

Śrī Vedānta Deśika was one of the most illustrious preceptors and philosophers of Śrīvaiṣṇavism. He reinforced the Viśiṣṭādvaita philosophy of Sri Ramanujacharya during the 13th-14th century period. Śrī Vedānta Deśika is revered as an incarnation of the 'ghaṇṭa' (sacred bell) of Lord Venkatesvara at Tirumala. He dedicated his life to the propagation of the philosophical teachings of Viśiṣṭādvaita with his irrefutable logic and in a voice ringing like a clarion (bell) from the hill-top.

Śrī Vedānta Deśika was born in 1268, at Thoopul, near Kanchipuram, India. His parents, Sri Ananthasuri and Thothaaramba were ardent vaiṣṇava brahmins and named their son after the Lord of Tirumala, "Venkatanatha". Even as a young boy, Venkatanatha showed extraordinary genius, and Vāstsya Varadāchārya, a spiritual descendant of Ramanuja, predicted that he would become a prominent preceptor of Sri Vaishnavism. At the age of seven, Venkatanatha began his studies under his maternal uncle, Sri Kidambi Appullalar, a distinguished disciple of Vāstsya Varadāchārya. By the early age of twenty he had mastered different aspects of the religious literatures—the *Vedas*, *Sastras*, *Agamas*, Sanskrit literature in general, including *Prākṛit*, and the *Divya Prabandhas* of the Alvars. He married at the age of twenty-one, and after a few years, following the instructions of his teacher, Venkatanatha and his family settled down in Thiruvahindhipuram. Here, Venkatanatha was personally blessed by the divine carrier bird of Lord Vishnu – Garuda – and Lord Hayagriva, who is the abode of all knowledge. All his writings and works are therefore specially blessed by the Lord.

By the age of twenty-seven, Venkatanatha rose to the status of "Acharya". He was a teacher who preached and practiced a life of simplicity and humility, free from the pursuit of worldly enjoyments. He propagated Sri Ramanujacharya's philosophy through discourses and literary works, touring all around the country. His ethical teachings and moral directions encompass



Śrī Vedānta Deśika (1268–1370)

all humanity without any sectarian split. He spoke so eloquently that even while refuting the arguments of his opponents, he used extremely polite words. People flocked in large numbers to hear his discourses and debates. He was adorned with the title 'Vedānta Deśika' (teacher/master of the Vedānta) by Lord Raṅganātha, the presiding deity of Srirangam, in appreciation of his lucid exposition of the Śrībhāṣya and his composition of *Śatadūṣaṇi* refuting the theory of monism. Śrī Vedānta Deśika possessed amazing knowledge in art, science, religion, philosophy, and even handicrafts; he was therefore conferred the title of 'Sarvatantra-svatantra' (the master of all science and knowledge) by Goddess Raṅganāyaki. Śrī Vedānta Deśika also established two important Srivaishnava Mathas – Sri Ahobila Mutt and Sri Parakala Mutt.

Venkatanatha was a versatile writer. He compiled more than 100 different works in languages such as Tamil, Sanskrit, *Prākṛit* and *Maṇipravāla* (a combination of Sanskrit and Tamil), covering several branches of learning like *Nyāya*, *Mīmāṃsā*, *Vedānta* and *Sāhitya*. He is also widely admired for his poetic excellence and was adorned with the title 'Kavitārkika-simha' (the lion of poets and philosophers). In one of his most beautiful works called *Paduka Sahasram*, Śrī Vedānta Deśika enlightens us about devotion to the Supreme being, beginning with tributes to a step below the lotus feet i.e. from His *Padukas* (sandals of the Lord). This poetic composition of 1008 verses in Sanskrit language was compiled in a single night, presenting the glory and grandeur of *Padukas'* shapes, and sounds produced during the Lord's walk and ornamentation. In one of the verses, Śrī Vedānta Deśika says, "What a great and impossible task it would be if one were to present the greatness of the *Paduka* of Ranganatha! Even if the vast expanse of the sky were to be made into a writing paper, all the 7 oceans have to become the writing ink; and even if the 1000-headed Adhishesha were to be assigned the task of describing the glories and the Lord Himself has to put them on paper; even then only a small portion of their glories could be covered.

Swami Vedanta Desika spent his last days at Srirangam. At the age of 101, after seeking permission from Lord Raṅganātha, he left his mortal body to enter the divine abode. Later, following the instructions of Goddess Sri Ranganayaki, a *sannidhi* was built inside the temple as a mark of respect to this great acharya. Thus the multifaceted personality Śrī Vedānta Deśika wholly employed his varied skills in the service of the Divine and stands tall amongst all the spiritual preceptors of Śrīvaiṣṇavism.

Vedanta & Science

Role of Free Will in Human Life

We know that we all have consciousness and free will. They are the properties of life. We use them every moment. No one can deny that we all have free will although it cannot be detected in the laboratory. Professor Charles Townes, Nobel Laureate in Physics says, "Many scientists will say, 'I can't believe in religion. On the other hand, if you ask them, do you think you have some free will, almost every scientist instinctively thinks so. He has free will. He can choose some things. He can decide to go this way or that way. There is, in fact, no room for free will in present scientific laws and yet almost every scientist essentially assumes he has it.'" Thus in science there is no room for free will and science, therefore, has no capacity to explain life fully.

Free will is not fully manifest in other beings but in human beings it is fully developed. We have the choice of acting rightly or wrongly, morally or immorally. According to the Law of *karma*, free will is a property of life particle (spiriton) and by exercising free will a person performs various actions and is implicated in various reactions. The use of free will either rightly or wrongly will decide the course of life. When the living being reaches the human form of life, the free will is fully manifest and from human life the chain of karma can be cut off by choosing the right action, the spiritual action. Hence, in Vedanta, the importance of the human form of life is emphasized.

Both science and religion are dedicated to search for truth and human happiness. Our free will should be utilized properly to achieve these goals. Religion has its moral codes of conduct given in all the revealed scriptures. Although religious fanatics may misinterpret some of these scriptural injunctions and may act sometimes in a very irrational and unreasonable way, a truly religious person will abide by



these guidelines in a more realistic and practical way. Science, however, does not have its own ethics as yet. But, scientists also need ethical guidance. In this connection we can mention Einstein's statement, "But science can only be created by those who are thoroughly imbued with the aspiration toward truth and understanding. This source of feeling, however, springs from the sphere of religion." In other words, religious and spiritual wisdom can help in framing the moral and ethical codes of science. Thus science and religion should be complementary and mutually dependent upon each other in all human enterprises.

The teachings of the Vedas prescribe that sincere persons should be educated how to use free will so that they can prepare themselves to select the right way in life's journey. As the dominant species, the human race has an obligation to protect and guide not only mankind but also all lower forms of life. We can either destroy ourselves and other life forms or we can act in a way to uplift and benefit the world, thus making a meaningful use of our human form of life. The future of humanity depends on how we choose to act, either individually or collectively. Such a choice should be guided by divine wisdom.

[Excerpt from the book, *Essays on Science and Religion*, Bhaktivedanta Institute, Kolkata]

2018 SUMMER SCHOOL "Space and Time in Science and Spiritual Traditions" held on 28th June - 1st July 2018 at IIT-BHU, Varanasi





"An equation for me has no meaning unless it represents a thought of God."

- Srinivasa Ramanujan

IMPORTANT DATES

Registration: 1st May to 15th September 2018

Paper Submission: 30th July 2018

Poster Submission: 30th July 2018

INVITED SPEAKERS

Dr. Edward N. Zalta, *Stanford University, USA*

Prof. Teun Koetsier, *VU-University, Amsterdam*

Dr. Hector Rosario, *GA, USA*

Prof. Klaus Btihmer, *University of Marburg, Germany*

Dr. Sandeep Kumar, *IIT BHU, Varanasi*

Jordan Bergmans, *Royal Academy of Music, London*

Prof. V. Kannan, *University of Hyderabad, Hyderabad*

Prof. Bhudev Sharma, *(formerly) Clark Atlanta University*

Prof. Luc Bergmans, *Sorbonne Universite, Paris*

Dr. Christoph Benzmueller, *University of Luxembourg*

Prof. Krishan Agrawal, *Virginia State University, USA*

Prof. Henk Barendregt, *Radboud University, Netherlands*

TOPICS

- Mathematics and Life
- Computation, AI and Consciousness
- The Concept of 'Infinity'
- Foundations of Set Theory and Ancient Wisdom
- Self-referencing and Self-realization
- Space, Time, Geometry and Beyond
- Godel, Ramanujan, Weyl and Gauss: Thoughts of Founding Fathers
- Intuitionism vs Formalism in Mathematics
- Unfolding Mysterious Numbers: i , Π , e and more
- Logic, Thoughts and "I"
- Probability, Statistics and Free Will
- Chaos and Order
- Symmetry, Simplicity and Beauty
- Philosophy of Mathematics and Theistic Interpretations
- Foundations of Mathematics
- Mathematics in Ancient Texts
- Consciousness and Information
- Mathematics in Arts, Spirituality and Music

HIGHLIGHTS

- ▶ Dr. T. D. Singh Memorial Lecture
- ▶ Plenary and Keynote Lectures
- ▶ Contributory Paper with Poster Presentation
- ▶ Post Conference tour to Puri & Konark
- ▶ Cultural Program
- ▶ Participation of about 600 students, scholars and Mathematicians



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Inspiration

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