

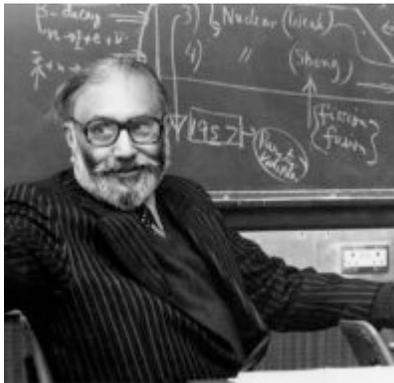
Religion and Science ... Friends or Enemies?

Dr Abdus Salam – His faith & His Science

By Zakaria Virk, Kingston, Canada

Dr Abdus Salam was a devout Muslim despite the fact that he was a towering scientist of the 20th century. He was brought up by a profoundly religious father; hence his father's personality was imprinted on him. His family had a rich tradition of scholarship, learning and piety. As was the custom, he learned the reading of Holy Quran from his mother. He was well versed in Arabic. His father used to recite verses, tales and the Holy Quran to him. It was from his father he developed his love for Islam.

From his childhood he offered five daily prayers. In the pocket of his jacket he used to carry of a small copy of the Holy Quran. At his home in Putney, while he was engrossed in his research, he used to listen to taped recitation of Holy Quran by outstanding *Qarees* of the Muslim world. He performed lesser pilgrimage, *Umra* when he was not internationally renowned. Despite his wish to perform Hajj, he could not do so on account of his religious beliefs. The Saudi Government would not grant him a visa.



Dr Abdus Salam

When Ahmadis were declared non-Muslims in 1974 by Government of Pakistan, he grew beard and assumed the forename Muhammad to show his pride in being a Muslim. He used to lead the Friday congregational prayer for Muslim students at the International Centre for Theoretical Physics., in Italy.

When his father was staying with him in London, he could have bought a house in a posh London suburb, but he chose to buy a house in Putney, because it was close to FAZAL Mosque, where his father could easily go for daily prayers. On Fridays Dr. Salam used to arrive at the mosque early and would take a seat in the front row. Even during the summer, he would don a winter jacket and a hat. When the Imam was delivering sermon, he would take out a notebook and start making notes. One day Imam Rafiq asked him: Do you like my sermon so much that you take notes? Dr Salam replied, the fact of the matter is that I get flashes of scientific ideas like an electric current, so I jot

them down right away. These ideas subsequently become basis for my theories. If I don't write them instantly, chances are I will lose them.

One of the favorite books of Dr Salam was *Shamail-i-Tirmizi*, a classic book of Hadith. Once Sir Zafrulla Khan (1893-1985) fell sick, Salam visited him in the hospital in London and expressed the desire to translate the book one day. Next time Dr Salam visited Sir Zafrulla at the hospital, he gave him a printed copy of the translation with this dedication: "*With deep gratitude to Abdus Salam, eminent physicist, with whom the idea of this book originated*".

Efficacy of Prayer

Dr Salam did not find any dichotomy between his faith and his science. He says: "I have myself never seen any dichotomy between my faith and my science – since faith was predicated for me by the timeless spiritual message of Islam, on matters on which physics is silent and will remain so. It was given meaning by the very first verse of Quran, after *Sura Fatiha*. This is the Book, Wherein there is no doubt, guidance to the God-fearing Who believe in **the Unseen**. The Unseen means beyond the reach of human ken."

He was a firm believer in the efficacy of prayer. He said: "I do have faith in the efficacy of prayer at times of distress. I could elaborate on this intensely personal thought but I shall forbear to do this. I am also a believer in the Moral Lord. My greatest desire before I die is that Allah may in His bounty may grant me the mystical vision so that I too can partake first-hand of what was vouched to the Seers in the past." (1)

His Belief in One God

As most of you are aware, Dr Salam shared the Nobel Prize in physics with two American scientists, one an atheist, and the other a Christian. This was not easy for a man who had not seen electricity until he was in his teens. But due to his unique personality, his devotion to his cause, his deep scientific interest, his power of concentration, inexhaustible energy for his scientific work, his exceptional capacity as an organizer, he succeeded in unifying forces that Einstein could not do.

By way of comparison we should give here beliefs of two outstanding scientists of Europe, namely Copernicus and Kepler. Copernicus had derived his astronomical ideas from his theology. Kepler, like Copernicus was convinced that the structure of the heavens had to reflect the perfection of its creator. This perfection revealed itself best through the precision of geometry. Kepler ideas about God provided his hypothesis, and he had the mathematical ability to turn his ideas into a system.

Kepler laws are not hard to explain, but one can never guess this from his explanations. Part of the problem is his religion, he saw his science as his religious duty and wrote as if it was an abstruse and complicated piece of theology. His notebooks are

even worse. Sheet after sheet of calculations are punctuated with mystical speculation and prayers. Nevertheless, it remains true that Kepler cracked the mystery of the planet's movements because of his faith in God's creative power. (God's philosophers, UK 2009, pp 288-292)

Once he visited famous British philosopher Bertrand Russell along with A.T.M. Mustafa, then education minister. During the meeting Mr. Mustafa started the discussion does God exist? After a while when Mr. Mustafa could not convince Russell, he left. Now Dr Salam was alone with the great philosopher. Russell said why do people think that they can convince a 95 years old in half an hour that God does exist? Dr Salam said to him, without a belief in God, a man's character remains deficient. We have observed that people who believed in God gave more sacrifices for mankind, compared to those who did not believe in God. Russell replied, give me an example. Dr Salam said: Gandhi is a case in point. Russell looked at Salam astonishingly and said: Gandhi was a cruel man. Dr Salam asked him: how come? He replied for 40 years he deprived his wife enjoyments of a married life. (2)

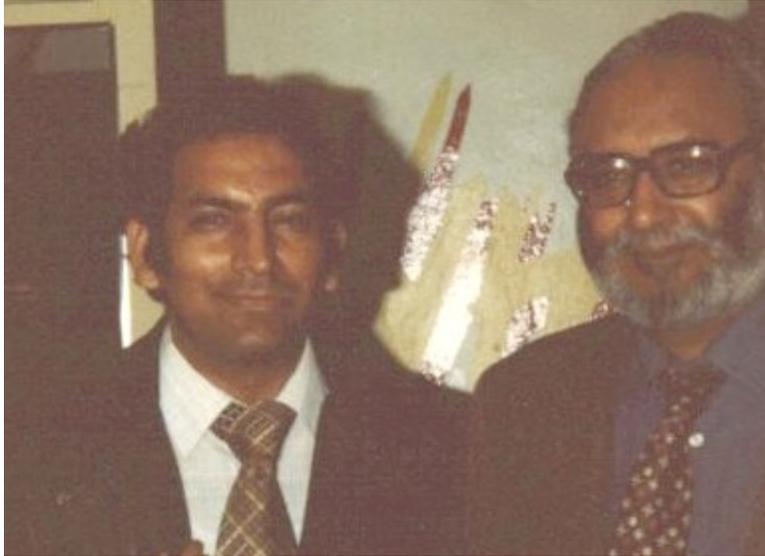
Dr Salam felt that the religious leaders in Muslim countries were too content with explaining the Islamic religion without any reference to science and technology. He asked them to exhort Muslims in their sermons to study science and technology, considering 750 verses, speaks of *tafakkur* and *taskheer*, i.e. science and technology. Most of them replied they would like to do this but they know not enough about the modern science. (3)

In an interview for the *New Scientist* (August 26, 1976) Dr Abdus Salam said: "Every human being needs religion, as Jung has so firmly argued; this deeper religious feeling is one of the primary urges of mankind." (Salam 1976).

In his article *Science and Religion* Prof. Salam wrote: "Einstein was born into an Abrahamic faith; in his own view, he was deeply religious. Now this sense of wonder leads most scientists to a Superior Being – der Alte, the Old One, as Einstein affectionately called the Deity – a Superior Intelligence, the Lord of all Creation and Natural Law." (4)

In an interview with *New Scientist*, he said: "We are trying to discover what the Lord thought; of course we miserably fail most of the time, but sometimes there is great satisfaction in seeing a little bit of the truth." (5)

<http://nobelist.tripod.com/sitebuildercontent/sitebuilderfiles/50-nobelists.pdf>



Zakaria Virk with Dr Salam, Wisconsin, USA 1982

Speech at Nobel Banquet

At the Nobel banquet ceremony in 1979, in his address he stated: “the creation of physics is the shared heritage of all mankind. East and west, north and south have equally participated in it. In the Holy Book of Islam, Allah says, 'Thou seest not, in the creation of all-merciful any imperfection, return thy gaze, seest thou any fissure. Then return thy gaze, again and again. Thy gaze, come back to you dazzled aweary.' This in effect is the faith of all physicists, the deeper we seek; the more is our wonder excited, the more is the dazzlement for our gaze." This amazement turns into admiration, and this admiration is in Salam’s opinion one of the strongest roots of religious feeling.

Following the teachings of Islam, he dedicated his life to finding unity in the four disparate forces of nature. He was able to prove that various interactions of the elementary particles are no more than diverse aspects of a single primary force.

In 1981 I was instrumental in having Dr Salam interviewed for Toronto’s CHIN radio while he was in New York. Prof. Narrinder Nath asked him during the Nobel ceremony in the hall of Royal Academy of Sciences when your name was read out, what was on your mind at that very moment. Dr Salam sagely replied: there were two things on my mind how Allah had bestowed His benevolences on me; who is a resident of a small unknown town, and this special favour of God. The main thought occupying my mind was one of thankfulness. I wished my parents were with me; their teeth were worn out praying for me. I wished they were with me. (6)

Religion and science

It is generally believed that science is anti-religion. That science and religion are mutually exclusive. Religious beliefs and scientific beliefs can never be compatible. Religion demands blind faith. Religion demands that people believe in its doctrines without questioning them, while science dictates that everything should be questioned and proven empirically.

The object of religion is to develop the ideals and aspirations of mankind, while the object of science is to realize these aspirations through finding the laws of nature. Dr Salam attempted to identify these laws of nature with the knowledge that a true science can never contradict religion. Salam's integrity and intelligence did not permit his beliefs to determine the outcome of his scientific work. His religious beliefs and cultural background profoundly influenced his scientific career. In his scientific work he sought inspiration from his religious beliefs. For instance he was inspired into the concept of symmetry by the stately towers of Badshahi mosque in Lahore. For him his religion was integral to his scientific work. His religious passion provided him a spur in his scientific discoveries.

Noble Laureate Sir W.H. Bragg said that science is opposed to religion in the sense that the thumb and fingers are opposed to one another. Einstein expressed the same view by a different image: science without religion is lame, and religion without science is blind. Salam agreed with both and said that science without religion is lame and has therefore to rely on religion to avoid limping. (7)

A science writer had this to say about him: "To a Muslim mystic, God is to be sought in eternal beauty. And for Salam, beauty comes thorough finding new, subtle, yet simplifying patterns in the natural world." (8)

Dr Salam had two passions in life, first, an urge to understand the nature of physical reality using the tools of mathematical physics. Second the desire to put the Islamic world on the road to prosperity through acquisition of science and latest technology.

In an interview published in Manchester Guardian, Robert Walgate asked Dr Salam about the fundamental contradictions between any religion which referred to one immutable text and spirit of science which must allow hypothesis, testing, verification, admission of error and change. The sage-scientist replied religion and science refer to two different worlds, religion to the inner world of human mind, and science to the outer world of matter. To explore the inner world, one needs faith and explore the outer world, one needs reason. (9).

In his first meeting with Albert Einstein, their entire discussion was about religion. Dr Salam explained to him the Islamic concept of Unity (*Tauheed*). Einstein did not dismiss Salam as a religious bigot and they developed a good understanding. His student Dr. Michael Duff, now Principal of the Faculty of Physical Sciences and Abdus Salam Chair of Theoretical Physics at Imperial College London, recalls that his

mesmerising lectures were so unique that the students would find themselves entranced by the depth of his knowledge.

Once he was asked, do you think your religious views made you think that they (four fundamental forces of nature) could be unified? He replied, "I think perhaps at the back of my mind. I wouldn't say consciously. But at the back of one's mind the unity implied by religious thought perhaps plays a role in one's thinking." (10)

To the question, coming from a religious background, whether there was any conflict in doing physics? Dr Salam replied: No why should there be? Fortunately Islam is one of the three religions, which emphasize the phenomena of nature, and their study... So Islam has no conflict with science.

Professor Hoodbhoy states that when he asked Dr Salam to write Preface to his book "**Islam and Science**", Dr Salam wrote the following about the irrelevance of religious beliefs and scientific discovery:

"I do not disagree with anything that Dr Hoodbhoy has written in this book. Dr Hoodbhoy quotes Steven Weinberg's and my research and says that it made no basic difference to our work whether I was an 'avowed believer and Weinberg an avowed atheist'. I can confirm that he is right. We were both 'geographically and ideologically remote from each other' when we conceived the same theory of physics for unifying the weak and electromagnetic forces. If there was any bias towards the unification paradigm in my thinking, it was unconsciously motivated by my background as a Muslim." (Fascinating Encounters: Prof Abdus Salam, DAWN, Karachi).

Is there such a thing as Islamic science? Dr Salam reply is: "There is only one universal science, its problems and modalities are international, and there is no such thing as Islamic science, just as there is no Hindu science, no Jewish science, no Confucian science, nor Christian Science." (11)

Interview in India

During his visit to India in 1981, he was interviewed by **Illustrated Weekly of India**. I would like to give here few questions he was asked.

Q: Do you believe in Destiny?

A: I don't know what destiny is.

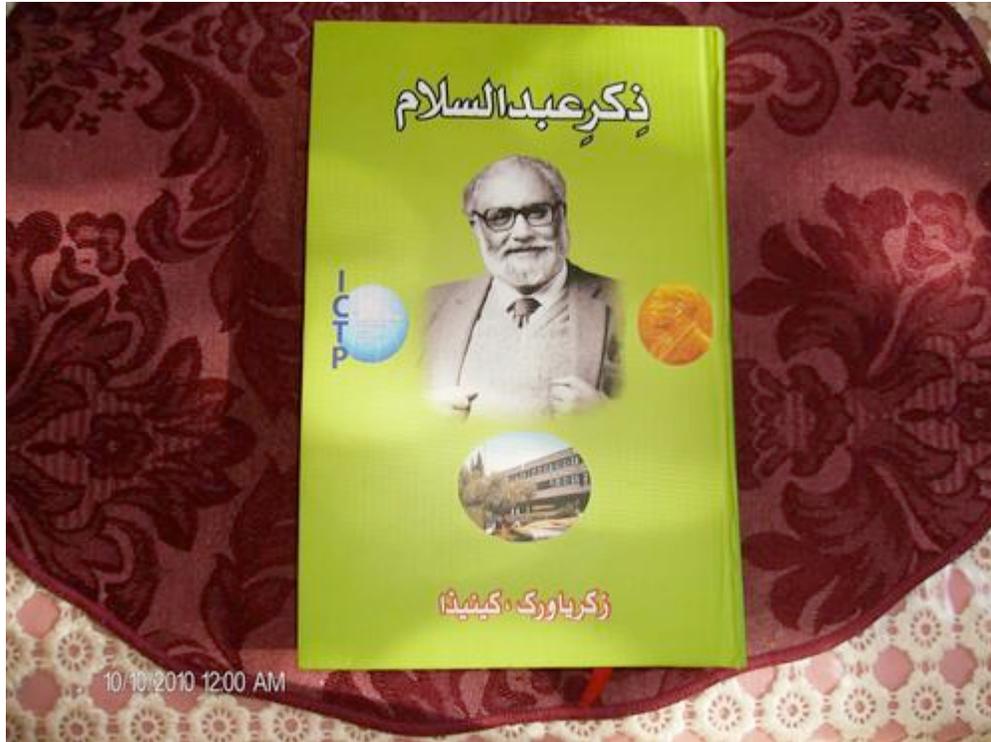
Q: What is your concept of God?

A: There are many concepts of God. For instance, there is the concept of God as the Law givers... say such as Einstein's God. And there is God of moral order. If you do well, the outcome will be good. And if you do evil, you will reap evil. Most of us believe in such things without ascribing them to God of moral order. Some people believe in God of history, a God who controls history. Then there is the personal God, to whom we pray.

Q: Could you describe your philosophy of prayer?

A: It is very difficult for a physicist to discuss prayer. I don't know what it does to you.

Once he was asked, can God be described in a mathematical equation? His reply was, that is rubbish.



Title page of new book Dr Abdus Salam, published 2010.

Was his Electro-Weak theory – pantheistic?

An Islamic monthly – **The Arabia** – published from London castigated his work on unification of fundamental forces as “pantheism”, therefore un-Islamic and heretical. In 1983 an Arab-Islamic journal which was also published from London, called this theory “*the heretical Sufi doctrine of Wahdat-ul-Wujud*”. To this he replied: “*I am proud to be a case together with al-Kindi, al-Razi, Ibn al-Haitham, and Ibn Sina, but I do protest against the attribution of pantheistic motives to myself*”.

In discussing the question, “**Was the science of Middle ages really Islamic**”, the writer of the quoted article said: “*The story of famous Muslim scientists of the Middle Ages, aside from being Muslims, there seems to have been nothing Islamic about them or their achievements. On the contrary their lives were distinctly un-Islamic. Their achievements in medicine, chemistry, physics, mathematics and philosophy were natural and logical extension of Greek thought*”. (12)

As to the question if there is liberty of scientific discussion and belief in Islam, Dr Salam observed, “*I am both a believer as well as a practicing Muslim. I am a Muslim because I believe in the spiritual message of the Holy Quran. As a scientist the*

Holy Quran speaks to me in that it emphasises reflection on the laws of nature, with examples drawn from cosmology, physics, biology, medicine as signs for all men.”

Conclusion

In the end I would like to say that Dr Salam did not find religion and science incompatible. For him his religious faith and his scientific work were inextricable intertwined. For his scientific work which spans over 40 years, and 250 scientific papers, he found inspiration in the teachings of Islam, his unswerving faith in God, which was the bedrock of his life. (zakaria.virk@ontario.ca)

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