

### **Salam Memorial Meeting, November 19-22, 1997, Trieste.**

Very properly this memorial meeting is to honour Professor Abdus Salam for his spectacular achievements, both as a physicist and for having created this Centre, now a focal point for scientific development in the Third World. It is a historic moment that, from today, the Centre shall be known as the Abdus Salam Centre for Theoretical Physics. I cannot think of any great physicist in this century who has been honoured at a comparable level.

It is, therefore, with considerable hesitation that I have chosen to talk not about Salam's brilliant successes but, instead, his most spectacular failure, by which I mean his unfulfilled quest to bring science to Pakistan and other Muslim countries of the world.

Three reasons compel me to talk about unpleasant matters in a meeting where so many pleasant things have been said over the last three days.

First, Salam was passionately committed to the idea that the cultural and material improvement of society hinges critically upon its developing science. He wished this for all countries, but did so with special intensity for the country of his birth. Hence to let his unfulfilled expectations pass without comment would be a significant omission.

Second, Salam's failure does not take away from him or make him a lesser person. Rather, it forces us to confront the question: what went wrong? It particularly demands that those of us who live in Pakistan ask why scientific and social development in our country continues to elude us, and why it appears an even more distant goal than it was 30 years ago. To my mind, telling the truth now - harsh though it be - may well be the only way of avoiding tragedy in the future.

Third, it is almost entirely in the context of Third World scientific development that I got to know Professor Salam. Over a period of many years, I had the privilege of engaging with him in numerous discussions and correspondence. I first met him as an awe-struck undergraduate student at MIT in 1972, and then as a visitor to the Centre in 1978. However, these were non-events. He did not know me then, or, for that matter, need to know. It was in 1985 that I was pleasantly surprised to receive a letter from him in Islamabad, where I was (and am) teaching, saying that he had read my critique of orthodox Islamist attempts to create an "Islamic Science" and the role of religious intolerance in destroying Muslim intellectual achievements many centuries ago. He suggested that, should I visit the Centre, he would like me to call upon him.

I can, therefore, date my association with Prof. Salam to the summer of 1985. The following year he suggested that we jointly author a preface to Michael Moravcsik's book "On the road to world-wide science", the manuscript of which he had just received. I was proud to accept. Two years later Salam wrote the introduction to my book "Islam and Science – Religious Orthodoxy and the Battle for Rationality". In his essay he makes perfectly explicit that the validity of a scientific truth can be adjudicated only according to criteria internal to science and not by appeal to religious, metaphysical, or aesthetic considerations. I am happy that my book provided Salam a vehicle to clearly articulate

his views because much confusion had existed about where he stood on the issue of religion and science.

The previous speaker detailed some of the ways in which Salam used his talent, time, prestige, and power, to raise the level of scientific development in Pakistan. As the scientific adviser to the President of Pakistan, Salam was responsible for laying the groundwork for the Pakistan Atomic Energy Commission, initiating research on problems of waterlogging and salinity, and agricultural research. He was the role model for many of those who opted for careers in science. To all this I may add that his personal generosity was simply extraordinary. He supported poor students in various cities of Pakistan and bought scientific equipment for schools and colleges with his personal funds. He laid aside part of his Nobel Prize money for a yearly prize to be awarded to the best researcher in a scientific field. And, I am witness to the pile of letters on his desk, received from students and admirers. Since time is the most precious and scarce resource for a busy and productive person, it always amazed me that Salam would reply to almost all of them, even the silly ones.

So, you might expect that Salam would be a hero in Pakistan. Not so!

Right here we have the biggest, by far, theoretical physics institution in the world, now named after Salam. But, in the country of his birth and citizenship, no scientific or other institution, building, or even a street, bears his name. School textbooks do not mention him, nor are children told about him by their teachers. Fake heroes are spattered all over the place but Salam is never to be found. Reflecting the disdain felt by much of Pakistani academia, a former vice-chancellor of my university scornfully asked in a meeting, "Who is Salam? What has he done for Pakistan?".

It is a fact that Salam had easy access to most world leaders, UN high officials, the Pope, and others. but found it very difficult to be heard by the leaders of his own country. In 1988 I was in Prof. Salam's hotel room in Islamabad where he had been patiently waiting for 2 days to meet with Prime Minister Benazir Bhutto. I took advantage of this to discuss his participation in a TV programme on educational problems that I was preparing. It was not right, I thought to myself, for a person of his stature and ill-health to be kept waiting in this manner. Suddenly the phone rang and Salam's face momentarily lit up. Then I saw his face fall as BB's secretary told him that meeting had been called off. No reason was given. Yes, I am glad that Prime Minister Nawaz Sharif was gracious enough to send a message of congratulation today at this meeting. We must always be grateful for small mercies. But how much did this one cost? I can recall that, about 5 years ago, while addressing a convocation at Government College Lahore, the same Mr. Sharif named all the illustrious alumni of the College but did not consider Salam worthy of mention!

It is remarkable that, about a decade ago, Professor Salam wanted to be in the run for the position of Director General of UNESCO but Pakistan refused to endorse his candidature. This was in spite of the fact that several developing countries, particularly Jordan and Kuwait, had pledged to fully support him. Since Salam had never given up his Pakistani nationality, the lack of endorsement by his home country killed his candidature.

Apart from being ignored and denied by officialdom, Salam was also the target of bitter attack and vilification as well. Right wing magazines concocted wild conspiracies of nuclear espionage, claiming that he had sold nuclear secrets to India. Fundamentalist student groups made it impossible, or very difficult, for Salam to visit any university campus. I am ashamed to say that Salam could never set foot in my university in Islamabad, whose physics department had been inspired in considerable part by him, and which was the only department in the country where his lectures could be possibly understood.

So much for Pakistan. And what of the Muslim countries who Salam endlessly cajoled, persuaded, and repeatedly visited for over 3 decades in the hope of prodding them along the road to scientific progress? He had many ideas and, in particular, a grand scheme to bring science to these countries by putting together an Islamic Science Foundation, with an initial endowment of \$1 billion, pooled together by a consortium of Islamic countries. It fell flat on its face after Saudi Arabia pulled out and Salam, together with his coreligionists, was banned from ever setting foot on Saudi soil. Salam never complained about this or other matters publicly, but privately he would express distress and disappointment that only 2 countries, namely Kuwait and Iran, seemed to be at all interested in putting money into science.

I am sure that many people in this audience must be very confused about what brought about this situation. Allow me to explain.

Before 1974, Salam was legally a Muslim in Pakistan, but subsequently he became a non-Muslim in a state where non-Muslims are, by law, second class citizens. Subsequent to his ex-communication by an act of the Pakistani national parliament, and of his Ahmadiyya sect, Salam resigned as Adviser to the President. Although he maintained informal contacts with the government, scientific institutions, and individuals, in effect he ceased to exercise significant authority.

Salam never accepted this excommunication. It clearly drove him into becoming more religious. Regrettably so, in the opinion of some, but that is not for me to comment upon. Subsequently (I think), he developed an intense pride in his heritage and did what no one else -- Muslim or other -- had done. From dry and dusty history books he rescued the scientific and intellectual achievements of Muslim intellectual giants of a thousand years ago and turned them into symbols of cultural pride. The crucially important thing is that he emphasized these achievements as belonging to the realm of the rational. For example, it is from one of Salam's essays that I first learned of the 12th century Arab scholar, Ibn-al-Haytham, long forgotten by all except professional historians, who had anticipated Fermat's principle of least action applied to light in a medium. Similarly, Salam's lecture, delivered in Stockholm at the Nobel Prize ceremony, begins with the travels of Michael the Scot who went all the way to Toledo in Muslim Spain, searching for learning and knowledge, because these were then exclusively concentrated in the lands of Islam. Salam's purpose was to rekindle a sense of pride and hope amongst those who had long lost both. He did succeed, but the victory was partial and temporary. No mortal can fight

the forces of history, especially when they are oriented towards the past rather than the future.

To my mind, Salam was the mythical Sisyphus incarnated into human form. You may remember this story: Sisyphus was condemned by Pluto to forever push a large rock up Mount Olympus. Each time he would labour his way to the top, the rock would roll all the way down and he would have to begin once again. Until his long and tragic illness left him incapacitated, Salam too was condemned into perpetually and painfully pushing his schemes for scientific development up the unyielding mountain of religious prejudice. The brutal fact is that Salam was squarely defeated in the end by the very side whose cause he had so vigorously championed.

The excommunication of 1974 merits further mention. Certainly, the doctrinal differences between Ahmadiyyas and mainstream Muslims are not of the slightest concern to most of us here – they are just as arcane and impossible to resolve as the differences between, say, Catholics or Protestants or Anabaptists or Calvinists. These differences appear to be the most important thing in the world to the battling parties, and completely absurd and irrelevant to outsiders. Nevertheless, it is usual, as in the Middle Ages of Europe, for theological disputes to be resolved by the use of force with the weaker side being exterminated or terrorized into fleeing. This is the legacy that every religion has left to mankind. To prevent the majority from slaughtering the minority was precisely the historical reason for the emergence of secularism in Europe. Tragically the Pakistani state moved the other way and became party to a theological dispute which had simmered for many years. As it turned out, 1974 was the first step down the steep slippery slope, the bottom of which is not yet in sight. More and more Islamic sects and communities are facing the threat of persecution and possible excommunication as the fires of religious extremism burn ever higher. To be quite honest, on the balance sheet of history, what happens to a particular individual is of scarce import. Therefore what really matters is not Pakistan's treatment of Salam, or even the persecution of this or that community, but the fate of Pakistani society at large.

Let me now conclude. With characteristic generosity of spirit, Salam chose to forgive and forget. He could easily have become very bitter but remarkably he chose not to go that way. Let us acknowledge and respect this. While Salam was never a cultural libertarian, he did believe that only liberal, tolerant, and pluralistic societies can advance scientifically and culturally. Therefore the best tribute to him would be for each of us, in our own way, to work towards building a global society which offers equal opportunity to all inhabitants of our planet, encourages diversity and creativity, and allows religious beliefs to be pursued without fear.