

Khorana is ours too
Pervez Hoodbhoy

EXTRACT: Unless Pakistanis learn to value the works of non-Muslims, science in Pakistan shall remain dead.

A *DAWN* [article](#) on Har Gobind Khorana (1922-2011) threw me back 50 years when I, along with 600 other students had packed 26-100 (MIT's largest lecture hall) to hear him speak. Being clueless of the basics of molecular biology, I understood little and left halfway through. Curiosity had driven me there because this famous MIT professor had won the 1968 Nobel Prize and started a brand new field — protein synthesis via nucleotides. More interestingly, he was a Lahori with bachelor and master's degrees from Punjab University.

Alas! Lahore, to its misfortune, does not know — nor cares to know — who this man was. The same holds true for another of its sons, Subrahmanyan Chandrasekhar (1910-1995), who became a Nobel Laureate in recognition of his definitive work on the death of stars. Today a Nasa satellite named Chandra scours the skies for neutron stars, black holes and other unusual astronomical objects.

The story of Abdus Salam (1926-1996) is too well known to repeat here. Winner of the 1979 physics Nobel, he studied at Government College (GC) Lahore and later taught at Punjab University. However, no road or landmark in Lahore bears Salam's name — or that of Khorana and Chandrasekhar. While a GC affiliated institution called the Abdus Salam School for Mathematical Studies nominally exists, to display his name on its signboard could be dangerous in a city often gripped by religious fervour.

Less well known is the story of Chowla and Chawla. At GC there have been two mathematicians in number theory. One was Sarvadaman Chowla, an accomplished mathematician who headed the mathematics department from 1937 to 1947. Being Hindu, he left Lahore after the rioting began and went to Princeton University, then the University of Colorado at Boulder, and eventually became professor at the University of Pennsylvania. He died in 1995 and was celebrated as a famous number theorist by the American Mathematical Society with several important theorems to his name.

The other was Lal Muhammad Chawla who graduated from Oxford in 1955 and then taught at GC for many years. With rather modest professional achievements, he had only one well cited paper. As a Google search of his publications reveals, Chawla was more interested in writing religious books than advancing mathematics. However, the GC math society is named after Lal Muhammad Chawla and not the more famous and much more accomplished Sarvadaman Chowla. No Hindu scientist is celebrated in Pakistan.

Rejecting non-Muslims of high professional merit has come at devastating cost to Pakistan. For one, it lost those who could have helped the newborn country establish a scientific base. For another, it became difficult to create institutional meritocracies. After Partition, many clever ones played the religious or ethnic card and undeservedly rose to positions of high authority. In time they became institutional gatekeepers with catastrophic consequences.

The weakness of science education in Pakistan is too evident to belabour here. Unsurprisingly, our best and brightest young people usually go for soft stuff like medicine, law, and business. Unlike in China or India, hardly any opt for tough, demanding, scientifically oriented careers. So, how can we persuade our children towards them? What stories to tell them about science and scientists? Most importantly, who should be their role models?

This brings up a civilisational problem. Over the last 300 years — which is how old modern science is — there are no Muslim subcontinental names associated with first tier (Nobel calibre) scientific accomplishments (after 1974 Salam must be excluded). Notwithstanding the valiant efforts of Sir Syed Ahmad Khan (1817-1898), Indian Muslims shunned science and the English language. Thus, even at the distant second or third tier level, one finds barely a dozen names.

Since one cannot find Muslim science heroes who belong to the soil, books for Pakistani children inevitably valorise Arabs from the Golden Age such as Al-Battani, Ibn-e-Shatir, Ibn-e-Haytham, etc. While these luminaries of Muslim science were genuine path-breakers, they do not serve well as role models. For one, persons from centuries ago cannot inspire today's children. For another, excitement is inspired by those 'of your own kind'. Arabs, however, are visibly different from people around here.

Ancient Hindu scientists could have found some place in Pakistani books. However, they are excluded on ideological grounds because ‘woh hum main say nahin hain’ (they are not us). Instead, many Pakistanis anxiously seek ancestral roots in Arabia, Afghanistan and Central Asia. But modern laboratory tools are ripping apart dearly held myths of racial origins. Now several genetic marker [studies](#) are suggesting that the subcontinent’s Muslims have descended primarily from local Hindu converts with only a few per cent admixture of Arab or Central Asian genes. Excluding Hindu scientists from our books is absurd.

Ideology and science are like oil and water — they refuse to mix. Science cares only about facts and logic, not personal likes and dislikes. History is replete with examples of failed attempts to fuse science with cherished beliefs. When Stalin sought to impose his Marxist views upon Soviet biology through his chosen tout, Trofim Lysenko, he nearly destroyed agriculture and forestry.

Soviet Russia’s good fortune was that it had a scientific community robust enough to counter Lysenko’s meddling. Pakistan has not been so lucky. It has an abundance of charlatans pretending to be scientists but just a few who deserve to be called such. While there is a science ministry, several scientific bodies, and hundreds of institutions that purport to teach or do research in science, no community of genuine scientists exists. High-sounding scientific bodies — such as the Pakistan Academy of Sciences — are a joke. They command no respect internationally and should be dissolved.

Every kind of intellectual endeavour, science included, needs an enabling cultural and social environment to flourish. Science suffocates when scientists are judged by their religion, race, ethnicity or any criterion other than scientific achievement. Before Pakistan can produce any science worth the name, it will need to overcome its deeply held prejudices. It must learn to value all who share the common heritage of humankind. The day we count Khorana, Salam, and Chandrasekhar as our very own, Pakistan will have begun breaking the shackles of scientific underdevelopment.

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