

A Pakistani looks at science and society in India  
by  
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Pakistan-India relations underwent dramatic improvement in 2004 and 2005. But this merely reflects the fact that relations were abysmally poor earlier. Indeed, even with the so-called peace process in motion, the two countries are hardly on friendly terms. Pakistan refused Indian aid for the devastating earthquake that killed over 50,000 people in its northern region. Moreover, there remains a high degree of ignorance among the populations – university academics included – of life and people on the other side of the border. An overwhelming number of students have never met a national of their “enemy country”, a notion ubiquitous in school textbooks.

It was, therefore, a stroke of good fortune that allowed me to visit, and also to independently assess, the state of education and science across India’s hugely diverse regions. This was made possible by the award of UNESCO’s Kalinga Prize for the popularization of science. One part of the Prize included a 4-week lecture tour that took me around India: Delhi, Pune, Mumbai, Bangalore, Chennai, Hyderabad, Bhubhaneswar, Cuttack, Calcutta, and then back to Delhi again before I returned home to Islamabad in mid-February. Although the Prize was awarded in 2003, frosty Pakistan-India relations had made the tour impossible until 2005.

It was a relentless schedule from the first day onwards with several lectures daily at schools, colleges, universities, research institutions, and peace groups. I chatted with children from excellent schools as well as those from rather ordinary ones; had long sessions with students and professors from colleges and universities; met with the “junta” (cooks, taxi drivers, and rickshawallas); and was invited to see ministers and chief ministers in several states, as well as the president of India.

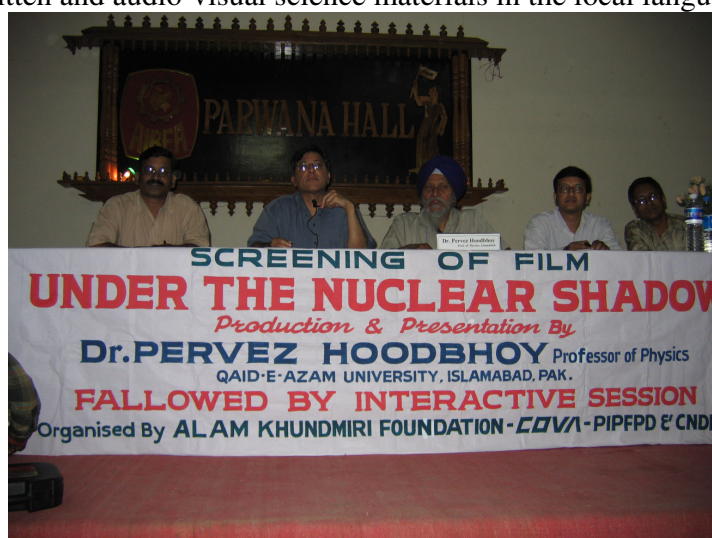


## Some Observations

- *Many Indian universities have a cosmopolitan character and are world class.* Their social culture is secular, modern, and similar to that in universities located in free societies across the world. (In Pakistan, AKU and LUMS would be the closest approximations.) Male and female students freely intermingle, library and laboratory facilities are good, seminars and colloquia are frequent, and the faculty engages in research. Entrance exams are tough and competition for grades is intense. Some “deemed universities” and other institutions I visited (TIFR, IISC, IIT’s, IMSC, ICT, IUCAA, JNCASR, IPB, Raman Institute, Swaminathan Institute,...) do research work at the cutting edge of science. A strong tradition of mathematics and theoretical science forms a backbone that sustains progress in areas ranging from space exploration and super-computing to nanotechnology and biotechnology.
- *The rural-urban divide, and the class divide, are strong.* Schools and colleges in small towns have a culture steeped in religion. Here one sees hierarchy, obedience, and even servility. The national anthem is sung in schools and religious symbols are given much prominence. Some students I met were bright, but many appeared rather dull. Although most Indian colleges are coeducational (unlike in Pakistan), male and female students sit separately and are not encouraged to intermingle. It is sometimes difficult to understand the English spoken there. Where possible, I spoke in Hindi/Urdu. This enhanced my ability to communicate and also created a certain kind of bonding. There is an evident desire to improve, however, and at least some college principals go out of their way to organize events and invite guest speakers. My lecture at the Basavanagudi National College, a fairly ordinary college in Bangalore, was the 1978<sup>th</sup> lecture by academicians over a period of 30 years! I do not know of any Pakistani college that invites speakers regularly.



- *Independent thought in India's better universities is alive and well.* Office bearers of the Jawaharlal Nehru University students union in Delhi were requested by the university's administration to present flowers to President Abdul Kalam at the annual convocation. They flatly refused, saying that he is a nuclear hawk and an appointee of a Hindu fundamentalist party. Moreover, as young women of dignity they could not agree to act as mere flower girls presenting bouquets to a man. Eventually the head of the physics department, also a woman, somewhat reluctantly presented flowers to Dr. Kalam but said that she was doing so as a scientist honoring another scientist, not because she was a woman. Bravo! I have not seen comparable boldness and intellectual courage in Pakistani students. Student unions in Pakistan have been banned for two decades and so it is a moot question if any union there could have mustered similar independence of thought.
- *Taking science to the masses has become a kind of mantra all over India.* My columnist friend Praful Bidwai – a powerful critic of the Indian state and its militaristic policies – counts among India's greatest achievements the energisation of its democracy and refers to “our social movements, with their rich traditions of people's self-organisation, innovative protest and daring questioning of power”. These movements have ensured that, unlike in Pakistan, land grabbers in Indian cities have found fierce resistance when they try to gobble up public spaces – parks, zoos, playgrounds, historical sites, etc. Praful should also include in his list the huge number of science popularization movements, sometimes supported by the state but often spontaneous. These are sweeping through India's towns and villages, seeking to bring about an understanding of natural phenomena, teach simple health care, and introduce technology appropriate to a rural environment. There is not even one comparable Pakistani counterpart. I watched some science communicators, such as Arvind Gupta at IUCAA in Pune, whose infectious enthusiasm leaves children thrilled and desirous of pursuing careers in science. Individual Indian states have funded and created numerous impressive planetariums and science museums, and local organizations are putting out a huge volume of written and audio-visual science materials in the local languages.





- *Attitudes of Indian scientists towards science are conservative.* Progress through science is an immensely popular notion in India, stressed both by past and present leaders. But what is science understood to be? I was a little jolted upon reading Nehru's words, written in stone at the entrance to the Jawaharlal Nehru Institute for Advanced Research in Bangalore: "I too have worshipped at the shrine of science". The notion of "worship" and "shrine of science" do not go well with the modern science and the scientific temper. Science is about challenging – not worshipping. As a secular man, Nehru was not given to worship but his metaphorical allusions to industries and factories as temples of science found full resonance. Indeed, science in India is largely seen as an instrument that enhances productive capabilities, and not as a transformational tool for producing an informed, just, and rational society. Most Indian scientists are techno-nationalists – they put their science at the service of their state rather than the people. In this respect, Pakistan is no different.
- *India's nuclear and space programs are nationally venerated as symbols of high achievement.* This led to India's nuclear hero, Dr. Abdul Kalam, becoming the country's president. When Dr. Kalam received me in his office, after the usual pleasantries, I expressed my regret at India having gone nuclear and causing Pakistan to follow suit. Shouldn't India now reduce dangers by initiating a process of nuclear disarmament? Dr. Kalam gave me a well-practiced response: India would get rid of its nuclear weapons the very minute that America agreed to do the same. He displayed little enthusiasm for an agreement to cut off fissile material production. However, he did agree to my suggestion that exchange of academics could be an important way to build good relations between Pakistan and India.



- *Indian society remains deeply superstitious, caste divisions are important, and women still have a long way to go.* While I found myself admiring the energetic popular science movements, I was disappointed that they pay relatively little attention to the anti-scientific superstitions widely prevalent in Indian society. The jyoti (astrologer) dictates the dates when a marriage is possible, and even whether a couple can marry at all. After I had given a strong pitch for fighting irrational beliefs at a meeting of science popularization activists from villages in Northern India, a young woman asked me what to do if “koi devi aap pay utr jayai” (if a spirit should descend upon you). Inter-caste marriages are still frowned upon, and usually forbidden. In local newspapers one typically reads of tragic accounts such as that of a boy and girl from different castes who jointly commit suicide after their families forbid the match. Although Indian women are freer, more visible, and more confident than their Pakistani counterparts, India is still a strongly male dominated society. However, the rapidly increasing number of bold and well-educated young women gives hope for the future.
- *Muslims in India remain at the margins of scientific research and higher education.* Hamdard University in Delhi is distinctly better than the university bearing the same name on the Pakistani side. Jamia Millia, a largely Muslim university, appears to be doing well and probably better than any Pakistani university in the field of physics. But, although Muslims form 12% of India’s population, I met only a few Muslim scientists in leading Indian research institutes and universities. Discrimination against Muslims does not appear to be the dominant cause. A professor at Jamia told me that an overwhelming number of Muslim students were inclined towards seeking easier (and more lucrative) professions in spite of special incentives offered to them at his university. In general, Muslims in India appear more modern and secular than in Pakistan. However, Hyderabad astonished me. Is it a total exception? In the lecture that I gave at a government women’s college, there was only one young woman without a burqa in an audience of about a hundred. These women were surprised to learn that Pakistan – at least in most places – is more liberal than Hyderabad. The extreme conservatism in the Muslim part of the city reminds one of Peshawar.



- *There was a remarkable lack of hostility towards Pakistan.* Indeed a desire for friendly relations was repeatedly expressed in every forum I went to. This is not to be taken lightly: many of my public lectures were either about (or on) science, but others dealt with deeply contentious issues – nuclear weapons, India-Pakistan relations, and the Kashmir conflict. Various Indian peace groups and NGOs organized public discussions and screenings of the two documentaries that I had made (with my friend Zia Mian): “Pakistan and India under the Nuclear Shadow”, and “Crossing the Lines – Kashmir, Pakistan, India”. To be sure, my views on Indian policies and actions in Kashmir occasionally provoked knee-jerk nationalistic responses and accusations of pushing “a Pakistani line”. But these were infrequent and even heated exchanges always remained within the bounds of civility.



- *Ignorance about Pakistan is widespread.* In most public gatherings, and certainly in every school that I spoke at, people had never seen a Pakistani. A puzzled 12-year old girl asked me: “Sir, are you really a Pakistani?”. Many Indians have a misconception of Pakistan as a medieval, theocratic state. In fact, only a few parts of Pakistan are really so. I also encountered the belief that Pakistanis have been totally muzzled and live in a police state. This is untrue – articles in the Pakistani press are often blunter and more critical than in the Indian press. An Indian friend hypothesized that knowledge of the other country is inversely proportional to the geographical distance between countries. Unfortunately this will remain true unless there is a substantial exchange of visitors between the two countries.





- *Indians are deeply nationalistic and may dislike particular governments but they only rarely criticize the Indian state.* This is not difficult to understand: the democratic process has given a strong sense of participation to most citizens and has successfully forged a national identity (except in Kashmir, and parts of the North East) that transcends the immense diversity of Indian cultures. But this has an important downside: nationalism is easy to mobilize and highly dangerous in matters of war and conflict. I found the Indian elite (especially the former heads of nuclear, space, and technology programs) condescending and irritatingly smug. Even if India has done well in some respects, in most others it is still behind the rest of the world. Fortunately, Pakistani intellectuals are less attached to their nation state and therefore more forthright. The reason is rather clear: three decades of military rule have dealt a serious blow to nation building and firming up the Pakistani identity.
- *Similarities between the two countries exceed the differences.* Cities in both countries are poisoned with thick car fumes and grid-locks are frequent; megaslums and exploding populations threaten to swallow up the countryside; electricity supplies are intermittent; and water is fast disappearing from rivers and aquifers. The rural poor are fleeing to the cities, and wretched beggars with amputated limbs are casually accepted as part of the urban scenery. There is little long-term planning, and none at all for coping with the inevitable changes that global warming will soon bring.

### **The Way Forward**

One can imagine a very large number of goodwill gestures that would help create a climate of peace between India and Pakistan. Among these is academic exchange and, in particular, the exchange of university teachers. Teaching visits could help create strong

bonds. This certainly does not come at the expense of other efforts such as short school visits by students. Indeed, one hopes that the suggested exchange could be a precursor for a much wider exchange of faculty and students between Pakistani and Indian universities, and hence allow for increased contact between two populations that have grown apart over the decades. If sufficient people-to-people contact comes about, this could eliminate or greatly reduce the threat of confrontation between two heavily armed neighbouring states.

University teacher exchange also makes eminent economic and developmental sense: Pakistan is eagerly seeking to attract foreign faculty into its rapidly expanding university system by offering salaries 5-10 times larger than normal for scientific and technical subjects. On the other hand, India has a huge pool of accomplished teachers in its universities and research institutes.

There is evidence that some Pakistani universities would be eager to accept Indian faculty if permission is granted by the government. Indeed, although this is not generally known, there are a handful of Indian teachers employed in Pakistan. Attractive salaries, together with other reasons, would succeed in attracting many more renowned Indian teachers for short-term contracts. Some Indian universities have already indicated their interest in hiring teachers from Pakistan.

Obtaining political consent from the two national governments will require exercising quiet but effective diplomacy, perhaps from a third country. It is not possible, at the present time to get long-term (3-6 month) visas for university teachers from the other side. This is likely to be the biggest immediate hurdle. But if the ice is broken, this may lead to a situation where large numbers of academics cross borders without needing special effort or financial incentives. Extremists on both sides will oppose the idea but, if one starts small enough, there may not be excessive opposition.

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