Photography: Alberto Conti

Pakistan's voice of reason

Two Pakistani scientists are known throughout the world. Disgraced engineer A. Q. Khan helped the country get the bomb. By contrast, **Pervez Hoodbhoy** has spent more than 30 years opposing it. A professor of physics at Quaid-i-Azam University in Islamabad, Hoodbhoy is a long-time critic of religious extremism, irrationality and military rule. With the regime of President Pervez Musharraf facing an uncertain future, Hoodbhoy has emerged as an unlikely pioneer of the pro-democracy movement. **Ehsan Masood** caught up with him during a meeting of the Academy of Sciences for the Developing World in Trieste, Italy

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Pervez Hoodbhoy says the key to stability in Pakistan is teaching people to think more rationally

There are daily demonstrations in universities across Pakistan. What are the students and faculty members demanding?
They want the restoration of the constitution and the rule of law, and an end to the state of emergency imposed by General Musharraf on 3 November. They want the chief justice and members of the supreme court to be reinstated. Pakistani campuses have suddenly woken up to social and political issues after two decades of being utterly quiet. I think we are witnessing something new and good.

Can the international scientific community do anything to help restore democracy?
The western scientific community should make it plain that it is opposed to the current state of emergency and the suspension of democracy. It should not communicate with or welcome representatives of the Pakistani government, nor allow them to address meetings or take part in conferences. On the other hand, it would be wrong to ban or discourage Pakistani scientists and students from visiting the west or its institutions.

Do you share the concerns of many in the international community about what would happen to Pakistan's nuclear arsenal if the present government were toppled?
The government says there is absolutely no danger. But I wouldn't be so sanguine, because extremists have penetrated into the depths of the army and the intelligence agencies.

You live in a part of the world where nuclear weapons are regarded by many as an article of faith. What is your view of Pakistan's nuclear capability?
I take a moral position: there should be no nuclear weapons anywhere in the world. But nuclear weapons in the possession of India and Pakistan are particularly dangerous because of the countries' proximity to each other and the fact that an accident can happen with no chances of controlling the consequences. Those of us who opposed the tit-for-tat nuclear tests of 1998 were absolutely right in thinking that this would be the beginning of an arms race. The arms race is definitely on. We in Pakistan are making as many warheads as possible. In spite of this, Pakistan is in greater danger today than it was in 1998. The threat is from within.

Your anti-nuclear stance is not a popular one in the Islamic world today.
Things are changing. The interesting thing is that in Pakistan, nuclear weapons are no longer thought of as a panacea for our ills as they were following the tests. The reason is that nuclear weapons have not put Pakistan in the ranks of technologically advanced countries, nor made it wealthier or better regarded. In fact, nuclear weapons are being looked at today with a great deal of nervousness, in particular by the US and many of its allies.

Musharraf has transformed Pakistan's science and higher education, with higher professors' salaries, more PhD students and a 60-fold increase in the science budget. One in two people now has a mobile phone. These are concrete achievements.
There is a lot of showbiz here. Yes, mobile telephone use has increased, but that has nothing to do with indigenous technology. It is largely because of the entry of multinational companies: the size of the market means that they are not exactly making a loss. But in terms of science development, I'm afraid there is very little good news. PhDs are being handed out to those barely literate in their fields. It's true that science funding has gone up, but so has the wastage. For example, vast amounts are being spent on importing scientific equipment, but very little use is being made of it.

"Science funding has gone up in Pakistan, but so has the wastage"

Any examples of this?
Yes. A Van de Graaff accelerator, worth some $7 million, was ordered for my university two years ago, but as yet there is no plan for using it. In all likelihood, it will spend its life in some basement and not much science will come out of it.

There has also been a massive university expansion programme. That must be a good thing.
What is most alarming is the speed at which new universities are being created. Over the past six years, some 50 new universities have come into existence. Many have been unable to recruit teaching faculty and the standards in some are so low that they should not be called universities at all. It's sad to see an institution being called a university when its teachers lack basic skills. It makes little sense to have a department of English where the head cannot speak a single straight sentence in English. Nor does it make sense to have a physics department when the head is unable to solve A-level physics problems. I can give you examples of both. That's our problem: not enough competent teachers.

At least more young people now have a chance of affordable higher education.
Access to higher education is indeed very small. Less than 3 per cent of those who are eligible are at university. But to award qualifications that have no real learning behind them is going to make the situation worse. University graduates without basic skills become a burden wherever they go, whether in industry, the service sector or education.

What would you say is the single biggest issue that needs addressing in Pakistan science and education?
I would say two things. First is the idea among our young people that knowledge is something that comes from above, or is something to be copied or memorised, rather than created through human endeavour. This needs to be tackled head-on. It is interesting that Urdu lacks a word or phrase for "creating knowledge". In our society, learning is taken to mean learning by rote. Secondly, teachers in our schools and colleges are utterly authoritarian: your teacher is not just the boss, he is seen as a father figure, someone you do not question. This forces students to accept information instead of thinking about it or questioning it.

Are you optimistic about the future?
Absolutely. We are seeing positive changes in some places. Some years ago, I presented a series of popular science programmes for Pakistan Television. The response was phenomenal and very, very heartening. I received thousands of letters, some from remote villages. Dozens of students came to my department; I even had one entire village school come in. In my view, the only way to get a handle on many of today's conflicts is to enable people to learn to think more rationally, and to move them away from extremist ideas, whether from religion or nationalism. Each is equally divisive. The message of science is that we are one human family. ●

Profile

Pervez Hoodbhoy has been at Quaid-i-Azam University since 1973. He has written and spoken extensively on topics ranging from science in Islam to education issues in Pakistan, and produced science television programmes for children. He is author of *Islam and Science: Religious Orthodoxy and the Battle for Rationality* (Zed Books, 1992). In 2003, he was awarded UNESCO's Kalinga prize for popularising science in Pakistan.

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