letters

Islam, science, and free and open inquiry

I suspect that Pervez Hoodbhoy's personal concerns unjustifiably and recklessly led to narrow and predetermined conclusions about science and Muslim culture ("Science and the Islamic World—The Quest for Rapprochement," PHYSICS TODAY, August 2007, page 49). That sort of judgment unfortunately resonates with prevailing and popularized Western attitudes.

Hoodbhoy missed an opportunity to discuss the teachings of Islam in relation to science, and the effects of historical, social, and political realities—a thesis that would have been much less stereotypical. I take issue with many aspects of the article and will comment on a select few.

Making connections between Islam and science is a precarious and complex undertaking. It is precarious in that true science cannot be characterized by the religion of those who engage in it, so any reference to "Muslim science" is without meaning. And the making of such connections is complex because nonreligious values govern how and whether science education and research are supported and encouraged. Clear distinctions must be made between the basic teachings in a given religion on one hand and the effects of religious fundamentalism on the other.

The question of why Islamic society seems disengaged from science when it contributed so much knowledge centuries ago may be relevant. Hoodbhoy disappoints with his casual attempt to answer it; he proposes instead a solution tantamount to changing Muslim societies (like the turning of a switch) to secular ones that accommodate science.

The author's choice of data sets is questionable. The Organization of the Islamic Conference is a very loose political coalition of dissimilar states, and at least one of its member nations is closely aligned with the Christian tradition. The effect of politics on science in some of the organization's countries is more pronounced than the effect of religion on science. Furthermore, the measure he used to gauge science productivity is not reliable; it does not account for the survival imperative of those nations or their efforts to meet national needs through applied science and engineering, which may trump contributions to pure science. A case in point, to which Hoodbhoy alluded, is the growing suite of technology projects in the Persian Gulf and the Middle East.

Funding may not be a panacea, as the author wisely stated, but steady funding is critical, and increases in government support for applied science initiatives across the region over the last decade have been significant. Hasn't funding been the primary driver of growth in industrialized nations? Sustaining the funding, creating high expectations and a strong work ethic, and establishing educational systems and environments conducive to scientific engagement must follow. Hoodbhoy's cynicism regarding the significance and the impact of regional developments in science and technology to date negates the rapprochement between science and Islamic societies that he leads us to believe is important.

Science's absence from the national agenda appears to be common among developing countries, regardless of the people's religion. Some nations have been deliberate about increasing science activities by strengthening education and substantially increasing funding. Some see economic growth as a motivator of science—a familiar concept in the West.

The PHYSICS TODAY article also includes a casual, isolated reference to plagiarism in Iran. Plagiarism should not be tolerated at any level, in any setting; but the author should take a moment to review the situation more broadly. Regrettably, plagiarism occurs in other contexts, including Western countries, where university faculty members succumb to the pressure to publish for the sake of promotion and tenure.

Developing a strong science base takes time. Research growth at leading international universities and the ensuing advances in science and technology took decades and serious financing. They were made possible by strong national commitments and, in the case of the US, certain freedoms and a market economy. We should welcome signs of a growing science agenda in Muslim-based societies. It is our obligation as a global scientific community to support scientists in any way we can in their efforts to advance science everywhere.

Hoodbhoy wasted a good opportunity to suggest strategic initiatives that would help bridge the perceived chasm between science and Muslim-based societies, to identify areas and paths of likely success, and to explain how the industrialized West can be of assistance.

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We would like to comment on some of the points Pervez Hoodbhoy raises in his article about the reasons for the decline of Islamic scientific greatness over the past several centuries.

Islam's Golden Age in the 9th–13th centuries brought about major advances in mathematics, science, medicine, and every field of human endeavor. In addition to translations of Greek, Chinese, and Indian scientific classics, Muslim scientists generated brilliant ideas and unique innovations because they took great inspiration from the Qur'an and from the exemplary life of the prophet Muhammed.

The main reasons for the decline of Islamic civilization, which started in the 13th century, were the removal of secular disciplines from the curricula of religious schools and the development and promulgation by some influential Muslim thinkers of the idea that human intellect can challenge God's reasoning. Starting from the late 19th century, the popularity of Marx-inspired materialistic philosophy among Muslim intellectuals intensified the identity crisis of many Muslims. Other reasons for the decline were a weakening of genuine faith among Muslims and destruction

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brought from outside by Genghis Khan and by some European powers.

As stated by Bediuzzaman Said Nursi, a great 20th-century Muslim scholar, "History testifies that whenever Muslims as a whole have adhered to their religion, they have advanced in relation to the strength of their adherence,"[1] that is, they were simultaneously strong in their state of knowledge, intellect, worldly affairs, and tolerance toward non-Muslims. But, wrote Bediuzzaman, "whenever they have lost their firmness in religion, they have declined."

According to Hoodbhoy, some "enlightened" Islamic scholars claimed that the Qur'an "tells us how to go to heaven, not how the heavens go." However, Bediuzzaman stated exactly the opposite: "Qur'an and science are like wings of a bird; if you cut one of the wings, the bird will fall and eventually die." He also strongly encouraged all Muslims to cooperate with the great legacy of Western physical sciences. Bediuzzaman emphasized harmony and moderation between faith and knowledge by stating that a person with faith but without knowledge tends toward bigotry and fanaticism, while a person with knowledge but without faith tends toward atheism and materialism. The trend of faith without pursuit of knowledge is what we often observe in many regions of the present Muslim world, whereas the trend of seeking knowledge with limited attention to faith has been seen in some Western societies for the past 200 years or so. Interestingly, Albert Einstein was a devout religious person who once made a statement similar to Bediuzzaman's: "Science without religion is lame, religion without science is blind."[2]

In addition to the criteria listed by Hoodbhoy to measure Muslim scientific progress, it is also crucial to stress the importance of how much attention Muslim governments currently give to boosting literacy rates and quality of secondary-school education in their countries. For instance, according to The World Factbook from the US Central Intelligence Agency, the seven Muslim countries having the highest literacy rate are former communist-bloc countries: Kazakhstan, Tajikistan, Uzbekistan, Turkmenistan, Azerbaijan, Kyrgyzstan and Bosnia-Herzegovina.[3] Those countries, along with Turkey, Iran, and Indonesia, have led all other Muslim countries in the numbers of gold, silver, and bronze medals their high-school students have won in international science and mathematics Olympiads over the past 10 years. Many observers see students' drive to participate in these contests as a strong indication of their future in science careers.

Religious moderation and constructive secular humanism, which are inherently compatible with common sense and the principles of logic and reason, are viable options for wise governance and progress in the Muslim world, as anywhere else.

Moreover, the diversity of cultures contributing to science is quite important today. Many bright Muslim scientists are active in non-Muslim countries, just as many non-Muslim scientists are active in Muslim countries. With increasing globalization and cultural diversity, science also transcends the boundaries of any specific state, religion, or culture, so it is difficult to evaluate the specific scientific contributions made by a people of a given state, faith, or culture. Science, now and in the future, is not just shared by Muslim, Christian, Jewish, Hindu, or Buddhist scientists. Science is a universally human treasury that belongs to everyone. The important task at hand is to preserve its achievements for future generations.

References

1. B. S. Nursi, *The Letters*, Risale-i Nur Collection 2, Sozler Publications, Istanbul, Turkey (1994), p. 511.
2. A. Einstein, "Science and Religion," talk presented at the Conference on Science, Philosophy, and Religion in Their Relation to the Democratic Way of Life, New York, 1941; available at http://www.update.uu.se/~fbendz/library/ae_scire.htm.
3. US Central Intelligence Agency, *The World Factbook*, https://www.cia.gov/library/publications/the-world-factbook/geos/xx.html.

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As a Jew living in Israel who believes any real progress and betterment of the lives of the surrounding population, our cousins, is to be applauded, I was very interested in the article on science in the Islamic world, and in the news report on a new research university in Saudi Arabia (PHYSICS TODAY, August 2007, page 33). I think the Saudi university report was fair, but Pervez Hoodbhoy's generally excellent article needs some comment, both on specifics and on general philosophy. I claim to represent no one but myself with these comments.

First, as Hoodbhoy notes, at times Israelis did help Hamas against the Palestine Liberation Organization, and at