

# Los Angeles Times

## Science as a shaper of global diplomacy

*The U.S., admired worldwide for its leadership in technology, should pursue science diplomacy with Muslim-majority countries. Such a policy could complement efforts to promote human rights.*

Op.-Ed. by Ahmed Zewail

June 27, 2010 (Sunday Edition)

In today's world, America's soft power is commonly thought to reside in the global popularity of Hollywood movies, Coca-Cola, McDonald's and Starbucks. But the facts tell a different story. In a recent poll involving 43 countries, 79% of respondents said that what they most admire about the United States is its leadership in science and technology. The artifacts of the American entertainment industry came in a distant second. In the 1970s, what I, as a young foreign student studying in the United States, found most dynamic, exciting and impressive about this country is what much of the world continues to value most about the U.S. today: its open intellectual culture, its great universities, its capacity for discovery and innovation.

By harnessing the soft power of science in the service of diplomacy, the U.S. can demonstrate its desire to bring the best of its culture and heritage to bear on building better and broader relations with the Muslim world and beyond.

I felt the full force of this soft power when I came to the United States from Egypt in 1969 to begin graduate studies at the University of Pennsylvania. I discovered how science is truly a universal language, one that forges new connections among individuals and opens the mind to ideas that go far beyond the classroom. My education here instilled in me greater appreciation for the value of scholarly discourse and the use of the scientific method in dealing with complex issues. It sowed, then nurtured, new seeds of political and cultural tolerance.

But perhaps most significant was that I came to appreciate the extent to which science embodies the core values of what the American founders called "the rights of man" as set forth in the U.S. Constitution: Freedom of thought and speech, which are essential to creative advancement in the sciences; and the commitment to equality of opportunity, because scientific achievement is blind to ethnicity, race or cultural background.

In January, appointed by President Obama as America's first science envoy to the Middle East, I embarked on a diplomatic tour that took me to Egypt, Turkey and Qatar. I met with officials from all levels of government and the educational system, as well as with economists, industrialists, writers, publishers and media representatives. What I learned during these visits was cause for some alarm, but also for considerable optimism.

The alarming aspect comes from the fact that education in many Muslim-majority countries now seriously lags behind international standards. Deficiencies in education, together with widespread economic hardship and the lack of job opportunities for young people, are sources of frustration and despair in many Muslim societies. They are rooted largely in poor governance and growing corruption, compounded by overpopulation and by movement away from the enlightened education I was fortunate enough to enjoy in Egypt in the 1960s.

Yet there are many positive signs as well. Muslim-majority countries such as Malaysia, Turkey and Qatar are making significant strides in education and in technical and economic development. Egypt, Iraq, Syria, Lebanon, Morocco and Indonesia are examples of countries still rich with youthful talents. Nor is this transfer of wealth and learning flowing exclusively from the West to the East. Today there are many Muslims in the West who have excelled in all fields of endeavor. These accomplishments and the values they represent can help the Muslim world recover its venerable heritage as a leader in science by complementing local efforts and aspirations.

It is certainly in the best interests of the United States to foster relations with moderate majorities who today often find themselves locked in struggle with minorities of fanatics. Most people I met in the Middle East believe in Obama's intentions, as laid out in his Cairo speech last year, and welcome the prospect of enhanced scientific and educational partnerships with the United States. Yet some expressed skepticism, with one high-ranking official asking me, "Will the political climate in the United States, and particularly the U.S. Congress, allow him to follow through on his promises?"

To enhance the prospects for success, we should begin by stressing three points.

First, the United States needs to define a coherent and comprehensive policy for pursuing science diplomacy with Muslim-majority countries. Despite many efforts by both public and private organizations, their initiatives remain fragmented.

Second, the focus of a better-integrated effort should be on improving education and fostering the scientific and technological infrastructure that will bring about genuine economic gains and social and political progress. One way would be for the United States to encourage and support the creation of relatively simple earth science labs in elementary schools, along with the teacher training necessary to stimulate curiosity about the workings of nature. For older students, I propose a new program, "Reformation of Education and Development," whose acronym, READ, would have special significance for Muslims, as it is the first word of the Koran. And through the program, the United States should be a partner in establishing science and technology centers of excellence for talented high school and university students in the region.

Third, these efforts must complement, not replace, U.S. efforts to promote human rights and democratic governance in the Muslim world. The United States must also continue to pursue a just and secure two-state solution to the Palestinian-Israeli conflict and work toward freeing the Middle East from nuclear proliferation.

All these efforts would go far toward creating goodwill, catalyzing progress and redirecting the region's energies into new, constructive and mutually beneficial channels.

The soft power of science has the potential to reshape global diplomacy.

Americans like to say that actions speak louder than words, and action is what we need now.

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