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Optimism, Pessimism, and Science Diplomacy

E. William Colglazier

My brother thinks I am an idealist, but that is not really true. Like some proponents of science diplomacy, I am rather an optimist, perhaps too much so. My optimism is based on science playing an influential and positive role in human affairs, including in diplomacy and foreign policy. It often translates into a worldview, rooted in the Enlightenment, that human history is predominantly a story of continual upward progress that benefits all. The inspiring words of Dr. Martin Luther King Jr., etched on his memorial in Washington, D.C., express this sentiment: "The arc of the moral universe is long, but it bends toward justice."[1]

Nevertheless, science diplomats are realists and recognize that politics is a more powerful force than science, at least in the short run. Technology can be harnessed for destructive purposes that run counter to the optimistic narrative. The wars and conflicts of the past hundred years are sobering reminders that death and destruction can result from the power of technology combined with darker forces present in people. Yet nothing has done more to deflate my optimism about continual upward progress aided by science than the America First policies of the current administration in Washington.

Withdrawing from the Paris climate agreement, pulling out of trade deals, and waffling on NATO treaty commitments are drastic reversals of American foreign policy. Scientific knowledge and expertise regarding climate change and international trade have been largely ignored or denigrated. High-level U.S. government positions in diplomacy and development and in science and technology remain unfilled. The administration has even recommended debilitating cuts in funding for the State Department and USAID.

In a speech at the State Department, Secretary Rex Tillerson explained America First foreign policy by saying that "things have gotten a little out of bounds here, they've gotten a little off-balance" regarding how our policies have favored other countries over ourselves. If we "condition too heavily that others must adopt this value that we've come to over a long history of our own," he went on to say, "it really creates obstacles to our ability to advance our national security interests, our economic interests."[2] National Security Advisor H. R. McMaster and National Economic Council director Gary Cohn penned an op-ed in the Wall Street Journal stating, "The world is not 'a global community' but an arena where nations, nongovernmental actors and businesses engage and compete for advantage."[3] Following the president's visit to NATO, German chancellor Angela Merkel concluded that America is no longer a reliable partner.

In addition to these foreign policy changes with reduced emphasis on American values in our diplomacy, the administration has proposed stark reductions in federal funding for scientific research. Other countries are perplexed by these changes in our science and technology policy. The U.S. government seems to have forgotten the "game plan" that made our country the world leader in science, technology, and innovation (STI). Combined with the president's executive order seeking to ban travel to the United States from certain countries, the image of America as a beacon of hope for many young people around the world has lost some of its luster.

U.S. foreign policy has always faced tension between a hard-nosed view of national interest and the idealism represented by American democratic values. Political leaders have often spoken in idealistic value-laden terms, but their policies at times did not live up to the visionary rhetoric. Thomas Jefferson's phrase that "all men are created equal" coexisted with his owning slaves. Woodrow Wilson's selling American involvement in World War I as "the war to end all wars" that would "make the world safe for democracy," as well as his vision for the League of Nations, contrasted with his racist views, his authoritarian approach to domestic opponents, and his inability to compromise. The proponents of science diplomacy recognize that national interests do indeed trump idealistic visions.

Before pessimism spreads too far, however, we should be clear about what we can realistically expect from science diplomacy, especially in this era of radical changes in U.S. government policy. First of all, other countries still want to engage with American capabilities in STI represented in our universities, research laboratories, and high-tech companies. The United States remains the world leader and the model to emulate with its "bottom up" innovative ecosystem, even though other countries are making rapid progress with significant investments and strengthened policies. Our science community is well aware that for America to remain among the world leaders in science and technology, we must make even greater efforts to collaborate with the best minds and most advanced facilities wherever they are located. International collaboration in STI will continue to grow.

Second, the scientific and technological revolution is accelerating. Not only do countries know that their future competitiveness, prosperity, and security are dependent on upgrading their capabilities in STI, they also know that they disregard scientific knowledge at their peril. I was taught physics by Richard Feynman, who wrote after the space shuttle Challenger accident, "Reality must take precedence over public relations, for nature cannot be fooled."[4] Scientific advice helping to inform public policy around the world will also continue to grow.

Third, the values that come from the conduct of science remain strong. They are a beneficial influence around the world. As the great scientist-humanist Jacob Bronowski stated more than fifty years ago, "Those who think that science is ethically neutral confuse the findings of science, which are, with the activity of science, which is not."[5] The values that come from the conduct of science—including freedom of inquiry, judgments based on evidence and merit, and transparency through publication—support democratic values.

These three trends will ensure that science diplomacy remains a major force in building knowledge-based societies around the world, providing a channel of communication and engagement even where governments are estranged, and making progress on the 17 Sustainable Development Goals of the United Nations 2030 Agenda. America's science diplomacy will be carried forward by our non-governmental STI community. All of these factors will help ensure that life is better for people around the world, and that makes me optimistic.

I have heard many graduation speeches over the past fifty years but remember only one. I was a physics professor at the University of Tennessee some thirty years ago when a beloved retiring professor gave a graduation speech in which his main message to students was to have a hard mind and a soft heart. In other words, he wanted each graduate to be uncompromising in the rigor and objectivity of his

or her analysis and thinking, but to apply that intellectual honesty with a kind heart and compassion for fellow human beings. I have always thought his advice was wise guidance for how scientific knowledge should be combined with human values to benefit humanity.

In crafting this editorial, I also reread portions of a book that influenced me many years ago, Modern Science and Human Values, by William W. Lowrance.[6] The concluding lines express my belief that we have it in our power to use science and technology for securing an optimistic future:

"The great challenge to our times is to harness research, invention, and professional practice to deliberately embraced human values to provide direction for the directed tragedy of technical progress...The fateful questions are how the specialists will interact with the citizens, and whether the performance will be imbued with wisdom, courage, and vision."

Lowrance's intent in using the word tragedy is that knowledge, once learned, can be applied for harm as well as for good. If I could make one edit to his apt conclusion about what the scientific community needs, I would add the word humility to "wisdom, courage, and vision." As for our politicians, I hope they remember that America's national interests are much broader than America First foreign policy. **SD**

Endnotes

[1] Dr. King was actually quoting Theodore Parker, a nineteenth-century reforming minister of the Unitarian Church.

[2] Rex W. Tillerson, "Remarks to U.S. Department of State Employees," May 3, 2017, https://www.state.gov/secretary/remarks/2017/05/270620.htm.

[3] H. R. McMaster and Gary D. Cohn, "America First Doesn't Mean America Alone," Wall Street Journal, May 31, 2017, https://www.wsj.com/articles/america-first-doesnt-mean-america-alone-1496187426?mg=prod/accounts-wsj.

[4] R. P. Feynman, "Personal Observations on the Reliability of the Shuttle," Appendix F, available at https://science.ksc.nasa.gov/shuttle/missions/51-l/docs/rogers-commission/Appendix-F.txt.

[5] Jacob Bronowski, Science and Human Values, rev.ed. (New York: Harper & Row, 1965).

[6] William W. Lowrance, Modern Science and Human Values (New York & Oxford: Oxford University Press, 1985).