

War and peace in the nuclear age

The ongoing confrontation with North Korea is a reminder that the world must prevent nuclear weapons from ever being used again. North Korea's development of a nuclear arsenal and delivery systems that could threaten the U.S. mainland, South Korea, and Japan has heightened the possibility of a disastrous conflict with hundreds of thousands of casualties. If constructive dialogue does not happen soon, the United States and North Korea may ratchet up tensions and take increasingly provocative actions. The decision by North and South Korea to field a combined team in the Winter Olympics gives hope for broader engagement, but diplomacy by scientists might be one step toward a more lasting rapprochement.

Science diplomacy was born as a response to nuclear weapons. The central question of whether nuclear war is inevitable in a world of deterrence was examined in "Living with Nuclear Weapons," which was produced by the Harvard Nuclear Study Group in 1983. The solution was for nations to take continual steps to reduce the risk of nuclear war. With enough time and gradual efforts to transform political relationships, even nuclear disarmament might become possible.

A series of nongovernmental engagements called "Track II" diplomacy began in the 1980s and included nuclear scientists, policy experts, and retired military leaders in the Committee on International Security and Arms Control (CISAC) of the U.S. National Academy of Sciences. This committee had regular meetings with a similarly composed group of experts under the Soviet Academy of Sciences. Both sides briefed their governments. These dialogues turned out to be enormously valuable when a "window of opportunity" for arms control and reductions emerged in Reykjavik, Iceland. There, in 1986, U.S. President Reagan and USSR General Secretary Gorbachev discussed the elimination of nuclear weapons. Several Soviet scientists who were engaged in the Track II diplomacy effort turned out to be Gorbachev's key advisers. Even though

negotiations were ultimately unsuccessful, this summit made the aspirational goal more than a pipe dream.

Sadly, that sentiment seems to be lost today. The 2015 Iran nuclear deal, brokered in part by two physicists—Ali Akbar Salehi, head of the Atomic Energy Organization of Iran, and Ernest Moniz, then the U.S. Secretary of Energy—is now threatened by possible U.S. withdrawal from this milestone in science diplomacy.

Nevertheless, scientists could play an integral role in building trust with North Korea and averting miscalculations that could lead to nuclear war. The scientists and engineers who lead North Korea's nuclear weapons and

ballistic missile programs are accorded considerable prestige by their government. I propose bringing together North Korea's science leaders and a group of prominent U.S. nuclear scientists and security experts outside of government for a dialogue on nuclear safety and security. Perhaps Chinese scientists who have been involved with U.S. scientists from CISAC in Track II dialogues would be willing to host the first meeting. The U.S. side might include distinguished scientific leaders who have previously engaged with North Korea on nuclear issues, such as former Los Alamos National Laboratory Director Siegfried Hecker, a plutonium expert at Stanford University. It could also include a



Reagan and Gorbachev sign the 1987 nuclear treaty.

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bipartisan group of scientists with previous high-level government experience, such as Moniz, who is now at the Nuclear Threat Initiative, and Harvard University's Ashton Carter, a physicist and former U.S. Secretary of Defense under President Obama. The current Secretary of Defense, General James Mattis, might be one source of experts credible to the current administration. If the dialogue achieved nothing more than reinforcing deterrence and reducing the risk of actions that could be misinterpreted and lead to conflict, it would be well worthwhile. It might even accelerate serious governmental negotiations for a permanent diplomatic solution.*

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