

WMD Nuclear weapons - governance

Risk expert

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States manage the risks of nuclear weapons through measures that have prevented their worldwide spread but have not significantly reduced the risk of catastrophic use. These measures include mutual deterrence based on the prospect of nuclear retaliation, moral norms of restraint, and international cooperation, most notably the 1970 Nuclear non-proliferation Treaty (NPT). However, recent changes to doctrines and development of new nuclear weapons by the United States, Russia, China and the other nuclear weapons states make it more likely that nuclear weapons will be used in military actions, or through miscalculation or accident, than at any time since the beginning of the nuclear age. Threats by Russia to use nuclear weapons in the current conflict in Ukraine have further heightened the risk of nuclear catastrophe.

The pillar of nuclear military strategy is deterrence, whereby nuclear-armed states threaten massive retaliation against each other in what is termed “mutually assured destruction.” This doctrine is considered by some to be an effective way of preventing nuclear war. However, others observe that since no nuclear weapons have been used in any conflict since 1945, political restraint based on a moral norm against their use also may have played a role.

At the same time that major powers relied on deterrence and norms of restraint, bilateral agreements and international cooperation, beginning with the 1963 USSoviet treaty to ban atmospheric testing, and subsequent US-Soviet/Russia bilateral agreements, have reduced nuclear arsenals from a high of 68,000 in the late 1980s to some 12,000 today. In addition, international cooperation in the form of the 1970 Nuclear Nonproliferation Treaty has prevented the development of nuclear weapons in all countries beyond the original five – United States, Soviet Union/Russia, United Kingdom, France, and China – with the exception of India, Pakistan, North Korea and probably Israel.

Altogether, some 25 governments have given up their nuclear weapons programs, including South Africa, Libya, Belarus, Kazakhstan and Ukraine. Another 15, like Canada, Brazil, and Argentina, have contemplated programs but not embarked upon them, in keeping with their responsibilities under the NPT. The UN Security Council, whose permanent members include the five recognized nuclear



weapons states, enforces the Nuclear Non-proliferation Treaty in partnership with the International Atomic Energy Agency (IAEA). Civilian nongovernmental organizations also play an increasing role in monitoring nuclear weapons developments, using fine-tuned satellite technology. As the use of surveillance technology by independent analysts increases, the ethics of their use may be scrutinized more closely; at present there is no regulation of these practices.

A separate international agreement, the Joint Comprehensive Plan of Action (JCPOA) to prevent Iran's development of nuclear weapons, had been reached in 2015 and served as a means to strengthen Iran's obligations under the NPT. The multilateral arrangement among China, France, Germany, Russia, the United Kingdom, the United States, the European Union, and Iran permitted civilian uranium enrichment by Iran and provided robust oversight of research and production facilities by the IAEA. Unfortunately, however, the United States withdrew from the JCPOA in 2017, and Iran has increased production of enriched uranium beyond that stipulated in the agreement. New administrations in both the United States and Iran currently are engaged in multi-state talks to negotiate a new plan that prevents Iran's enrichment of fuel to weapons grade in exchange for economic sanctions relief, but they have yet to reach a new agreement.

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The conflict in Ukraine with nuclear-armed Russia on one side, and the United States and NATO countries, also armed with nuclear weapons, on the other, threatens to upend the fragile nuclear order. For now, all parties are exercising restraint in the face of Russia's aggression against Ukraine. The long term consequences of this war for the governance of nuclear weapons, and the moral norms that influence state action, however, will be significant if difficult to foresee at this date.

Even before Russia's veiled threat to use nuclear weapons in Ukraine, bilateral and multilateral institutions that restrain nuclear weapons arsenals were unraveling at an alarming rate. Major treaties between Russia and the United States, including, most recently, the 1987 Intermediate Nuclear Forces treaty that had banned an entire class of nuclear capable missiles in Europe, had collapsed in 2019 with the withdrawal of the United States and then Russia. Only the New START treaty of 2010, renewed through 2025, remains. It limits strategic nuclear weapons of the United States and Russia to 1,550 each and provides for transparent verification measures to ensure compliance. However, no treaty or agreement has sought to limit nonstrategic nuclear weapons, those with yields below 300 kilotons. Russia is suggesting that it might use these tactical weapons in the war in Ukraine should it feel overpowered by conventional forces in a move to “escalate to deescalate” the conflict. Estimates of Russia's battlefield nuclear weapons range from 1500 to 2000; the United States and NATO deploy an estimated 100 of such smaller nuclear weapons in Europe.

Even with the New START limits on arsenals, however, Russia and the United States have each declared their intentions to use nuclear weapons even if such weapons are not used against them first. Such nuclear postures, as well as Russia's current threats, suggest that nuclear weapons are increasingly viewed as instruments of warfighting rather than solely as deterrents against other states'



nuclear threats. The practice of restraint, once thought to be a result of nuclear deterrence and norms of non-use, as well as formal agreements, is deteriorating. Evolving doctrines, as well as the development of new, more lethal nuclear weapons suggest that a new arms race is underway. Included in that race are China, which is increasing production of long-range nuclear-capable missiles, North Korea, India, and Pakistan, as well as Russia, the United Kingdom, and the United States. This new nuclear arms race among the nuclear weapon states reinforces the perceived utility of nuclear weapons in warfighting and increases the risk that these weapons will be used.

Arms races also underscore the difficulties of enforcing the Nuclear Non-proliferation Treaty when countries do not wish to cooperate. The original treaty, which is viewed as a major element of global nuclear governance, suggested a bargain whereby those states without nuclear weapons would not acquire them, would have access to civilian nuclear power, and, in exchange, the nuclear weapons states would disarm when conditions warranted. Many believed that the end of the Cold War was such a time, and, while nuclear arsenals have radically decreased in Russia and the United States since 1992, the recent reversal in doctrine and rhetoric suggest that these and other nuclear weapons states have no intention at present of eliminating their nuclear arsenals. As the nonproliferation regime, informal norms of restraint, and mutual deterrence that regulated nuclear weapons in the past are eroding, new technological developments, when coupled with nuclear weapons, present ever greater danger that they will be used through miscalculation or by accident. Cyber-attacks that may disrupt command and control systems of nuclear weapons; increased reliance on space technology for military purposes; and dependence on artificial intelligence for control of armaments, make states and their weapons systems more vulnerable to adversaries. Furthermore, no regulatory frameworks are in place to address these new technologies.

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In the face of these growing dangers and in reaction to nuclear weapons states’ lack of compliance with the disarmament provisions of the NPT, non-nuclear weapons states introduced in 2017 a UN treaty banning all nuclear weapons. One hundred and thirty-five of the 193 member states participated in negotiating the treaty that prohibits developing, manufacturing, possessing, or stockpiling nuclear weapons, as well as threatening their use. While there is no separate verification regime established with this treaty, all signatories must adhere to IAEA safeguards. With 50 ratifications, the treaty entered into force on January 22, 2021. As of May 2022, 86 countries have signed the treaty and 60 have ratified it, adapting their national legislation to comply with its provisions. Not since the Nuclear Non-proliferation Treaty of 1970 have states taken such dramatic and collective action to prohibit possession of nuclear arsenals.

Another bright spot in an otherwise dismal nuclear governance landscape is the Comprehensive Test Ban Treaty and its implementing organization, the Comprehensive Test Ban Treaty Organization (CTBTO). The CTBTO monitors nuclear testing worldwide and publicly holds states accountable for their nuclear programs. It is through this organization that the international community knows of North Korea’s nuclear tests and verifies that no other countries have tested



nuclear weapons since 1998. While the treaty has not entered into force because key states, including the United States and China, have not ratified it, the CTBTO receives financial and expert support even from those countries, and, along with the TPNW, represents a slim hope for future cooperation to regulate nuclear weapons.

Unfortunately, hostilities between the United States and Russia, until now central leaders in the global nuclear order, have disrupted prospects for governing the numbers and uses of nuclear weapons, and will test state doctrines of nuclear deterrence as well as the capacity of international institutions to restrain nuclear arsenals. The risk of nuclear weapons use is greater now than at any time since nuclear weapons were first exploded over Hiroshima and Nagasaki at the end of World War II.