Principles for Reforming the Nuclear Order

In collaboration with the Atomic Energy Commission (CEA)

George Perkovich

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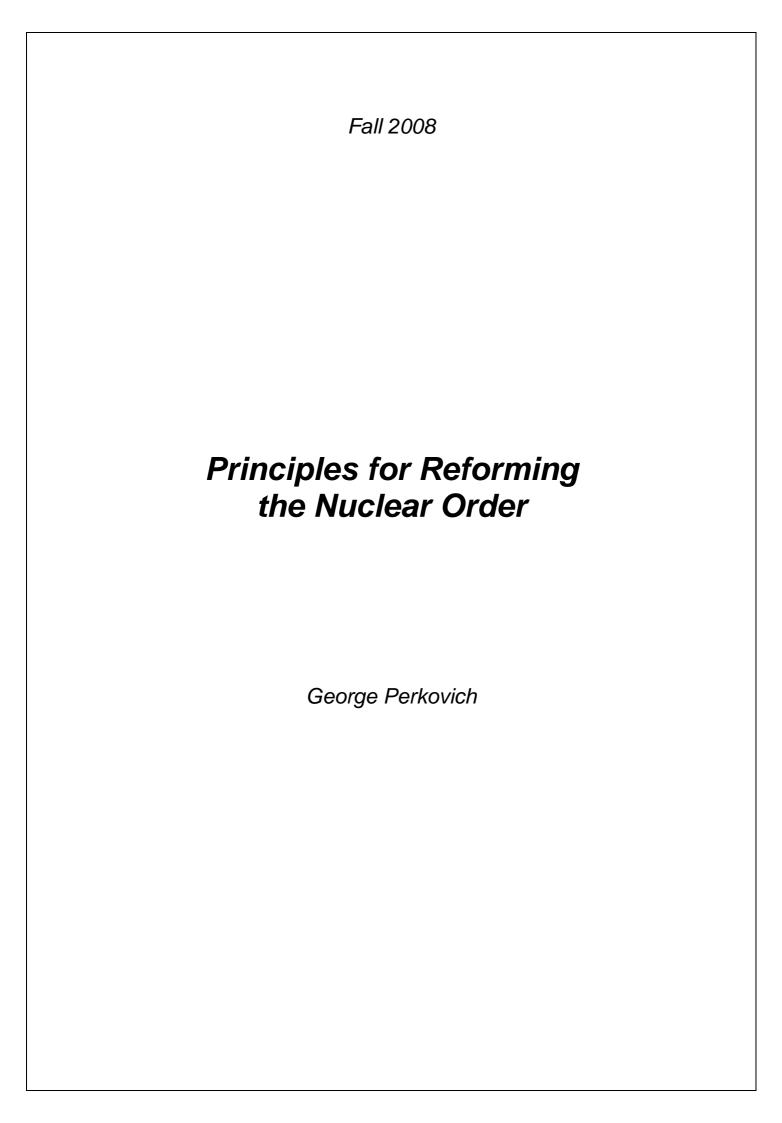
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Introduction

The creation of a rules-based regime for managing nuclear technology and preventing its proliferation for weapons purpose is a historically remarkable achievement. Its foundation is the International Atomic Energy Agency (IAEA) safeguards system established in the late 1950s, which reflected the recognition that nuclear material and technology needed to be closely monitored with common standards if the benefits of atomic energy were to be widely and safely shared. The cornerstone of this regime is the 1968 Nuclear Nonproliferation Treaty (NPT), which recognized that preventing the spread of nuclear weapons required the provision of major incentives to states that might otherwise seek these weapons. These incentives were security – agreement by "your" neighbors not to acquire nuclear weapons, and by the established nuclear-weapon states to protect you – technological cooperation, and the promise of a more equitable nuclear future when no one possesses nuclear weapons.

A Weakening Order Under a Growing Pressure

The United States and the Soviet Union led the creation of what might be called the first nuclear order as they learned from crises and the nuclear arms race that stability required negotiations of treaties and other rules that channel the development of civilian and military capabilities in predictable ways. Today, fractures can be seen in this order inherited from the Cold War. These fractures result primarily from three points of pressure.

Three Sources of Stress

The first is the potential expansion of nuclear industry around the world as demand for electricity grows and the need to abate growth in carbon emissions raises the real costs of fossil fuels. An increasing number of countries express interest in starting or widening programs to produce nuclear energy. Much of this declared interest will not materialize into actual power plants. Many aspirants to a nuclear energy industry will not have social and physical infrastructures that current nuclear technology suppliers will find suitable. Still, a growing number of plants will be built in Asia, Europe and North America, and perhaps in the Middle East and South Africa. Anticipating a market for enriched fuel, either internally or for export, some states such as Iran, Brazil, Canada, and South Africa have developed or seek to develop programs to enrich uranium. Others such as South Korea will explore options for reprocessing spent fuel in ways that could enable them to separate plutonium. The spread of fuel-cycle capabilities to non-nuclear-weapon states elicits concerns that these states could overtly or covertly move to produce nuclear weapons. Once a state is capable of enriching uranium or separating plutonium from spent reactor fuel, it has achieved the most difficult prerequisites to the production of nuclear weapons. Even reactor programs alone enhance a state's cadre of trained nuclear professionals, who could some day lead an effort to develop nuclear weapon options.

Recognizing these realities should not lead one to malign the intentions or the aspirations of developing countries. The point is simply that the system ensuring the peaceful use of nuclear energy will come under greater stress as the number of actors and facilities increases.

The expansion of the nuclear industry and the spread of fuel-cycle capabilities exacerbate the second source of pressure on the nuclear order – direct proliferation threats. North Korea and Iran bring these threats to light, but Syria's undeclared nuclear activities, revealed after the Israeli



airstrike of September 2007, and the likely continued existence of proliferation networks, point to broader risks. Confidence needs to be strengthened that actors who violate their obligations not to seek or proliferate nuclear weapons will be caught and faced with consequences grave enough that they will abandon their nuclear weapon ambitions and capabilities. In other words, much more certain and robust enforcement is needed to deter violations or bring violators back into compliance with their commitments to conduct all nuclear activities solely for peaceful purposes. Iran presents the most dramatic current example of weaknesses in the enforcement system.

The failure of the nine nuclear-armed states to take steps convincing the rest of the world they will eliminate their nuclear arsenals represents the third major stress on the nuclear order. The five nuclearweapon states under the NPT are obligated under Article VI of the treaty to "pursue negotiations in good faith" related to "cessation of the nuclear arms race at an early date and to nuclear disarmament". Some officials and experts in the U.S. and France question the precise nature of this obligation, suggesting the NPT contains no legal commitment to eliminate nuclear arsenals.¹ In the run up to the 2005 NPT Review Conference, U.S. and French officials essentially disavowed disarmament pledges made in the 2000 Review Conference.² But legal hairsplitting over the exact meaning and requirements of the NPT's Article VI is politically beside the point. International treaties such as NPT, and, more broadly, functional regimes to order international affairs, must evolve organically with history. This is one reason why the NPT included a mechanism to review and decide upon its future twenty-five years after its entry into force, and why nuclear states, at that fateful review conference in 1995, reiterated their obligation to pursue nuclear disarmament. Any contrary statement would quite certainly have led to the breaking off or the shortening of the life-span of the treaty. At the 2000 NPT review conference, states agreed on "13" Steps" to serve as benchmarks for measuring fulfillment of their "unequivocal undertaking [...] to accomplish the total elimination of their nuclear arsenals" At best, four of these 13 steps have been largely implemented. The most important steps in the eyes of most of the world have not been taken: entry into force of the Comprehensive Test Ban Treaty (CTBT), conclusion of a verifiable fissile material cutoff treaty, application of the principle of irreversibility to all nuclear arms control, and the conclusion of START III negotiations.

Bans on nuclear weapon testing and fissile material production hold special prominence in part because they represent the least debatable, most concrete and readily doable element of Article VI: "the cessation of the nuclear arms race". A ban on explosive testing may not lead to the elimination of all nuclear arsenals, but it would over time seriously impede

¹ Christopher A. Ford, "Debating Disarmament: Interpreting Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons", *The Nonproliferation Review*, November 2007, Volume 14, n° 3.

² Rebecca Johnson, "Is the NPT Up to the Challenge of Proliferation?" *Disarmament Forum*, n° 4, 2004.



the development and deployment of new types of nuclear weapons. This would reduce the temptation of national security establishments to think of new ways for nuclear weapons to solve new problems and could encourage a devaluation of nuclear weaponry. Ending production of fissile materials for nuclear weapons would quantitatively cap the potential for arms racing. Both measures - bans on testing and fissile material production – would impede proliferation, too. Yet, neither is close to being legally implemented. The CTBT was agreed in 1996 and signed by all the NPT nuclear-weapon states and Israel. These states plus India and Pakistan have politically committed not to test. However, the U.S., China, Egypt and others have not ratified the CTBT, while India and Pakistan have not signed it. Thus a legally binding global ban on nuclear testing is not in place. Regarding fissile material production, negotiations on a ban have been blocked for more than a decade in the Conference on Disarmament. China is particularly reluctant to formally cap its production because it worries that the U.S. could exploit ballistic missile defenses, advanced conventional weaponry, and other new technologies to negate China's small nuclear retaliatory force. China feels it might need to produce more nuclear weapons to overwhelm potential U.S. defensive and pre-emptive strike capabilities. Pakistan, too, has blocked negotiations of a fissile material production ban.

The reluctance of the U.S., China, India and Pakistan to ban testing and further fissile material production particularly rankle non-nuclear-weapon states. (France, the United Kingdom and Russia have fulfilled expectations in these two areas.) If the current possessors of nuclear weapons cannot say, in effect, "we have enough, and we do not intend to invent and test new ones", the rest of the world feels that the core bargain of the nonproliferation regime is not being implemented. Both measures would limit military nuclear capabilities; they are also seen to express intentions to reduce the role of nuclear weapons in international politics and to take nuclear disarmament seriously. If the abolition of nuclear weapons would take many steps and much time, ending testing and fissile material production are early steps in that direction. If the nuclear-armed states will not agree to them, they seem to be reneging on the core principles of the nuclear order.

Geopolitical Change and Nuclear Order

It seems at least highly plausible that the collapse of the bipolar geostrategic system is a major underlying cause of the fractures in the nuclear order. The U.S. and the Soviet Union led the creation of that order because they agreed that they did not want other states to acquire nuclear weapons and challenge their dominance. The balance of power between the two giants also increased stability by giving third-country regimes a protective patron to turn to if Moscow or Washington threatened them. The temptation to acquire nuclear weapons to fend off one superpower's pressure for regime change was reduced because a threatened government could turn to the other superpower for protection. The post-NPT nuclear order also helped the U.S. and the U.S.S.R. impose discipline globally, although they were neither omnipotent nor infallible.



There were indeed exceptions. South Africa secretly built six nuclear weapons before dismantling them (also secretly) in the early 1990s and joining the NPT. But its apartheid government was largely estranged from the U.S. and therefore outside its influence, and South Africa's ideological and strategic antipathy towards the Soviet Union was an incentive for the apartheid regime to seek nuclear weapons.³

India and Pakistan refused to join the NPT and in the 1970s and 80s moved to build nuclear weapons. India did so in part to assert its autonomy from *both* superpowers, and to contest China, which both superpowers were also inclined to do. In any case, India was too big to stop and the two superpowers were unprepared to meet its demands for global nuclear disarmament. Pakistan was a U.S. partner and Washington placed a higher priority on cooperating with it to drive the Soviet Union out of Afghanistan than on preventing Pakistan from getting the bomb. Still, within the Soviet bloc, nonproliferation discipline held, and the U.S. used its power to stop nascent nuclear weapon activities in Taiwan, South Korea and perhaps other cases.⁴

With the dissolution of the Soviet Union, the U.S. remained the only state capable of projecting military power globally. The United States' unique and highly effective conventional military capabilities, particularly high-accuracy deep-strike systems, made all governments potentially defenseless. U.S. economic and soft power resources added to the sense in the 1990s that it was the hegemonic leader of the emerging global system. This made other major powers uncomfortable as expressed by then French Foreign Minister Hubert Védrine's designation of the U.S. as the "hyperpower" in need of some balancing, for its own good and that of the world.⁵

This discomfort grew throughout the late 1990s and intensified with the U.S-led invasion of Iraq, the withdrawal from the Anti-Ballistic Missile Treaty (ABM Treaty), and the (mistaken) perception that the U.S. were increasing reliance on nuclear weapons while advancing discriminatory proposals to block the spread of nuclear technology to other states. In fact,

³ Mitchell Reiss, *Bridled Ambition: Why Countries Constrain their Nuclear Capabilities*, Baltimore, MD: Johns Hopkins University Press, 1995, p. 9; David Fischer, "South Africa" in Mitchell Reiss and Robert S. Litwak (eds.), *Nuclear Proliferation after the Cold War*, Baltimore, MD: Johns Hopkins University Press, 1994, p. 213.

⁴ Mitchell Reiss and Robert S. Litwak, "Introduction" in Mitchell Reiss and Robert S. Litwak (eds.), *Nuclear Proliferation after the Cold War*, Baltimore, MD: Johns Hopkins University Press, 1994, p. 4. For an examination of the South Korean case, see Mitchell Reiss, *Without the Bomb: The Politics of Nuclear Nonproliferation*, New York, Columbia University Press, 1998, pp. 78-108. For an examination of the Taiwanese case, see Joseph Yager, "Taiwan" in Joseph Yager (ed.), *Nonproliferation and U.S. Foreign Policy*, Washington DC, Brookings, 1980, pp. 66-81.

⁵ Ministre des affaires étrangères, *Déclaration et point de presse de M. Hubert Védrine sur les relations internationales entre la France, l'Europe et les Amériques*, Paris 1^{er} février 1999.



whereas U.S. administrations previously thought of the deterrent "triad" as air, land and sea-based nuclear weapons, the 2001 Nuclear Posture Review reduced the role of nuclear weapons in the overall deterrent arsenal of the U.S. by conceptualizing a "new deterrent triad" in which nuclear weapons were only one leg, and conventional capabilities and nuclear infrastructure were the other two legs of the triad. This too-clever-by-half formulation obscured the important reality that U.S. defense officials reduced the roles and missions of nuclear weapons by substituting conventional capabilities for them. Russia and China led arguments that unipolarity was dangerous and multipolarity would be better. Some European leaders such as Dominique de Villepin and Jacques Chirac supported this view, as did some in India. Iranians, South Africans, Brazilians and others in large developing countries also began to coalesce in soft-balancing against U.S. hegemony.

Technological developments increase the political drive to create a more multipolar balance of international power. Mastery of the process of uranium enrichment was once thought too difficult for developing countries to achieve. Indeed, Iraq and Libya heavily invested in seeking this capability and fell short of success, while Iran has been working at it for twenty years with only recent breakthroughs. Yet know-how and technology are spreading. Brazil now has an enrichment program that appears effective and South Africa is likely to follow. South Korea seeks to develop pyroprocessing techniques that could give to it the capacity to separate plutonium. As nuclear industry expands and technologies are developed to enrich uranium more economically, more states are likely to seek and acquire this capacity.

Mastery of all aspects of nuclear industry would serve the political and strategic ambitions of major regional powers, whether fuel-cycle capabilities make economic sense or not. Iran may be a model. Its enrichment program now makes the world, its neighbors and its own citizenry view it as a rising power. Iran would not need to produce nuclear weapons to convince its neighbors (and others) that it has at the least a latent nuclear deterrent, and increased political bargaining power. In that sense, centrifuges may serve part of the symbolic and strategic function of nuclear weapons, but with less risk. Others such as Brazil and South Africa, which aspire to permanent seats on the UN Security Council and recognition as important poles of power in the international system, may see enrichment programs as useful to this end. If they do, it is not clear how their neighbors and other aspiring powers, say in Southeast Asia and the Middle East, will react.

⁶ See Lewis A. Dunn, et al, "Foreign Perspectives on U.S. Nuclear Policy and Posture", *Defense Threat Reduction Agency*, December 2006.

⁷ On "soft balancing", see those articles from *International Security*, vol. 30, n° 1, Summer 2005: Robert A. Pape, "Soft Balancing against the United States"; T.V. Paul, "Soft balancing in the Age of U.S. Primacy" and Stephen G. Brooks, William C. Wohlforth, "Hard Times for Soft Balancing".



There are ideas on how to reduce the risks of proliferation in this environment, but they are resisted, primarily by the same states that generally seek a more multipolar order in which they retain the "right" to acquire full-spectrum peaceful nuclear programs. The international safeguards system which is intended to detect and therefore deter military applications of nuclear material and technology has not been strengthened enough to keep pace with those new developments. In 1997, the IAEA adopted a model Additional Protocol that, where adopted, requires states to disclose much more information about their nuclear activities, and provides for short-notice inspections and new monitoring techniques that could enhance the IAEA's capacity to detect violations. Yet, fewer than 90 states have implemented this protocol, and those that have not include Algeria, Belarus, Egypt, Iran, Malaysia, Mexico, Morocco, Syria, the United States, Venezuela, and Vietnam. Moreover, safeguards are only a part of the system to monitor nuclear programs and to detect and deter proliferation.

Similarly, France and Germany have put forward proposals to make it more difficult for states to withdraw from the NPT, or at least to clarify the procedures for doing so and the penalties for withdrawing after having been found in non-compliance with safeguards requirements⁸. But key non-nuclear-weapon states have resisted those proposals while China and Russia have not put their weight behind them. This increases risks of hedging on nonproliferation commitments and weakens confidence in the overall nuclear order.

Thus, the original nuclear order is weakening rather than strengthening, and efforts to reverse that trend and establish a reformed order that will reduce risks of proliferation in 21st century conditions are foundering. The U.S. have enough power to motivate others to seek to balance it, but not enough to solve global problems and ensure a global order on its own. Meanwhile, no other power or coalition of states has the will or capacity to supplant the U.S. in leading the necessary creative process. The U.S. are unlikely to abandon leadership, but to achieve its interests and also to create global public goods, the United States and its allies need the cooperation of Russia, China and major regional powers.

Indeed, in order to strengthen the nuclear order, the three nuclear-armed states that are not party to the NPT – India, Pakistan and Israel – must also be integrated into the broader nonproliferation regime. Among other things, they must accept the same obligations to disarm and control exports of relevant technology, material and know-how as the original five nuclear-weapon-states. No process or forum now exists to include those

⁸ Federal Republic of Germany, "Strengthening the NPT against withdrawal and non-compliance: Suggestions for the establishment of procedures and mechanisms", Working paper, Preparatory Committee for the 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Third Session, New York, 2004. Republic of France, "Strengthening the nuclear nonproliferation regime", Working paper, Preparatory Committee for the 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Third Session, New York, 2004.



three states. The U.S. led an initiative to change existing rules – nationally and within the 45-member Nuclear Suppliers Group – to offer full nuclear cooperation with India in return for Indian adherence to some nonproliferation rules. The "U.S.-India nuclear deal" has many shortcomings that fall beyond the scope of this paper, but one could argue that a major flaw is the omission of Pakistan and Israel from the integration process. Any serious effort to reform the nuclear order – which the India deal is not – would have to establish criteria for bringing Pakistan and Israel into the nonproliferation and disarmament processes.

The Necessity of Equity

At such a moment, it is necessary to identify basic principles on which the creation of a reformed nuclear order could be built, and without which such an effort will fail.

A Necessary Quid Pro Quo

The first principle is that strengthening the nuclear order will require bargaining. It cannot be achieved by diktat from the states that possess nuclear weapons. The world has changed in the forty years since the NPT was negotiated. Developing countries such as China, India, Iran, South Africa, Brazil have more economic and political power, and are determined to build a multipolar order. It is increasingly obvious that efforts to manage global trade and climate change cannot succeed without these states' cooperation, and that they are able and determined to press their positions. The nuclear order is no different.

These developing countries (and others less big and powerful) insist on greater equity. They resist the preferences of the post-World War II major powers. The U.S., Europe, Japan, Russia, *et al* cannot impose new rules on them; they must negotiate them. Agreement will not be reached if terms are not basically equitable.

The most obvious measure of equity demanded for the nuclear order is the elimination of nuclear arsenals by all states. This demand was made in the negotiations of the NPT in the 1960s, but the two superpowers were able to deflect it with the vague language of Article VI and the U.S. provision of a nuclear deterrent umbrella to NATO allies, Japan and South Korea. Today, after decades of frustration over the lack of serious effort towards the abolition of nuclear weapons, non-nuclear-weapon states will not accept new rules to limit their nuclear "rights" and to strengthen nonproliferation enforcement if disarmament is not compulsory.

This tension is most clearly expressed in discussions of measures to prevent the spread of fuel-cycle capabilities to non-nuclear-weapon states. Key regional powers – again, Iran, South Africa, Brazil, and Egypt – strongly resist the idea of binding rules or supplier cartels to prevent them

⁹ See Anthony Faiola and Rama Lakshmi, "Trade Talks Crumble in Feud Over Farm Aid", *The Washington Post*, July 30th, 2008.

Joachim Krause, "Enlightenment and nuclear order", *International Affairs*, Volume 83: Issue 3, 2007, pp. 483-499.



from acquiring fuel-cycle capabilities. 11 Referring to what they perceive as being the original unkept bargain of nonproliferation for disarmament, these states say they will not accept another discriminatory approach to nuclear technology. Negotiations have not actually been conducted over this issue, but informal interactions indicate that the disarmament issue is tightly linked to new efforts to strengthen nonproliferation rules, safeguards and their enforcement. It is possible, perhaps even probable, that even if the nucleararmed states agreed to pursue disarmament more seriously, the nonnuclear-weapon states would still resist new limitations on their acquisition of nuclear technology. But if more progress towards nuclear disarmament is not sufficient to win acceptance of measures strengthening the nonproliferation regime, it is necessary to offer it in return for agreement on measures strengthening international inspections, enhancing technology control, and inhibiting withdrawal from the NPT. Nuclear-armed states may feel they will gain nothing from carrying out additional disarmament steps, but rather than using this as an excuse for not taking any steps, they should reach out to leaders of key non-nuclear-weapon states and offer to negotiate reciprocal incremental measures.

One way to approach this challenge could be the establishment of an equitable, universal norm or rule according to which all new fuel-cycle facilities in the world must be multinationally owned and/or managed, and that existing national facilities would either be shut down or transferred to multinational management within a given period, say, ten years. This would mean, for example, that new enrichment and reprocessing plants planned in the U.S. would need to be multinationalized. Europe already has such facilities with the Urenco and Eurodif models. Russia has a vaguely defined plan to make its Angarsk enrichment plant multinational, while Brazil and Argentina are now discussing how to make enrichment in Brazil a shared enterprise. Making multinationalization mandatory raises exceedingly complicated political, economic and legal issues, but the challenge should not be avoided without first having made serious efforts to overcome it.

Discussions about the fuel-cycle issue in the U.S. indicate that the nuclear and national security establishments generally do not yet fully comprehend the political realities within those developing countries whose agreement must be obtained. Former U.S. Secretary of Defense Harold Brown and former CIA Director John Deutch, both Democrats, wrote in a November 2007 op-ed in the *Wall Street Journal* that "there are several critical nonproliferation objectives that should be pursued, but they do not require any unattainable vision of a nuclear-weapons-free world to justify them". Among these objectives is the "urgent need to put into place new means of controlling the aspects of the fuel cycle – enrichment and fuel reprocessing – that present the greatest proliferation risk". These eminent Americans along with French and Russian officials and experts act as if they were merely requesting an upgrade of the nuclear order software from

¹¹ Deepti Choubey, *Are New Nuclear Bargains Attainable?*, Carnegie Endowment for International Peace, Washington DC, 2008.

¹² Harold Brown and John Deutch, "The Nuclear Disarmament Fantasy", *Wall Street Journal*, November 19, 2007.



1.0 to 2.0. They fail to appreciate that key developing countries feel that the original software did not work well for them and that they received comparatively poor, indeed unfair, service from the original vendors. Not having benefited as fully as they expected from the original bargain, these developing countries do not want to sign a new contract for the purported upgrade they are being offered. And with the diffusion of technology anticipated in coming years, resembling the diffusion of open-source codes in computer software, they believe they have alternatives. A vision of a nuclear-weapon-free world is not necessary to *justify* stronger controls on fuel-cycle technology, but it is absolutely necessary to *achieve* such controls.

The Dialectic of Immediate Goals and Ultimate Objective

Developing countries such as Brazil, South Africa, Iran, Egypt and perhaps Turkey as well as others to follow will say "no" to a new nuclear order that does not provide clearer guarantees of nuclear disarmament, at a minimum. This demand should not be rejected out of hand. At the same time, the elimination of all nuclear arsenals is not an end in itself. It is a means to global security. The political relations, security conditions, as well as verification and enforcement mechanisms that would be required to enable the abolition of nuclear weapons are all conducive to a more secure world. Thus, the goal of abolishing nuclear weapons can be a beneficial organizing principle of the national security policies of major states.

Nuclear disarmament and resolution of political-security conflicts would have to proceed together in a reciprocal, co-evolutionary process. Nuclear arms reductions, implementation of a Comprehensive Test Ban Treaty, and universal adoption of the Additional Protocol could, for example, improve political dynamics and confidence between nuclear-armed and non-nuclear-weapon states. These and other paired steps that could be taken in the short term are discussed in the recent *Adelphi Paper*, "Abolishing Nuclear Weapons". They can enhance security in their own right. Additionally they would build confidence that global leaders are actively seeking to create conditions for the eventual elimination of nuclear arsenals. This, in turn, would strengthen the norm against nuclear weapons, including within states whose cooperation is necessary to block or deter terrorist groups, on which efforts to prevent proliferation are based.

Of course, the U.S. and Russia must lead efforts to leverage progress on disarmament into progress in strengthening the nonproliferation regime. The other nuclear-armed states can help – particularly China, India, Pakistan and Israel, whose actions most affect regional proliferation dynamics – but Washington and Moscow control more than 95 percent of the world's nuclear weapons and can set either positive or negative examples in the doctrines, operational postures, and rhetoric they use to define the meaning and salience of these weapons.

¹³ George Perkovich and James Acton, "Abolishing Nuclear Weapons", *Adelphi Paper* n° 396, IISS, London, 2008.



Recent trends are negative. While leaders and populations in both countries recognize that there is no cause for them to clash militarily, Russians today militantly resist expressions of anti-Russian and pro-American ideologies and interests in former Soviet republics and satellites. It is as if any reminders of the collapse of the extended Soviet empire had to be stifled, and the reinvigorated power of Russia demonstrated. The Bush Administration and U.S. Congress have exacerbated this dynamic by disparaging the legitimacy of Russian sensibilities and practices and by creating facts on the ground whenever Russia did not have the power to prevent it. As foreign dependency on Russian oil and gas rose, and prices boosted Russian capabilities and leverage, Moscow reverted to steely power politics. The spat over U.S. plans to deploy limited ballistic missile defenses and related infrastructure in Poland and the Czech Republic has displayed all of these tendencies. So, too, have the relations between Georgia, the U.S. and Russia before and after the August 2008 military conflict. To be sure, neither country poses a threat that would in any way justify risking nuclear war between them, and both have way more nuclear capabilities than necessary to deter each other. Further verifiable nuclear arms reductions should be readily achievable. Agreeing on a legally binding follow-up to the START Treaty, which expires at the end of 2009, could be a means of demonstrating to each other and to the world the limits of their competition and the depth of their responsibility. Cooperating to renovate and strengthen the overall nuclear order, even while disagreeing vehemently in other areas, would serve both countries' national interests and improve their standing as global powers. At the time of this writing, though, it is unclear whether the two governments, or the successor to the Bush Administration, will be willing and able to follow this logic.

Sino-American relations are vital in shaping the nuclear order over the longer term. China is the pivot that connects the biggest players in the global nuclear order - the U.S. and Russia - and the newest - India and Pakistan. China's qualitative and quantitative build-up of nuclear forces relates directly to U.S. capabilities to negate China's second-strike deterrent capability, including command and control. U.S. plans and capabilities for ballistic missile defenses, conventionally-armed global strike missiles, and other means to potentially threaten Chinese nuclear forces factor heavily into Beijing's calculations of "how much is enough" in terms of missiles, warheads and fissile materials. The scale, scope and pace of Chinese nuclear weapon deployments will affect India's calculations of what nuclear forces it needs, including whether and when it would choose to agree to a ban on fissile material production and nuclear testing. India's policies in those areas will in turn affect Pakistan's. In the explicit nonproliferation domain, China's attitudes toward enforcement of international norms and rules in the UN Security Council, including via sanctions, are extremely important. Its traditional insistent emphasis on state sovereignty and non-intervention in internal affairs of others, and its reluctance to endorse sanctions as an international practice, make China a follower, not a leader, in renovating the nuclear order.

Because U.S. nuclear weapons and overall strategic capabilities dwarf China's, Washington must take the initiative if a dialogue is to result in a shared understanding of whether and how strategic stability can be



achieved between the two – and necessarily Russia. A renovated nuclear order along the lines sketched in this paper cannot be created if China does not cooperate. And China will find it exceedingly difficult to cooperate if the U.S. do not accept a mutual deterrence relationship with China – that is, the U.S. must eschew capabilities and plans to negate China's capability to retaliate to a U.S. first strike. Without such an understanding, China will not join a fissile material production cut off, will not ratify a Comprehensive Test Ban Treaty, and will not join in the nuclear arms reduction process. Without those steps, the prospects of strengthening the overall nonproliferation regime are dim, as discussed above. It is not clear how the new U.S. administration will perceive those issues and pursue strategic relations with China. Given the more immediate near-crisis challenges at home and in Iraq, Afghanistan, Pakistan and the Middle East, and the drama of the confrontation with Russia, it is doubtful that shaping U.S.-Chinese strategic force policies will be a priority of the highest level leadership in Washington.

In South Asia, culmination of India's and Pakistan's positive back-channel diplomacy over Kashmir could expedite the conclusion of an agreement to eliminate short-range ballistic missiles that both countries recognize are unnecessary and not conducive to crisis stability. Alternatively, this logic could be reversed, with an agreement on missiles improving the political environment for creating and announcing a formula for ending conflict over Kashmir. Such progress alone will not end nuclear build ups in South Asia, as India's concerns also center on China, as noted above.

As the foregoing discussion suggests, the goal of nuclear disarmament does not make the project feasible or inevitable. A serious effort must be made to identify and explore the challenges to the complete abolition of nuclear weapons and to discuss, for a start, what states can begin doing today to circumvent them.

The U.S., Russia and China play a pivotal role here. Washington and Moscow control by far the largest arsenals, while Beijing is improving and expanding its nuclear weapon capabilities with no communication of its possible end points. Together, these three states affect most importantly regional security and proliferation dynamics in Northeast Asia, South Asia and, to a smaller extent, in the Middle East. As veto-wielding members of the Security Council, the U.S., Russia and China also determine whether confidence can be built in the enforcement of nonproliferation and disarmament commitments. If these three states do not cooperate in stabilizing their own strategic relations and giving impetus to the necessary reform of the nuclear order, the existing order will continue to fracture and prospects of security from nuclear danger will wane. It is therefore incumbent on these states to give this larger purpose, greater attention and for the rest of the world to demand more of them collectively.

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