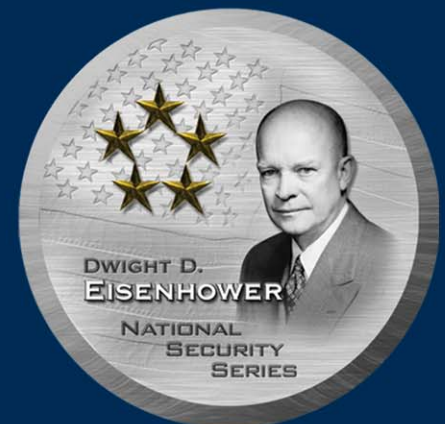


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Proliferation Challenges after Iraq



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The report of an Eisenhower National Security Series workshop
co-sponsored by the Woodrow Wilson International Center for Scholars and
the Reves Center for International Studies of The College of William and Mary

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INTRODUCTION

ROBERT S. LITWAK AND MITCHELL B. REISS

The Iraq war was a precedent-setting case in which forcible regime change was employed to achieve nonproliferation objectives. Yet the use of this policy instrument belies a larger failure of international efforts to halt the spread of nuclear, chemical, and biological weapons.

Iraq thus raises questions not only about individual countries pursuing weapons of mass destruction (WMD), such as North Korea and Iran. It also prompts questions about the continuing vitality and effectiveness of the international nonproliferation regime. During the 1990s, numerous countries sought to arm themselves with the world's most lethal weapons: Thirteen countries pursued biological weapons and sixteen countries had chemical weapons; twenty-eight countries had ballistic missiles. Evidence showed a growing trade and cooperation among many of these countries in WMD technologies. In January 2001, the Defense Department published *Proliferation: Threat and Response*, which warned: "In virtually every corner of the globe, the United States and its allies face a growing threat from the proliferation and possible use of nuclear, biological, and chemical (NBC) weapons and their delivery systems."

What steps can be taken to halt and reverse this trend? Can export controls be fortified or have sub rosa networks between unprincipled nuclear suppliers and "rogue" states effectively doomed a supply-side solution? Is it possible to strengthen International Atomic Energy Agency (IAEA) safeguards (even as some technical experts question the utility of the "enhanced" 93+2 safeguard

protocol)? Can signatories be persuaded not to defect from the Nuclear Nonproliferation Treaty (NPT)? Does the Security Council have the political will, especially after Iraq, to squarely address "any threat to the peace, breach of the peace, or act of aggression," in accordance with the UN Charter? What happens if this assault on the international nonproliferation regime cannot be mended? Will military preemption or preventive war become a more frequent policy tool?

To address these questions confronting the United States and the international community in the aftermath of "major combat operations" in Iraq, the Woodrow Wilson Center and the Reves Center of International Studies of The College of William and Mary organized a daylong workshop on June 24, 2003 in Washington. The meeting, held at the Woodrow Wilson Center, convened some forty top nonproliferation specialists from government, academia, and the broader policy community. The workshop was supported by and part of the U.S. Army's Eisenhower National Security Series.

The workshop participants explored nonproliferation strategies to address the nuclear crises with North Korea and Iran, the challenge of ensuring durable WMD disarmament in Iraq, the nuclear challenge in Pakistan (a front-line state in the war on terrorism), and prospects for reforming the international nonproliferation regime. Expert presentations on each topic were followed by general group discussion. Daniel Freeman prepared a summary report, which was updated by the presenters.

IRAN

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Eisenstadt traced Iran's desire for nuclear weapons to both regime-specific and regime-neutral factors - that is, to motivating factors particular to the Islamic Republic of Iran (IRI) regime and to factors that would influence decision-making regardless of the political character of the regime. The IRI regime's strong interest in security self-reliance may be understood, in terms of regime specificity, both as a reaction against the Shah's dependence on the West and as an application of the lessons of the international arms embargo that crippled Iran in the Iran-Iraq war. The weak economy that plagues the IRI regime is also a powerful motivating factor in the Iranian nuclear program, as the regime has found a conventional military buildup to be economically unfeasible and thus sees nuclear proliferation as a "short-cut" to regional power status. Finally, there are the specific security concerns of the IRI regime, which was for years threatened by Baathist Iraq and continues to perceive threats from Israel, Pakistan, and the United States. This sense of insecurity has been exacerbated by the ongoing American interventions in Afghanistan and Iraq and the continued US naval presence in the Persian Gulf.

Still, much of the impetus for Iran's nuclear weapons program is less regime-specific, dating not to the inception of the Islamic Republic but to the government of the pro-Western Shah, who built a research reactor in Tehran. The same nationalistic motivations of power, prestige, and influence that characterized the Shah's attempts at proliferation motivate the Islamic regime today. These common factors are more than a matter of Iranian security concerns; while any "grand bargain" in which Iran agreed to abandon or freeze its nuclear program would have to address Iranian geopolitical concerns, it would be

a mistake to assume that such concerns are the main impetus behind the Iranian nuclear program. Considerations relating to power, prestige, and influence, among others, would also motivate a successor regime. Although it is not axiomatic that any Iranian government would pursue a nuclear weapon option, it likewise cannot be assumed that regime change would eliminate the motivations that underlie proliferation in Iran.

Turning to Iran's short-term nuclear capabilities, Eisenstadt noted that Iran is pursuing both the plutonium and enriched uranium routes to securing the fissile material for nuclear weapons. Iran is developing its fuel cycle capabilities; a February IAEA visit revealed a 160-centrifuge pilot plant with components for an additional thousand centrifuges and floor space for fifty thousand. While the Iranians claim that this facility will simply produce fuel for the country's planned nuclear reactors, this capability is cause for concern; it is generally agreed that reactor-grade plutonium can be used in a nuclear weapon and that, barring this, a pressurized water reactor can produce military-grade plutonium under certain conditions. The reactor near Bushehr, then, may be a major source of fissile material for the Iranian nuclear weapons program upon the reactor's expected completion within the next two years. Still, completion is not synonymous with full operation; there will likely be some startup problems with the hybrid reactor, which combines Russian reactor components with a German containment structure, before it comes fully online. While acknowledging that Iran's anticipated capacity to cross the nuclear threshold does not necessarily imply an immediate decision to do so, Eisenstadt expressed skepticism on this point; if Bushehr goes online within the next year, Iran may have enough fissile material for its first weapon in as little as two to three years. Although some estimates are more optimistic, not

forecasting an Iranian nuclear weapon until the end of the decade, Eisenstadt stressed that the time to act against Iranian proliferation is now.

Eisenstadt saw the options available to American policymakers as delay, an enhancement of nonproliferation safeguards, a diplomatic full-court press on Iran, an encouragement of political change in Tehran, and preventive action. He was not particularly optimistic that any of these policy avenues will be able to forestall Iranian proliferation if the IRI regime is truly determined to acquire a nuclear arsenal; he expressed a growing sense of resignation that the best the US can hope for is the somewhat unlikely combination of successful American delay tactics with internal Iranian governmental reforms facilitating a political deal.

Any near-term delaying tactics should focus on Bushehr, which has yet to be completed. The Bush administration was probably disappointed that the 2003 IAEA visits to nuclear facilities in Iran have failed to yield an IAEA declaration of Iranian NPT non-compliance and a subsequent Security Council resolution preventing Russia from completing Bushehr. This course of events may still be forthcoming should additional information arise in the latter half of 2003, but Eisenstadt was not optimistic, noting that Russia has veto power over Security Council resolutions. Barring a Security Council resolution on Bushehr, the United States should press Russia to follow through on an agreement whereby Iran promises to immediately return the spent fuel generated by Bushehr for reprocessing in Russia.

Enhanced safeguards, in the form of the IAEA's Additional Protocol 93+2, are the current focus of international efforts on Iranian nonproliferation. While 93+2 would be a step forward in that it would aid in the detection of Iranian NPT violations, the key lesson of Iraq is that proliferation can occur "even [with] the most intrusive inspectional monitoring regime" and that a

consensus for action in the Security Council and other international institutions is difficult to achieve even when there is fairly definite scientific evidence of infractions. Moreover, 93+2 would do nothing to prevent Iran from creating an infrastructure that, while technically in compliance with IAEA regulations, would enable Iran to quickly proliferate should it decide to break out of or withdraw from the NPT at a later date.

The major hurdle faced by the current attempts at a diplomatic full-court press on Iran is the discrepancy between the American and European perceptions of the endgame. The Bush administration's stated position that an Iranian bomb is unacceptable is ambiguous about whether the US would accept an Iranian build-up of a nuclear infrastructure that stops just short of weapons production or whether the current focus on the Additional Protocol is simply a point of departure for further American efforts at Iranian nonproliferation. Still, there is little prospect of Iranian acceptance - or even international acceptance - of a solution that fully addresses the threat posed by the Iranian nuclear weapons program. Seeing full dismantlement of the program as essentially impossible, Eisenstadt was skeptical that even his second-choice solution, a freeze on further Iranian nuclear development, would be feasible. Furthermore, any sort of "grand bargain" would be encumbered by the political necessity of linking the nuclear issue to Iran's involvement in terrorism, Iran's efforts to obstruct the Arab-Israeli peace process, and Iranian objections to American efforts to encourage political change in Iran.

Though a new Iranian regime, however reformist, would probably still desire a nuclear arsenal because of the broad support in Iran for proliferation, there is nonetheless some opportunity for nonproliferation through Iranian political change. A reformist leadership in Iran might be more sensitive to the cost of nuclear proliferation and, if that cost proved high enough, might be willing to postpone the actual production of nuclear

weapons. Still, even barring this, a true reformist government would probably act more responsibly as a nuclear power. Thus, though political change in Tehran might not resolve the problem of Iranian proliferation, such reform might make an Iranian nuclear weapons state more manageable.

Finally, preventive action is beset by a number of potential costs both in domestic Iranian politics and in the international community. A U.S. military strike invoking the new preemption doctrine would incur geopolitical difficulties and would risk strengthening the hardliners in Tehran by inciting an anti-American backlash. Given the risks, solid intelligence and flawless execution, with a certainty of delaying the Iranian program for years, would have to be the prerequisites for any military action. While recent press leaks regarding the Iranian nuclear program are encouraging, American experiences in both North Korea and Iraq call into doubt whether U.S. intelligence capabilities are adequate to support a preventive military option. As a result, while he admitted that it might be possible under certain conditions, for the time being, Eisenstadt viewed the prospect of preventive action more as a bargaining chip and a spur to diplomacy than as a viable option.

Eisenstadt concluded by noting that the Iranian nuclear program cannot be fully addressed without dealing simultaneously with North Korean capabilities. As long as North Korea is a producer of fissile material, there will be a risk of export to Iran and other aspiring nuclear powers.

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Einhorn noted that Iranian centrifuge enrichment efforts are further advanced than American analysts previously estimated. It is unclear how well synchronized the various elements of the Iranian program are; the disconnect between the timing of the heavy water facility and the timing Iran

anticipates for its heavy water production raises questions about the integration of the uranium program. Thus, Iranian nuclear efforts may face unanticipated delays. Despite some estimates that Iran could produce enough highly enriched uranium (HEU) for a nuclear weapon by the end of 2005, Iran probably will not reach this threshold until several years later.

In its efforts to acquire nuclear weapons, the Iranian government is motivated by a sort of "magical sense about how nuclear weapons are going to solve [its] security problems" that is devoid of systematic, strategically logical thinking. The hypothetical nuclear policy of a more representative, less theocratic regime in Tehran is an unknown. Still, a representative government would probably be more responsive to the needs of the Iranian people and might thus be willing to forgo nuclear weapons if the perceived economic and political costs to Iran were high enough.

Dismissing as a policy option an invasion and occupation of Iran like those in Afghanistan and Iraq, Einhorn said that the only American military option worth considering is a surgical strike against Iranian nuclear sites with the objective of delaying or terminating the program. Like Eisenstadt, however, Einhorn highlighted the dependency of this option on highly reliable intelligence and suggested that Iran may already have satellite enrichment facilities or a secondary uranium conversion facility unknown to American policymakers. Failure to destroy such sites would undermine any preventive military action.

The Bush administration's political multilateral approach to Iranian proliferation has made significant progress in its efforts to use the IAEA to expose Iranian intentions and engender international pressure on the regime to halt its nuclear program. Iranian Atomic Energy Organization (IAEO) head Gholamreza Aghazadeh's recent calls for negotiation on ambiguities in the Additional Protocol suggests that this pressure is hav-

ing some effect. Another positive development is the IAEA's demand that Iran, as a show of good faith, not begin uranium centrifuge operations; centrifuge operations would contaminate facilities, hindering the IAEA's sample-based inspections. Meanwhile, the Russian government, while erratic and elusive in its statements, appears to be maintaining its guarantee of fresh fuel for the Bushehr reactor so long as the Iranians promise to return the spent fuel. Russia has set no other preconditions for fuel supply, but additional IAEA evidence of Iranian violations of safeguards obligations could tip the balance and prompt Russia to halt its participation in the Bushehr project. Similarly, further IAEA evidence might also spur the European Union to suspend its current trade negotiations with Iran, hopefully underscoring to Tehran the price it will pay if it continues its efforts at proliferation.

Einhorn identified three alternative strategies for the international community. The first is a "zero-tolerance" policy on Iranian proliferation that seeks to end entirely the Iranian nuclear program by dismantling the Bushehr reactor and Iran's nascent fuel cycle facilities, among other sites. This strategy is the closest to the declared position of the Bush administration, which, while saying the Additional Protocol is necessary but not sufficient, has not fully articulated what would constitute a satisfactory agreement.

The second principal policy option, which is closest to most European governments' current position, would allow Iran to pursue its nuclear power and fuel cycle programs so long as it adhered to the Additional Protocol. Iranian submission to the Additional Protocol, with full implementation taking a few years, would likely be sufficient for much of Europe. Such a solution, however, is problematic. The United States would continue to harbor suspicions that Iran's safeguarded fuel cycle activities concealed efforts at proliferation; Iran could import materials ostensibly for its legal fuel cycle facilities and then divert these materials to a clandestine nuclear arms program;

finally, Iran could remain technically in compliance with the NPT while it developed its nuclear capabilities and then withdraw from the treaty and use for its weapons program any fissile material that had been produced

Einhorn expressed support for the third principal policy option, which would allow Iran to pursue its ambitious nuclear power program but deny it fuel cycle capabilities. Iran would have to sign and implement the Additional Protocol as well as return the spent fuel produced by its nuclear reactors to the fuel's countries of origin. While this solution would trigger Iranian protestations that Iran would be unacceptably dependent on foreign fuel sources and vulnerable to a US-led international embargo on nuclear fuel shipments to Iran, these concerns could be creatively addressed. For example, the international community might provide a multilateral guarantee of fuel cycle services to Iran at market rates so long as it respects its NPT obligations and forgoes fuel cycle capabilities. By taking at face value Iran's implausible desire for nuclear power despite its fossil fuel resources, this approach has the potential to stop the Iranian weapons program while providing Tehran a way to save face. Nonetheless, any policy will also have to address the security concerns that partially motivate the program in the first place; the United States will need to convincingly reassure Tehran that the US is not a threat.

No solution to the Iranian nuclear challenge can be reached in a political vacuum. The Bush administration's policy on Iranian proliferation will be bound up in concerns about Iranian harboring of Al Qaeda, support for Hezbollah, efforts to destabilize postwar Iraq by manipulating Shi'i there, and opposition to the Middle East peace process, among other issues. Einhorn thus stressed the merits of an US-Iranian modus vivendi, whether written or oral, that deals with the Iranian nuclear program in the broader context of US-Iranian relations. Iran, under such an arrangement, would refrain from destabilizing the

reconstruction of Iraq, end support for Hezbollah, and curb Al Qaeda activity in Iran. The US, in turn, would provide assurances that it would not attack Iran, agree to respect Iranian interests in Iraq, take steps to drop the extant US sanctions on Iran, and cease blocking nuclear vendors from participation in the Iranian power program.

An agreement to respect Iranian sovereignty by no means requires an American statement of neutrality on the Iranian political evolution toward a more representative, progressive government. The United States would have to refrain from providing material support to the Iranian opposition or engaging in other physical attempts to destabilize the regime in Tehran, but Washington would not have to cease its rhetorical and moral support for Iranian reformers and for political change in Iran. Still, even this program, with its emphasis on mutual concessions, probably has little more than a one in two chance of success.

DISCUSSION

- The IAEA's revelations about Iran's centrifuge program to enrich uranium suggest a clandestine weapons program, but it is not clear that the Tehran regime has made a decision to acquire nuclear weapons. A key question is whether the program can be "walked back."
- The IAEA report has led to increased international cooperation between the United States, the European Union and Russia to address the challenge posed by the Iranian nuclear program.
- Russia, the key supplier of nuclear technology to Iran, was embarrassed by the IAEA

report and is concerned about the potential rise of another nuclear weapons state on its border. Moscow is exploring methods of constraining the Iranian nuclear fuel cycle so that enriched uranium cannot be diverted into a clandestine weapons program. Along these lines, Russia is attempting to negotiate an agreement for the return of spent fuel from the Bushehr reactor and is pressing Iran to accede to the Additional Protocol.

- The European Union has also been shaken by the revelations about Iran's uranium enrichment activities and the construction of a heavy water plant. The EU has linked a proposed trade agreement to Iran's acceptance of the IAEA's Additional Protocol.
- The EU and U.S. positions may diverge over the adequacy of the Additional Protocol in addressing the Iranian nuclear challenge. The EU may consider Iran's accession to the Additional Protocol as the solution to the problem, while the United States is likely to regard this as being "too little" and to press for significant constraints on Iran's possession of fuel cycle technology.
- External pressure (e.g., the threat of an air travel ban) is a necessary component of a strategy to address Iran's nuclear challenge. But the United States should leave the Tehran regime a way out of the crisis if it changes its behavior.
- Among the constraints on a preemptive U.S. military strike on Iran's nuclear infrastructure is concern that it could trigger a retaliatory response, including terrorism.

NORTH KOREA

**STEPHEN KIM, LAWRENCE LIVERMORE
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Dr. Kim's views are his own and do not reflect the positions of the Lawrence Livermore National Laboratory or the Department of Energy.

Kim cautioned against over-reliance on the worst-case scenario assessments of some policymakers and specialists that North Korea's nuclear weapons program is fairly advanced, citing the absence of hard knowledge about the program to support such a claim. At the same time, it cannot be said that the program is not advancing or advanced. Secretary of Defense Donald Rumsfeld has said that "the existence of nuclear weapons in North Korea is at the minimum probable" and that fuel rod reprocessing could yield the materials for further weapons construction in "a relatively short period of time"; similarly, the CIA has publicly announced that large-scale nuclear weapons production, at a rate of fifty bombs per year, could begin in North Korea as early as 2005. However, while IAEA monitoring devices have clearly been removed, it is unclear at this point whether or not North Korea is actually reprocessing the approximately eight thousand spent fuel rods from its 5MW research reactor. Similarly, despite a North Korean official's April 2003 claim to Assistant Secretary of State James Kelly that North Korea has a secret nuclear program, the facilities in question have not been located. Much remains unknown: how much, if any, plutonium North Korea has separated from the fuel rods; whether or not North Korea has an additional reprocessing plant; where, if additional uranium enrichment facilities exist, North Korea has hidden them; where North Korea has built underground bases; whether there are other facilities; and finally, whether or not North Korea has taken the spent fuel rods and, if it has, where it has taken them.

The circumstantial evidence that has emerged from defector testimony indicates that North Korea is engaged in reprocessing without concern for basic worker or environmental safety. In one account, yellow smoke emitted by the Institute 501 experimental plant typically caused the plant's workers severe pain and trouble breathing. Another defector recalled workers jumping into uranium solution in their underwear to remove a piece of cloth plugging a valve: "They were passed off as our model - that is, as paragons who sacrificed their own bodies without hesitation, all for nuclear development."

The future prospects of the North Korean nuclear program depend on the country's ability to construct functional reactors and produce fissile material as well as on its ballistic missile capabilities. First, though various think tank assessments differ on how long it will take North Korea's reactors to become operational, there is a consensus that the completion of one 200 MW and one 700 MW thermal reactor was years away at the time of the 1994 Agreed Framework. Once operational, the two reactors could produce approximately 275 kg of plutonium per year, 55 kg from the 200 MW and 220 kg from the 700 MW reactor. As the amount of plutonium used per bomb is dependent both on North Korea's technical capabilities and on its desired yield, the 275 kg figure does not translate into an assessment of how many nuclear weapons North Korea could or would produce.

North Korea's ballistic missile program boasts a stockpile of about 600-750 missiles. However, this figure says little about North Korea's launch capability, the number of missiles it could fire in a war; launch capability is dependent on the country's launch facilities and on its manpower, among other logistical factors. Furthermore, a March 2002 accidental explosion at a North Korean launch site may have severely crippled

operations, according to South Korean government sources. Defense Ministry officials have estimated that North Korea would have difficulty launching another missile for at least a year. Still, North Korea has exhibited proficiency in the design and production of effective multi-stage ballistic missiles; accuracy improvements and other steps forward are anticipated.

Given the likelihood that North Korea already has a small nuclear arsenal, its failure to test a nuclear device thus far might be attributed to one of two reasons. First, as North Korea would only test a weapon if it had enough material left over for several additional bombs, it is possible that the state simply did not want to "waste" a bomb with a test. This would, after all, be somewhat consistent with the United States decision to only test a single device before actually using atomic bombs in wartime. Alternatively, North Korea may simply have confidence in the accuracy of non-nuclear tests and calculations to verify bomb yield.

Many policymakers fear that North Korea's endemic economic crisis could prompt the Pyongyang regime to raise funds by selling special nuclear material or a completed nuclear weapon to another state or non-state actor, but Kim thought this unlikely. Admittedly, North Korea has a longstanding history of arming other nations for cash; according to US government sources, North Korea sold about \$580 million worth of ballistic missiles to Middle Eastern states in 2001 alone. However, Kim Jong-Il is not a blind risk-taker. So long as he can raise significant revenues by selling missiles, narcotics, and other more common contraband, he will have little reason to sell fissile material from his country's limited supply. Even if Kim Jong-Il did intend to put fissile material on the market, it is unlikely North Korea would actually do so before it had acquired a much larger arsenal than it probably has at the moment. However, if Kim Jong Il is able to gather a significant quantity of fissile material, then the probability of an actual

sale or of North Korean threats of a sale will dramatically increase.

Kim identified the regional powers with a stake in the current stalemate as Russia, Japan, South Korea, and China, in order of increasing relevance. First, while Russia has the least at stake in the fate of the North Korean nuclear program, President Putin has directly involved himself in the crisis, having released with Chinese President Hu Jintao a joint statement that excludes force as a solution to the problem. What's more, Kim Jong-Il's visit to Moscow may have carried favor with Putin, who announced on June 20 that "Under no circumstances should North Korea be driven into a corner...If North Korea has problems and concerns over its security...it should be given these security guarantees." But despite Russia's ability to offer oil and rail transport routes to the Kim regime, Russia has little real leverage over North Korea; Moscow's principal hope for gaining a more significant role lies in a hypothetical souring of Sino-North Korean relations, in which case Russia might assume China's role as mediator.

Japan exercised restraint in its response to North Korea's 1998 testing launch of a Taepodong ballistic missile over its territory, but the Tokyo government has taken concrete steps, including a measure to improve U.S.-Japanese military coordination, since North Korea's 2002 admission that its spies had abducted Japanese citizens decades earlier. Within Prime Minister Koizumi's cabinet, there is an apparent divide between Deputy Vice Foreign Minister Hitoshi Tanaka, who laid the groundwork for Koizumi's visit to Pyongyang and emphasizes such dialogue, and the more hawkish Deputy Chief Cabinet Secretary Shinzo Abe. Abe has joined Defense Secretary Ishiba in urging Koizumi to be more coercive and on June 15 asserted that "there is no one in the world who believes you can solve gangster troubles through dialogue." Abe's argument that the time has come for Japan to rethink its fundamental values suggests a debate

unprecedented in the history of the modern Japanese republic. Nationalists have profited in the political and social spheres from ongoing reports that North Korean guided missiles threaten Japan, threats that have fostered in the polity a feeling of helplessness suggestive of the drifting Taisho period of the 1920s and early 1930s.

Though South Korea, as the traditional object of Pyongyang's expansionist aims, should be most concerned by North Korean nuclear proliferation, Seoul's behavior in the present crisis has been overly conciliatory. Kim Dae-Jung's Sunshine Policy has worked to undermine the mainstays of modern South Korean statecraft: anticommunism and a pro-American foreign policy. The opposition Grand National Party is badly divided; critics of North Korea are silenced; the South Korean public knows little about Kim Jong-Il and North Korea more generally; and even officials in Seoul refuse to contemplate preventive military strikes against the North. There are occasional appeals for a more hard-line policy, such as Army Chief of Staff Nam Jae-Joon's "clarifying" label of Pyongyang as Seoul's "main enemy," a term that had been removed from the Defense Ministry lexicon under the Kim Dae-Jung administration, and National Assembly Speaker Park Kwan-Yong's calls for the government not to oppose proposals of economic sanctions against the North. Nonetheless, even Park's request was followed by rebukes accusing the Roh administration of undercutting the Sunshine Policy and general pan-Korean nationalism.

In this polarized political environment, ROK President Roh has himself been inconsistent, offering a different message to the international community than he does to the Korean public. Though fairly pro-American in his spring 2003 visit to Washington, he has since stated that he regretted his enthusiasm; in Japan, Roh passed over the United States to praise Japan as South Korea's best friend and touted dialogue as the only acceptable means of resolving the standoff with North Korea; in China, he praised Mao

Zedong as one of his political heroes; finally, Roh has claimed that to become a full democracy, South Korea will have to repeal its domestic ban on the Communist Party. By compromising South Korea's pro-American and anti-communist foreign policy mantle in this way, Seoul risks being excluded from the diplomatic wrangling that surrounds the North Korean nuclear crisis; what's more, by looking the other way and, at times, assenting to anti-American and pro-North Korean sentiments at home, Roh's government is constraining US policy options, thereby obstructing the resolution of the standoff.

Finally, China, whose oil and coal exports account for 80 percent of North Korean energy production, is the most important of the regional powers with a stake in the North Korean crisis. Beijing has emphasized the importance of dialogue in resolving the standoff but remains deeply concerned both by the North Korean nuclear program and ostensibly by the threats posed by refugees from North Korea to the stability of its own Communist political system. Also, unlike Seoul, Beijing sees relations with the United States as a paramount consideration in decision-making about the crisis. Nonetheless, the official position of the Chinese government seems to differ from the views of the Chinese public; a recent survey of Chinese opinion revealed that 57 percent want their government to back North Korea in the event of another Korean War, 89 percent oppose the United States' military threats to Pyongyang and U.S. policies toward North Korea more generally, and 54 percent characterized Pyongyang's nuclear ambitions as an internal matter than should be resolved domestically.

Despite such pro-Pyongyang dynamics in the general Chinese public, Beijing is unlikely to oppose economic sanctions if Washington moves forcefully to impose them. Indeed, Jiang Zemin did not oppose sanctions in 1994, and though he has since ceded the title of president to Hu Jintao, Jiang retains broad power and influence over Chinese military decisions and government

policy in general. The "Shanghai Bang," or Shanghai faction, which Jiang controls, maintains a numerical majority in key government bodies. Five of the nine members of the Chinese Communist Party's Politburo, including Jiang protégé Zeng Qinghong, are members of the Shanghai Bang. Jiang and two other Shanghai members outnumber Hu on the four-member Central Military Commission, of which Jiang remains president. Finally, though Hu heads the North Korean Crisis Leading Group, it was Jiang who ordered the group's March 2003 formation; Vice President Zeng Qinghong, a Jiang confidant who has good personal relations with the North Korean leadership, is the group's deputy chief. All in all, Jiang has positioned himself to maintain effective control in much the same way Deng Xiaoping did after formally ceding the reins to Hu Yaobang and Zhao Ziyang; the foreign policy paradigms that developed under Jiang's leadership will probably continue under Hu Jintao.

Kim articulated a broad range of U.S. options for addressing the North Korean nuclear crisis. First, the United States might simply acquiesce, but this option is bound up in the question of whether or not the US could live with a nuclear North Korea. Second, Washington might seek a temporary freeze on the North Korean nuclear program, as it did with some success in the 1994 Agreed Framework. Third, the Bush administration might pursue a sanctions regime. Here, the policymakers would have to decide whether the sanctions would simply block exports of missiles, drugs, and counterfeit currency or whether imports would also be interdicted; they would also have to decide whether it would be feasible to undertake a selective blockade unilaterally or whether it would be more advisable to enlist help from Seoul and Tokyo; finally, they would have to evaluate whether a blockade could even be successful - that is, whether U.S. forces could accurately detect the export of fissile materials or components. Fourth, the United States might conduct a preventive strike on North Korean

nuclear facilities; here, the element of surprise might be hindered by the stated positions of Seoul and Tokyo, as simply sidestepping South Korea might unacceptably jeopardize the fifty-year-old US-ROK alliance.

In terms of short-term, less comprehensive options, Kim suggested psychological operations that would address some stability concerns by communicating to North Korean officials and to various embassies that any collapse of the Kim Jong-Il regime need not bring down the North Korean state with it. U.S. policymakers might also gain rhetorical ground by stressing North Korea's terrible human rights record, financing lecture tours by prominent North Korean defectors. Finally, the United States might highlight the DPRK's inability to feed its own people even as it pursues an expensive nuclear weapons program. To this end, humanitarian aid might be delivered not at Pyongyang, but at Panmunjom, where North Korea would have to visibly retrieve it; if Pyongyang refused, it would exhibit the callous intransigence of Kim Jong-Il's government.

HENRY SOKOLSKI, NONPROLIFERATION POLICY EDUCATION CENTER

Sokolski noted that our diplomatic efforts with Iran and North Korea bear an oft-ignored resemblance to the American experience with Vietnam in that the natural urge to solve these problems by redoubling our exertions in a losing campaign may actually end up making matters worse. This impulse toward over-the-top, counterproductive action has been aggravated by exaggerated perceptions of the North Korean nuclear threat. Take, for example, the argument that the American alliances with Seoul and Tokyo will crumble if Pyongyang acquires more nuclear weapons, as South Korea and Japan will need their own nuclear arsenals as a hedge. This line of reasoning is flawed in its assumption that alliance relationships turn on the size of an opponent's nuclear arsenal; after all, NATO did not collapse with

the growth of the Soviet stockpile. Another flawed contention is the argument that if the standoff with North Korea is not solved immediately, Pyongyang will export fissile material or even warheads to terrorist groups or other countries. According to the CIA, Pyongyang has had nuclear weapons for nearly a decade, and there is no indication that North Korea has exported nuclear materials thus far. However mistaken, these sorts of prognostications have encouraged extreme positions among political decision-makers, who are increasingly divided between opposite but mutually desperate approaches that Sokolski termed "bombing" and "groveling."

In a bid for more comprehensive thinking about the problems posed by the North Korean and Iranian nuclear programs, Sokolski suggested that one might think about them - and even about nuclear terrorism - as "lesser included threats," to borrow from the Cold War lexicon. There is a possibility that there are even greater nuclear menaces in the international system. The danger, then, is that a weak policy of halfhearted threats, cajoling, deals, grand bargains, and protocols would ultimately send the message to other potential proliferators that one can legally toe the edge of the nuclear weapons breakout threshold without penalty from the international community. Such behavior might even garner rewards, given the incentives for "compliance" written into the NPT. In such an environment, states like Saudi Arabia, Turkey, Syria, Algeria, Egypt, South Korea, and Taiwan would probably start to "hedge their bets" by developing their own nuclear weapons options.

Given the threat of such a hyper-proliferated world, it needs to be made clear that there is a price for violations of the nonproliferation regime. Sokolski favored a proposal whereby a state that violates or withdraws from the NPT has to relinquish the technology it gained for

compliance under the pretense that it was for peaceful purposes. Such violators should, as a rule, be expelled from the IAEA and cut off from receiving any additional nuclear technology or goods. In addition, unless they return to NPT compliance, violators of the treaty should be placed under UN sanction. At the very least, the UN Security Council should authorize the interdiction of any nuclear export or imports to or from a violating state. More comprehensively, the global nonproliferation regime must target problem states' fuel cycle capabilities, which are particularly essential to rapid breakout. Along these lines, the Bush Administration's Proliferation Security Initiative (PSI), is an important step in the right direction. Sokolski suggested that the PSI should be made a country-neutral policy and applied equally not only to North Korea and Iran, but also to Pakistan, India, and Israel. By fostering international institutional legitimacy in this way, the global regime may be able to build the PSI into an effective compliment to the NPT.

DISCUSSION

- The North Korean nuclear issue is embedded in the broader issue of that country's future political evolution. North Korea is a failed state with a collapsing economy and large-scale starvation. Even the military is reportedly experiencing reduced food rations.
- While experts debate whether the North Korean regime can survive, Kim Jong Il is evidently planning for the long-term (with a report that he is even grooming his son to succeed him).
- Negotiations have two advantages: first, they may yield a satisfactory resolution of the North Korean nuclear crisis; second, they are the predicate for tougher steps if negotiations fail.

PAKISTAN

PETER LAVOY, NAVAL POSTGRADUATE SCHOOL

Dr. Lavoy's views are his own and do not reflect the positions of the Naval Postgraduate School or the Department of Defense.

The Pakistani leadership is confident in its deterrence posture. The military government has integrated nuclear, conventional, and sub-conventional military capabilities, as well as diplomatic maneuvers, into a coherent security policy that proved effective in the 2002 Indian-Pakistani standoff. Many in Pakistan believe that Islamabad deterred war and Indian aggression not only in 2002 but also in 1984, 1986-87, 1990, 1998 and 1999.

The nuclear weapons component of Pakistan's deterrence strategy is based on rough parity with India. Drawing upon David Albright's fissile material production statistics and upon conversations with Indian and Pakistani officials, Lavoy placed the median estimates of Pakistani and Indian nuclear arsenal sizes at about sixty and seventy weapons, respectively, a point of relative parity. However, Pakistan enjoys an advantage over India in missile delivery system capability, having prioritized this area of development in the wake of American sanctions and suspension of F-16 delivery. In addition to its aircraft-based delivery systems, Pakistan has six separate ballistic missile systems, all designed expressly for delivering nuclear weapons to targets in India. These missiles have ranges from 80 kilometers all the way to 2400 kilometers.

Pakistani conventional forces, which constitute 90 percent of Islamabad's deterrence posture, work in concert with nuclear weapons in the country's overall security strategy. India has an approximate advantage over Pakistan of two-to-one in most conventional military categories.

Thus, if Pakistan did not have nuclear weapons, India might be able to draw out any limited conflict into a war of attrition, which India, with its greater conventional forces, would be sure to win eventually. By raising the stakes of all-out war, the Pakistani nuclear arsenal ensures that conventional military engagements remain limited, an area where the operational readiness of Pakistan's armed forces gives Islamabad certain advantages.

The asymmetrical tactics of Pakistan's sub-conventional force capabilities, from state-sponsored terrorism to proxy war, are the least well-understood facet of Pakistani deterrence strategy. Pakistan is probably involved in the ongoing violence in Kashmir, though the exact nature and scope of this involvement is a matter of considerable controversy. Indian intelligence officials accuse Islamabad of fomenting violence and insurrection in nearly every other Indian state as well, but it is difficult to assess to what extent this unrest is simply a product of India's internal social, political, and ethnic cleavages, an ambiguity that makes Islamabad's asymmetric tactics all the more effective.

Finally, though not a direct military deterrent per se, diplomacy is nonetheless an important element of Islamabad's deterrence strategy. Pakistan's military and political coordination and cooperation with the United States has encouraged Washington to keep pressure on New Delhi, which, in turn, finds itself less politically able to launch even a limited war on Pakistan.

However effective Pakistan's deterrence mechanism has become since the 1998 nuclear weapons tests, there are several problematic areas in Islamabad's long-term strategy with respect to India: Pakistan's perception of Indian objectives, its support for high-risk "defensive" confrontations, and its application of such asymmetrical

measures as support for the infiltration and violent activities of anti-India extremists, support that New Delhi calls state-sponsored terrorism). First, some Pakistani officials believe that India will settle for nothing less than a weak, compliant Pakistani state along the lines of Bangladesh or Nepal. It follows that in order to survive in the long term, Islamabad must defeat, divide, or otherwise severely cripple India, a mentality that necessarily sees relations with India as a constant state of war. Secondly, as some Pakistani officials see no other course of action consistent with Pakistan's independence and its "dignity," the Pakistan army has a history of taking extremely high risks to exploit perceived Indian weaknesses, a policy exemplified by its conduct in the 1999 Kargil crisis in Kashmir. Such risk-taking is a common characteristic of weak states' policies towards larger neighbors. Finally, in accordance with this policy framework, Pakistan's has pursued, as an aspect of its deterrence mechanism, the unwise strategy of supporting violent autonomy movements in Indian-held Kashmir. This is especially problematic given the increasing polarization in India between Muslims and Hindus, the rise in attacks on Muslims in recent years, and the increasingly violent message of Indian mullahs, whose extremism is mounting despite India's traditionally moderate Muslim community. Pakistan, which lent support to the 1989 resumption of the insurrection in Kashmir, views the current ethnic, religious, and social fragmentation in India as additional strategic opportunities that might be exploited. Of course, one might counter that the Indian government has itself encouraged some tensions within India for New Delhi's own purposes, but this cannot change the fact that India will take countermeasures if New Delhi perceives a Pakistani challenge to Indian interests. This is a reality that officials in Islamabad apparently fail to grasp.

Still, it may be Pakistan's internal fragmentation that poses the greatest threat to Pakistani security. On a social level, Pakistani society is in-

creasingly suffering growing ethnic, Shi'i-Sunni sectarian, ideological, and socio-economic cleavages in the wake of the country's economic and political difficulties. Like New Delhi, Islamabad has developed mechanisms over the years for managing the natural social divisions within its borders. However, this fragmentation may prove more destabilizing when compounded with Pakistan's present economic difficulties and the decline of its education system and social services more generally. As a result, there is a possibility, albeit a small one, of social revolution, especially if the Musharraf regime is not able to manufacture a smooth transition to democracy within a few years. Alternatively, India might exploit Pakistani social divisions by pursuing the kinds of asymmetrical tactics Pakistan is accused of employing in India. Though India has thus far refrained from making state-sponsored terrorism and proxy wars major elements of its policy towards Pakistan, there is some historical precedent for such asymmetrical tactics in Indian aid to the Bengali freedom fighters of East Pakistan. An Indian decision to revive this sort of policy would be fraught with the same risks that Pakistani sub-conventional force strategies in India face now, but India's own domestic instability may nonetheless encourage New Delhi to follow this course.

The state of civil-military relations within Pakistan may also undermine the country's security. Musharraf's military dictatorship has put the final nail in the coffin of civilian control of the armed forces. This presents a challenge to Pakistani stability in that there is no real mechanism, martial or civilian, in place for deciding President Musharraf's successor. This is especially confusing in the broader context of the reshaping of Pakistan's political elite, which is increasingly populated by religious leaders, fostering resentment among rank-and-file observant Muslims.

Finally, allegations of corruption and other problems within the military itself also put Pakistan's

security at risk. For instance, the absolute political power of the Pakistani army may have eaten away at military professionalism as current and former army officers have seized major positions in business, government, and social services. Though such officers tend to be trustworthy and efficient, their growing monopolies in the non-military spheres of power continue to present distractions from the officers' principal duties military professionals. As the military draws its members from the nation it serves, the ethnic, sectarian, and socio-economic cleavages that threaten Pakistani society may also eventually weaken the armed forces, which thus far have avoided this sort of fragmentation. Finally, many high-ranking military officers, including members of the general staff, have apparently been left out of the decision-making processes on such important strategic issues as the 1999 Kargil crisis; when a decision proves strategically unsuccessful - even disastrous - it compounds the bitterness of those excluded from decision-making, further fragmenting the upper ranks of the Pakistani military. Once Musharraf is out of power and thus no longer able to hold the various sides together, there is a risk that bureaucratic infighting will damage military stability and Pakistani security

**GEORGE PERKOVICH, CARNEGIE
ENDOWMENT FOR INTERNATIONAL PEACE**

Perkovich identified three proliferation challenges posed by Pakistani nuclear capabilities. First, Pakistan might sell, distribute, or otherwise export to another state or a non-state actor the technical knowledge necessary for nuclear weapons development. This would be most likely to occur if Islamabad believed that such proliferation would pay off in technology, financing or political support that would strengthen Pakistan's hand against India.

A second Pakistani proliferation issue lies in the possibility that a conventional war with India might escalate to nuclear weapons use. While

each rationalizes its nuclear arsenal on the grounds of deterring the other, neither India nor Pakistan has accepted the mutuality of nuclear deterrence. Pakistan is a non-status quo power that desires to remove Indian control over Kashmir and does not rule out military operations to accomplish this. While India would accept the status quo in Kashmir as a formal resolution, New Delhi also insists it is not deterred from militarily punishing Pakistan for actions that India blames on Islamabad. Thus, neither state accepts that nuclear weapons foreclose the use of force in the Indo-Pak relationship.

Finally, the Pakistani state itself faces an uncertain future. If the Pakistani state were to fall into dysfunction or be compromised by major social cleavages, the state's capacity to manage its nuclear establishment with sufficient discipline, rigor and investment could be undermined. A degraded state apparatus, paired with social upheaval, would increase the risk that nuclear weapons or materials could be diverted. More likely than "loose nukes" would be scenarios under which Pakistani personnel shared their expertise in clandestine procurement, the design of equipment such as gas centrifuges, or even the design of nuclear weapons themselves.

In short, all three proliferation problems have their origins in the flawed regime in Islamabad; the Pakistani state must undergo a regime change, but one of a much different nature than the one the recent US-led intervention will have brought to Iraq. First, while it is true that the Pakistani army's obsessions with nuclear weapons and with deterring India have exacerbated the present crisis and that Musharraf, as a military dictator, has failed to implement the reforms he promised, the army must nonetheless play an important role in any future Pakistani state. The question is whether and how the Pakistani Army can contribute to reforms whereby the Army would become genuinely subsidiary to elected civil institutions and leaders. This is not something that American policymakers have considered seri-

ously. Secondly, the dramatically anti-Indian instincts that characterize Pakistan's strategic culture are bound up in a sense of Pakistani nationalism; in working to reform Islamabad's strategic culture, policymakers must understand that tension in India has a "ripple effect" in Islamabad. When intolerant Hindu fanatics campaign against and, in extreme cases such as the violence in Gujarat, conduct pogroms against Muslims, Pakistan's most militant groups claim vindication in their own brand of anti-Hindu extremism. The interplay between Hindu and Muslim extremism in the two countries is a growing threat.

DISCUSSION

- The United States could provide Pakistan the necessary technical assistance to improve the safety and security of the Pakistani nuclear arsenal in order to prevent theft, unauthorized nuclear use and nuclear transfer. Preventing nuclear leakage is one of the greatest legacies Musharraf could leave.
- The United States is engaged on several major issues of concern with the Pakistani government. In Pakistan, there is a belief that if Islamabad provides Washington assistance on its top priority - presently terrorism - this assistance will ease US pressure on Pakistan over other contentious issues, including that of nuclear proliferation.

IRAQ: MAKING WMD DISARMAMENT STICK

**JONATHAN B. TUCKER, MONTEREY
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Tucker began his presentation by noting the failure to date of Coalition forces to find evidence of Iraq's alleged stockpiles of weapons of mass destruction (WMD), which the Bush administration used as the primary rationale for invading Iraq and removing Saddam Hussein from power. Since hidden caches of chemical or biological arms or bulk agent may yet be discovered, the jury is still out on the status of Iraq's pre-war WMD programs, but it is increasingly unlikely that they posed an "imminent" threat. Regardless of the final outcome of the weapons hunt, Tucker argued that one can draw useful lessons from Iraq's past behavior as a determined proliferator and the international efforts to contain its WMD programs.

Before the recent war, intelligence assessments that Iraq retained large stockpiles of chemical and biological weapons were based on circumstantial evidence rather than on hard data, Tucker said. US intelligence agencies suffered from a lack of human sources within Iraq, a weakness compounded by the withdrawal of United Nations Special Commission (UNSCOM) inspectors in December 1998. Accordingly, the US intelligence community based its estimates of Iraqi WMD production during the 1998-2002 period on extrapolations from UNSCOM data, defector reports of uncertain reliability, and evidence that Iraq was importing dual-use equipment and materials and rebuilding commercial facilities, such as chemical and vaccine plants, that had been used in the past for illicit weapons production.

US intelligence analysts also doubted the Iraqi government's claim that it had unilaterally eliminated its stocks of anthrax and VX nerve agent after the 1991 Gulf War, particularly given

Baghdad's refusal to provide documentary or physical evidence to back up this assertion. Accordingly, it was assumed that all prohibited weapons whose destruction UNSCOM could not verify remained in Iraq's arsenal—a questionable assumption, but one that Bush administration policymakers favored because it supported their case for war. After Iraq finally admitted weapons inspectors in late 2002 from UNSCOM's successor, the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC), US intelligence agencies intercepted Iraqi communications that suggested the dispersal and concealment of WMD in defiance of the inspection regime. Finally, during the war itself, Coalition forces discovered caches of Iraqi chemical protective suits and auto-injectors for administering nerve agent antidotes, indicating that the Iraqi military was prepared for offensive chemical warfare operations. Yet this conclusion was at odds with the failure of postwar occupation forces to find any deployed chemical weapons.

The mystery surrounding Iraq's pre-war WMD capabilities will probably be resolved only through in-depth interviews with former Iraqi weapons scientists, Tucker said. To date, however, Iraqi weapons scientists who have been taken into Coalition custody have been treated harshly and held incommunicado. Fearing legal prosecution for war crimes or retribution from Saddam Hussein loyalists, they have been reluctant to speak freely. Full cooperation and reliable testimony from Iraqi weapons scientists will be forthcoming only if they are guaranteed physical security and granted immunity from prosecution.

Given the current lack of conclusive intelligence, Tucker identified four competing hypotheses about the fate of Iraq's WMD. The first hypothesis is that Saddam Hussein was telling the truth

when he said that Iraq had unilaterally eliminated all its WMD programs after the 1991 Gulf War. This explanation seems unlikely, however, given Saddam's dogged refusal to cooperate fully with UN inspectors despite the cost of years of crippling international sanctions. Unilateral disarmament would also be inconsistent with Saddam's worldview, which saw possession of WMD as a vital tool for achieving his strategic ambitions as leader of the Arab world and the dominant power in the Persian Gulf. Saddam also viewed non-conventional arms as the guarantor of his own political survival, and he did not hesitate to use chemical weapons to suppress the Kurdish uprising in 1988.

The second hypothesis is that Iraq retained a "strategic reserve" of WMD, as the Bush administration claimed, but did not employ it during the war. Caches of chemical and biological weapons or bulk agent may have been buried at unmarked sites in the Iraqi desert or hidden at other remote locations to avoid discovery by UN inspectors. Because the inspectors left the country shortly before the war began, the Iraqi regime may not have had time to recover its concealed weapons (particularly if they were in the form of bulk agent) and employ them against Coalition forces. It seems unlikely, however, that during the ten days that Coalition forces took to fight their way from Kuwait to Baghdad, Iraq could not have retrieved weaponized stockpiles under such a scenario.

A related possibility is that hidden WMD stocks existed but the Iraqi government made a deliberate decision not to use them. Saddam may have calculated that restraint would serve him well politically and that any use of WMD against Coalition forces would expose his earlier disarmament claim as an outright lie, costing him support among the Iraqi public and the broader Arab world. Resort to non-conventional weapons would also have alienated France and Russia, Iraq's key supporters on the UN Security Council and ruled out any possibility, however un-

likely, of a negotiated settlement to the war that would leave Saddam in power. The threat of severe American or Israeli retaliation also provided a strong deterrent to Iraqi WMD use.

From a strictly military standpoint, Saddam may have concluded that escalation to non-conventional warfare would not affect the outcome of the conflict. The grounding of the Iraqi air force early in the war eliminated the most effective means of delivery for chemical and biological agents, and Coalition forces were well equipped with gas masks, suits, antidotes, and other defenses against such weapons. Biological agents could not be employed for defensive purposes because of their relatively long incubation periods compared with the rapid pace of the Coalition offensive. Similarly, the use of persistent chemical weapons, such as mustard gas or VX nerve agent, would have slowed but not halted the Coalition advance. It is possible, however, that Saddam considered using chemical and/or biological weapons as a last resort but hesitated until it was too late. Once the Coalition's special forces operations and intense bombing campaign had disrupted Iraq's military communications and command-and-control, effective Iraqi use of WMD became impossible.

The third hypothesis is that Iraq had a hidden WMD arsenal that, shortly before the war, was secretly transferred to a sympathetic country such as Syria or Syrian-controlled Lebanon. Tucker argued that this scenario was unlikely for two reasons. By harboring Iraqi weapons, the Syrian government would be risking a grave military confrontation with the United States, with no clear offsetting benefit. Moreover, the large caravan of trucks needed to transport a militarily significant stockpile of chemical weapons (i.e., hundreds of tons) would almost certainly have been detected by U.S. reconnaissance satellites.

The fourth hypothesis is that Iraq eliminated its existing WMD stockpiles and replaced them with a breakout capability to produce chemical and

biological weapons on fairly short notice. This explanation sidesteps many of the weaknesses of the full disarmament hypothesis. Retaining a breakout capability would be consistent with the testimony of Iraqi General Hussein Kamal, the mastermind of Iraq's WMD programs, who defected to Jordan in August 1995. During an interview in Amman with UNSCOM executive director Rolf Ekeus, Kamal asserted that Iraq had destroyed its stocks of chemical and biological weapons but preserved seed cultures of biowarfare agents and precursor materials for chemical weapons, as well as recipes, computer files, and blueprints, to facilitate the swift reconstitution of its chemical and biological arsenals once UN sanctions were lifted. In the event of a crisis or imminent war, Iraq would have been able to produce a militarily significant stockpile within about a month's time. Such a rapid breakout strategy would also be consistent with Iraq's efforts after 1991 to preserve its WMD design teams, conduct additional research and development, and import equipment that could be used either for peaceful industry or for weapons production.

From a technical standpoint, Tucker said, a rapid CBW breakout capability would minimize the operational problems associated with Iraq's crude preparations of biological agents (anthrax and botulinum toxin) and chemical nerve agents (sarin, cyclosarin, and VX). Because Iraqi scientists could not produce chemical or biological agents in highly pure or stabilized form, the weapons tended to deteriorate rapidly and had a shelf-life of only several weeks or months. Accordingly, any stocks of anthrax slurry or nerve agent left over from the 1991 period would have lost all military utility. Iraq's nerve agents also contained acidic impurities that were highly corrosive and caused stored munitions to leak, posing serious hazards and logistical problems. Given these drawbacks, Iraq may have decided to produce chemical and biological weapons on a "just in time" basis to meet immediate combat requirements, rather than stockpiling them for long pe-

riods. Another advantage of maintaining a breakout potential while eliminating active stocks of chemical and biological agents is that it enabled Saddam to frustrate the efforts of UN weapons inspectors, while appearing to be in compliance with Security Council resolutions and undermining the US case for war.

Tucker noted that the four contending hypotheses are not, of course, mutually exclusive. It is possible that in addition to breakout capability, Iraq maintained a small strategic reserve of bulk or weaponized chemical or biological agents. A final judgment on this point will have to await the findings of the Iraq Survey Group, which is currently conducting an in-depth investigation of Iraq's pre-war WMD programs. With respect to Saddam's nuclear program, however, the Bush administration's pre-war assessment was almost certainly exaggerated. It is true that an Iraqi nuclear scientist revealed after the war that he had been ordered to bury key components of a gas centrifuge (a device used for uranium enrichment) in his rose garden in April 1991, with the declared intent of rebuilding the nuclear program at a future date. Nevertheless, a rapid-breakout strategy would not be feasible in the nuclear area because production of atomic weapons requires large quantities of plutonium or highly enriched uranium (HEU). Using gas-centrifuge technology to refine enough HEU to make one or more bombs would require the construction and operation of hundreds of centrifuges over a period of many months or years.

Whatever the fate of Iraq's WMD turns out to be, Saddam Hussein was the archetype of a "determined proliferator" for whom the incentives to develop WMD outweighed the disincentives. Iraq's non-conventional weapons programs were driven both by real security concerns, such as the need to deter attack from Iran and Israel, and Saddam's personal ambitions, which included the pursuit of regional hegemony and the desire to bolster his domestic standing and ensure the survival of the regime. In general, Saddam took the

long view and valued his own survival above all other objectives. For this reason, he discounted the enormous costs to the Iraqi people of retaining his prohibited WMD programs in defiance of the international community, resulting in twelve years of harsh economic sanctions and two wars.

Tucker drew some policy lessons from Iraq's elaborate measures to conceal its WMD capabilities from UN inspectors and the outside world. First, Iraq's weapons programs were highly compartmentalized, so that only the most senior Iraqi officials had broad knowledge of the entire effort and most scientists knew only about their own specialized area of expertise. This system aimed to prevent WMD programs from being compromised by defections or penetration by foreign intelligence services. In addition, the Iraqi regime established a massive concealment apparatus involving thousands of individuals from the General Intelligence Service, the Military Industrial Commission, and the two security services directly responsible for protecting the regime: the Special Security Organization and the Special Republican Guard.

Iraqi concealment operations involved moving WMD and related equipment from place to place, one step ahead of UN inspectors, as David Kay's nuclear inspection team discovered in June 1991 when they found themselves chasing trucks carrying giant magnets employed for uranium enrichment. Iraq dispersed and duplicated elements of its WMD programs, devised numerous code names that were frequently changed, and moved key items of equipment under the cover of darkness. The Iraqi security services also kept UN inspectors under intensive surveillance in an effort to determine the targets of "surprise" inspections in advance. Even as the Iraqi regime concealed key WMD components and equipment, it made calculated concessions by unilaterally destroying nonessential or outdated materials and equipment, or surrendering them to the UN inspectors. Whenever the inspectors confronted

Iraqi officials with hard evidence of gaps or inaccuracies in their "full, final, and complete" declarations, the Iraqis simply acknowledged the errors and issued a revised declaration, admitting only what was absolutely necessary—a strategy that came to be known as "cheat and retreat."

Iraq's concealment effort also utilized sophisticated methods of deception and denial. Deception techniques were intended to make WMD programs appear to be legitimate industrial activities, while denial techniques sought to conceal the very existence of illicit production through camouflage, electronic emission control, and personnel or communications security. For example, Iraq buried high-voltage power lines and removed security fences from its uranium enrichment plant to minimize telltale "signatures" of suspicious activity that could show up in satellite images. Iraq's concealment strategies also involved cutting corners on safety and environmental protection, such as eliminating specialized biocontainment systems (e.g., roof ventilators and air filters) that might indicate production of biological warfare agents.

Most of Iraq's pre-1991 chemical and biological weapons production took place in dual-use industrial plants that did not require elaborate concealment measures, Tucker explained. These facilities were ostensibly designed to manufacture legitimate products, such as pesticides, fertilizers, animal feed supplement, and vaccines, but they were secretly diverted to the production of warfare agents. Moreover, Iraq's chemical and biological agents were loaded into standard munitions such as 122mm rockets, artillery shells, and 500-pound aerial bombs. Given the worldwide availability of dual-capable industrial plants and the fact that developing countries have a legitimate need to manufacture vaccines and agricultural chemicals, a determined proliferator can always retain a breakout capability to produce chemical or biological agents on demand. In addition, technologies that can support deception and denial operations (such as pollution controls,

encrypted communications, and self-sterilizing fermenters) are spreading rapidly and are bound to fall into the hands of aspiring proliferators.

Tucker suggested that despite the removal of Saddam Hussein, the recent US-led war has not fully eliminated the risk of WMD proliferation in Iraq. He identified several short-term threats that Coalition forces must address if their non-proliferation efforts are to be successful. First, the physical remnants of Iraq's WMD programs must be eliminated by finding and securing pathogen collections, feedstocks for chemical weapons, and radiological and fissile materials. Second, it is important to monitor dual-use industrial facilities in Iraq that could be converted fairly readily to WMD production. An ironic lesson of the Iraq War is that intrusive UN inspections proved to be quite effective at containing Iraq's WMD programs. Accordingly, UNMOVIC inspectors should be invited back into Iraq to monitor Iraq's dual-use plants on an ongoing basis, as authorized under UN Security Council Resolution 715 (1993) and subsequent resolutions. Such monitoring would have to continue until Iraq's transition to democracy is complete and the new government has demonstrated a clear commitment to the nonproliferation regime. Tucker projected a timeframe of about five years until UN monitoring could be lifted.

The Coalition must also attend to the intellectual legacy of Iraq's WMD program by securing technical documentation and preventing the recruitment by regional proliferators or terrorist networks of any of the roughly 3,000 Iraqi scientists and technicians who were formerly engaged in WMD development and production. International research grants for peaceful science and technology research in Baghdad would provide temporary employment for the former weapons scientists and help to prevent defections motivated by financial desperation.

Finally, American policymakers must address Iraq's legitimate security concerns in the context

of its regional security environment. Several nearby countries, including Iran, Israel, Syria, Egypt, and Saudi Arabia, are believed to possess chemical and/or biological warfare capabilities, and Israel has an undeclared nuclear arsenal. If Iraq's security concerns are ignored, they could spur a future government in Baghdad to reacquire WMD in the name of self-defense. An American security guarantee for Iraq would be a good start toward reducing such proliferation incentives. Tucker argued, however, that the United States must ultimately address Iraq's WMD-rich neighborhood and promote regional approaches to nuclear, chemical, and biological disarmament in the Middle East.

TIM TREVAN, FORMER UNSCOM WEAPONS INSPECTOR

Expressing general agreement with Tucker's assessment, Trevan argued that to effect a real, lasting WMD disarmament in Iraq, coalition forces will have to address both the means and the motives underlying the Iraqi proliferation efforts. The international nonproliferation regime will have to eliminate Iraq's capacity to produce WMD, both in material and in human-technical terms, at the same time that it works to address the regional security concerns that would spur a new Iraqi regime to recommence a WMD program in the first place.

To curtail Iraq's means of proliferation, coalition forces must track down what WMD materiel presently exists in the country, enlisting former Iraqi weapons scientists to aid in the search, and must begin an aggressive monitoring system to detect future attempts at proliferation. Still, Trevan identified significant obstacles to the WMD recovery efforts. Trevan suggested that before the outbreak of the war, Iraqi WMD could have existed in bulk agent format rather than as filled ammunitions. Bulk agents would have been easier to hide, as they could be stored in tanker trucks and driven around the country ahead of inspectors, then easily buried in the desert

when desired, making them very difficult to locate. Once formed into filled munitions, on the other hand, WMD take up a far greater volume and are thus much more difficult to move or conceal. WMD recovery efforts may also face obstruction from the compartmentalization of the Iraqi program. Iraqi weapons scientists may be able to tell the international nonproliferation regime exactly what was achieved in terms of WMD research and development - and even what weapons were produced and in what quantity - but it is unlikely that the scientists have much knowledge about weapons concealment operations, which were probably handled by Iraqi security officers. As low-level personnel involved in the task may have been executed for security reasons, coalition forces will need high-level security officers with a more comprehensive view of the program to complement any specific technical intelligence supplied by former Iraqi weapons scientists; scientists will know what to find, but only former security personnel will know where to find it.

The comprehensive archives that Saddam's regime allegedly maintained on its weapons program may also prove to be a valuable source of the intelligence needed to effect full WMD disarmament. Though Iraq frequently claimed that documents had been destroyed, Saddam's Iraq readily provided copious WMD documentation whenever it was in its interest to do so. It is quite possible that the archives were destroyed over the course of the war, but if they still do exist, they are most likely wide-ranging and well organized.

In terms of Iraq's human-technical means of proliferation, Trevan stressed the importance of controlling the activities of Iraq's former scientists, presenting subsidized research employment of those scientists as one promising way of preventing their defection for purely financial reasons. Still, as there are non-financial reasons for defection, Trevan suggested a scientist-monitoring regime that would account for the scientists' ac-

tivities and affiliations.

Some of the proliferation motives of the Saddam regime have already been addressed by the very fact of Saddam's removal from power. Such personal factors as Saddam's desire for power and his desire for a historical legacy as the leader who united the Arab world against Israel and the West were significant forces behind Iraq's WMD programs. These factors were indeed unique to Saddam's regime. Still, regional security concerns and other regime-nonspecific factors might drive a future Iraqi regime to seek WMD; the proliferation of other states in the region "sets up a regional prisoners' dilemma for any country faced with the question of acquiring WMD." Hedging against the risk of WMD threats from its neighbors, in other words, a future Iraqi regime might decide to develop WMD even as it recognizes that the best-case scenario would be a region free of WMD entirely. The key, then, is to somehow change the decision-making process, to take measures to force would-be proliferators out of the "prisoners' dilemma" mindset. Such measures might include aiding in the buildup of conventional forces, framing a regional security arrangement, providing US security guarantees, and other carrot-and-stick frameworks of offered incentives and threatened sanctions.

Inspections, Trevan stressed, are ineffective in stemming the tide of WMD proliferation. The UNSCOM inspections in Iraq were the most powerful conceivable - save the inclusion of a military component, which would only exacerbate matters by legitimizing the use of force on the proliferator's side - and even those inspections could not prevent Iraqi acquisition of the means of proliferation. This leaves proliferators' motives, but even here, little can be done about the complex regional security environment that frequently stimulates would-be proliferators. Regime-change can address regime-specific, personal factors, but such a policy is largely powerless when it comes to broader systemic factors. Iraq must consider the varying degrees of

threat posed by Egypt, Saudi Arabia, Israel, Turkey, Iran, and Syria. Iran, however, must also consider Russia and Pakistan; Pakistan adds China and India, China adds North Korea and Taiwan, and North Korea adds South Korea and Japan to the equation. While China's standout power and consistency may offer some sort of key to the solution, the result nonetheless remains an immensely complex set of interlocking security environments that would be extremely difficult to alter in any meaningful way. With the outlook grim on altering the means or motives of proliferation, Trevan proposed that policymakers start considering long-term objectives that seek not the unlikely outcome of a nonproliferated world, but rather effective security strategies for coping with the highly proliferated world that seems likely to arise.

DISCUSSION

- The nonproliferation regime cannot prevent determined proliferators from acquiring proscribed unconventional capabilities. Onsite inspections, as demonstrated by the UNSCOM experience in the 1990s, can be an effective nonproliferation tool, but their utility should not be oversold. Effective inspections require, most notably, good intelligence and cooperation by the target state.
- The UNSCOM inspections probably led the Saddam Hussein regime to retain a rapid breakout capability instead of large stocks of weaponized agents.
- In the post-war period, the discovery of residual weapons and this breakout capability will rely on information from former Iraqi scientists. The United States is sending a mixed message to these scientists - on the one hand soliciting their knowledge of the Iraqi program, while, on the other, intimidating them with threats even if they cooperate.

THE GLOBAL NONPROLIFERATION REGIME: CAN IT DEAL WITH THE HARD CASES?

**JOSEPH PILAT, LOS ALAMOS NATIONAL
LABORATORY**

Dr. Pilat's views are his own and do not reflect the positions of the Los Alamos National Laboratory, the National Nuclear Security Administration, or the Department of Energy.

Pilat noted that there was some cause for optimism about the prospects of the global nuclear nonproliferation regime as recently as 1997 and early 1998. At that time, the emergence of four nuclear powers from the Soviet collapse had been averted; there were unprecedented levels of cooperation between Western nuclear powers and former Soviet states; Argentina, Brazil, and South Africa had scrapped their nuclear weapons programs; the NPT had been extended indefinitely in 1995; the Additional Protocol offered a solution to the IAEA safeguard loopholes that had been exposed by the Iraqi nuclear program's successes in the early 1990s; and the Comprehensive Test Ban Treaty was finally concluded.

Around the time of the 1998 nuclear tests in India and Pakistan, however, concerns began to mount about the "hard cases" of proliferation in South Asia, Saddam's Iraq, North Korea, and Iran, and the September 11 attacks highlighted the growing threat of nuclear and radiological terrorism. Increased technology diffusion, difficulties with export controls, and "virtual proliferation" hedging strategies, in which states built a rapid NPT breakout capability without actually crossing the nuclear threshold, all further threaten the nonproliferation regime. There are also growing concerns, especially in the traditional nonproliferation and arms control communities, about the effects of American "rogue state" policies.

Still, the international nonproliferation regime's recent failures have been no more decisive than

its successes a few years before. Indeed, the past dozen years have seen many efforts to resolve nonproliferation problems by external means, efforts that, by sidestepping the exposed flaws in the international nonproliferation regime, made the regime seem increasingly ineffective and unnecessary. The threat of four nuclear weapons states arising from the Soviet collapse, for instance, was met not by existing capabilities of the nonproliferation regime, but by such external approaches as cooperative threat reduction, lab-to-lab collaboration, and the concept of the international science center. In effect, the Clinton administration's counter-proliferation initiatives and the second Bush administration's preemption doctrine were and are simply attempts, in this tradition, to attain new nonproliferation tools to make up for the shortcomings of the global nonproliferation regime. This was what the Agreed Framework with North Korea largely attempted to do in 1994. In this context, Pilat noted the European foreign policy establishment's reactions to the Agreed Framework; Europe's reactions were initially very negative, predicting the demise of the NPT and multilateral nonproliferation efforts in general, but later developed into a greater acceptance of what the Agreed Framework could offer "at least at the margins of the regime."

While the impression at the time of the Agreed Framework that the regime was becoming increasingly irrelevant may have been exaggerated, the regime continues to face challenges on many fronts. The NPT has been unable to deal with the Indian and Pakistani nuclear weapons tests. The regime was unable to prevent North Korea's withdrawal from the NPT, calling to mind the massive withdrawal forecasts of the 1995 and 2000 NPR Review Conferences. The present concerns about Iranian proliferation highlight the

difficulties inherent in NPT Article IV, which essentially permits a regime such as that in Tehran a path to a rapid breakout capability that does not necessarily violate the letter of the regime's obligations. The recent U.S. Nuclear Posture Review (NPR) has prompted fears in the US and abroad that the NPR could undermine the regime and nonproliferation efforts more generally. (Pilat noted that the NPR and the issues it raised were complex, and that he could not address them in his remarks.) Given the limited international consensus on how NPT compliance should be enforced, there is also widespread concern about U.S. preemption doctrine and the elevated prospect of U.S. unilateral action to forestall proliferation.

Pilat argued that expectations for the capabilities of strengthened safeguards may be too high, given the inherent limitations of any onsite inspection regime and the specific capabilities afforded to the IAEA under the Additional Protocol. It remains to be seen whether the newly proposed measures and the IAEA's greater interest in integrated safeguards significantly strengthen the regime. Thus far, ratifications of the model Additional Protocol have been limited. The first state to provisionally apply integrated safeguards was not a "hard case" but rather Australia.

The debate over the efficacy of Security Council resolution 1441 inspections in Iraq has raised lingering doubts about the nonproliferation regime's credibility. The IAEA's handling of the Iranian nuclear program will be a proving ground for the agency; its claim to have been deceived by Iran was a significant first step, but the linkage of "success" in Iran to Iranian acquiescence to the model Additional Protocol and enhanced safeguards remains problematic. Also troubling is what seems to be a gradual breakdown of the Nuclear Suppliers Group (NSG), which has been compromised by Russian activities, by French announcements of future plans, and by lateral proliferation. This development has triggered significant concerns about the future effectiveness

of the NSG as a component of the global nonproliferation regime.

While the hope in the early 1990s was that the UN Security Council would act to pick up the slack in the regime, there has been very limited consensus on nonproliferation enforcement and a patent unwillingness by most states to use force against noncompliant states. The same paralysis that gripped the Security Council on Iraq seems to have taken hold over the issue of North Korea as well.

It is often difficult to predict the long-term significance of "shocks" on the global nonproliferation regime. The threat of nuclear weapons use in South Asia, for example, was a widely held concern a year ago; it remains a significant issue, but its magnitude has diminished in the eyes of the international community. Future shocks to the regime include the potential for nuclear weapons tests in North Korea, a North Korean sale of WMD to a non-state actor or to another state, a Japanese withdrawal from the NPT because of a perception that the regime has not adequately addressed the North Korean proliferation threat, and a preemptive Israeli strike on Iranian nuclear facilities. Finally, there is a great deal of talk about a "second nuclear coming," a significant rise in nuclear power generation worldwide. Pilat expressed skepticism on the likelihood of this prospect but noted that in the event of such a development, Iran would be more important than Iraq to the future of the nonproliferation regime.

The present concerns about the ability of the regime to address the risks posed by civil nuclear facilities recall the 1970s view that "every nuclear reactor" was a proliferation threat. Pilat traced this renewed focus on misusing technologies that can have civil and military application, exemplified by the case of Iran, both to the arguments of the 1970s and to the post-September 11 issue linkage of proliferation with terrorism. Controls over nuclear and dual-use exports may become

increasingly tenuous, especially if their ostensible successes in effecting supplier restraint have primarily been the consequence of a weak nuclear market. Should supplier restraint decrease, it might trigger a vicious cycle where, in combination with lateral proliferation, it underscored to supplier states the futility of export controls, effecting an even greater increase in nuclear supply to would-be proliferators.

In effect, there may be a revival of the 1970s nuclear supply debate, which was fueled by discord among supplier states and by the demands of consumer states. In the context of Iran, there may also be rekindled scrutiny of the NPT's Article IV loopholes and, relatedly, of general safeguards efficacy. The international community will have to assess whether the regime's safeguards remain credible and whether they successfully build confidence in peaceful nuclear energy development.

In this uncertain climate, Pilat speculated, "regime change" may not only refer to North Korea or Iran, but also to the NPT and the IAEA. American military action, even as part of a coalition operating under UN Security Council approval, will probably not be able to fully solve the host of problems facing the global nonproliferation regime today; even improved safeguard technologies would prove insufficient. This is not to suggest that American strategists should not explore counter-proliferation and other military options. Indeed, given the disheartening state of the regime, American military responses may prove the best measures available - however incomplete their results. In this context, the focus on preemptive regime change "looks very rational and seems very understandable."

Some argue that only comprehensive institutional changes within the regime itself have the potential to achieve a full solution. However, the options for institutional reform of the global nonproliferation regime are not promising. An early 1990s move to standardize the provisions of the

different WMD nonproliferation institutions met with failure when it was realized that the result would be a "least common denominator" equalization that substantially weakened many facets of the regime; efforts at remaking the regime would probably meet a similar end today. While a revised Baruch Plan, a realpolitik cartel approach, a new international inspections authority, and other proposed alternatives to the existing nonproliferation regime all have merits, any attempt to supplant the old regime with one of these schemes would face great political impediments. The current regime will have to be reformed, not replaced.

Without a regime-strengthening reform program, the regime will continue to erode, and states like Japan, Saudi Arabia, and Turkey might become the next decade's "difficult case" proliferators, with the prospect of a "second coming of nuclear energy" further complicating matters. While declining to make specific policy recommendations on reform, Pilat emphasized the need to consider reinterpreting Article IV of the NPT. Proliferation may be a natural force of geopolitics, he concluded, but the US and the international community are not powerless to prevent or manage it.

GARY SAMORE, INTERNATIONAL INSTITUTE FOR STRATEGIC STUDIES

The global nonproliferation regime is not only ill-equipped to deal with the "hard cases," Samore argued, but can actually make it more difficult to deal with them. Afraid of detracting from the regime's credibility, the international community often ends up unproductively constrained in its interactions with proliferators. Policymakers should instead use the regime to buttress the case-specific policies that are necessary in dealing with the hard cases. At the same time, policymakers should try to use the hard cases to mobilize support for regime-strengthening measures, much as the nonproliferation community was able to marshal political support for the Additional Proto-

col after the 1991 Gulf War by pointing to the case of Iraq.

While the global nonproliferation regime has been "irrelevant" to South Asia and thus unable to stop proliferation there, the region may nonetheless be the easiest of the hard cases in that its nuclear developments have not undermined the NPT more generally. India and Pakistan will not join the NPT as non-nuclear states, nor will the NPT be revised to permit them membership as nuclear weapons states. Nonetheless, if the Comprehensive Test Ban Treaty (CTBT) or Fissile Material Cut-off Treaty (FMCT) were actually implemented in South Asia, the regime could impede further nuclear weapons development by limiting additional nuclear weapons design and fissile material accumulation. Still, this implementation remains unlikely for the time being. More promising is the prospect that the regime's constraints on nuclear suppliers might serve as a model for the South Asian states, most notably Pakistan, to emulate in creating their own export control systems; to "limit the damage" of South Asian proliferation in this way should be policymakers' top priority in the region. At any rate, the regime's failures in South Asia have not damaged the regime elsewhere; the subcontinent has always been an isolated geopolitical unit, and India and Pakistan's emergence as overt nuclear weapons states has not caused new nuclear weapons programs or defections from the NPT in other regions of the world.

The global nonproliferation regime is also of limited relevance to North Korea, which continues to violate the NPT, as it has for over a decade, and has "de facto special status" within the regime. The Agreed Framework was a unique in that raised nonproliferation standards for North Korea in some areas and lowered them in others. The Framework delayed implementation of full-scope safeguards in North Korea until a "significant portion" of the light water reactor project had been completed, allowing North Korea a "nuclear hedge," whether real or imagined; at the

same time, however, the Framework was even more stringent than the NPT in requiring a full cessation of North Korean plutonium production whether or not it was under IAEA safeguards. In effect, the Agreed Framework repaired a weakness in the NPT, but only at the significant cost of delayed full compliance. As North Korea is unlikely to accept the NPT requirement that it yield its undeclared nuclear weapons, and the United States is unlikely to accept the NPT's permission of North Korean plutonium or enriched uranium production under safeguards, any agreement resolving the current crisis will not conform to the boundaries established by the NPT regime.

As in South Asia, the NPT's irrelevance in North Korea has not significantly damaged the global nonproliferation regime; even within Northeast Asia, the regime's failures have thus far been confined to North Korea. Still, there is a long-term risk that South Korea and Japan will pursue a nuclear or other WMD deterrent capability should North Korean proliferation continue to appear unchecked. In effect, if the United States does not maintain credible security guarantees to Japan and South Korea, the entire Northeast Asian NPT regime may collapse and take the broader global regime with it.

As with Iraq after the 1991 Gulf War, policymakers might seek to use the example of North Korean proliferation to mobilize support for strengthening the global nonproliferation regime; President Bush's Proliferation Security Initiative (PSI), which calls for the multilateral interdiction of WMD shipments and shipments of missile-related equipment, is an interesting step in this direction. The authorization of interdiction under international law presents some problems, but North Korea's missile systems and potential as an exporter of fissile material present a compelling case for such a mechanism.

Finally, Iran is unique among the hard cases in that the short-term implementation of the NPT

in Iran may actually undermine long-term non-proliferation efforts there. Indeed, American and European efforts to pressure Iranian compliance with its NPT safeguard obligations and its acceptance of the regime's Additional Protocol have been "very successful." At the same time, Iranian compliance with these limited demands would undercut international backing for more comprehensive nonproliferation objectives in Iran, such as ending Iran's enrichment program, which would go beyond the requirements of the NPT. Nonetheless, even the experience of Iran could be used to strengthen the regime. The unprecedented scope of Iran's exploitation of the NPT exemplifies the flaw in the current international understanding of Article IV; the NPT might be reinterpreted or adapted to prohibit any development of a rapid break-out capability under the guise of a civilian nuclear energy infrastructure.

Despite the problems posed by the hard cases, Samore argued that the danger of nuclear proliferation is actually limited, noting that Europe, Latin America, Southeast Asia, and Sub-Saharan Africa are not of concern in terms of nuclear development and that two South Asian states already have proliferated. This leaves Northeast Asia and the Middle East, which together pose some the greatest threats the regime has faced. Though the technical barriers to proliferation in Northeast Asia are fairly low - Japan, Taiwan, and South Korea could all develop nuclear arsenals relatively quickly if they decided to do so - the political barriers impeding such a decision remain high. In the Middle East, on the other hand, the political will to proliferate is far greater, fueled by longstanding concerns about the Israeli

nuclear arsenal and now also by the forthcoming threat of Iranian proliferation; however, the technical barriers to proliferation in the Middle East, particularly in the Arab countries, are high. Iran and North Korea aside, the political barriers in Northeast Asia and the technical ones in the Middle East should be enough to forestall proliferation in those regions in the short term. Should the international community fail to check the North Korean and Iranian nuclear programs in the meantime, however, multiple nuclear powers might arise in Northeast Asia and the Middle East, a development that would greatly destabilize the two regions and destroy the global non-proliferation regime.

DISCUSSION

- A major challenge facing the NPT regime is the fact that the technology transfer provision of Article IV permits determined cheaters to acquire the wherewithal for a clandestine weapons program while remaining technically in compliance with the treaty.
- To address this problem, Article IV should be reinterpreted to block the transfer of uranium enrichment and reprocessing technology. Nuclear technology transfers should perhaps be prohibited for states that fail to adopt the Additional Protocol.
- The international community should consider the creation of a new entity, separate from the IAEA, to enforce the safeguards provisions and ensure that signatory states are in compliance with their NPT obligations.

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