To Join or Not to Join the Nuclear Club:
How Nations Think about Nuclear Weapons:
Two Middle East Case Studies

Relinquished Nuclear Powers: A Case Study of Libya

Målfrid Braut-Hegghammer

Pakistan's Motivations for Possessing Nuclear Weapons and Challenges to the "Unitary Rational Actor" Model for Managing Deterrence

George Perkovich

Middle East Studies
at the Marine Corps University

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This fourth issue of the MES Monograph Series features two papers presented by Dr. Målfrid Braut-Hegghammer, Assistant Professor at the Norwegian Defence University College, and Dr. George Perkovich, Vice President for Studies and Director of the Nuclear Policy Program at the Carnegie Endowment for International Peace, as part of a workshop entitled "To Join or Not to Join the Nuclear Club: How Nations Think about Nuclear Weapons." The workshop was sponsored by the Minerva Research Initiative and held at the Marine Corps University. The workshop and current monograph could not have been realized without the efforts and vision of Dr. Norman Cigar, Director of Regional Studies and a Minerva Chair holder at the Marine Corps University.

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We welcome comments from readers on the content of the series as well as recommendations for future monograph topics.

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Forward

by Norman Cigar and Stephanie Kramer, Marine Corps University

The two papers in this monograph were presented at a conference entitled "To Join or Not to Join the Nuclear Club: How Nations Think about Nuclear Weapons." These two case studies are by Dr. Målfrid Braut-Hegghammer of the Norwegian Defence University College, "Relinquished Nuclear Powers: A Case Study of Libya," and by Dr. George Perkovich of the Nuclear Policy Program, Carnegie Endowment for International Peace, "Pakistan's Motivations for Possessing Nuclear Weapons and Challenges to the 'Unitary Rational Actor' Model for Managing Deterrence." These two papers were selected for their insights on differing paths taken by two countries in the greater Middle East region—Libya and Pakistan—with one having decided to relinquish its nuclear program and the other deciding to acquire a military nuclear capability.

Our purpose in holding this conference, as part of the Minerva Research Initiative, was to gain a better understanding of the multidimensional aspects of how regional powers decide whether to acquire and retain nuclear weapons by using case studies from around the globe. Such factors include threat perceptions, the interpretation of lessons learned from other countries experiences, the calculus of perceived costs and benefits for national security, the envisioned modes of employment of nuclear weapons (political and military), and the legal/ethical considerations—all from the perspective of regional actors. Furthermore, a country's specific political decisionmaking process and its institutions are also key factors in understanding how actual and potential regional nuclear powers make decisions on the nuclear issue. As such, an understanding of the motivations and of the perceived utility of nuclear weapons, from the perspective of recent and potential nuclear powers, can provide insights that can contribute to the crafting of more effective U.S. and multilateral nonproliferation, counterproliferation, and deterrence strategies.

The conference was held at the General Gray Research Center, the Marine Corps University, Quantico, Virginia, on 31 January 2012, and was made possible through the generosity of the Minerva Research Initiative, the Marine Corps University, and the Marine Corps University Foundation. Special thanks are extended to Dr. Amin Tarzi and Mr. Joel Westa of the Marine Corps University for their valuable professional input and advice in the planning of this conference, and to Major General Thomas M. Murray, USMC, President, Marine Corps University, and Dr. Jerre W. Wilson, Vice President for Academic Affairs, Marine Corps University, for their support and encouragement at every stage of the process.

Relinquished Nuclear Powers: A Case Study of Libya

by Målfrid Braut-Hegghammer, Norwegian Defence University College

Introduction

"Now the security of Libya does not come from the nuclear bomb, quite the contrary, the nuclear bomb represents a danger to the country ... […] While in the past no one would have objected to Libya being attacked, today the whole world will defend Libya."[1]

"… [Qadhafi] was encouraged by the West and handed over the facilities like a child, who is glad to be given a chocolate. Well, the nation [Libya] sees all of this and the heart of the nation bleeds because of that. We can see this factor in all the countries, where people have staged rebellions."[2]

In late 2003, Libyan officials announced their decision to abandon the pursuit of nuclear weapons, after seeking to acquire such weapons for nearly three decades. This decision has been described as "one of the most spectacular cases of successful, peaceful de-proliferation in history."[3] The 2011 Libyan popular uprising may make it possible to learn more about the causes of Libya's nuclear rollback; it may also necessitate revising our understanding of the lessons that other states will draw from this example.

From the outset, the debate on Libya's decision to abandon its pursuit of nuclear weapons was polarized. On the one hand, scholars argued that the Libyan regime had been persuaded to abandon its pursuit of nuclear weapons in an expansive trilateral negotiation process with the United States and the United Kingdom. On the other hand, others claimed that the Libyan leader, Colonel Muammar Qadhafi, was deterred from acquiring nuclear weapons by the conflict between Iraq and the international community during 2002-2003. Furthermore, states appeared to draw different policy implications from Libya's nuclear rollback. While Washington and London were keen to present Libya as a lesson for other proliferating states, demonstrating that states would stand to gain from abandoning their nuclear weapons programs, other capitals reached the opposite conclusion. Finally, the status of the Libyan nuclear program has been described in conflicting terms. Some have argued that the Libyan program was only a few years away from developing nuclear weapons, while others have characterized this effort as a joke that was doomed to fail. Looking back, what conclusions can now be drawn about the Libyan nuclear program and 2003 roll-back decision?

This paper examines Libya's nuclear rollback and how this has been interpreted by other states following the 2011 popular uprising. The long-term consequences and impact of the so-called Libyan model remain to be determined. I offer a preliminary analysis of how close Libya had come to a nuclear weapons capability by late 2003, and how their nuclear rollback may inform proliferation decisions elsewhere. I will argue that Libya's nuclear program, as well as the decision to discontinue the pursuit of nuclear weapons as part of a negotiated settlement, is likely to remain an exceptional case. However, the Libya case offers important lessons for understanding how illicit nuclear suppliers can affect nuclear proliferation risks, and how a state can be persuaded to abandon the pursuit of nuclear weapons as part of a broader normalization process. Furthermore, the Libyan case could be seen as a cautionary tale demonstrating the importance of rewarding nuclear rollback decisions to enhance the appeal of this option for other states.

Qadhafi's Nuclear Ambition: 1969-2003

When Libya discontinued its nuclear weapons program, the international community was surprised at the scope of the technical infrastructure that was subsequently uncovered. While other states had long suspected that the Libyan regime had pursued nuclear weapons, it was widely assumed that Libya lacked the skills and infrastructure to mount an operational program.

In the years following Libya's nuclear rollback, assessments of the threat posed by the Libyan program have varied considerably. After the Libyan decision was announced, U.S. officials stated that the Libyan program was "much further advanced" than expected and included "all necessary components in making a nuclear bomb."[4] Similarly, another administration official characterized the Libyan program as "robust" and "enormous."[5] Only two years later, the U.S. Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction described Libya as "an inept bungler, the court jester among the band of nationalists seeking … nuclear capabilities."[6]

What explains such widely divergent interpretations? In the following subsections, I will briefly examine the emergence of Libya's nuclear program between 1969 and 2003. I will show that the Libyan nuclear program was rapidly approaching the operational stage, but that the regime's ambivalent support for these efforts rendered the program a hedging strategy rather than a primary objective. While the Libyan regime may never have been entirely persuaded that nuclear weapons were necessary solutions to key strategic challenges, the Libyan case demonstrates that changing nuclear supply dynamics can rapidly intensify nuclear threats.

Qadhafi's Nuclear Ambitions

Almost immediately after seizing power in September 1969, the incumbent regime began to explore options for acquiring nuclear weapons. First, Muammar Qadhafi sought to purchase nuclear weapons from other states. In 1970, Qadhafi's second-in-command, Abdessalam Jalloud, approached China seeking to buy nuclear weapons. Similar approaches were reportedly made toward India.[7] At the same time, Qadhafi approached a number of states (including Egypt) about potential collaboration with a view to develop nuclear weapons. During the 1980s, the Soviet Union became Libya's most important supplier state, providing a 10 megawatt research reactor under International Atomic Energy Aency (IAEA safeguards).[8] Nonetheless, Libya continued to court other states for nuclear technology and know-how. One such relationship was Libya's financial support for Pakistan's nuclear program during the mid-to-late 1970s. During this period, Libya only appears to have received limited support from the Pakistanis, such as training of Libyan staff. The oversight committee at Tajoura—the center of Libya's nuclear program— reportedly met every week, and Qadhafi promised to provide whatever resources were deemed necessary to facilitate this effort.[9] However, his ambivalent attitude to the pursuit of such weapons—evident in his political statements on this issue—was reflected in the seemingly half-hearted nuclear program that emerged during the 1970s.

Curiously, despite Libya's pursuit of expensive nuclear technology and its hiring of foreign experts from states such as Egypt, the Libyan regime did not invest in developing a robust domestic knowledgebase to support its nuclear program. From the outset, then, the Libyan program relied on external assistance for manpower and technology. According to Egyptian experts working in Libya's nuclear research establishment at Tajoura during the 1970s, the Libyan regime had to be persuaded to send students abroad (notably to the United States and the United Kingdom) to study nuclear science and technology.[10] These students returned to form a small, but highly capable, group with a clear understanding of what a nuclear weapons project would require. However, such a small group would not suffice to run an operational nuclear weapons program.

During the 1980s, Libyan officials continued to explore different routes to the bomb. Little is still known about the domestic calculations informing Libya's priorities and decisions during this period. What is known

is primarily based on information declared by Libyan officials to the IAEA and information from Libya's suppliers. This information suggests that the pace and orientation of the Libyan effort was largely determined by what Libya could obtain from the nuclear marketplace, and the extent to which these offers were suited for a country with such a limited domestic technical foundation. In 1980, the nascent Libyan nuclear establishment began to experiment with uranium enrichment using centrifuge technology.[11] The Libyans reprocessed and separated a small amount of plutonium during this initial exploration, but ultimately opted to pursue uranium enrichment. Between 1983 and 1989, Libya conducted further uranium enrichment experiments and unsuccessfully tried to acquire a conversion facility.[12]

A combination of controversial foreign policies and tightening regulation of the global nuclear market made it increasingly difficult for the Libyans to obtain the building blocks for a nuclear weapons program from foreign suppliers. As a result, the project was, in the words of Libyan officials, "dwindling" during the 1980s. In 1984, Pakistan's nuclear mastermind A.Q. Khan contacted the Libyans offering enrichment technology. His offer was turned down as the Libyans decided they were not yet able to utilize what he offered. Around the same time, Libya recruited a European expert to develop a gas centrifuge in Libya. This individual left Libya in 1991 or 1992, allegedly having failed to mount a single operational centrifuge.[13] As other states noted Libya's fairly indiscrete attempts to acquire sensitive technologies, U.S.-led efforts to deny Libya sensitive technology intensified.[14]

Nuclear Hedging

In the mid-1990s, the Libyan regime made a strategic decision to reinvigorate its efforts to develop a nuclear weapons option. At the same time, the regime was increasingly torn about the direction of its foreign and security policies and whether the nuclear weapons project enhanced or detracted from its prospects of long-term domestic political survival.[15]

On the one hand, Libya had found a willing and able supplier of sensitive nuclear technology in Pakistan. By 1989, the A.Q. Khan network once again approached the Libyans. In early 1991, the two parties agreed that Khan would supply Libya with a centrifuge plant.[16] The following year, the United Nations imposed sanctions on Libya after Tripoli refused to extradite two Libyan suspects for trial on the 1988 Pan Am bombing. These sanctions, which included a total ban on air travel and arms sales to Libya, prevented the Khan network from delivering the initial order.[17] In 1995, the Qadhafi regime decided to intensify its efforts to acquire a uranium enrichment capability. Two years later, Matuq Muhammad Matuq, who was then in charge of the Libyan nuclear weapons project, and his colleague Karim, who was in charge of the gas centrifuge program, commissioned a gas centrifuge plant from the A.Q. Khan network.[18] The Libyan order was essentially for a turn-key enrichment facility that would produce sufficient weapons-grade uranium for several nuclear weapons annually. The Libyans ordered 10,000 centrifuges and the associated equipment, for a price between $100 to $200 million.[19] The order far outstripped any other deals made by the A.Q. Khan network, and remains one of the largest transfers of sensitive nuclear technology.

While the Libyan program had found a willing supplier in the A.Q. Khan network, the nuclear program did not progress in an even manner. During this period, increasingly influential reformist elements in the Qadhafi regime argued that it was necessary to fundamentally transform Libya's relations with the West to secure the regime's long-term prospects of survival. Towering economic problems had plagued the Libyan population since the mid-1980s. These problems, combined with the excesses of the regime's revolutionary movement both domestically and abroad, had led to widespread dissatisfaction in the population. In the early 1990s, this was reflected in several challenges to the regime, including military coup attempts, an Islamist uprising in the east, and an assassination attempt targeting Qadhafi. These developments strengthened the position of the so-called revisionist elements that favored economic liberalization and were skeptical of the role nuclear weapons could play in solving Libya's strategic challenges. Libya reached out to the United States on several occasions during the 1990s, as early as 1992 signaling its willingness to negotiate on a range of issues including the sensitive weapons programs. Both in 1992 and 1999, however, the United States refused to negotiate in other areas until the Lockerbie issue had been resolved.[20]

As Libya sought to improve its international standing while simultaneously pursuing nuclear weapons as a hedging strategy, its grand strategy appeared increasingly conflicted. For example, in 1997—the same year that Libya ordered the large centrifuge plant from the A.Q. Khan network—Qadhafi signaled his willingness to strike a deal on the Lockerbie issue with Britain and the United States.[21] In 1998, the Qadhafi regime started negotiations with the two countries, leading to a trial of the two Libyan suspects in The Hague. These negotiations established contact among the three governments and laid the foundation for a trilateral dialogue addressing a range of issues obstructing the normalization of diplomatic relations.

In the framework of these negotiations, Tripoli saw an opportunity to come in from the cold. Since the 1980s, diplomatic ties between Libya and the United States had been severed. During the Reagan administration, the United States attacked Libya in retribution for Libyan intelligence's alleged involvement in the 1986 bombing of the La Belle discotheque in Berlin and defined Libyan regime change as a policy objective. A nuclear weapons capability would not only elevate the regime's international standing, regionally and in relation to Western powers, it could also effectively deter other states from attacking Libya. Toward the late 1990s, however, the United States sent increasingly strong signals that it would revise its longstanding position on Libyan regime change. This would alleviate a key concern of the Qadhafi regime, as it was clear that the Libyan military was unable to defend or protect the capital against American air strikes. These developments led many in the Qadhafi regime to favor continued efforts to improve relations with the United States. However, hardliners in the regime—the so-called revolutionaries—and military leaders were skeptical. They feared that compromises with the West, particularly with regards to the nuclear weapons program, would make the regime more vulnerable in the long term.

The incompatibility of these two policies—pursuing nuclear weapons while simultaneously attempting to get closer to the Western powers—became evident to Qadhafi following the 11 September 2001 terrorist attacks. As the international community made its case against Iraq, and war was becoming an increasingly likely prospect, it became clear to the Libyan regime that it would be necessary to either abandon the nuclear weapons project or prepare to rapidly develop a nuclear weapons capability. According to Saif al-Islam Qadhafi, the son of the former Libyan leader, Qadhafi feared that abandoning the nuclear weapons project would make the Libyan regime vulnerable to Western efforts to achieve regime change. Saif al-Islam, along with elements in the regime who favored improving Libya's international standing, argued that abandoning the nuclear weapons program would make the regime safer than it had ever been.[22]

In March 2003, shortly before the invasion of Iraq, the Libyan negotiation team once again raised the issue of the WMD programs to their U.S. and British counterparts. Within six months, the three parties had agreed on a process for verifiably dismantling Libya's unconventional weapons programs.[23] Musa Kusa, the former intelligence chief in the Qadhafi regime, approached British officials when Qadhafi made his rollback decision in late 2003.[24] In return for this move, the Qadhafi regime would obtain acceptance and a working relationship with the United States. Crucially, unilateral and multilateral sanctions would be lifted. This would enable the regime to benefit from oil sales and improve the dismal state of the economy.

The Libyan Nuclear Challenge

How far was Libya from the nuclear weapons threshold when Qadhafi made the decision to abandon the pursuit of such weapons? Was the program simply a bargaining chip, or did it constitute an intensifying threat? According to IAEA inspectors, in late 2003, Libya was about three to four years away from starting the centrifuge enrichment plant.[25] During this time, Libya would also have to obtain the sorely lacking manpower to operate this plant. The IAEA also verified Libya's statement that, despite receiving drawings and manuals for weapons design from A.Q. Khan in 2001 or 2002, it had not started weaponization work.[26] The Libyans also faced challenges in the front end of the nuclear fuel cycle which would have to be addressed to approach nuclear self-sufficiency. Libya's nuclear advances were uneven. The country faced a number of challenges and shortcomings—perhaps most acutely in terms of insufficient domestic expertise and lacking industrial development—that would have to be overcome in order to be able to become able to produce nuclear weapons indigenously. The A.Q. Khan network allegedly prepared to assist Libya in coping with

these shortcomings, including work on nuclear weapons designs.[27] While these challenges could be overcome—with the aid of the Khan network and perhaps North Korea—it would take time. Libya would have required several years—and much greater investment and commitment on the part of the regime—to reach nuclear latency.

The case of Libya demonstrates how a country with limited indigenous technical resources could nonetheless—with the help of others—acquire the ability to develop fissile material. This is often characterized as the main bottleneck facing nuclear aspirants. The fact that Libya was able to assemble infrastructure on this scale while largely evading the attention of the international community illustrates the severity of the challenge posed by illicit nuclear transfers.[28]

Revisiting Libya's Nuclear Rollback

One of the key questions that surfaced in the wake of Libya's nuclear rollback was whether the Libyan regime would be more secure against domestic and external challenges. In interviews, Saif al-Islam Qadhafi echoed his father's public statements that the decision had made the regime safer.[29] Egyptian oppositional voices argued in December 2003 that the only thing the Libyan people had secured from the deal "is for the colonel to remain a crown of thorns on their heads."[30] Similarly, in January 2004, former Jordanian official, Adnan Abu Odeh, argued that the Libyan people were not protected against anything other than from American influence.[31]

Another important question was whether the decision to abandon WMD programs reflected a deeper transformation or reorientation of the Libyan regime's policies and relations with the outside world. Recent analyses have linked Libya's rollback decision to a broader reorientation of Libya's foreign and economic policies.[32] While Libya had come in from the cold, it was unlikely that the Qadhafi regime would transform itself with regards to issues such as human rights, democratization, and economic reforms.[33] The Libyan officials who had defined the pragmatic *Realpolitik* that characterized Libyan foreign policy during the Lockerbie negotiations and the nuclear rollback deal lost their influence within the regime. In the spring of 2006, the reformist Prime Minister Shukri Ghanem was replaced by hawkish Baghdadi Ali Mahmudi. While there were many signs suggesting that even Qadhafi no longer believed that he could continue to govern Libya according to the idiosyncratic ideology he developed in the late 1970s, the regime would not —and perhaps could not—transform itself.

In the months following the rollback decision, Libyan and American officials presented a "Libyan model" that other states were encouraged to emulate: through negotiations, a state could be persuaded to abandon the pursuit of nuclear weapons.[34] Qadhafi described his motives for agreeing to this as a result of a changing global environment and that pursuing nuclear weapons would have been increasingly "dangerous."[35] The Libyan media characterized the decision as "an example that is both an inducement and a method for working for world peace."[36] Other Libyan commentators denied that Libya was acting out of fear, claiming that fear of US military force would have led Libya to retain its WMD programs, following North Korea's example.[37]

Libyan Perspectives

Within a year, however, a different message was coming from Tripoli. Senior officials started to express disappointment with the way in which the international community—especially the United States and the United Kingdom—responded to the regime's decision. In December 2004, Qadhafi made the following statement:

> Actually we were somewhat disappointed by the response from Europe, the United States,
> and Japan. They did not really repay Libya for its contribution to international peace. And

we are still waiting. If we are not repaid, other countries will not follow our example and dismantle their programmes in turn. When we spoke with North Korea and Iran, which are suspected of having nuclear programs, they said: "But what was the recompense in your case? What did you obtain from the international community? So why do you want us to dismantle our program?"[38]

The former Libyan leader cited a number of benefits that Libya could have obtained in return for its decision. These included a security guarantee, civilian nuclear assistance, assurances that no country would use nonconventional weapons against his country under any circumstances, and access to conventional military equipment to bolster national defense.[39] In subsequent interviews, Qadhafi suggested that Libya had been promised more by the United States and the United Kingdom than the regime had received.[40] Other voices from the Libyan regime stressed that what Libya had acquired from the 2003 decision was an opportunity to facilitate development. Foreign Minister Abd al-Rahman Shalqam stated in 2004 that American weapons were not necessary and that Libya was not in a rush to acquire such weapons but was focusing its efforts on economic development.[41]

Following Libya's reintegration into the international community, the regime was in a better position to pursue other suppliers of such goods and services. Libya's European neighbours—notably Italy and France—were keen to strengthen mutual ties in terms of energy, trade, and security. In the nuclear arena, the Libyan program appeared to dwindle following the rollback decision. After late 2003, Libyan officials defended their investments in nuclear technology by referring to civilian applications of nuclear research that would continue to benefit the population.[42] In 2007 and 2008, Libya and France agreed to develop a framework for civilian nuclear cooperation. While this agreement did not commit France to specific projects or investments, it was a sorely needed symbolic victory for Tripoli.

As time passed, Libyan officials voiced mounting disappointment that Libya had not received a prominent international position following the nuclear rollback. Furthermore, Qadhafi contrasted perceived slights—such as the way Western states did not permit certain states to acquire nuclear weapons, while quietly accepting Israel's nuclear arsenal—as further undermining the Libyan model. This led to increasingly vocal statements and actions intended to signal the regime's frustration to the international community. For example, in late 2009, the Libyan regime left 5.2 kg enriched uranium in seven transport casks and refused landing clearance to a Russian plane scheduled to collect this material. If this uranium was not moved within three months, it could cause the release of radioactive nuclear material into the atmosphere. This incident appears to have reflected Qadhafi's irritation that he had not been permitted to pitch his tent outside the United Nations headquarters in New York.[43] Similar frustration was expressed by the Libyan leader after the United States did not invite Libya to the 2010 nuclear security summit. Qadhafi stated that it was a "blunder" not to invite the country that had most recently abandoned nuclear weapons and that this would make the Libyan example less attractive to states such as North Korea and Iran.[44]

Regional Responses

Libya's nuclear rollback was met with mixed responses in the Middle East. Initially, most commentators attributed the Libyan decision to the Bush administration's harsh policies and Saddam Hussein's fate following his capture in Iraq. Libya's neighbours characterized the rollback decision as a victory for the Bush doctrine of pre-emption. Arab observers cited a number of factors as having caused this decision, "including Saddam Hussein's capture, Iran's signing of a protocol to the Nuclear Nonproliferation Treaty … and revelations about the interception in Italy of a shipment of illicit material heading for Libya."[45] Other commentators noted the pragmatist logic informing Libya's decision. The editor of *Al-Sharq al-Awsat*, a leading pan-Arab newspaper, described the move as a "lesson in sane dealings with the political reality, the likes of which have been absent from the Arab rationality for long decades."[46]

Following the 2003 Libyan announcement, regional commentators pointed to the lack of pressure from European countries and the United States on Israel to abandon its nuclear weapons arsenal. While Western

analysts debated whether force or diplomacy had persuaded Qadhafi to abandon his pursuit of nuclear weapons, and whether Iran or North Korea would follow suit, Middle Eastern commentators noted that the political will of Western states to exert such pressure on Israel seemed non-existent.[47] In other words, analysts noted the unique overlap of interests that had produced the 2003 rollback agreement and expressed doubts that such an overlap was likely to emerge between the United States and other suspected proliferators.

Revisiting the Libyan Model

Following the 2011 popular uprising which led to Qadhafi's overthrow, the contested Libyan model is once more subject to reinterpretation. Several observers have noted that it would have been much more difficult to provide the critically important support for the Libyan resistance movement if Qadhafi had been able to develop nuclear weapons. The consensus, then, is that the Qadhafi regime's decision to abandon its nuclear weapons program ultimately contributed to its downfall. This has been taken to suggest that it is now less likely that other states suspected of pursuing a nuclear weapons option are keen to follow Libya's example.[48] This would be an unfortunate outcome, as the Libyan model was a rare success story of coercive diplomacy. It also demonstrated that former adversaries could come to agreement concerning difficult conflicts and reduce tensions for the benefit of global peace and stability.[49]

It is not yet possible to discern the long-term implications of the overthrow of the Qadhafi regime for the appeal of negotiated nuclear disarmament along the lines of the so-called Libyan model. Meanwhile, even prior to 2011, it was clear that the Libyan model did not trigger similar acts of negotiated nuclear rollback elsewhere. In the years following Libya's rollback decision, the international community struggled to cope with the challenges posed by North Korea's nuclear tests and Iran's nuclear program. While the Libyan regime lamented that it had not been better compensated by the West, the North Korean regime appeared to be virtually unassailable. Although the stark contrast between the fate of these two regimes is likely to have been duly noted by nuclear aspirants elsewhere, the implications for future proliferation challenges are not necessarily straightforward.

Two important variables are likely to influence how states weigh the appeal of the Libyan model: how advanced their nuclear capabilities are, and the intensity of their demand for nuclear weapons. It is plausible that states with advanced nuclear capabilities are unlikely to be persuaded to abandon their capabilities in return for normalization of their international standing. Many now argue that it is too late to persuade North Korea to abandon its nuclear weapons capability, and a growing number of observers assess that Iran's nuclear program is entering a "zone of immunity" from foreign intervention. What has been the response from these states to the events in Libya in 2011? One notable view, expressed by Iranian leader Ayatollah Khamenei in March 2011, underlines the costs of compromising with regards to nuclear programs in terms of domestic politics and regime stability.[50] While this rhetoric is open to challenge on several grounds, it is a telling indication of the way in which leading Iranian figures characterize the consequences of Libya's negotiated nuclear rollback.

In a second example, on 22 March, North Korean media cited Foreign Ministry spokesmen characterizing lessons from the Libyan popular uprising as follows: "Libya's nuclear dismantlement much touted by the U.S. in the past turned out to be a mode of aggression ... It proved once again the truth of history that peace can be preserved only when one builds up one's own strength."[51]

Elsewhere, the Libyan case has been cited as an example of how nuclear rollback makes states vulnerable to domestic and foreign enemies. In Pakistan, A.Q. Khan stated: "[d]on't overlook the fact that no nuclear-capable country has been subjected to aggression or occupied, or had its borders redrawn. Had Iraq and Libya been nuclear powers, they wouldn't have been destroyed in the way we have seen recently."[52] His sentiments echoed those of Indian officials after the 1991 Gulf War, when an Indian general stated that no country could challenge the United States unless it possessed nuclear weapons. Khan's statement reflected growing concerns in Pakistan about the vulnerability of its nuclear assets after American forces killed Osama bin Laden in Abbottabad two weeks earlier.[53] Khan, of course, had his own axe to grind with the Libyan

regime following the disclosure of the assistance provided by his network to the Libyan program.

Alternative Models?

Within a decade of Libya's negotiated nuclear rollback, the Libyan model appears unlikely to appeal to states with an advanced nuclear infrastructure and with a strong demand for a nuclear deterrent. Instead, the strategy of another state—North Korea—which made rather different choices in the nuclear arena following lengthy negotiations with the United States, may seem more appealing as a model for such states. If the Libyan model is a case of a negotiated nuclear rollback, the North Korean "model" could be seen as a strategy to agree to nuclear restraint, subject to the state in question considering the benefits of this arrangement to outweigh the costs. In the North Korean case, the regime agreed to nuclear restraint in return for substantial assistance from the United States in the 1994 Agreed Framework. In contrast to the Libyan decision to abandon all nuclear research and development, North Korea secretly expanded its enrichment program. Once Pyongyang was no longer satisfied with the terms offered by the United States, the regime withdrew from the Non-Proliferation Treaty (NPT) in 2003 and carried out nuclear tests two years later. Following the 2003 war in Iraq, North Korean officials reiterated the point that the possession of nuclear weapons would have saved the Iraqi regime—a belief that has been bolstered following the 2011 Libyan uprising.[54] In addition to serving as a deterrent against foreign intervention, nuclear weapons function as a key lever in relation to the international community. The domestic survival of the Pyongyang regime rests on the flow of aid from the outside world. Following the acquisition of nuclear weapons, North Korea has received far more aid than countries of similar size and level of economic development.[55]

The contrasts between Libya and North Korea suggest two possible lessons for prospective proliferators. First, the North Korean "model" seems to underscore the value of maintaining a nuclear option while engaging in negotiations concerning restraint or rollback. Retaining the option of rapidly resuming the effort to develop or test nuclear explosives could be interpreted as an increasingly vital component of such negotiations for isolated regimes. This conclusion is unlikely to be missed by the various factions in Tehran. Second, the tendency to reach out to the United States offering nuclear restraint or rollback in return for a grand bargain—as seen in the cases of Iraq, Iran, Libya, and North Korea in the 1990s—could decline in the foreseeable future. States could turn to other emerging powers—notably China—in making decisions about nuclear power versus nuclear weapons. Looking to the future, decisionmaking in latent nuclear weapons states could be informed by more complex, and possibly conflicting, agendas.

Conclusion

Libya's decision to abandon its pursuit of nuclear weapons is likely to remain a unique case of negotiated nuclear rollback for two reasons: the unique characteristics of the Libyan program and the subsequent fate of the Qadhafi regime. This appeared to be the case even before the Arab Spring, due to the Qadhafi regime's vocal dissatisfaction with the compensation received for abandoning the nuclear weapons program.

For states standing at the threshold of a nuclear weapons option, the Libyan model appears anachronistic. Unilateral disarmament—abandoning nuclear latency—may seem irrational to regimes that fear foreign pressure and domestic unrest. For the Iranian regime, for example, the North Korean strategy may seem far more appealing. However, unlike North Korea, Iran lacks a patron to balance the pressure wielded by the United States and Israel. While Russian and Chinese influence can to some degree compensate for American and European efforts to impose strict economic sanctions, the absence of a countervailing patron confines Iran's options. While it seems highly unlikely that a state such as Iran will be tempted to adopt the Libyan model following the 2011 uprising, states with a less advanced nuclear capability could emulate aspects of the Libyan model if they intend to use this capability as a lever. We may be headed for a world with a growing number of latent nuclear weapons states reluctant to surrender their nuclear weapons option. This, ironically, could be the main lesson that states opt to draw from the Libyan case.

<u>Notes:</u>

[1] "Libya: Gaddafi Addresses General People's Congress," *Tripoli Great Jamahiriyah TV* (in Arabic), 2 March 2004, FBIS.

[2] Ayatollah Khamenei, Mashhad Nowruz Address 2011. Source: Vision of the Islamic Republic of Iran Khorasan Provincial TV, Mashhad, 21 March 2011, in BBC Monitoring, 23 March 2011. Accessed from www.iranalmanac.com.

[3] Harald Müller, "The exceptional end to the extraordinary Libyan nuclear quest," in Morten Bremer Mærli and Sverre Lodgaard (Editors), *Nuclear Proliferation and International Security*, (London: Routledge, 2007), p. 73.

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Pakistan's Motivations for Possessing Nuclear Weapons and Challenges to the "Unitary Rational Actor" Model for Managing Deterrence

by George Perkovich, Carnegie Endowment for International Peace

States' motivations for acquiring and retaining nuclear weapons change over time. The threats and interests that lead states to seek nuclear weapons in the first place may subsequently morph. States may then identify other threats and interests to retain the weapons. For example, the United States began the Manhattan Project to meet the threat of an assumed Nazi nuclear-weapon program. Germany was defeated in May 1945, but the U.S. continued the Manhattan Project and three months later dropped two atomic weapons on Japan. After Japan surrendered, the U.S. cited the emerging threat of the Soviet Union to justify continuing its build up of nuclear weapons. After the collapse of the Soviet Union, U.S. strategists and officials have justified retention of a large, sophisticated nuclear arsenal to deter post-Soviet Russia, China, "rogue states," and, more vaguely, nuclear terrorism, and to hedge against unforeseen developments.

Pakistan has been relatively constant in defining the threats that require its possession of a growing nuclear arsenal. Pakistan's President Zulfikar Ali Bhutto initiated a crash program to produce nuclear weapons in January 1972, one month after the country's ignominious defeat in war with India, which resulted in the eastern half of Pakistan becoming the new independent country of Bangladesh. Nuclear weapons would ensure Pakistan that it "never again" would be humiliated and defeated by India. Its existence and territorial integrity could be guaranteed regardless of India's disproportionate size and resource advantages.[1] Bhutto also saw the nuclear weapon program as a means by which he, as a civilian leader, could balance the internal power of the Pakistan Army. The Army had ruled the country since 1958 and was clearly the dominant center of power within it. But if Bhutto could preside over a successful nuclear weapon program and retain authority over the weapons it produced, he could stand on a more equal footing with the Army.

Of course, things change. Bhutto was displaced in a military coup in 1977 and hanged in 1979. The Army took over the state and the nuclear weapon program and has remained the dominant institution in the country. In contrast with India, whose nuclear weapon program has been directed and closely managed by successive prime ministers and a coterie of top civilian scientists, Pakistan's nuclear program has been military in its management, purpose, and ambition. Pakistan's arsenal is dedicated to deterring India from taking advantage of its greater power and resources to invade Pakistan or dictate its policy choices, particularly regarding strategic objectives such as Kashmir and, more recently, Afghanistan. To the extent that India could be tempted to mobilize its superior resources to produce and deploy conventional military power that conceivably could defeat the Pakistani Army, Air Force and Navy in war, Pakistan's military has developed nuclear doctrines and capabilities to wield and use nuclear weapons against India's conventional forces, as well as to retain the capacity to hold India's major population centers at risk. The Pakistani military projects a multi-variant role for its nuclear deterrent, at the tactical, operational, and strategic levels.

In addition to deterring India from threatening Pakistan's territorial integrity and sovereign autonomy, nuclear weapons also are a symbol of national prowess. Indeed, after the nuclear tests of 1998, it was not uncommon to meet Pakistani military officers and high-ranking civilians who proclaimed that nuclear weapons were the country's one unmistakably great achievement. More speculatively, and ironically, given Bhutto's original intention to balance the Army's power internally, the Army's control over the nuclear

weapons program means that if civilians ever gain real predominance over the country's governance and distribution of resources, the Army will have the upper hand in negotiating the terms by which it would hand over real control over the nuclear program and arsenal.

With that brief background, I now discuss two related challenges that Pakistan poses to deterrence stability in South Asia, and to the broader model of deterrence that has predominated international thinking since the 1960s. These challenges are unprecedented and related, and therefore deserve dedicated analysis not only in Pakistan and India, but also in the U.S. One is the spectrum of violence that occurs between India and Pakistan and therefore affects their management of nuclear deterrence. The deterrence model that grew up around the U.S.-Soviet contest concentrated on balancing nuclear doctrines and forces in ways that deterred initiation of nuclear war, including "bolts from the blue," and also the escalation of large-scale conventional war into nuclear war. In South Asia today, by contrast, India and Pakistan must contend with the potential of subconventional aggression (terrorism) to escalate to conventional war and then nuclear war. This broader threat spectrum would be inherently more difficult to manage than the Cold War environment. The difficulty is compounded further by a second challenge, the possibility that Pakistan is not the sort of "unified rational actor" assumed by deterrence models.

Theories of nuclear deterrence rely on the assumption that nuclear competitors are "unitary rational actors." Bruce Bueno de Mesquita and William H. Riker concisely express this assumption: "national decisions of such magnitude as acquiring a nuclear capability or using such a capability in a war are made by a single, dominant leader who is an expected utility maximizer."[2] Among other things, this assumption extrapolates to the nuclear domain the key feature of a modern state as defined by Max Weber, that a state exercises a monopoly on the legitimate use of force in and from its territory.

To the extent that analysts and policymakers have worried about instances when the unitary rational actor model might not pertain, they have tended to focus on the problem of non-rationality. Terrorists are presumed to be undeterrable because they do not conform to the dominant model of rationality. States led by madmen, religious zealots, or neo-Hitlerites also are deemed to violate the model. More broadly, as Lawrence Freedman has noted, the unitary rational actor model does not account for "a whole range of psychological and sociological factors—such as mental quirks, lack of awareness, domestic political pressures, value-conflicts or sheer errors of judgment."[3] Irrationality is a real problem and it may not be limited to terrorists and militant states, as historical examples from the Cold War suggest. But, the first adjective in the "unitary rational actor" model—unitariness—is also highly problematic and less often considered.

When unity exists—defined as the top state leadership's clear control over the instruments of violence emanating from the state—deterrence can operate as it is supposed to. The highest authorities of the state effectively maintain a monopoly on the instruments of violence and the transmission of signals internally as well as to competitors. The problem is when unity does not exist in fact or in the perception of competitors. Disunity produces dangerous confusion and ambiguity that interfere in the management of deterrence. Who is sending signals through violence that is perceived to be emanating from the state and/or its territory? What is being signaled? To whom does the victim of aggression address counter-signals and actions? How does one calculate the interests of the attacker if the putative leaders of the state are not the authors of the perpetrated violence, or are pretending not to be? If states and their leaders are presumed to be rational and to highly value the preservation of their state, but disunity exists and other actors who may not place a high value on preservation of the state are conducting aggression and may be able to gain control over nuclear assets, how does one manage deterrence and escalation processes in such a situation? In this latter scenario, disunity erodes the rationality on which deterrence is predicated.

The outcomes of confusion prompted by violence whose authorization is ambiguous could be either stabilizing or destabilizing. If, for example, authorities in India believe that authority in Pakistan is splintered, New Delhi may choose to refrain from counter-attack, which could reinforce stability and escalation control. On the other hand, they could respond with force, risking unintended escalation. However, because leaders of adversarial states must put any immediate conflict in the context of longer-term

relations, they must think how their action or inaction today could raise or lower the risk of inviting more violence from the adversary in the future. Thus, forbearing counter-attack in one crisis can be seen to weaken deterrence of future violence. With each additional crisis that is not met with a counter-attack, the pressure mounts to act more forcefully the next time in order to restore deterrence.

Pakistan illustrates the unity problem. Early in its history, Pakistan's military leadership saw the potential value in mobilizing "irregular" forces to augment the regular Army in pursuing the state's objectives vis-à-vis India. These objectives most famously have included wresting the Kashmir Valley from Indian control, and/or raising the costs of India's ongoing occupation of the Valley and diverting Indian forces to the occupation. War initiated by Pakistan in 1947 was said by Pakistani authorities to be carried out by irregulars outside of state control. In 1971, the Pakistan Army mobilized proxy forces in East Pakistan to combat the Bengali separatist insurgency, which was backed by India.[4] These proxies, who were mostly Urdu-speaking Biharis and activists from the Jamaat-e-Islami party, massacred large numbers of Bengalis. In the 1980s, Pakistan and the United States (with help from Saudi Arabia and others) famously mobilized irregular "freedom fighters" to drive the Soviet Army from Afghanistan. After that successful mission, the Pakistani military and intelligence services shifted these forces to Kashmir, exploiting the opening created by India's rigging of state elections there in 1989. Pakistan nurtured and abetted the growth of jihadi organizations to carry on the struggle with India. Over time, these groups proliferated. There is room to debate the degree to which Pakistani authorities controlled the growth and operations of these groups, but through the present era these authorities have not stifled them decisively.

By instructive comparison, the United States and the Soviet Union during the Cold War used proxies in violent struggles in the Third World but did not extend violence directly into each other's homeland. There are several reasons for this, but one of them was recognition of the danger that attacks in the Soviet or U.S. homeland could escalate to nuclear war. To preserve nuclear deterrence and avoid nuclear war, the two antagonists eschewed the projection of violence into each other's territory. Noting this form of restraint does not imply that the U.S. or the Soviet Union were acting from virtue; their proxy wars killed many more people than would have been killed if they had held back. Rather, the point is that the projection of violent actors by Pakistan into India or vice versa poses unprecedented risks of deterrence instability.

The unity problem posed by Pakistan has not eased since it and India made their nuclear deterrence relationship overt when they tested nuclear weapons in 1998. In early May 1999, the Pakistani military, directed by Chief of Staff General Pervez Musharraf, instigated infiltration by Army forces dressed as civilians into high points of the Kargil region of Kashmir which were then under nominal Indian control. After India belatedly learned of this infiltration, what became known as the Kargil conflict ensued. Pakistan at first claimed that the insurgents were aggrieved local freedom fighters, not under Army control. As the conflict gained steam and insurgents were killed, Indian forces discovered identity cards and other evidence that demonstrated that the fighters were Pakistani servicemen. On 31 May, Pakistani Foreign Secretary Shamshad Ahmed said that escalation could lead to use of "any weapon" in the Pakistani arsenal. The Pakistani Senate declared that "the purpose of developing weapons becomes meaningless if they are not used when they are needed." The role of nuclear threats and deterrence in the conflict remains subject to scholarly debate, and it is possible that the nuclear shadow inspired caution and helped prevent escalation of the conflict. However, this benign effect would be difficult to sustain if similar forms of aggression were repeated because India would be pressed to seek options to deter such repetition.

That conflict ended in weeks. India reported that 527 of its servicemen had been killed and 1,363 others wounded. Pakistani sources differ on casualty figures, ranging from 423 killed to 3,000. Pakistan was compelled by international opinion and diplomatic pressure, spearheaded by the United States, to acknowledge its fault and to accept an end to the conflict without gain. In the following years, Indian military leaders, strategic analysts, and politicians concluded that Pakistan now dangerously believed that nuclear deterrence could give it a shield behind which to conduct low-intensity—sub-conventional—war against India, believing that India would not escalate in retaliation for fear of triggering nuclear war that would not be worth the loss of small chunks of disputed territory in Kashmir. This is an example of the stability/instability paradox conceptualized by Jack Snyder decades ago. Out of frustration, and to deter Pakistan from

waging aggression at any level on the threat spectrum, Indian security analysts and military officers struggled to develop doctrine and capabilities to fight Pakistan at all levels of violence while dominating the escalatory process. Of course, this is easier said than done.

Two years after the Kargil conflict, on 1 October 2001, terrorists linked to Pakistan attacked the Jammu and Kashmir legislative assembly complex in Srinigar, killing 38 people. Two months later, on 13 December, a handful of militants attacked the Indian parliament building in New Delhi. India asserted that the attackers were linked to Pakistan, in particular the Jaish-e-Mohammed and Lashkar-e-Taiba organizations which were known to recruit and train in Pakistan. Pakistani authorities denied any role in the attacks. There was and is much evidence to indicate that these groups had grown up with the support of Pakistan's Inter-Service Intelligence (ISI), and even if Pakistani authorities disputed the ISI's direct control over these groups, it was clear that the authorities did not act decisively to demobilize them.

Following the two attacks, India mobilized massive forces toward the Indo-Pakistan border. This force eventually totaled 800,000 troops, backed by naval deployments to potentially conduct a blockade of Pakistan. A stand-off ensued for more than six months, with real concerns in the region and internationally that major warfare could erupt. Eventually, with the assistance of concerted behind-the-scenes diplomacy by the U.S. and others, India stood down.

By 2004, India and Pakistan had undertaken back-channel negotiations with each other to temper their relationship and seek a framework for ending the Kashmir conflict. However, this promising diplomacy was not brought to completion due to internal developments in both countries.

In November 2008, another major terrorist attack was conducted by agents of Laskhar-e-Taiba, this time against the Taj Mahal hotel and other facilities in Mumbai. The attacks killed 164 people and wounded more than 300. Perhaps mindful of the Kargil and 2001-02 crises, the two states, again pressed by the U.S., largely avoided repeating the cycle of recriminations and mobilization of large conventional forces that had occurred before. Nevertheless, there was at least one "scare" when Pakistani President Asif Ali Zardari received a phone call from a man claiming to be Indian Foreign Minister Pranab Mukherjee, warning that India would launch a war on Pakistan the next day. Such a threat would naturally prompt the Pakistani military to increase its readiness, if not to launch pre-emptive operations. As a recent report by the Henry L. Stimson Center documents, American officials learned of the alleged call and ascertained that it was fraudulent, that Mukherjee had not placed it. The U.S. was thus able to calm the situation.

The deterrence implications of subconventional aggression and ambiguous state control over its perpetrators are profound and have not been adequately addressed by Pakistan, by India, nor by international strategic analysts. The absence of state control over all organized perpetrators of cross-border violence would shake the morale, identity, and standing of the Pakistani Army if its leaders or the public were to recognize that this is the reality suggested by the use of force by Pakistani citizens or agents against India when Pakistani authorities deny that these actors or actions have been ordered by the state. In some ways, the operation by ostensibly uncontrolled violent groups acting from Pakistani territory is a violation of Pakistani sovereignty, much like Osama bin Laden's long presence in Pakistan was. In the latter case, the Pakistani security establishment chose to focus on the United States' violation of Pakistani sovereignty in raiding Osama's compound, but in subsequent debates increasing numbers of Pakistanis acknowledge that Bin Laden's presence also was an embarrassment.

Pakistani security officials naturally are loathe to admit this implication out of pride and fear that the military's standing and competence would be called into question. Yet, the risks that subconventional uses of force could escalate to conventional and perhaps nuclear war deny Pakistanis, Indians, and the international community the luxury of acting as if the disunity of the chain of command is not a fundamental strategic problem. The lack of coherence of authority in Pakistan—and of the state's monopoly on the legitimate use of force—is a fundamental strategic problem.

The disunity problem is more worrisome if in fact Pakistani authorities do exert influence or control over organizations that have conducted terrorist operations in India—and elsewhere—and are merely denying it

for tactical reasons. In this case, Pakistani authorities can be treated fairly as the authors of the signals that are sent by these actors in the military competition with India. India can then seek to manage pre-conflict and intra-conflict deterrence according to the traditional model, while still facing severe challenges of escalation control. The challenge certainly is complicated by the ambiguity that Pakistan would be seeking to create by denying responsibility for future subconventional operations; deterrence stability would be weaker than in "normal" scenarios. But if India were correct in acting on the belief that Pakistani authorities were culpable for such operations, the burden of having stepped first on the escalation ladder would be on Pakistan, and the defender's advantage in deterrence would accrue to India.

The graver problem arises if and when Pakistani leaders are not in control of the perpetrators of violence emanating from Pakistani territory. In that case, when faced with an attack, India would conclude that deterrence had failed or was inapplicable, but that if India did not retaliate it would encourage further attacks and do nothing to compel Pakistani leaders to assert control over violent actors. But if India did retaliate, Pakistani leaders, feeling that they had not authorized aggression against India, would feel that India was initiating war. It is widely recognized that victims of aggression—defenders—are more highly motivated to retaliate because they have suffered an injustice. Victims of aggression tend to have a higher commitment to defend than perpetrators do to escalate, and outside powers tend to side with defenders. The combination of greater commitment and international support gives defenders' deterrent threats weight. Knowing this, Pakistani defenders would feel that their threats to escalate in response to an Indian attack would be more credible than if they had been the initiators of the conflict. Indians, of course, would feel that this logic rewards Pakistani authorities for not exercising a monopoly on the legitimate use of force emanating from their territory, precisely the situation they want Pakistan to correct.

Perhaps because the classical model of nuclear deterrence was developed in the context of the bipolar U.S.-Soviet competition in which neither state deployed proxies to commit terrorist or sub-conventional attacks on the other's homeland, the model is relatively silent on how such low-intensity aggression could or should be deterred. The literature's silence on this problem, and Pakistan's self-interested belief that nuclear deterrence should be applied only to the conventional-nuclear threat spectrum, further distract analysts and policy-makers from wrestling with the problems that sub-conventional violence poses to deterrence stability. Yet, as psychologist Steven Pinker has elaborated in his masterly book, *The Better Angels of Our Nature*, "the necessity of vengeful punishment as a deterrent…has been demonstrated repeatedly in mathematical and computer models of the evolution of cooperation."[5] Retaliation "is necessary for cooperation, for preventing a nice guy from being exploited." If one does not retaliate, it may invite further aggression. Of course, if competitors merely engage in a cycle of action and retaliation, both end up losing over time. Survival and betterment require moves to break the cycle. The victim of aggression may retaliate and at the same time signal an interest in returning to cooperation in which both sides refrain from further violence. Psychological experiments and computer modeling indicate that the cycle can be broken by "random" grants of forgiveness of an aggression and an invitation to cooperate. To make this strategy work over time, of course, the actor who has been forgiven a transgression should display contrition for the transgressive act. Otherwise, the forgiver can be perceived embarrassingly as a sucker, which can trigger powerful emotions of vengefulness.

This dynamic has been on display in the post-Mumbai relationship between India and Pakistan. India suffered the attack, but Prime Minister Manmohau Singh resisted pressures to retaliate and, in essence, forgave Pakistan in order to avoid an escalatory cycle of retaliation. Pakistani leaders, half-heartedly and ambiguously, signaled regret for the terrorist attacks—while denying direct responsibility for them. The opportunity has been created for cooperation to stabilize the situation. No matter how justified Pakistanis might feel the acts of jihadis operating in India are, and how much they feel India should "get over it," they would be wise to recognize that India's interests in reinforcing deterrence, in not looking like suckers, and in satisfying emotional impulses for revenge make the situation quite precarious in the event of another terrorist attack emanating from Pakistan.

It is beyond the scope of this paper to specify how Pakistan, India and interested outside parties could or should redress the challenges to deterrence stability discussed above. The safest way to defuse this

unstable competition and reinforce deterrence stability, of course, is for Pakistan to make unambiguous efforts to restore the monopoly on the legitimate use of force that is central to modern statehood. The onus for this lies within Pakistan, of course, but India and the U.S. would be wise to concentrate their policy formulation and execution with this in mind. More broadly, policy-makers and analysts interested in nuclear deterrence would be wise to recognize that the unitary rational actor model that has for so long shaped thinking and policy may not always apply. Pakistan is a case that indicates some of the implications of this observation. Given that deterrence in nuclearized environments will be an ongoing challenge, it behooves analytical communities in the U.S. and elsewhere to treat the Indo-Pakistan deterrence challenge as a laboratory for diagnosis and development of potential remediating approaches.

Notes:

[1] The fixation on the threat that India could weaken or dismember Pakistan underestimates the reality that the East Pakistan crisis stemmed from West Pakistan's maltreatment of East Pakistan. The gravest threats to Pakistani unity today also are caused by internal injustices and misgovernance, including in Balochistan, which some in Pakistan fear could go the way of East Pakistan.

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[4] Ahmed Rashid, *Pakistan on the Brink* (New York: Viking, 2012), p. 47.

[5] Steven Pinker, *The Better Angels of Our Nature* (New York: Viking, 2011), p. 532.

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To Join or Not to Join the Nuclear Club: How Nation Think about Nuclear Weapons: Two Middle East Case Studies

Relinquished Nuclear Powers: A Case Study of Libya
Målfrid Braut-Hegghammer

Pakistan's Motivations for Possessing Nuclear Weapons and Challenges to the "Unitary Rational Actor" Model for Managing Deterrence
George Perkovich

The current debate revolving around Iranian and North Korean nuclear programs highlights the need to foster a more complete understanding of the multidimensionality of states' decision-making process on whether to acquire and retain nuclear weapons. Case studies from the greater Middle East region offer the opportunity to examine the factors such states take into consideration when determining which path to follow. Such factors include threat perceptions, the interpretation of lessons learned from the experience of other countries, the calculus of perceived costs and benefits for national security, the envisioned modes of employment of nuclear weapons (political and military), and the legal/ethical considerations—all from the perspective of regional actors. Furthermore, a country's specific political decisionmaking process and its institutions are also key factors in understanding how actual and potential regional nuclear powers make decisions on the nuclear issue. As such, an understanding of the motivations and of the perceived utility of nuclear weapons from the perspective of recent and potential nuclear powers can help senior leaders craft more effective U.S. and multilateral nonproliferation, counterproliferation, and deterrence strategies. The two papers included in this Monograph offer insights into the differing paths taken by two countries in the greater Middle East region—Libya and Pakistan—with the former relinquishing its nuclear program and the latter acquiring a military nuclear capability.

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