

# **The Relevance of Historical Experience to Current Nuclear Proliferation Challenges**

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## **Abstract**

This paper examines whether there is strong historical evidence for the success or failure of two alternative strategies used for controlling nuclear proliferation. The first strategy incorporates the nuclear non-proliferation regime and the norms attributed to it. The second strategy embraces a protection and prevention approach. In this paper, both strategies are evaluated against historic nuclear non-proliferation successes and failures. This paper assesses which strategy was most applicable in order to see what lessons can be learnt from the last forty years of nuclear proliferation. The paper concludes that while the nuclear non-proliferation regime, specifically the Nuclear Non-Proliferation Treaty (NPT), has been successful in controlling nuclear proliferation, historical evidence indicates that the protection offered by a U.S. security guarantee was the most effective measure.

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As we enter the fourth decade of the nuclear non-proliferation regime, the threat of more countries proliferating is still with us. An assessment of the last forty years of nuclear proliferation shows that there are lessons to be learnt in order to confront today's nuclear challenges. How individual countries can be encouraged to forgo nuclear weapons depends to an extent on domestic and international circumstances, but this paper concludes that the importance of U.S. security guarantees is underappreciated in curtailing proliferation. While the Nuclear Non-Proliferation Treaty (NPT) has been successful, historical evidence indicates that the protection offered by a U.S. security guarantee was the most effective measure in controlling nuclear proliferation.

Over the years, two dominant strategies have emerged in curtailing nuclear weapons proliferation. These are the (1) nuclear non-proliferation regime and (2) protection and prevention strategy. This paper tries to determine which of these strategies was the most effective. History has shown that both of these strategies have been successful. Many might expect the nuclear non-proliferation regime to be the most effective strategy due to the NPT (the legally binding treaty that prohibits the spread of nuclear weapons) and its multilateral focus and normative power. However, historical experience has shown that the regime was not the primary motivating factor for some states to give up their nuclear weapons aspirations. Once these states were confident of their security situation, which in most cases was due to the U.S. security guarantee, they ratified the NPT and became involved in the nuclear non-proliferation regime. In other words, both strategies often worked together, but the main driver in controlling nuclear proliferation in many cases was the extension of a U.S. security guarantee. The purpose of this paper is three-fold: First, I present the theories behind both strategies; second, I analyze historical case studies of both successes and failures in non-proliferation; and, finally, I outline the relevance of historical experience to current proliferation challenges. These strategies are still relevant in the twenty-first century, and the lesson to be learnt for today's nuclear proliferation challenges is that a credible U.S. security guarantee can be effective in getting states to forswear their nuclear weapons ambitions.

## **Two Dominant Strategies**

The two dominant approaches used in curtailing nuclear weapons proliferation can be called the “nuclear non-proliferation regime” and the “Protect and Prevent”

strategy. Although they share the same purpose of curbing nuclear proliferation, they are different in both theory and practice.

The thinking behind the nuclear non-proliferation regime strategy can be found in liberal institutionalism. In international relations theory, liberal institutionalism posits that international cooperation is facilitated through regimes and international norms and rules. The nuclear non-proliferation regime relies on soft power, where values and ideas are commonly shared. It is multilateral, has at its centerpiece the NPT (a treaty that establishes norms and supply-side controls), warrants rules and inspections through the International Atomic Energy Agency (IAEA), and is bound in international law and obligations. Rules and norms are established through the NPT, the IAEA, and nuclear weapon free zones. The NPT was signed in 1968, and came into force in 1970. Today, there are 189 signatories to the treaty. In other words, every country in the world, with the exception of India, Israel, Pakistan, and North Korea, has signed the treaty.<sup>2</sup> The IAEA administers the NPT, and its role is to ensure that NPT signatories are complying with the treaty. Nuclear weapon free zones are areas throughout the world that are protected against the use, storage, and testing of nuclear weapons. Table 1.1 lists the seven nuclear weapon free zones that are in existence today.

**Table 1**  
**The Seven Nuclear Weapon Free Zones**

<b>Nuclear Weapon Free Zone (Dates when entered into force)</b>	<b>Area It Covers</b>
Antarctic Treaty (23 June 1961)	Antarctica
Tlatelolco Treaty (25 April 1969)	South America, Latin America, and the Caribbean
Rarotonga Treaty (11 December 1986)	The South Pacific (i.e., Australia, the Cook Islands, Fiji, Kiribati, Nauru, New Zealand, Nieu, Papua New Guinea, the Solomon Islands, Tonga, Tuvalu, Vanuatu, and Western Samoa)
Bangkok Treaty (28 March 1997)	South East Asia (i.e., Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam)

<sup>2</sup> Although North Korea was a signatory to the NPT since 1985, it withdrew from the treaty in 2003.

Mongolia (28 February 2000)	Mongolia (note that this is the first instance of a single state declaring its sovereign territory nuclear free)
Semipalatinsk Treaty (21 March 2009)	Central Asia (i.e., Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan)
Pelindaba Treaty (15 July 2009)	Africa (54 independent African states)

Within the regime, nuclear technology supplies are controlled through a number of multilateral export control agreements, including the Nuclear Suppliers Group (1974), the Zangger Committee (1971–1974), and the Wassenaar Arrangement (1996). These agreements make it extremely difficult for countries to acquire nuclear weapons technology, and as such, raised the normative bar set by the nuclear non-proliferation regime.

Recently, the regime has evolved to address twenty-first century concerns, such as reducing the risks of nuclear terrorism. These agreements appeared after the attacks of September 11, 2001, and they deal with the issue of weapons of mass destruction (WMDs) rather than just nuclear proliferation alone. They include the G8 Global Partnership Against the Spread of WMDs, the Proliferation Security Initiative (PSI), UN Security Council Resolution 1540, and the Global Initiative to Combat Nuclear Terrorism (GICNT). The G8 Global Partnership was introduced in June 2002 as an initiative to prevent terrorists from acquiring or developing nuclear, chemical, radiological, and biological weapons; missiles; and related materials, equipment and technology. The PSI was launched in May 2003 by President George W. Bush as a global initiative aimed at stopping shipments of WMD, their delivery systems, and related materials worldwide. UN Security Council Resolution 1540 was introduced in April 2004 and promotes more effective laws and enforcement measures against the proliferation of WMDs. GICNT was launched in July 2006 by President Bush and Russian President Vladimir Putin to expand and accelerate the development of partnership capacity to combat the global threat of nuclear terrorism. Arguably, these latest additions do not fit within the regime because they are not

legally binding arrangements. However, they do facilitate cooperation between self-interested actors, a key component of regimes.<sup>3</sup>

Finally, the non-proliferation regime is a source of enforcement and punishment. There are routine inspections by the IAEA in which non-nuclear-weapons states agree to have their nuclear activities monitored by the IAEA. Failure to comply with the NPT can result in punishment by the United Nations Security Council (UNSC). The current Iranian nuclear crisis is a case in point. Since the National Council of Resistance of Iran (NCRI), an exiled Iranian opposition group, held a press conference in August 2002 telling the world about Iran's secret nuclear fuel cycle program, Iran has been suspected of pursuing a nuclear weapons program. Since 2006, the UNSC has passed five resolutions on the Iran nuclear issue, imposing legally binding political and economic sanctions on Iran's trade in sensitive nuclear materials and technology for the proliferation risks presented by its nuclear program and its failure to suspend its proliferation sensitive nuclear activities.<sup>4</sup>

Over the years, the normative aspect of the non-proliferation regime has become stronger and stronger. Many states never pursued a nuclear weapons program because the norm associated with nuclear weapons proliferation became extremely powerful. Of the 189 NPT signatories, only five are nuclear weapon states (the United States, Russia, the United Kingdom, France, and China).

"Protect and Prevent" is explained by realism theory, which posits that states behave in a way that maximizes power, thereby ensuring their ultimate security and survival. From the inception of the NPT, "Protect and Prevent" has been the chosen strategy of the United States: The United States has protected its allies through bilateral treaties focusing on security pacts and providing security guarantees, and has persuaded these allies not to seek nuclear weapons (two examples are Taiwan and South Korea). The prevention component of this strategy concerns any would-be proliferators, and until the current Bush administration came to power, the preferred method of prevention was through U.S.-imposed sanctions. Historically, the "protect" element of this strategy was very effective, and in most cases, it worked in tandem with the non-proliferation regime strategy. As soon as countries were assured

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<sup>3</sup> Stephen D. Krasner defines regimes as "principles, norms, rules, and decision-making procedures." "Structural Causes and Regime Consequences: Regimes as Intervening Variables," *International Organization* 36 (Spring 1982): 185–205.

<sup>4</sup> The UNSC Resolutions are: 1696 (July 2006), 1737 (December 2006), 1747 (March 2007), 1803 (March 2008), 1835 (September 2008).

of their security situation through a credible U.S. security guarantee, they would sign and ratify the NPT (often with pressure from the United States) and become involved in the nuclear non-proliferation regime. It can therefore be argued that the “protect” component served as a precursor to the non-proliferation regime.

However, with the advent of the current Bush administration, the “prevention” component of the “Protect and Prevent” strategy took priority. The 2002 Nuclear Posture Review (NPR) and the 2002 National Security Strategy (NSS) demonstrated that the Bush administration’s tools for preventing future proliferation would be missile defenses, preemption/preventive war, and regime change.<sup>5</sup> The NPR offered to assure allies and friends (through protection measures afforded by security guarantees), deter aggressors (through deterrence, sanctions, and defense), dissuade competitors, and defeat enemies.<sup>6</sup> The invasion of Iraq in 2003 demonstrates the twenty-first century model of “Protect and Prevent” as articulated in the NPR and NSS. By launching a preventive war on Iraq, the United States believed it would be protecting its allies by preventing Saddam Hussein from getting nuclear weapons.

## **Lessons Learned From Successful Non-Proliferation History**

A review of the past forty years of nuclear non-proliferation indicates that the U.S. security guarantee was the most effective strategy in countering further nuclear proliferation. These guarantees provided the foundation that allowed the non-proliferation regime to work. After receiving a U.S. security guarantee, each state ratified the NPT and consequently became involved in the nuclear non-proliferation regime. Without this guarantee, and without subsequent ratification of the NPT, the norm against nuclear weapons proliferation might not have been as strong as it is today. Similarly, states that did proliferate were not offered security guarantees, which further motivated them to become nuclear weapon states.

For the purpose of this analysis, nuclear non-proliferation success is defined as no nuclear weapon states beyond the permanent five. This can be operationalized

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<sup>5</sup> See the U.S. Department of Defense, “Nuclear Posture Review” and “National Security Strategy of the United States of America,” both released in 2002. Also see the writings of Colin S. Gray and Keith B. Payne.

<sup>6</sup> U.S. Department of Defense, “Nuclear Posture Review” (2002).

through the following four scenarios. First, a country has a technological or potential nuclear weapons capability, but it does not intend to acquire a nuclear weapons program. Second, a country has a technological or potential nuclear weapons capability, and intends to acquire a nuclear weapons program, but later realizes it is not in its national security interest to pursue the bomb. Third, a country wants a nuclear weapon, but does not have a technological or potential capability; it starts a nuclear weapons program, but then either decides against it or is forced to abandon it. Fourth, a country relinquishes nuclear weapons it already possesses. Table 1.2 presents the criteria for success against the countries examined in this research.

These four categories deal specifically with states that either had a technological or potential nuclear weapons capability or had the desire to pursue a nuclear weapons program. An obvious caveat is that this research does not incorporate the vast majority of states that signed the NPT. The fact that 189 countries are party to the treaty is an obvious indicator of success. However, of the 189 signatories, most of these states never tried pursuing a nuclear weapons program (either because they did not have the capabilities or the desire). The focus is on the four measures listed above as it is important to look at states that had the capability and/or the desire to acquire a nuclear weapons program in order to assess which strategy played a motivating role for these states in not pursuing a nuclear weapons program.

While there are different conclusions to be reached from each of the four categories, it is clear that the U.S. security guarantee was a fundamental component in providing the power behind the non-proliferation norm. Iran is today's current proliferation challenge – a state with a technological or potential nuclear weapon capability and quite possibly the intent to acquire a nuclear weapons program. So far, it has yet to test a nuclear weapon, unlike North Korea. Analyzing the different categories and assessing which of the two strategies worked best under certain conditions can and should be applied to Iran.

Table 2

**Definitions of Nuclear Non-Proliferation Success**

<b>Criteria for Success</b>	<b>Countries Examined</b>
Country has a technological or potential nuclear weapons capability, but no intention of acquiring a nuclear weapons program	<ul style="list-style-type: none"> <li>• Canada</li> <li>• Germany</li> <li>• Italy</li> <li>• Japan</li> <li>• Netherlands</li> <li>• Norway</li> <li>• Spain</li> </ul>
Country has a technological or potential nuclear weapons capability, and intends to acquire a nuclear weapons program, but later realizes it is not in its national security interest to pursue the bomb	<ul style="list-style-type: none"> <li>• Sweden</li> <li>• Switzerland</li> <li>• Australia</li> <li>• South Korea</li> <li>• Taiwan</li> </ul>
Country wants a nuclear weapon but does not have a technological or potential nuclear weapons capability; it starts a nuclear weapons program, but then decides against it	<ul style="list-style-type: none"> <li>• Argentina</li> <li>• Brazil</li> <li>• Libya</li> <li>• Iraq</li> </ul>
Country relinquishes nuclear weapons that it already possesses	<ul style="list-style-type: none"> <li>• South Africa</li> <li>• Belarus</li> <li>• Kazakhstan</li> <li>• Ukraine</li> </ul>

*Technological/Potential Nuclear Weapons Capability But No Intention of Acquiring a Nuclear Weapon*

In the first category, countries with a technological or potential nuclear weapons capability but no intention of acquiring a nuclear weapons program were analyzed. Canada, Germany, Italy, Japan, the Netherlands, Norway, and Spain are some notable examples of this group. By 1968, these countries had fairly advanced civilian nuclear technology and were using commercial nuclear power reactors to generate electricity. In spite of the technological or potential nuclear weapon capability, these countries remained non-nuclear weapon states. Comparing the non-proliferation regime strategy with the “Protect and Prevent” strategy, it is clear that the key element in convincing these countries to remain non-nuclear weapon states was the U.S. security guarantee, rather than the non-proliferation norm. Even though by 1968 all these countries were U.S. allies, they still needed the reassurance of a U.S.



security guarantee that allowed them to feel confident of their security situation. Japan was protected under the U.S. nuclear umbrella through the 1960 Treaty of Mutual Cooperation and Security, while all the other countries are NATO members.<sup>7</sup> After the guarantee was in place and the countries felt secure and protected, these states proceeded to ratify the NPT. One might expect that with the extension of a U.S. security guarantee, the United States would exert pressure on these countries to sign and ratify the NPT. However, this was not the case. With the exception of Canada, Norway, and Spain, all the countries in this group ratified the NPT a full three to seven years after signing it, as shown in Table 1.3 below.<sup>8</sup>

**Table 3**  
**Dates the NPT Was Signed and Ratified**

	Canada	Germany	Italy	Japan	Netherlands	Norway	Spain
NPT signed	1968	1969	1969	1970	1968	1968	N/A
NPT ratified	1969	1975	1975	1976	1975	1969	1987
Number of years difference	0.5	6	6	6	7	c. 0.5	N/A

*Technological/Potential Nuclear Weapons Capability with Intention of Acquiring a Nuclear Weapons Program, But Not for Long*

In the second category, countries with a technological or potential nuclear weapons capability that intended to acquire a nuclear weapons program, but later realized it was not in their national security interests to pursue the bomb, were analyzed. Sweden, Switzerland, Australia, South Korea, and Taiwan are the prominent examples of this group. Within this group, both the strategies of the nonproliferation regime and “Protect and Prevent” were successful in maintaining these countries’ non-nuclear weapon status. However, the two strategies did not work together, or at the same time. The normative component of the non-proliferation regime alone triumphed in the Swedish, Swiss, and Australian examples. Yet, for South Korea and Taiwan, the “Protect and Prevent” strategy was more effective.

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<sup>7</sup> Spain became a NATO member in 1982.

<sup>8</sup> Germany and Italy signed the NPT 1969 and ratified it in 1975; Japan signed in 1970 and ratified in 1975; Norway and Canada signed in 1968 and ratified in 1969; Spain never signed the NPT, but ratified it in 1987.

Throughout the late 1950s and early 1960s, there was much debate in both Sweden and Switzerland over the issue of a nuclear weapons program as both states considered pursuing one.<sup>9</sup> Although not part of NATO, there was an implicit understanding that Sweden and Switzerland would be protected under America's nuclear umbrella.<sup>10</sup> Sweden was technically capable of building nuclear weapons by 1957, and Switzerland was technically capable of building nuclear weapons by 1965.<sup>11</sup> By 1968, Sweden had built up a strong nuclear industry, including indigenous light-water reactors, and had one of the world's largest sources of uranium.<sup>12</sup> Throughout the late 1950s and 1960s, Switzerland engaged in nuclear fission research, and had acquired uranium and plutonium as part of its nuclear development.<sup>13</sup> However, both states had decided against pursuing a nuclear weapons program before the existence of the NPT. Both signed the treaty in 1968, with Sweden ratifying it two years later. When Switzerland signed the treaty in 1968, it did so with the following declaration:

On the occasion of the signature today of the Treaty for the Non-Proliferation of Nuclear Weapons, the Swiss Government expressly declare that they will not submit the Treaty to Parliament for its approval until such time as they consider that a sufficient measure of universal support has been obtained by the Treaty.<sup>14</sup>

Therefore, for Switzerland, the normative component of the non-proliferation regime was not immediately powerful. The normative element of the regime had to evolve over time before the Swiss were willing to engage within the regime. They waited until 1977, when more states had ratified the treaty, before they ratified it. By the time Switzerland ratified the NPT in March 1977, 97 other countries had also signed and ratified the NPT. Nevertheless, even though both states decided against pursuing

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<sup>9</sup> For more details on Sweden's domestic debate, see Jerome Garris, "Sweden's Debate on the Proliferation of Nuclear Weapons," *Cooperation and Conflict* VIII (1973): 189–208.

<sup>10</sup> Paul M. Cole, *Sweden Without the Bomb: The Conduct of a Nuclear-Capable Nation Without Nuclear Weapons* (Santa Monica, Calif.: RAND Corporation, 1994); Mitchell Reiss and Robert S. Litwak, eds., *Nuclear Proliferation After the Cold War* (Washington, D.C.: Woodrow Wilson Center Press, 1994): 342.

<sup>11</sup> Stephen M. Meyer, *The Dynamics of Nuclear Proliferation* (Chicago: The University of Chicago Press, 1984): 41.

<sup>12</sup> T. V. Paul, *Power Versus Prudence. Why Nations Forgo Nuclear Weapons* (Montreal: McGill-Queen's University Press, 2000):85; Cole, *Sweden Without the Bomb*, 29.

<sup>13</sup> *Ibid.*, 91.

<sup>14</sup> See United Nations, "Multilateral Arms Regulation and Disarmament Agreements," undated. As of September 2008, <<http://disarmament.un.org/TreatyStatus.nsf>>

nuclear weapons before 1968, their signatures on the treaty confirmed their non-nuclear status.

The Australian example differs from the Swedish and Swiss examples because up until the Australian ratification of the NPT in 1973, Australia was seriously considering a nuclear weapons program. Australia first considered a nuclear weapons option in 1956.<sup>15</sup> Australia was capable of producing an atomic bomb because Australian scientists had collaborated in the British nuclear project. Furthermore, between 1955 and 1963, Australia produced about 6,000 tonnes of uranium oxide, which was used for nuclear weapons by the United Kingdom and the United States.<sup>16</sup> Even though Australia had a military alliance with the United States through the 1951 ANZUS Treaty, it was still interested in pursuing a nuclear weapons program. From 1956 to the early 1960s, Australia was interested in procuring nuclear weapons from external sources, notably the United Kingdom. However, from 1964 to 1972, Australia focused on how it could develop the bomb indigenously.<sup>17</sup> Within this period, three events dramatically reduced Australia's sense of security, and therefore increased its desire to acquire a nuclear weapons program. These were, first, the Chinese nuclear test explosion of 1964; second, the United Kingdom's decision to withdraw its troops from the Pacific Ocean; and third, U.S. disengagement from Vietnam.<sup>18</sup> These events coincided with the arrival of Prime Minister John Gorton in 1967, who supported nuclear weapons for Australia. Australia signed the NPT in 1970, but Prime Minister Gorton explained that, "we wish to make it plain that our decision to sign is not to be taken in any way as a decision to ratify the treaty, and of course the treaty is not binding on us until it is ratified."<sup>19</sup>

Australia's three-year delay in ratification was therefore an indication that Australia was keeping its nuclear options open.<sup>20</sup> However, a change in the political leadership of the country in 1972 led to the definitively anti-nuclear weapons, pro-NPT Labor Party coming to power, culminating in the Australian ratification of the NPT and an end to the desire to produce an Australian atom bomb. As in Sweden

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<sup>15</sup> Jim Walsh, "Surprise Down Under: The Secret History of Australia's Nuclear Ambitions," *The Nonproliferation Review* (Fall 1997): 3.

<sup>16</sup> Paul, *Power Versus Prudence*, 73.

<sup>17</sup> Walsh, *Surprise Down Under*, 9.

<sup>18</sup> Ibid.

<sup>19</sup> Ibid., 12.

<sup>20</sup> Paul, *Power Versus Prudence*, 76.

and Switzerland, the normative component of the non-proliferation regime proved to be more effective for Australia compared with a U.S. security guarantee.

Paradoxically, the nuclear non-proliferation regime did not affect South Korea and Taiwan in deciding against a nuclear weapons program. With these two countries, both elements of the “Protect and Prevent” strategy were used. On one hand, the United States offered security guarantees to both nations; on the other, the United States threatened sanctions if the two states did not shelve their nuclear weapons ambitions. South Korea, fearing a conventional military threat posed by North Korea, had begun a nuclear weapons program in the early 1970s.<sup>21</sup> Although South Korea did not have a nuclear infrastructure, it had industrial and technical capabilities.<sup>22</sup> In early 1974, South Korea began negotiating with Canada to buy a heavy-water CANDU reactor, and with France to buy a reprocessing facility that would separate out the plutonium from the reactor.<sup>23</sup> The combination would have allowed South Korea to produce nuclear weapons-related material. The United States was aware of South Korea’s interest, and threatened sanctions if South Korea did not ratify the NPT.<sup>24</sup> Once South Korea had ratified the NPT in 1975, seven years after signing it, it canceled its nuclear weapons project. The U.S. threat of sanctions, coupled with a bilateral security alliance—including the stationing of U.S. troops in South Korea and protection under the U.S. nuclear umbrella—were important factors considered during South Korea’s decision-making process regarding nuclear weapons acquisition. Similar to South Korea’s fear of North Korea, Taiwan felt threatened by a nuclear China, and as such embarked on a secret plutonium reprocessing activity in the mid 1970s.<sup>25</sup> U.S. pressure and the extension of

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<sup>21</sup> Meyer, *The Dynamics of Nuclear Proliferation*, 125; Lewis A. Dunn, *Containing Nuclear Proliferation* (London: The International Institute for Strategic Studies, Adelphi Paper 263), Winter 1991, 10. It should be noted that during this period, the U.S. reduced its forces on the Korean peninsula during this period, which may have reduced South Korea’s perception of its security.

<sup>22</sup> Meyer, *The Dynamics of Nuclear Proliferation*, 125.

<sup>23</sup> Joseph Cirincione, *Bomb Scare: The History and Future of Nuclear Weapons* (New York: Columbia University Press, 2007), 57.

<sup>24</sup> Paul, *Power Versus Prudence*, 121; Cirincione, *Bomb Scare*, 57; Meyer, *The Dynamics of Nuclear Proliferation*, 126; William Epstein, “Why States Go—and Don’t Go—Nuclear,” *Annals of the American Academy of Political and Social Science*, 430 (March 1977): 24; Dunn, *Containing Nuclear Proliferation*, 10; Etel Solingen, “The Political Economy of Nuclear Restraint,” *International Security* 19 (Fall 1994): 144; Henry D. Sokolski, ed., *Prevailing in a Well-Armed World: Devising Competitive Strategies Against Weapons Proliferation* (Carlisle, Pa.: Strategic Studies Institute, U.S. Army War College, 2000), 105.

<sup>25</sup> Sokolski, *Prevailing in a Well-Armed World*, 80; Meyer, *The Dynamics of Nuclear Proliferation*, 132; Federation of American Scientists, “Taiwan’s Nuclear Weapons,” April 4, 2000. As of September 2008, <[www.fas.org/nuke/guide/taiwan/nuke/index.html](http://www.fas.org/nuke/guide/taiwan/nuke/index.html)>

protection under the U.S. nuclear umbrella eventually resulted in Taiwan shelving its nuclear weapons ambitions.

*Starts a Nuclear Weapons Program, But Then Changes Its Mind*

The penultimate category concerns countries that wanted a nuclear weapon, did not have a technological or potential capability, started a nuclear weapons program, but then either decided against it or were forced to abandon it. Argentina, Brazil, Libya, and Iraq are some notable examples of this group. Within this group, once again the results are mixed. Here, either neither strategy applied *or* both strategies were applied, but it is too difficult to conclude which of the two strategies was most effective. For Argentina and Brazil, neither of the strategies applied. For Libya and Iraq, both strategies were applied, but it is unclear which of the two triumphed.

Initially, Argentina and Brazil both opposed the NPT because of their desire to pursue nuclear technology for security purposes, and subsequently refrained from signing the treaty until the mid 1990s. Neither country enjoyed good relations with the United States. Therefore, a U.S. security guarantee was not considered an option. As longstanding regional rivals living under military dictatorships, both Argentina and Brazil embarked on a covert nuclear weapons program in their quest to become the regional superpower between the 1950s and 1980s. Argentina started researching nuclear technology in the 1950s, and Brazil began research in nuclear technology in 1945.<sup>26</sup> Argentina had a copious supply of uranium, and in the 1950s, launched an ambitious nuclear energy program in the hope of mastering the nuclear fuel cycle.<sup>27</sup> In 1958, Argentina became the first Latin American state to operate a nuclear research reactor.<sup>28</sup> Argentina also had power reactors, a small reprocessing plant, a fuel-fabrication facility, and an experimental pilot-scale heavy-water facility.<sup>29</sup> Brazil had power and research reactors as well as a gas-centrifuge unit and a laboratory-scale reprocessing facility.<sup>30</sup>

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<sup>26</sup> Paul, *Power Versus Prudence*, 103, 107.

<sup>27</sup> Ibid., 103.

<sup>28</sup> Mónica Serrano, "Brazil and Argentina," in Reiss and Litwak, 235.

<sup>29</sup> Paul, *Power Versus Prudence*, 104—105; Joseph Cirincione, Jon Wolfstahl, and Miriam Rajkumar, *Deadly Arsenals: Nuclear, Biological, and Chemical Threats* (Washington, D.C.: Carnegie Endowment for International Peace, 2002), pp. 344—345.

<sup>30</sup> Paul, *Power Versus Prudence*, 108; Cirincione, Wolfstahl, and Rajkumar, *Deadly Arsenals*, 354—355.

However, a change in direction of both countries' nuclear programs came with a change in political leadership. In the late 1980s, both countries became civilian democracies interested in improving relations with the international community. These countries became non-nuclear weapon states through a bilateral process through their creation of the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC). After the creation of ABACC in 1991, Argentina and Brazil became involved in the non-proliferation regime. Their first step in becoming involved in the non-proliferation regime was not, as might have been expected, through the ratification of the NPT. First, Argentina and Brazil agreed to full-scope IAEA safeguards (1991), then they ratified the Treaty of Tlatelolco (the South American nuclear weapon free zone) (1994), and lastly, they finally ratified the NPT (1995 and 1998, respectively). The Argentina and Brazil success story therefore was not affected by the non-proliferation regime or by "Protect and Prevent." Instead, their success was situational: Both countries experienced a change in the political landscape at around the same time, both began engaging in bilateral negotiations, and both realized that nuclear weapons were not in their national security interests.

Libya and Iraq are both very complicated stories that have been analyzed in tremendous detail in other works. Both these states, although NPT signatories, were adamant about acquiring a nuclear weapons program. Both strategies were tried and tested with Libya and Iraq, but it is unclear which of the two strategies prevailed. Apart from being NPT signatories and IAEA members, the two countries' involvement in the non-proliferation regime was minimal. Iraq signed the NPT in July 1968, and ratified it in October 1969. Libya signed the NPT in 1968, but ratified it seven years later upon the insistence of the Soviet Union (which refused to provide nuclear assistance otherwise).<sup>31</sup> At the time, Libya was negotiating a 400 megawatt (MW) power reactor with the Soviets. Both Gaddafi and Hussein embarked on a WMD program, so clearly the normative power of the NPT was not particularly effective for them. Libya had a few research and power reactors, but its chemical weapons capability and ballistic missile arsenal were better known and more developed than its nuclear weapons program. Libya's nuclear weapons program was very rudimentary due to its lack of indigenous resources and its failure to procure

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<sup>31</sup> Epstein 24; Meyer 70, 139.

key components.<sup>32</sup> A. Q. Khan reportedly provided Libya with an actual nuclear weapons design and with assistance on centrifuge enrichment.<sup>33</sup>

Viewed as a pariah state, Libya was designated a state sponsor of terrorism in 1979 by the U.S. Department of State. This designation continued until Libya's rehabilitation more than twenty years later. As a result of its support for international terrorism, including the Lockerbie bombings, Libya was an outcast state, and was repeatedly sanctioned by the UN and was also subject to one of the strictest U.S. sanctions regimes in existence. In December 2003, nine months into the Iraq invasion, Gaddafi announced his decision to dismantle the Libyan WMD and ballistic missile programs. Many supporters of the Bush administration's preemption policies point to the example of Iraq as a precursor of Gaddafi's decision, and attribute Gaddafi's decision to the NSS. However, others have argued that the war in Iraq did not have anything to do with Gaddafi's decision, since Libya's path to reintegrating within the international community had already been in the pipeline. Throughout the late 1990s, Libya had begun cooperating over Lockerbie, and many high-level top-secret talks were taking place between British and Libyan officials. Therefore, it is not quite so clear which, if either, of the two strategies prevailed. Did the sanctions in the U.S. "Protect and Prevent" strategy used against Iraq encourage Gaddafi to reconsider his WMD program? This scenario seems unlikely given the timeframe. Saddam was captured on December 14, 2003, and Gaddafi made his announcement five days later. Furthermore, Gaddafi's decision was facilitated by nine months of secret negotiations with the West.<sup>34</sup> Did Gaddafi's intention to integrate with the international community, which was facilitated through his cooperation over Lockerbie, force him to reconsider his WMD program? In this scenario, the non-proliferation norm would triumph. Since announcing its decision to renounce its WMD program, Libya has become involved in the non-proliferation regime. It has ratified the Treaty of Pelindaba (2005) that established the African nuclear weapon free zone, and, more recently, it has become a participant in both the PSI and the GICNT, two twenty-first century initiatives designed to counter nuclear terrorism.

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<sup>32</sup> Wyn Q. Bowen, *Libya and Nuclear Proliferation. Stepping Back from the Brink*, (London: The International Institute for Strategic Studies, Adelphi Paper 380, 2006); Sharon A. Squassoni and Andrew Feickert, "Disarming Libya: Weapons of Mass Destruction," *CRS Report for Congress*, April 22, 2004.

<sup>33</sup> Squassoni and Feickert.

<sup>34</sup> BBC News Online, "Libya Hailed for Renouncing WMD", December 20, 2003. As of September 2008, <[news.bbc.co.uk/2/hi/africa/3336627.stm](http://news.bbc.co.uk/2/hi/africa/3336627.stm)>

As with Libya, it is unclear which of the two strategies prevailed in Iraq. The example of Iraq is a very complicated case.<sup>35</sup> The Iraqi nuclear weapons program was a much more developed program than Libya's. Iraq had a nuclear weapons complex, research reactors, uranium enrichment facilities, reprocessing, and uranium processing.<sup>36</sup> Although Iraq had signed the NPT, Saddam Hussein decided to pursue nuclear weapons. The 1981 Osirak bombing by Israel during the Iran-Iraq War hampered Iraq's efforts to use the reactor to create nuclear weapons. Due to its lack of cooperation with the IAEA and the international community, Iraq was faced with UN sanctions and further international isolation throughout the 1990s. During this time, IAEA and UNSCOM officials were on the ground in Iraq to verify the elimination of Iraq's WMD program. In fact, some argue that such inspections, coupled with UN sanctions, were effective in disarming Iraq after the 1991 Gulf War.<sup>37</sup> However, in the late 1990s, these officials were expelled, which is when the international community feared that Iraq was restarting its WMD and nuclear weapons program. After 9/11, intelligence began to link Saddam to the 9/11 attacks and provided "evidence" of an Iraqi WMD program (including a nuclear weapons program).<sup>38</sup> This intelligence prompted the Bush administration to apply its own version of "Protect and Prevent", launching the U.S.-led preemptive attack. Because no evidence of WMDs was found, it is difficult to conclude which of the two strategies worked. Were the UN-imposed sanctions on Iraq throughout the 1990s the key to Saddam's dismantlement? In other words, was this an example where the stick of the non-proliferation regime prevailed? Or, was Saddam so afraid of being found that he disarmed when the Bush administration started the blame game in late 2001/early 2002?

### *Relinquishes Nuclear Weapons It Possesses*

In the final category, countries that relinquish the nuclear weapons they already possess are analyzed. This category of success is very different from the other three groups because it deals with states that either had nuclear weapons and chose to give them up (the case of South Africa) or inherited nuclear weapons and subsequently

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<sup>35</sup> The full details of the covert Iraqi nuclear weapons program, including the IAEA's involvement, fall beyond the scope of this article.

<sup>36</sup> Cirincione, Wolfstahl, and Rajkumar, *Deadly Arsenal*, 289—290.

<sup>37</sup> Cirincione, *Bomb Scare*, 118.

<sup>38</sup> October 2002 National Intelligence Estimate, *Iraq's Continuing Progress for Weapons of Mass Destruction*. Declassified on July 18, 2003 and available to see on the Federation of American Scientists website, <[www.fas.org/irp/cia/product/iraq-wmd-nie.pdf](http://www.fas.org/irp/cia/product/iraq-wmd-nie.pdf)>



gave them up (the cases of Belarus, Kazakhstan and Ukraine). In this category, the normative element of the non-proliferation regime was more important than “Protect and Prevent” in these decisions.

South Africa is the only country known to have manufactured nuclear weapons and then dismantled them. This reversal became known as “nuclear rollback.” South Africa unilaterally and voluntarily relinquished its nuclear weapons program, including the six nuclear devices it had assembled. The South African nuclear weapons program began in 1974 and comprised a nuclear weapon research and development complex, power reactors, research reactors, uranium enrichment facilities, reprocessing, and uranium processing.<sup>39</sup> South Africa was motivated to acquire a nuclear weapons program by the combination of a deteriorating security situation, political isolation (due to apartheid), and the desire for regional dominance. However, in the late 1980s/early 1990s, the international order began to change. After the collapse of the Soviet Union, South Africa was no longer faced with a Communist security threat from Angola. Equally, apartheid had come to an end, and South Africa wanted an end to its international isolation. Therefore, the strategy that most applied to South Africa’s decision was the normative element of the non-proliferation regime. This is because whilst an apartheid state, South Africa did not have any relations with the United States, and while there were sanctions imposed on the apartheid regime, protecting South Africa with a U.S. security guarantee was never an option. South Africa wanted to return to the good graces of the international community and one way to do this was to sign the NPT, which it did in 1991. Since then, South Africa has become very much involved in the nuclear non-proliferation regime. Real prospects for establishing an African nuclear weapon free zone were realized in March 1993, when South African President De Klerk announced details of South Africa’s rollback. Efforts to create an African nuclear weapon free zone started in 1964 when the Organization of African Unity announced its desire to create a treaty that would prohibit the production and control of nuclear weapons on the African continent. These efforts were vitalized in 1993 upon De Klerk’s announcement, after which the Treaty of Pelindaba (named after the former location of South Africa’s nuclear weapons) became valid. Furthermore, South Africa is a member state of the Zangger Committee and a participating state in the Wassenaar Arrangement.

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<sup>39</sup> Cirincione, Wolfstahl, and Rajkumar, *Deadly Arsenals*, 365.

Belarus, Kazakhstan, and Ukraine were three former Soviet successor states that inherited both loose nuclear weapons material and nuclear weapons after the breakup of the Soviet Union. With the disintegration of the Soviet Union, Belarus, Kazakhstan, and Ukraine were left with strategic nuclear weapons, highly enriched uranium, and nearly all of the nuclear fuel cycle facilities and production sites associated with controlled nuclear commodities.<sup>40</sup> Through the Nunn-Lugar Cooperative Threat Reduction Initiative, a large number of the loose nuclear weapons have been safeguarded and dismantled, and therefore all three states have relinquished their inherited nuclear weapons. Similar to South Africa, the three former Soviet states all underwent significant domestic change during the late 1980s and early 1990s. All four states' decisions to relinquish their nuclear weapons were mostly due to their desire to be accepted in the international community as new, independent states. One of the ways in which this was possible was through the normative element of the non-proliferation regime. Part of their effort to reintegrate with the international community took the form of signing the NPT and subsequently becoming involved in the nuclear non-proliferation regime.

What can be concluded through this research is that amongst all four categories of nuclear non-proliferation success, "Protect and Prevent" was the most effective strategy in persuading countries to remain non-nuclear. Within this strategy, two components were most effective: protection in the form of security guarantees, and sanctions or the threat thereof (seen in the cases of South Korea, Taiwan, Libya, and, arguably, Iraq). In cases where "Protect and Prevent" did not apply, the normative power of the non-proliferation regime triumphed. However, that is not to undermine the non-proliferation regime, since the regime, through the NPT and its export control agreements, made it extremely difficult for countries to acquire a nuclear weapons program. Furthermore, the global norm associated with the further proliferation of nuclear weapons, seen through the NPT, explains the vast number of countries that did not pursue a nuclear weapons program. The norms attributed to the NPT made acquiring the bomb appear like "bad behavior", and as such, many countries signed and ratified the treaty. In some cases, U.S. security guarantees persuaded states not to pursue their nuclear weapons aspirations. It appears that these security guarantees were the foundation of early acceptance of and therefore the establishment of NPT norms. Therefore, this analysis concludes that security

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<sup>40</sup> William C. Potter, "The Politics of Nuclear Renunciation: The Cases of Belarus, Kazakhstan, and Ukraine," The Henry L. Stimson Center, Occasional Paper No. 22 (April 1995): 2.

guarantees were the foundation of the effective non-proliferation regime we see today.

### **Lessons Learned in Failed Non-Proliferation History**

Understanding why nuclear non-proliferation failed is vital in order to properly evaluate the two dominant non-proliferation strategies. In a historical context, this paper explored (1) whether these two strategies were applied in cases where proliferation occurred and (2) why these strategies failed if they were applied. For the purpose of this analysis, nuclear non-proliferation failure is defined as more nuclear weapon states beyond the permanent five. This definition can be operationalized through the following two measures: (1) a country conducts a nuclear test (the examples are India, Pakistan, and North Korea) or (2) there is reasonable suspicion that a country has a nuclear weapons arsenal (i.e., the case of Israel). Our understanding of nuclear non-proliferation failure can help us confront current and future proliferation challenges.

Of these four states, both strategies were tried and tested in North Korea alone. However, both strategies failed. North Korea acceded to the NPT in 1985, violated it, and subsequently withdrew from it in 2003, only to conduct a nuclear test in 2006. Therefore, in this case, the non-proliferation regime failed. Similarly, “Protect and Prevent” failed against North Korea. A U.S. security guarantee for North Korea was never an option. On the contrary, a U.S. security guarantee was in place to protect Japan, South Korea, and Taiwan *from* North Korea. The United States repeatedly threatened North Korea with both sanctions and preemptive action. In 1994, when North Korea threatened to remove fuel rods from the Yonbyon nuclear reactor, U.S. officials considered a preemptive strike on the reactor.<sup>41</sup> Yet even these threats were not enough to discourage and prevent North Korea from acquiring a nuclear weapons program.

In the cases of Israel, India, and Pakistan, neither of the two strategies was applied. Israel has historically had a policy of opacity and ambiguity regarding its nuclear weapons program.<sup>42</sup> India did not like nuclear apartheid, and viewed the non-

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<sup>41</sup> Cirincione, Wolfstahl, and Rajkumar, *Deadly Arsenals*, 246.

<sup>42</sup> Zeev Maoz, “The Mixed Blessing of Israel’s Nuclear Policy,” *International Security* 28 (Fall 2003): 44—77; Shai Feldman, “Israel”, in Reiss and Litwak; Paul, *Power Versus Prudence*.

proliferation regime, especially the NPT, as discriminatory.<sup>43</sup> Pakistan's acquisition and subsequent development of nuclear weapons were driven by India's nuclear weapons program. By the same token, these three countries were never offered any explicit U.S. security guarantees or alliance support. India feared a nuclear China, and some analysts argue that during the mid-1960s, India sought a security guarantee from the United States, the USSR, and United Kingdom, but was shunned by all three.<sup>44</sup> Similarly, former Pakistani Prime Minister Nawaz Sharif was willing to forgo nuclear testing in the late 1990s in return for economic and military aid and security guarantees from the West, none of which materialized.<sup>45</sup> It is impossible to predict what might have happened had India—or even Pakistan—received a credible security guarantee. Would there still have been a nuclear arms race between the two regional rivals? Or would they have normalized their relations, just like Argentina and Brazil? In either scenario, the importance of a U.S. security guarantee cannot be overlooked or undermined.

Israel, India, Pakistan, and North Korea became nuclear weapon states in order to guarantee their survival. These states proliferated because they felt insecure and alone. Israel felt the need to protect itself in a hostile region. It was not a recognized state, and was therefore very insecure. Israel had a “never again” attitude towards the Holocaust and was dependent on the “ultimate capacity” (i.e., nuclear weapons) for its security. India feared a nuclear China, and, lacking a security guarantee, felt the need to protect itself by embarking on a nuclear weapons program. Pakistan's nuclear weapons program was undeniably linked to India's nuclear weapons program. The motivations behind North Korea's decision to become a nuclear weapon state are primarily security driven. After the Cold War, North Korea became an isolated, outcast state with its own agenda, and felt the need to protect itself against a U.S.-led invasion. At the time of their decisions to become nuclear weapon states, these four countries found themselves alone and insecure in their respective high-conflict zones. They were not offered any credible security guarantees, and when two of the countries' requests for such guarantees were refused, developing a nuclear weapons program seemed to be the only viable option left in order to remain secure.

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<sup>43</sup> George Perkovich, *India's Nuclear Bomb. The Impact on Global Proliferation* (Berkeley, CA: The University of California Press, 1999); Paul, *Power Versus Prudence*.

<sup>44</sup> Sumit Ganguly, *Conflict Unending: India-Pakistan Tensions Since 1947* (New York: Columbia University Press, 2001).

<sup>45</sup> Paul, *Power Versus Prudence*, 135.

## **What Are Our Options, Then, Today?**

This analysis has shown that some elements of both strategies were very effective. Within the nuclear non-proliferation regime, the global norm against the spread of nuclear weapons is extremely powerful. However, as discussed earlier, this norm was not immediately effective in many cases. More and more countries had to sign the NPT before the norm became as powerful as it is today. Furthermore, the non-proliferation regime made it extremely difficult for countries to acquire nuclear weapons technology. Within “Protect and Prevent”, the protective element was far more effective than its preventative component. It resulted in a number of countries shelving their nuclear weapons aspirations and becoming involved in the nuclear non-proliferation regime. Furthermore, protection was very important in establishing and strengthening the non-proliferation norm. “Prevent” worked, but only when U.S. sanctions were threatened rather than actually applied. We saw how the threat of U.S. sanctions, coupled with U.S. security guarantees, were successful in stopping South Korea and Taiwan from pursuing their nuclear weapons aspirations. However, when the United States actually followed through on its threats of sanctions, countries went ahead with their nuclear weapons programs (i.e., North Korea, Iraq, and Libya).

Based on this analysis, what are our options for today’s proliferation challenges? I believe that Iran is more of a proliferation challenge than North Korea, since Iran is still an NPT signatory and has yet to master the nuclear fuel cycle. North Korea, on the other hand, withdrew from the NPT and successfully tested a nuclear weapon. That is not to say that the international community should give up on North Korea just because it has already become a nuclear weapon state. However, the focus should be on how the international community, particularly the United States, can stop countries from going down the nuclear weapons path.

Both the non-proliferation regime and “Protect and Prevent” strategies are still being applied to Iran today. Iran’s participation in the non-proliferation regime is fairly minimal. Although it is an NPT signatory – in fact, it was one of the first countries to sign (in 1968) and ratify (in 1970) – Iran does not participate in any export control agreements. Iran repeatedly refers to Article IV of the NPT, insisting on its inalienable right to produce nuclear energy. The United States and its allies see Iran’s insistence on this point as a shield for its covert nuclear weapons program. To

protect its allies and prevent Iran from becoming a nuclear weapon state, the United States is building up its missile defenses and retaining its forces that surround Iran in Iraq, Afghanistan, and throughout the Persian Gulf. In addition, during the presidency of George W. Bush, bellicose terms such as “regime change” and “preemption” were often repeated. Now, under President Obama, although these terms are no longer used, we still hear references to military strikes as an option “on the table”. It is too soon to assess how successful these strategies will be given the ongoing saga of the Iranian nuclear issue. However, Iran is situated in a high-conflict region, has an overwhelming sense of national pride, and is not protected by any security guarantees or powerful allies. If efforts are not made to help Iran feel more secure in this very insecure situation, and if Iran goes ahead and successfully completes the nuclear fuel cycle, we might well see a new wave of proliferation in the Middle East. It would be a shame if the lessons from the past forty years of nuclear proliferation history are not put into practice.

If any lesson is to be learned from the past forty years of nuclear proliferation history, it is that although we cannot point to a “one-size-fits-all” approach to preventing nuclear proliferation, the best approach to strive for is a mixture of the two strategies discussed in this paper. We need to continue to develop both of these strategies by strengthening the non-proliferation regime and by focusing more on the “protect” element. There have been improvements in the former; new multilateral initiatives—such as United Nations Security Council Resolution 1540, the G8 Global Partnership against the spread of WMDs, the Proliferation Security Initiative, and the Global Initiative to Combat Nuclear Terrorism—now address nuclear terrorism. However, these initiatives were introduced within the past six years, and are therefore all in their early stages. As a result, it will take time and effort before they can take full effect. Let us not forget that the NPT did not become an effective or norm-building treaty overnight.