1-1-2011

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Recommended Citation
Chris Peloso, Crafting an Updated Nuclear Non-Proliferation Treaty: Applying the Lessons Learned from the Success of Similar International Treaties to the Nuclear Arms Problem, 9 Santa Clara J. Int’l L. 309 (2011).
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Crafting an Updated Nuclear Non-Proliferation Treaty:

Applying the Lessons Learned from the Success of Similar International Treaties to the Nuclear Arms Problem

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I. Introduction

The Nuclear Non-Proliferation Treaty (NPT) is one of the oldest, most ambitious, and most universal arms control treaties ever to enter into force. At present 189 countries are Parties to the NPT. The supporters of the NPT claim that it is one of the most successful multilateral treaties in history. When the NPT was originally signed, five countries had a nuclear weapon capability. Now, forty years later, only nine countries (give or take) have developed nuclear weapons. Many countries that are capable of developing a capability (such as Japan or Germany) have chosen not to do so. Several countries, most notably South Africa, Ukraine, Kazakhstan, and Belarus have voluntarily given up their nuclear weapons.

While a strong argument can be made that the NPT has been successful in its mission to deter proliferation of nuclear weapons, critics can point to several shortcomings. The NPT has been criticized as being inequitable and further emphasizing the dichotomy between the Nuclear Weapons States (generally richer, military Superpowers), and the Non-Nuclear Weapons States (generally poorer, third-world countries with little international influence). Critics would also point to the failure of the NPT to prevent countries such as North Korea, Pakistan, India, and Israel from developing weapons. These failures also bring into question the ability of the NPT to discourage countries with nuclear aspirations (e.g., Iran, Saddam-era Iraq) from becoming the next generation of Nuclear Weapons States.

In three important ways, the world of 2011 is much different than the world of 1968, when the NPT was originally opened for signature. First, the development and use of weapons of mass destruction has become less acceptable to the world community. Second, the public opinion on the use of nuclear technology has become less favorable because of safety and environmental concerns. Third, the world approaches the development of treaties differently. Some parts of the NPT, such as the right of countries to the benefits of "peaceful nuclear explosions" are outdated. It may be possible to develop a new, second-generation NPT that incorporates the lessons learned from the failures of the original, and also adds successful strategies gleaned from more recent multi-lateral treaties.

The NPT should be amended in several ways. First, it should do more to encourage Nuclear Weapon State Parties to disarm. Second, it should include a 'no first use' provision. Third, it should do more to encourage non-signatories to join. Fourth, it should do more to discourage Parties from withdrawing from the treaty. Finally, it should do a better job of balancing the rights of Non-Nuclear Weapon State Parties to develop nuclear technology.

6. NPT, supra note 1, art. V.
with dual-use concerns. This new NPT could provide a more equitable and effective solution to the complex dangers of nuclear weapons proliferation.

II. The Development of the Nuclear Non-Proliferation Treaty

At the height of the “Cold War,” it was recognized that the deterrent balance between the United States and U.S.S.R. would become increasingly unstable as more and more countries began to develop nuclear weapons capabilities. Miscalculation, unauthorized use, and escalation could have far greater consequences for a nuclear-armed combatant than for one without nuclear weapons. As a response to the perceived threats of proliferation, the NPT was first proposed in 1958 by the government of Ireland. 7

The NPT was initially drafted by the United States and the U.S.S.R. as part of their general bilateral arms control discussions. 8 At the time neither country was willing to completely disarm while both countries were concerned about nuclear proliferation. 9 In addition, three other countries (U.K., France, China) had developed nuclear weapons. 10 The final version of the NPT came to a compromise in which the five countries currently in possession of nuclear weapons would sign as Nuclear Weapons States (NWS Parties) and be allowed to keep their nuclear weapons (albeit with a promise of eventual disarmament), while all other countries would sign as Non-Nuclear Weapons States (NNWS Parties). 11 Article IX specifies that no other countries will be allowed to accede to the NPT as NWS Parties, thereby permanently capping the number of NWS Parties at five. 12

III. The Pillars of the Nuclear Non-Proliferation Treaty

The NPT is commonly described as having three main “pillars”: non-proliferation, disarmament, and peaceful use. 13 The non-proliferation pillar is described in Articles I–III. Under this pillar, NNWS Parties agree not to import, build or otherwise acquire nuclear weapons or other nuclear explosive devices. 14 NWS Parties are obliged not to transfer nuclear weapons or explosive devices to other countries. 15 In addition, any group of countries is permitted to establish nuclear-weapon-free zones in its respective territories. 16

Article VI describes the disarmament pillar and obliges the Parties to undertake “to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a Treaty on general and complete disarmament under strict and effective international control.” 17 While this Article

8. Id. at 153–56.
9. Id.
10. NPT, supra note 1.
11. Id. art. IX § 3.
12. Id.
14. NPT, supra note 1, arts. I–III
15. Id.
16. Id. art. VII.
17. Id. art. VI.

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is only a vague statement with no hard deadlines or timetables, it remains the only legally binding obligation on NWS Parties to ultimately eliminate their nuclear weapons. Although few practical steps have been taken towards complete disarmament, at the 2000 NPT Review Conference, the five NWS Parties agreed to “13 practical steps,” including entry into force of the Comprehensive Test Ban Treaty and the reduction of the role of nuclear weapons in strategic planning, leading to the elimination of their nuclear arsenals.18

Finally, as an incentive to get countries to sign as NNWSs, the peaceful uses pillar was included in the treaty. Under this pillar, as described in Articles IV and V, all State Parties to the treaty agree to full exchanges of equipment, materials and scientific and technological information for peaceful uses of nuclear energy.19 NNWS Parties must accept and comply with International Atomic Energy Agency (IAEA) safeguards as a condition for peaceful nuclear cooperation.20 However, if NNWS Parties meet IAEA safeguards, there is no limit on the countries’ ability to “develop research, production and use of nuclear energy for peaceful purposes without discrimination.”21

IV. The Nuclear Non-Proliferation Treaty was a Success

If one considers that the main purpose of the NPT is to deter proliferation, then the small number of new nuclear powers would imply the treaty was a success. When the NPT was signed, five countries had nuclear weapons.22 Now, forty years later, only nine countries (give or take) possess nuclear weapons.23 This is much lower than some historical predictions made at the time the NPT was being negotiated. For example, in 1963, President Kennedy warned that fifteen to twenty-five states might obtain military nuclear capabilities by the 1970’s.24 President Kennedy based this pessimistic forecast on a secret study that Secretary of Defense Robert McNamara had given the president one month earlier. In this document, McNamara expected that by 1973 eight new states might acquire nuclear weapons (China, Sweden, India, Australia, Japan, South Africa, Germany, and Israel) and that, shortly thereafter many more countries could go nuclear as the cost of acquiring nuclear weapons “may come down by a factor of 2 to 5 times.”25 In 2004, the IAEA estimated that the number of countries with the know-how to develop nuclear weapons is in the range of thirty-five to forty.26 The fact that very few of these countries have chosen to develop nuclear weapons shows that non-proliferation efforts have been successful.

In addition, the fact that the Ukraine voluntarily disarmed after the breakup of the

19. NPT, supra note 1, arts. IV–V.
20. Id. art. III.
21. Id. art. IV.
23. Id.
U.S.S.R. is more evidence of success. Upon dissolution, Ukraine inherited 1240 nuclear warheads as well as ICBMs and strategic bomber delivery systems, the third largest arsenal in the world at the time.\textsuperscript{27} Within five years, Ukraine had successfully transferred all of their weapons back to Russia, and joined the NPT as a NNWS Party.\textsuperscript{28} Both Kazakhstan and Belarus also chose to give up their inherited nuclear capabilities and sign the NPT as NNWS Parties.\textsuperscript{29} While other factors such as bilateral pressure, development costs, security guarantees from the United States, and domestic political pressure could be the reason countries such as Ukraine make the decision to disarm, a desire to be compliant with the NPT and be accepted into the community of nations was certainly a factor in their decision-making process.\textsuperscript{30}

There have also been successes in the disarmament pillar. Specifically, Article VI calls on Parties to the treaty to "undertake[] to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament."\textsuperscript{31} Since the NPT entered into force, there have been numerous treaties and negotiations related to the reduction of the nuclear threat.\textsuperscript{32} When the NPT was signed in 1968 there were approximately 39,000 nuclear weapons in the world. By 2006, worldwide nuclear stockpiles had shrunk to less than 27,000.\textsuperscript{33} While this is only a small step towards the complete disarmament Article VI calls for, it does represent a considerable success. The three smaller nuclear powers (U.K., France, China) have also slowly reduced their stockpiles from their peak levels, and now each retains only around half the number of warheads they have in the past.\textsuperscript{34} While none have taken any concrete actions towards complete disarmament, all the NWS Parties are moving towards smaller stockpiles.

The peaceful uses pillar has been the least successful of the three pillars. In the last decade, the growth rate of worldwide nuclear energy generation capacity has only been 0.6% per year.\textsuperscript{35} However, this lack of growth can be attributed to the economic costs of nuclear

\textsuperscript{28} Norris & Kristensen, supra note 27.
\textsuperscript{29} Id.
\textsuperscript{31} NPT, supra note 1, art. VI.
\textsuperscript{34} Id.
\textsuperscript{35} Int'l Atomic Energy Agency [IAEA], Energy, Electricity and Nuclear Power Estimates for the Period up to 2030, at 32-33, IAEA, RDS-1/28 (August 2008), available at http://www-
power, and are not necessarily due to any failure of Parties to meet their obligations to share nuclear technology.\textsuperscript{36}

V. The Nuclear Non-Proliferation Treaty was a Failure

Despite the near universality of accession to the NPT, and the decisions made by the overwhelming majority of governments to not develop nuclear weapons capabilities, in some aspects the NPT has failed in all three of its pillars. While the proliferation of nuclear weapons capability has been minimal, it is unclear that this is directly attributable to the non-proliferation pillar of the NPT. Like most treaties, the NPT only binds those who wish to be bound. While the vast majority of countries have ratified the NPT, only those that have already made an internal decision to forgo nuclear weapons development are signatories. Countries intent on developing nuclear capabilities, such as India, Israel, and South Africa, did not sign the NPT.\textsuperscript{37} Since countries that are not parties are not bound by its provisions, any country making the decision to develop a nuclear weapons capability can remain free to do so by declining to join the NPT. The fact that India is not a signatory to the NPT and yet has recently signed a nuclear cooperation the United States is evidence that the political costs of remaining outside of the NPT are manageable.\textsuperscript{38}

A second, similar way that the NPT has failed is that it allows Parties that decide to develop nuclear weapons, such as North Korea, to withdraw from the treaty. Withdrawal is allowed under international treaty law, and Article X of the NPT explicitly gives Parties the right to withdraw from the treaty if they decide that "extraordinary events . . . have jeopardized the supreme interests of its country."\textsuperscript{39} The NPT does not define what an "extraordinary event" is, leaving a large loophole for parties to leave the treaty. For example, in 1993, when the IAEA exposed North Korean plutonium extraction efforts, North Korea simply announced that it was withdrawing from the NPT due to extraordinary events.\textsuperscript{40} With no clear way to refute the withdrawal, the United States and other countries had few options other than giving North Korea concessions to coerce it into remaining a Party.\textsuperscript{41}

The non-proliferation pillar is ineffective because there is no language in the NPT to actively encourage countries to join, or deter them from withdrawing. Admittedly there are international political costs to not being a Party to the NPT, but countries such as India and Israel are evidence that such costs are manageable. An NPT that does not depend on dip-


\textsuperscript{37} See Background: The Nuclear Non-proliferation Treaty, supra note 2.


\textsuperscript{39} NPT, supra note 1, art. X.

\textsuperscript{40} Young W. Kihl, Confrontation of Compromise? Lessons from the 1994 Crisis, in PEACE AND SECURITY IN NORTHEAST ASIA 188 (Young Whan Kihl & Peter Hayes eds., 1997).

\textsuperscript{41} Id.
Diplomatic negotiations to coax countries to join, or to form coalitions willing to sanction a withdrawing Party, would make for a stronger, more effective treaty.

The NPT has also failed in its disarmament pillar. When the NPT was signed in 1968, there were approximately 39,000 nuclear weapons in the world. By 1986, that number would grow to over 70,000. Since that time, worldwide nuclear stockpiles have shrunk to less than 27,000, but it is more likely that this decline could be attributed to the end of the Cold War, the high costs of maintenance, and to bilateral treaties between the U.S. and the U.S.S.R. (such as SALT and START), than through direct pressure from obligations under the NPT. None of the five NWS Parties have seriously considered complete disarmament. In fact, in 2005 the United States modified their Doctrine for Joint Nuclear Operations to increase the number of scenarios in which nuclear weapon use would be authorized.44 As recently as March 2009, Russia announced that upgrading their nuclear forces was a “top priority,” implying that they have no intention of disarming in the foreseeable future.45 The NWS Parties have treated the disarmament pillar as a long-term aspiration, as opposed to a present obligation. In an April 2009 speech, President Obama recommitted the United States to working towards eventual disarmament, but with the caveat that, “this goal will not be reached quickly—perhaps not in my lifetime.”46

For the NNWS Parties, the NPT has failed in the third pillar guarantee of access to the peaceful uses of nuclear technology. The NPT was originally intended to provide commercial nuclear technology to developing countries in what is sometimes called the “atoms for peace” deal. Article V of the NPT states that “potential benefits from any peaceful applications of nuclear explosions will be made available to non-nuclear-weapon States Party to the Treaty.”47 At the time the NPT was signed, there was some thought that nuclear explosives might be used for industrial purposes, such as excavating large amounts of soil, or blowing out oil well fires. For example, in 1965, the U.S.S.R. conducted the Chagan test, where a 140kt nuclear device was used to create a crater that would dam a river and form a lake. A number of similar tests were conducted in the United States at the Nevada Test Site under the Department of Energy’s Plowshares program. While some of the tests proved effective, concerns about environmental contamination, proliferation of weapons technology, and compliance with nuclear test ban treaties have led all of the five NWS Parties to abandon the idea of developing peaceful nuclear explosions. Effectively, Article V is

42. Norris & Kristensen, supra note 27, at 64–66.
43. Id.
46. President Barack Obama, Remarks at Hradcany Square, Prague, Czech Republic (Apr. 5 2009), available at http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered/.
47. NPT, supra note 1, art. V.
49. Id. at 3.
50. Id. at 61 (noting that even a peaceful nuclear detonation is likely to be a violation of the Comprehensive Nuclear Test Ban Treaty).
NNWS Parties are still supposed to benefit from Article IV, which states that "[a]ll the Parties to the Treaty undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy." Ideally, this provision should allow NNWS Parties to develop peaceful nuclear energy technology, and receive assistance in doing so. Similar to Article V, at the time the NPT was being negotiated, nuclear energy was considered the energy source of the future, and the drafters of the NPT expected countries to take advantage of this energy source, and Articles IV and V were to be the incentive for countries to sign on as NNWS Parties. However, in the latter half of the twentieth century, environmental concerns made nuclear energy less attractive, and developing nations often do not have the capital to make such a large investment or the infrastructure necessary to support it.

Even where they do, some countries have found that the NWS Parties, or at least the United States, is strongly opposed to their development. In 2004, the United States announced that a major emphasis of its foreign policy would be to prevent the further spread of uranium enrichment and plutonium reprocessing, despite the acknowledgement that such actions are inconsistent with Article IV of the NPT. For example, Iran, a NNWS Party to the NPT, has found itself under considerable pressure to abandon its nuclear power reactor at Bushehr, despite the fact that the reactor is not suitable for breeding weapons-grade plutonium and is under IAEA safeguards. It appears that in the world today, whether a country receives help and encouragement for a domestic nuclear power program has more to do with the power of that country’s allies and enemies, as opposed to their status as an NPT Party.

While some countries have thriving nuclear power industries, a country cannot simply claim adherence to the NPT as a NNWS Party as a sufficient justification for nuclear power development programs, and few countries are taking advantage of their right to construct nuclear power plants. Therefore the third pillar of the NPT, which was designed to be the ‘carrot’ to encourage countries to adhere to the provisions of the NPT, is no longer effective as a realistic incentive.

51. NPT, supra note 1, art. IV § 2.
54. Another example is the nascent Syrian nuclear program, which has been opposed by the United States on non-proliferation grounds despite the fact that Syria has a right as an NNWS Party to the NPT to develop civilian nuclear power. See Syria Had Covert Nuclear Scheme, BBC NEWS, Apr. 25, 2008, http://news.bbc.co.uk/2/hi/middle_east/7364269.stm.
55. As of 2007, only thirteen countries were constructing nuclear power plants. Only two nuclear power plants are operational in all of Africa, and only six in all of Latin America. Rüdiger Falksohn, A Nuclear Power Renaissance, DER SPIEGEL, Jan. 1, 2007, http://www.spiegel.de/international/spiegel/0,1518,460011,00.html.
VI. Shortcomings of the Nuclear Non-Proliferation Treaty

Both technology and world politics have changed substantially since the NPT was originally drafted. Compared to more recent multilateral arms control treaties, the NPT is archaic and has numerous problems. These problems contribute to the failures of the NPT and limit its effectiveness at deterring nuclear proliferation. By understanding these problems and addressing them, a much stronger, more effective NPT can be created.

The major criticism that can be leveled at the NPT is inequity. Unlike every other multilateral arms control treaty, the NPT in effect has created two classes of parties, those with nuclear weapons and those without. This is an inherently inequitable situation. The NPT creates a "nuclear elite" that for forty years have been allowed to retain nuclear weapons while forbidding all others from having them. Some argue that the NWS Parties could draw a distinction between their "responsible" ownership of nuclear weapons and that of the aspirant powers. Even if one were to accept this argument, the two-tiered system remains a problem because it causes resentment in NNWS Parties about being treated as second-class world citizens.

For example, the government of India has repeatedly offered to sign the NPT as a NWS Party. After being rebuffed and told that they will only be accepted into the treaty as a NNWS Party, and therefore be required to give up their nuclear arsenal, India has declined to become a signatory to the treaty. This has left them outside the scope of the NPT, and they are under no binding obligations to refrain from nuclear proliferation.

A second major shortcoming of the NPT is that, unlike some other multilateral treaties


60. See Fidler, David P. and Sumit Ganguly, India Wants to Join the Non-Proliferation Treaty as a Weapon State, YALE GLOBAL ONLINE, Jan. 27, 2010, http://yaleglobal.yale.edu/content/india-wants-join-non-proliferation-treaty

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such as the Montreal Protocol, there are no automatic consequences for non-accession to the treaty. While there has been some attempt to politically isolate non-signatories, the effects of such isolation are often limited by the economic and political interests of countries willing to break that isolation. The failure of Articles IV and V to provide a 'carrot' to NNWS Parties, and the absence of any language in the NPT mandating sanctions or other 'sticks' means that the only factor encouraging non-signatories to sign the NPT is a desire to generate political goodwill and join the community of nations. Since the countries most likely to develop nuclear weapons are the least likely to be concerned with generating political goodwill, the system is ineffectual at stopping the "bad actors," and only successfully stops countries with little desire for nuclear weapons in the first place. The failure of the NPT to provide either a carrot or a stick creates a scenario where the countries most likely to develop nuclear weapons are the most likely to remain outside the scope of the NPT.

Similarly, since there are no defined penalties for withdrawal from the treaty, the NPT doesn't encourage signatories to remain bound by the treaty. The primary example of this is North Korea. North Korea was an NNWS Party to the NPT, and agreed to not develop nuclear weapons. In 1993, the IAEA demanded special inspections of several suspicious nuclear facilities in North Korea. North Korea responded by announcing they would withdraw from the NPT. While North Korea agreed to 'suspend' their withdrawal only after heated negotiations, in 2003, after another round of increased tensions with their neighbors and disagreements with the IAEA, North Korea withdrew from the NPT, and soon after detonated their first nuclear device. North Korea's actions show the inability of the NPT to act as a deterrent to proliferation. If any Party to the NPT can simply walk away from the treaty obligations whenever they decide to develop a nuclear weapon, then the NPT is a paper tiger. As noted above, there is no language in the NPT that forces Parties to take any action against a country that declines to sign, abrogates, or withdraws from the treaty. This means that the only countries that will be bound by the treaty's provisions are those who are already willing to not develop nuclear weapons.

Similarly, the NPT is also insufficient in the fact that there are no penalties for non-compliance, especially for NWS Parties. There are no consequences to NWS Parties providing nuclear technology to non-signatories. In 2006, the United States signed a deal with India to provide nuclear fuel, despite the fact that India is not a signatory to the NPT, and is a

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63. See, e.g., Riechmann, supra note 38.

64. SARAH J. DIEHL & JAMES C. MOLTZ, NUCLEAR WEAPONS AND NONPROLIFERATION 21 (2007).

65. Id.


67. Admittedly, the United Nations Security Council (UNSC) did vote to condemn the test. However, they were only able to pass the resolution by barring the possibility of taking military actions, and the sanctions arguably had little practical effect on the country. In any case, the UNSC would likely have condemned the test regardless of the existence of the NPT. S.C. Res. 1718, U.N. Doc. S/RES/1718 (Oct. 14, 2006).
de facto NWS. Since then, other countries such as France and Canada have moved to sell nuclear technology to India as well. Again, the NPT proves to be a paper tiger. Without a mandated sanctions regime explicitly spelled out in the treaty text, a proliferant country may suffer limited consequences from their decision, especially if it remains in the interest of a NWS Party to maintain relationships with the proliferant.

Admittedly, the IAEA reports potential violations to the United Nations Security Council (UNSC), and the UNSC has sometimes imposed sanctions on nuclear proliferants. However, the sanctions imposed by these resolutions are weaker than those the UNSC had previously imposed in response to many lesser threats to international peace and security.

The peaceful uses pillar also suffers from shortcomings in that Articles IV and V have parties not living up to their end of the bargain, causing the IAEA to be frustrated in its attempts to verify the non-proliferative intentions of the states which have signed and ratified the treaty.

For example, Iran has long been arguing that the NPT gives it the right to develop a nuclear power infrastructure, including a uranium enrichment capability. However, the Unit-
ed Nations has imposed sanctions against Iran out of fear that it will use this technology to develop a nuclear weapons capability.\textsuperscript{76} The drafters of the NPT failed to account for the fact that it is difficult to firewall nuclear power technologies from nuclear weapons technologies. The same gas centrifuge that can be used to enrich uranium for nuclear fuel can also be used to enrich to weapons-grade uranium. The same reactor technology used to power homes can also be used for breeding plutonium.\textsuperscript{77} For example, the North Koreans operated the Yongbyon nuclear reactor for peaceful commercial power generation. However, the same gas centrifuge that can be used to enrich uranium for nuclear fuel can also be used to enrich weapons-grade uranium.\textsuperscript{78} As written, Articles IV and V of the NPT create tension because NNWS Parties feel that they should have the right to develop the technology and that they are being deprived of that right despite being Parties to the treaty. Conversely, based on the North Korean example, Parties are right to fear that the development of nuclear power technology can be used as a backdoor to nuclear weapons development.

Finally, while Article VI of the NPT obligates NWS Parties to disarm, it provides no mechanism to push them towards that goal. The treaty provides no timetables or intermediate steps to disarmament, so this provision is toothless.\textsuperscript{79} While steps towards nuclear disarmament have been taken, these have been accomplished mainly through bilateral treaties such as SALT and START, and are not directly attributable to the NPT. To date, none of the five NWS Parties to the NPT has announced a concrete plan to completely disarm. Not only does this make the NPT ineffective in its ultimate goal of ridding the world of nuclear weapons, but it also creates tension with the NNWS Parties. When the treaty was initially opened for signature in 1968, many countries signed on as NNWS Parties under the assumption that reasonably soon after the treaty entered into force, the five NWS Parties would disarm.\textsuperscript{80} When other multilateral arms control treaties, such as the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC), were signed, countries with those arms made a pledge to disarm, and have kept those promises.\textsuperscript{81} How-

\begin{itemize}
\item \textsuperscript{76} UN Passes Iran Nuclear Sanctions, supra note 73.
\item \textsuperscript{77} Monitors 'to See N Korea Reactor,' BBC NEWS, June 27, 2007, http://news.bbc.co.uk/2/hi/asia-pacific/6243874.stm.
\item \textsuperscript{78} Id.
\item \textsuperscript{80} While it is impossible to say what timeline the individual signatories anticipated, the fact that disagreements over Article VI fulfillment were the most contentious parts of the First NPT Review Conference (in 1975), and the Second (in 1980) imply that NNWS Parties were expecting NWS Parties to take actions towards complete disarmament in the first few years after the NPT entered into force. NUCLEAR PROLIFERATION AND INTERNATIONAL SECURITY 52–53 (Morten Bremer Mærlí & Sverre Lodgaard eds., 2007).
\item \textsuperscript{81} While countries such as the United States and Russia have not met the CWC deadlines for destroying their large quantities of chemical agents, the agents have been removed from each country's "stockpile," have been deweaponized, and are no longer consider part of their arsenals or play any part in their military operations doctrines. See U.S. ARMY CHEM. MATERIALS AGENCY, http://www.cma.army.mil (last accessed Apr. 13, 2011).
\end{itemize}
ever, the failure of the NWS Parties to keep their pledge to disarm seems unfair to the NNWS Parties, and provides an argument for their development of nuclear weapons technology. It can be difficult to create a unanimous international condemnation of a nuclear aspirant such as Pakistan or India when other countries retain the right to use nuclear weapons themselves. In addition, the continued failure of the NWS Parties to seriously consider disarmament has led to a number of countries questioning whether the NPT should continue at all. At the Fifth NPT Review Conference in 1995, there was considerable resistance to extending the treaty based primarily on the failure of the five NWS Parties to satisfy their obligations under Article VI.

VII. Why is it Important to Update the Nuclear Non-Proliferation Treaty?

While the NPT represented an important step in controlling the proliferation of nuclear weapons, as written the treaty is not designed to meet modern problems. There are a number of reasons why it is important to update the treaty to modern standards of international law.

First when the NPT was signed, the world was essentially bi-polar, boiling down to the United States and its NATO allies on one side versus the U.S.S.R. and its Warsaw Pact allies on the other. The worldview of the drafters of the NPT was that if the Superpowers adhered to the treaty, smaller countries would be prevented from independently developing nuclear weapons. But today's world is far more multi-polar, and the United States and other NWS Parties do not retain the same influence over potential proliferants they once may have had.

In addition, as technology advances and information becomes more available, it becomes easier for smaller, less developed countries to acquire nuclear technology simply, cheaply, and indigenously. The Manhattan Project cost an estimated $26 billion in today's dollars, a sum out of the reach for all but a few countries. But technological advances have made development far easier to achieve. For example, Saddam Hussein's nuclear development program focused on a uranium enrichment method known as EMIS. EMIS was originally developed in the 1940's and was considered outdated and obsolete. But Iraqi scientists relied on the fact that details of EMIS enrichment technology were available in the open literature and the machines were simple enough to manufacture that they could

83. Id. at 1.
84. A good example of the thinking of the day is McNamara’s memo to President Kennedy in which McNamara’s calculus of the number of future nuclear weapons states is partially driven by which countries the U.S.S.R. would ‘allow’ to develop nuclear weapons. Memorandum from Robert McNamara, supra note 25.
be made using Iraq's existing infrastructure.\textsuperscript{88}

Since the world has changed since the NPT was drafted, improving the NPT is necessary to allowing it to remain an important tool in preventing non-aligned, less industrialized countries such as Iran from acquiring nuclear weapons. More importantly, updating the NPT could prevent terrorist groups and other non-state actors from acquiring nuclear weapons.

A second reason to update the NPT is to improve equity between NWS Parties and NNWS Parties. Issues of inequity are a thorn in the side of third world countries, and developing a more inclusive, more equitable system could alleviate tensions not directly related to nuclear weapons.\textsuperscript{89} Nuclear weapons are possibly the ultimate tool in retaining hegemony.\textsuperscript{90} It is well known that the five NWS Parties also happen to be the five permanent members of the UNSC. People in many countries equate possession of nuclear weapons with status, and the ability to bully around those that do not possess nuclear weapons.\textsuperscript{91} For example, Iran constantly decries the inherent unfairness of being pressured to not develop nuclear weapons while the United States and Israel are allowed to have them.\textsuperscript{92} Similarly, North Korea developed nuclear weapons so as to be taken seriously as a country and to serve as a deterrent against perceived American aggression.\textsuperscript{93} Even terrorist groups have publicly stated that they have the right to possess nuclear arms as a counterbalance to perceived American aggression.\textsuperscript{94} The inequitable nature of the NPT has led a number of countries to conclude that regardless of their obligations as NNWS Parties, they have a right to nuclear weapons in a way that is not mirrored in chemical or biological weapons. An updated NPT could change the way the world views the acceptability of nuclear arms.

The third reason to update the NPT is that at present, concerns over proliferation are acting as an obstacle to the development of nuclear energy. The looming threat of climate change requires new energy solutions that are not based on fossil fuels, and nuclear energy could be a large part of that mix.\textsuperscript{95} However, without a better way to mitigate the concerns over dual-use technology and nuclear weapons development, it is unlikely that the major powers will be willing to see certain types of nuclear technology become widely available in the third world. For example, the UNSC has authorized sanctions against Iran for its de-

\textsuperscript{88} Duefler, supra note 86, at 42.
\textsuperscript{89} See generally DURCH, supra note 59.
\textsuperscript{91} Reynolds, supra note 90.
\textsuperscript{92} Id. See also IAEA, supra note 75.
\textsuperscript{93} North Korea Vows 'Annihilating' Nuclear Strike if United States Attacks Pre-emptively, FOXNEWS, July 3, 2006, http://www.foxnews.com/story/0,2933,201956,00.html.
\textsuperscript{94} In a 2001 interview Osama bin Laden said, "I wish to declare that if America used chemical or nuclear weapons against us, then we may retort with chemical and nuclear weapons." The Man who Interviewed Osama bin Laden 3 Times, THE INDEPENDENT, Mar 9, 2009, http://www.independent.co.uk/news/media/press/the-man-who-interviewed-osama-bin-laden-3-times-1639968.html.
\textsuperscript{95} Economic, safety, and environmental arguments against nuclear energy notwithstanding (and outside the scope of this paper). See Patrick Moore, Going Nuclear, WASH. POST, Apr. 16, 2006, at B01, available at http://www.washingtonpost.com/wp-dyn/content/article/2006/04/14/AR2006041401209.html.
velopment of the Natanz Uranium Enrichment Plant due to worries about Iran’s nuclear weapons program, even though uranium enrichment is a permitted activity under the NPT. An updated NPT that includes increased transparency and safeguards could help to reduce tension over secret weapons programs and allow nuclear power to flourish.

VIII. Modern Treaties that Can Offer Guidance on How to Update the Nuclear Non-Proliferation Treaty

Since the NPT entered into force, a number of other multilateral arms control treaties have been developed. In many cases, these treaties have dealt with similar issues to the ones the NPT was designed to address, and have addressed the issues in a different manner, perhaps learning from the deficiencies of the NPT. For example, when the Chemical Weapons Convention (CWC) was being developed, the drafters were faced with the similar problem that some countries already had significant stockpiles of chemical weapons. Instead of taking the NPT’s tactic of setting up a two-tiered system of ‘Chemical Weapons States’ and ‘Non-Chemical Weapons States,’ the drafters mandated that all countries wishing to be Party to the CWC must completely give up their chemical weapon inventories. During the treaty negotiations, both the U.S. and the U.S.S.R. had argued that they should be allowed to retain a stockpile of up to 500 tons of agent. However, unlike the NPT, the rest of the world was unwilling to accept a two-tiered treaty, and the U.S. and U.S.S.R. eventually capitulated and agreed to complete destruction of their stockpiles.

Lessons might also be taken from the large number of bilateral nuclear weapons agreements that have been negotiated since the NPT entered into force. These bilateral agreements have been successful in encouraging the five NWS Parties to reduce their inventories and improve controls and communications. These treaties may be of special value in updating the disarmament pillar of the NPT, since they were focused on creating confidence-building measures and reducing nuclear stockpiles.

Even multilateral treaties that are non-arms control related could also provide some guidance on how to update the NPT. For example, the drafters of the Montreal Protocol on Substances that Deplete the Ozone Layer realized that in order for the treaty to be effective, there would have to be almost total compliance. So they added terms into the treaty to encourage countries to accede to the treaty and included a sliding scale of obligations in order to increase fairness and to discourage Parties from abrogating or withdrawing from the treaty in the future. The lessons learned from the success of the Montreal Protocol can be applied to the NPT to mitigate the proliferation problems posed by non-Parties.


98. JOZEF GOLDBLAT, ARMS CONTROL: THE NEW GUIDE TO NEGOTIATIONS AND AGREEMENTS 146 (2002).

99. Id.

100. Montreal Protocol, supra note 62, arts. 4–5, 8.
IX. Roadmap for Updating the Nuclear Non-Proliferation Treaty

The provisions of the NPT, particularly Article VIII, paragraph 3, create a treaty review process in which the Parties meet every five years to discuss treaty performance and suggest improvements. The Seventh Review Conference was held in 2005, and was considered a failure by many countries that had hoped to make substantive changes to the NPT. The 2005 Conference focused on three main issues: nuclear disarmament and security assurances, safeguards and regional issues (including establishment of a nuclear weapon-free zone in the Middle East), and implementation of the NPT's provisions related to the peaceful uses of nuclear energy. However, no substantive changes were made. The Eighth Review Conference was held in 2010, and many of the same issues were addressed. Similar to 2005, the conference ended with lofty rhetoric about commitments to the goals of the NPT, but no substantive changes. The biggest result of the 2010 Conference was the final declaration, which resolved to hold a Middle East conference in 2012—not to establish such a zone, but to begin the process of establishing one.

The Ninth Review Conference is scheduled to occur in the spring of 2015, and it is likely that many of the same issues will be re-addressed. Considering the failures of the 2005 and 2010 Conferences, countries will undoubtedly redouble their efforts to make substantive changes to the NPT. The 2015 forum may provide a unique opportunity to completely overhaul the NPT to bring it in line with more modern treaties and to improve effectiveness and equity. At that conference, the Parties should consider the following recommendations:

A. Design a Regime that Creates Incentives for Nuclear Weapons States to Disarm

The NPT is unique among modern arms control treaties in that it creates two classes of Parties: those who are allowed to possess nuclear weapons and those who are not. This inherent unfairness has led to countries such as India refusing to sign the treaty. Indian Defence Minister Pranab Mukherjee called the NPT "discriminatory and flawed" because it creates a de facto permanent elite class of NWS Parties.

The fact that the NWS Parties expect to continue retention of their nuclear stockpiles for the foreseeable future has led some to question the entire treaty. U.N. Under Secretary General Jayanatha Dhanapala, President of the 1995 NPT Review and Extension Conference, was quoted as saying, Unless there is substantial progress—evidence in the nuclear disarmament field—we are going to have

101. NPT, supra note 1, art. VIII.
103. Id.
very serious erosion of the confidence of states parties to the Treaty. This could be quite dangerous for the future, and so I would hope that the nuclear-weapon states in particular and the other supporters of the indefinite extension of the Treaty... would bear this in mind and work together with other states parties to ensure that the objectives of the Treaty are fulfilled, and soon.\textsuperscript{108}

Study of the provisions of the NPT shows that it was meant to be the first step in the eventual complete disarmament of all Parties. In the NPT preamble, it is stated that the treaty is designed "to facilitate the cessation of the manufacture of nuclear weapons, the liquidation of all their existing stockpiles, and the elimination from national arsenals of nuclear weapons and the means of their delivery pursuant to a Treaty on general and complete disarmament under strict and effective international control."\textsuperscript{109} Article VI of the Treaty calls on NWS Parties to "pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control."\textsuperscript{110} Unfortunately, it has not been successful on this issue.

For guidance on how the NPT could be improved, it may be helpful to examine how the CWC addressed a similar problem. By the time the CWC was opened for signature, a number of countries had fully developed chemical weapons programs and relatively large stockpiles. However, unlike the NPT, the CWC did not form two classes of signatories. Article I of the CWC makes it very clear that "[e]ach State Party to this Convention undertakes never under any circumstances . . . to develop, produce, otherwise acquire, stockpile or retain chemical weapons . . . ."\textsuperscript{111} Article I further stipulates that all Parties are to destroy all chemical weapons stockpiles as well as all chemical weapons production facilities.\textsuperscript{112} The language of the CWC is much stronger than the mere suggestive language of Article VI of the NPT, which only requires NWS Parties to "undertake[] to pursue negotiations" on complete disarmament, and is more all-inclusive than Article II of the NPT, which obligates only NNWS Parties to refrain from acquiring nuclear weapons.\textsuperscript{113}

The CWC also anticipates that countries with large stockpiles are not going to be able to immediately get rid of them. Article IV(6) of the CWC sets a hard timetable for destruction, mandating that countries with chemical weapons stockpiles shall begin destroying their stockpiles within two years and complete destruction within ten.\textsuperscript{114} Any state ratifying the convention after this ten-year period is obligated to destroy their stockpiles as soon as possible.\textsuperscript{115} By allowing countries with stockpiles a grace period to disarm, the CWC is able

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108. & Daniel Plesch & Stephen Young, \textit{A Permanent Non-Proliferation Treaty}, BASIC REPS. NEWSL., June 1, 1995, at 1–3.
109. & NPT, supra note 1, pmbl.
110. & Id. art. VI.
111. & CWC, supra note 97, art. I.
112. & Id.
113. & NPT, supra note 1, arts. II, VI.
114. & CWC, supra note 97, art. IV(6). Admittedly neither the U.S. nor Russia achieved their ten-year timeline, and are unlikely to meet the negotiated extension. However, both countries are working towards destruction, and extensions are permitted under the CWC, provided they are made at least 180 days before the deadline with a detailed explanation of the reasons for the request and plans for achieving destruction by the revised extension date. \textit{See Press Release, U.S. Dept of Def., U.S. Chemical Weapons Destruction Extension Requested (Sept. 3, 2003), available at http://www.defenselink.mil/releases/release.aspx?releaseid=5635.}
115. & CWC, supra note 97, art. IV(8).
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to allow countries to gradually come into compliance. This reduces the economic burden on countries with large stockpiles, but it also helps to build confidence. Each Party with a stockpile can be assured that other Parties are meeting their obligations at the same time. Countries may not be willing to immediately disarm if they are worried that their enemies are not also doing likewise. Under the CWC, a country can be confident that others are involved in the disarmament process before the final deadline to disarm arrives.

By mandating that all countries completely disarm their chemical stockpiles, the CWC achieves its fundamental objective of ridding the world of chemical weapons, and maintains equity between countries. This equity is important for two reasons. First, it stops countries from using the excuse of, "our enemies have these weapons so we need them also." Second, it makes a clear statement to the world that these weapons are unacceptable, creating a form of customary international law putting chemical weapons outside of the *jus in bello* and placing those who would acquire such weapons outside of the community of nations.

The NPT should be modified to include hard timetables for the five NWS Parties to completely disarm their nuclear stockpiles. Like the CWC, the modified NPT should create a grace period whereby NWS States could gradually come into compliance, and should contain verifiable intermediate milestones towards disarmament. The NPT should follow the format of the CWC’s Annex on Implementation and Verification. The CWC Annex starts with a requirement that Parties declare their stockpiles of chemical weapons. The Annex then requires Parties to commence destruction of chemical agents in an agreed-upon order focusing on the most deadly chemical agents first. The CWC goes on to require destruction begin within two years, and has intermediate milestones that require Parties to destroy a percentage of their stockpile each year for ten years.

The NPT should be modified to reflect a similar schedule. NWS Parties should be required to declare their stockpile of nuclear weapons, and then begin destruction according to an agreed-upon timeline that reflects realistic assessments of how quickly the weapons can be dismantled safely and efficiently.

Unlike the current NPT, which just provides aspirational language suggesting that the NWS States eventually disarm, these timetables and milestones will reduce the incentive of states such as India to keep their nuclear programs alive out of a sense of discrimination, and will reduce the worries of NWS Parties that they will be left defenseless if they disarm while others do not.

If the NWS Parties commit to full disarmament, it will also change the acceptability of nuclear weapons possession. Many nuclear aspirants such as Iran and North Korea can argue that if other countries are allowed to have nuclear weapons, they should be allowed to have them as well. This is a basic sovereignty argument, and it is difficult to refute. By creating a hard commitment for all countries to give up nuclear weapons, countries such as Iran and North Korea will find their arguments much harder to make. The prohibition on nuclear arms will become a part of customary international law, and possession will be

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117. *Id.*, annex on Implementation and Verification pt. IV(C), §§ 15–16.
118. *Id.*, annex on Implementation and Verification pt. IV(C), § 17.
more internationally taboo. While this does not absolutely prevent a country from making the choice to develop nuclear weapons, it would significantly increase both domestic and international pressures to disarm.

NWS Parties may balk at the idea of disarmament without confidence-building measures that the other NWS states are disarming as well. While this is certainly a legitimate concern, numerous other treaties have effectively dealt with the same issue. There are three ways that an NPT verification protocol could be structured: the CWC model, the IAEA model, and the SALT model.

The first option to ensure that disarmament obligations are being met is to add language to the NPT similar to the CWC Annex on Implementation and Verification. The Annex contains specific language on how verification activities are to be carried out in order to ensure compliance. Verification of nuclear stockpiles is easier than verification for chemical stockpiles for several reasons. First, the infrastructure required to produce plutonium or highly enriched uranium (HEU) is significantly larger, more expensive, and more unique than the infrastructure required to produce chemical agents. Second, there are fewer dual-use nuclear facilities worldwide than dual-use chemical facilities. Third, trace amounts of radioactive materials are easier to detect than trace amounts of chemical materials. In addition, nuclear weapons and chemical weapons present similar concerns over the inadvertent disclosure of military secrets to inspectors. Since the drafters of the CWC believed that they could accurately verify whether or not Parties were meeting their chemical weapons obligations, there is no reason to believe that the same verification protocols would not adequately work for verifying a Party's nuclear obligations.

A second option would be to extend the current IAEA agreement for safeguards to NWS Parties. The IAEA already has a robust inspection mechanism designed to ensure the timely detection or diversion of significant quantities of nuclear material from peaceful nuclear activities to the manufacture of nuclear weapons. The IAEA has been applying these safeguards to NNWS Parties since 1972, and has updated and modernized its safeguards system. If the IAEA believes that its verification protocols are sufficient to ensure that NNWS Parties do not have a clandestine nuclear weapons development program, it is reasonable to believe that similar protocols will be sufficient to prevent NWS Parties from cheating on their disarmament commitments.

A third option for verification can be found in the text of the SALT I treaty. Article XV

119. Id., annex on Implementation and Verification pt. IV(D).
121. Iraq’s nuclear weapons development program went undetected by the IAEA in 1991. Albright David and Robert Kelly, Has Iraq Come Clean at Last?, BULL. OF ATOMIC SCIENTISTS, 53, 55–60 (Nov. 1995). In response, IAEA has placed more emphasis on the additional goal of detecting clandestine acquisition activities. This has resulted in the IAEA’s Strengthened Safeguards System (S3), formerly called 93 + 2. IAEA, Model Protocol Additional to the Agreement(s) between States(s) and the International Atomic Energy Agency for the Application of Safeguards, IAEA Doc. INFCIRC/540 (corrected) (Sept. 1997), available at http://www.iaea.org/Publications/Documents/Infcircs/1998/infcirc540corrected.pdf [hereinafter Model Safeguards Agreement].
122. Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Strategic Offensive Arms, Together with Agreed Statement and Common
of SALT recognizes that in order to provide assurance of compliance, each country is expected to use National Technical Means for verification, and that no country shall interfere with the use of National Technical Means. 123 A similar provision could be worked into the updated NPT as a Protocol, which would suggest that the five NWS Parties use and share National Technical Means as a mechanism for assuring compliance with the disarmament timetables. 124 Considering that both the United States and Russia have had significant experience in developing inspection regimes related to their bilateral nuclear arms treaties, and have been satisfied with their ability to verify each other's compliance to those treaties, it is conceivable that NWS Parties could develop a regime that would allow them to be confident that the other NWS Parties were meeting their disarmament obligations. 125

The United States proposed the SALT model of using National Technical Means to ensure compliance for use in the Fissile Material Cut-Off Treaty. 126 The U.S. argued that no verification protocol would be completely effective, even if it was so extensive that it could compromise the core national security interests of key signatories. 127 The U.S. further argued that mechanisms and provisions that provide the appearance of effective verification without supplying its reality could be more dangerous than having no explicit provisions for verification. 128 Such mechanisms and provisions could provide a false sense of security.

Counterintuitively, even with no verification, a complete disarmament provision would still have positive effects, even if there was some cheating. 129 First, any country willing to cheat and retain nuclear weapons would incur a significantly higher economic cost to

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123. The term "National Technical Means" generally refers to satellite imagery as well as other intelligence-gathering activities. It was first used in the SALT I treaty, and reflected a concern that the "Soviet Union could be particularly disturbed by public recognition of this capability [satellite photography] . . . which it has veiled." See Memorandum from Melvin Laird, Sec'y of Def., to the Assistant to the President for Nat'l Sec. Affairs (June 8, 1972), http://www.gwu.edu/~nsarchive/NSAEBB/NSAEBB231/doc02.pdf.

124. Admittedly, SALT I was designed to limit missiles and large objects that are detectible by satellite reconnaissance. SALT I, supra, note 122. The ability of National Technical Means to detect small quantities of Plutonium is not proven. However, new technologies are increasing detection capabilities, and the U.S. has committed tens of millions of dollars funding research in this area. See, e.g., Domestic Nuclear Detection Office—National Science Foundation Academic Research Initiative, NAT'L SCIS. FOUND., http://www.nsf.gov/pubs/2009/nsf09532/nsf09532.html (last accessed Apr. 15, 2011).


127. Id.

128. Id.

doing so because of increased security needs. Those higher economic costs could convince a country to make the economic decision to not cheat. Second, cheaters run the risk of international condemnation and criticism if their program is ever discovered. Those political costs could convince a country to make the political decision to not cheat. Third, all NWS Parties currently argue that they retain their weapons for their deterrent capabilities.130 Any clandestine nuclear program would almost certainly eliminate any deterrent capability, since it is impossible to deter an adversary with weapons you cannot admit to (or even imply) possessing. The decreased usefulness of a clandestine nuclear program could convince countries that it is not worthwhile to cheat. Finally, while an NWS Party may clandestinely retain a handful of nuclear weapons, it will not be possible to retain anywhere near the quantity of weapons, personnel, and facilities that the U.S. and Russia currently retain. A world with a handful of carefully hidden nuclear weapons presents a smaller risk of global-scale catastrophe than one with tens of thousands of nuclear weapons, and the corresponding possibility of Mutually Assured Destruction and nuclear Armageddon.

B. As an Intermediate Step, Include a "No First Use" Provision into the Treaty

Admittedly, convincing the five NWS Parties to completely disarm is an ambitious goal, notwithstanding the obligations of Article VI. As an intermediate step, the NPT should be modified to prohibit Parties from being the first to use nuclear weapons. Since no nuclear weapon has been used offensively since 1945, there is already a de facto norm on non-use in customary international law, but this should be codified in the text of the treaty.

Adding a use prohibition would bring the NPT in-line with other arms control treaties designed to control certain types of weapons. For example, Article I of the CWC explicitly obligates all Parties to never, under any circumstances, use chemical weapons or engage in military preparations to use chemical weapons.131 Similarly, The Geneva Protocol also explicitly prohibits the "use of bacteriological methods of warfare."132 The Ottawa Treaty has a similar provision obligating Parties to "never under any circumstances... use antipersonnel mines."133 There are other examples as well.134

Since, unlike the treaties related to chemical and biological weapons, the NPT does allow NWS Parties to (at least temporarily) retain nuclear arsenals, a complete non-use provision

131. CWC, supra note 97, art. I(1).
133. Ottawa Treaty, supra note 129, art. 1(1).
would be contradictory. However, the NPT should be modified to include a provision prohibiting all Parties from being the first to use a nuclear weapon in a conflict, and to prohibit use of nuclear weapons against any NNWS Party.

A "no first use" provision would require some NWS Parties to change their current military doctrine. U.K. defense policy now reserves the right to use nuclear weapons "in extreme self defence." In the United States, the Doctrine for Joint Nuclear Operations envisions a variety of conditions in which the U.S. would be the first to employ nuclear weapons, including to prevent an imminent chemical or biological weapons attack, destroy a hardened bunker, or to counter potentially overwhelming adversary conventional forces. Russia made a pledge against first use of nuclear weapons in 1982, but this pledge was officially dropped in 1993. France has also recently implied that they would be willing to respond to terrorist attacks with nuclear weapons.

However, the nuclear powers have not been completely closed to the idea of adopting a "no first use" policy. In a 1995 UNSC Resolution, all five NWS Parties gave security assurances against the use of nuclear weapons against NNWS Parties. China and India have both publicly declared their commitment to "no first use." In 2008, Pakistan's President Asif Ali Zardari stated, "I can assure you that Pakistan will not be the first country ever to use [nuclear weapons]." Several regional nuclear weapons free zone treaties also have a "no first use" provision. Protocol II, Article 3 of the Treaty of Tlateloco states, "The governments . . . undertake not to use or threaten to use nuclear weapons against the Contracting Parties of the Treaty . . ." Similar language can be found in Protocol I of the Treaty of Pelindaba, Protocol I, Article 2 of the Treaty on the Southeast Asia Nuclear Weapon-Free Zone, and Protocol II, Article 1 of the Treaty of Rarotonga. The fact that some NWS Parties have been willing to ratify these regional treaties (such as the U.S. with

136. JOINT CHIEFS OF STAFF, supra note 44, ch. 3(1)(d).
the Treaty of Tlateloco) implies that they may be willing to add a "no first use" provision to the NPT.

Adopting a "no first use" provision is important because it can end the cascade of nuclear deterrence. Arguably, the U.S.S.R. developed nuclear weapons to counter the perceived threat from the United States. The U.K., France, and China developed nuclear weapons to counter the perceived threat from the U.S.S.R. India developed nuclear weapons to counter the perceived Chinese threat. Pakistan developed nuclear weapons to counter the perceived Indian threat. Even today, North Korea argues that they need nuclear weapons as a deterrent against a nuclear preemptive attack from an enemy.146 Iran too seeks nuclear weapons as a shield against perceived Weapons of Mass Destruction threats from Israel, the United States and Iraq.147

A "no first use" provision would help to alleviate the concerns of potential nuclear powers that they need nuclear weapons to deter an enemy from launching a nuclear attack against them. A security guarantee that helps to assure countries that they will not be the target of a nuclear attack can help break the cascade of nuclear deterrence, and would be an achievable intermediate goal on the path of complete nuclear disarmament.

C. Design a Regime with Mandatory Sanctions Against Countries that Choose not to Sign the Treaty

The NPT does not provide for any consequences of non-accession. There is also currently no mechanism within the NPT to deter non-accession or non-compliance other than the threat of bad publicity and the disapproval of the world community. Countries who do not feel that the NPT is in their best interest simply choose to not sign and not be bound by its provisions. As of 2010, four countries are non-Parties to the NPT.148 These countries made a political decision that they did not want to be bound by the NPT's restrictions, and wanted to maintain the option of developing a nuclear weapons capability. As non-Parties, they are not bound by any of the restrictions of the NPT and are free to develop nuclear capacity at will.

The NPT as currently written is powerless to prevent non-Parties from developing nuclear weapons capability. There are only limited downsides to declining to become a Party. Article I of the NPT forbids NWS Parties from directly providing nuclear weapons technology to "any recipient whatsoever," with no distinction between NNWS Parties and non-

147. See Arch Roberts Jr., Why Iran Seeks Nuclear Weapons, YALE GLOBAL ONLINE (Jan. 8, 2009), http://yaleglobal.yale.edu/content/why-iran-seeks-nuclear-weapons.
signatories.\textsuperscript{149} Article III(2) forbids Parties from providing special nuclear material to NNWS Parties, but makes no mention of whether such materials can be provided to non-signatories.\textsuperscript{150} While the world generally complies with the spirit of the NPT and refuses to provide materials to non-signatories, this compliance is voluntary and is discarded when leaders decide to give national interests more weight than international agreements.\textsuperscript{151} Articles IV(2) and V encourage Parties to share nuclear technology, but do not specify that such technologies are not to be shared with non-signatories.\textsuperscript{152} The guidelines of the Nuclear Suppliers Group (NSG) attempt to fill this gap, but the NSG guidelines do not carry the same weight of international law that a treaty would have, and loopholes in the guidelines still permit transfer of technology in some cases.\textsuperscript{153} While generally effective at stopping trade, the guidelines are fungible and can be changed to suit the needs of countries with the power to change the system in their favor. For example, in 2006, the United States forced through a change in the NSG guidelines to successfully get a waiver to transfer previously prohibited items to India.\textsuperscript{154}

This failure to address non-signatories is a major flaw in the NPT because it creates a situation where the only countries being bound by its provisions are those that have already made the political decision to not develop nuclear weapons. By contrast, the Montreal Protocol lays out very specific penalties for non-compliance and for non-participation. Article 4 of the Montreal Protocol provides for specific restrictions on trade with non-Parties. Parties to the Montreal Protocol are not permitted to import or export most chlorofluorocarbons (CFCs), or products containing CFCs, from countries that are not Parties.\textsuperscript{155} Parties are also forbidden to provide non-Parties with technology or financial assistance for projects that produce or use CFCs.\textsuperscript{156} Article 8 of the Montreal Protocol sets up a mechanism for treatment of Parties found to be in non-compliance.\textsuperscript{157} Under Article 8, the Parties have authorized the United Nations Environment Programme (UNEP) to establish an Ozone Secretariat to regularly meet to investigate non-compliance and recommend penalties.\textsuperscript{158} Penalties can be as severe as treating non-compliant Parties as if they were non-
Parties under Article 4.\textsuperscript{159}

The Montreal Protocol provides an economic 'stick' that can be used to deter countries from remaining outside of the Treaty. This deterrence language should be adopted by the NPT, and the treaty should be amended to explicitly restrict Parties from importing or exporting certain products and technologies to non-Parties. For example, an amended NPT could require a complete embargo of all nuclear technology, including commercial nuclear power technology and financing of nuclear projects to non-signatories. Nuclear power is big business, especially for India. For example, after the NSG guidelines were modified to allow trade with India, India signed a nuclear fuel deal with Russia for $700 million.\textsuperscript{160} Pakistan is currently constructing the Chasma-2 nuclear power reactor with $350 million in financing from China.\textsuperscript{161} Were the NPT modified to absolutely forbid nuclear trade with non-signatories, large economic interests could persuade non-signatories to join the NPT.

It could go even further. Considering that nuclear energy is not a large industry in many countries, the loss of access to nuclear power technology may not be a big enough stick. This provision should be expanded to cover all energy products and technology. This would include embargoes on the import and export of oil and gasoline. In addition, Parties should be restricted from providing financial assistance to non-signatories for domestic energy projects.

Like the Montreal Protocol, these restrictions could be applied in stages to allow non-Parties time to adjust and come into compliance with the treaty.\textsuperscript{162} In addition, similar to Article 4 of the Montreal Protocol, as part of the implementation of this new provision, Parties should approve sanctions for non-compliance to include treating the non-complying Party as a non-Party. This would discourage countries such as North Korea from becoming Parties to the NPT and yet not complying with its provisions.

By taking these actions, the NPT will have a large economic 'stick' that can be used to encourage countries to become Parties, and to enforce compliance once they do.\textsuperscript{163} When combined with the earlier recommendation to require all countries to submit to eventual complete disarmament, this will address the concerns of some countries that they refuse to be subject to restrictions while other countries are not subject to similar restrictions.


\textsuperscript{160} See, e.g., Russia, India Sign 700 Million Dollars in Nuclear Fuel Deals, INDIA DEFENCE, Feb 11, 2009, http://www.india-defence.com/reports-4216


\textsuperscript{162} Admittedly, there will not be 100\% compliance, especially when countries are asked to impose sanctions on their traditional allies. However, even partial compliance could have an effect on a country's decision to remain outside of the NPT and could provide domestic political pressure on a country to encourage their non-signatory ally to join.
D. Design a Regime that Encourages Compliance and Discourages Withdrawal from the Treaty

Similarly, the NPT should ideally be amended to discourage countries from withdrawing from the Treaty or being non-compliant with the Treaty. The toothlessness of the current NPT was recently seen in the response to the situation in North Korea. In late 2002 and early 2003, the IAEA issued two resolutions stating that North Korea was in non-compliance with their obligations under the NPT.\textsuperscript{164} When the IAEA threatened to send the matter to the UN Security Council, North Korea simply dropped out of the NPT.\textsuperscript{165}

Article X of the NPT provides a sovereign right to withdraw from the treaty.\textsuperscript{166} However, nothing in the NPT provides for consequences for withdrawal. The only possible response for the rest of the world is to refer the action to the UNSC, citing the withdrawal as a "threat to the peace."\textsuperscript{167} However, the UNSC is not required to take actions against the withdrawing Party, and sanctions may be vetoed if the Party has an ally on the UNSC.\textsuperscript{168} A clause within the NPT that automatically imposed trade sanctions on a withdrawing Party without requiring separate U.N. action would make the consequences of withdrawal more clearly defined to the withdrawing Party and remove hope that they could avoid negative consequences if the UNSC lacks the political will (or the votes) to impose a penalty.

As it now stands, the NPT has no inherent ability to encourage compliance or discourage withdrawal. Any country that signs can, with little effort, withdraw from the NPT and begin a nuclear weapons development program. In fact, a country could sign, accept support for their nuclear infrastructure as provided for in Article IV, and once they have reached a certain level of proficiency, abruptly drop out of the NPT and repurpose their commercial nuclear industry to weapons development.

Ideally, the NPT should be strengthened by removing the option for Parties to withdraw. However, this is too ambitious of a goal. Almost all other arms control treaties have provisions similar to Article X of the NPT.\textsuperscript{169} However, Article X could be modified to restrict or condition withdrawal. For example, in the 2005 NPT Review Conference, Germany suggested adding a clause to Article X, which stated "the right of withdrawal cannot be exercised in cases where the state in question is... in noncompliance with the NPT."\textsuperscript{170} This


\textsuperscript{166} NPT, supra note 1, art. X.

\textsuperscript{167} See U.N. Charter arts. 39, 41–42.

\textsuperscript{168} See, e.g., FARRALL, supra note 70, at 213.


clause would limit the ability of countries like North Korea from withdrawing from the
treaty to avoid sanctions for being non-compliant.

The language of the CWC provides for another potential way to strengthen the NPT. Ar-
ticle XVI(3) of the CWC notes that withdrawal from the treaty does not affect the duty of
States to continue fulfilling their obligations under international law.171 If NWS Parties
make significant steps towards disarmament, customary international law outlawing the
possession or development of nuclear weapons will be created. If this is the case, then add-
ing a clause to the NPT warning Parties that withdrawal does not exempt them from meet-
ing customary international law will provide a hook to prevent countries such as North Ko-
rea from withdrawing from the NPT and subsequently claiming that they are under no
obligation to refrain from nuclear weapons development.

Further, the NPT should be modified to include an article similar to Articles VI and VII of
the BWC. Article VI(1) authorizes any State Party to lodge a complaint to the UNSC if they
find any other State Party is in breach of their obligations.172 Article VI(2) requires all State
Parties to cooperate in carrying out an investigation by the UNSC.173 Article VII requires
State Parties to provide support and assistance to any Party that has been exposed to dan-
ger as a result of a violation of the BWC.174 Adding this language to the NPT will strengthen
compliance in two ways. First, it will lessen the chance that a country could count on po-
werful allies to shield it from an investigation into their compliance. Second, it will alert
countries that if they threaten their neighbors, all of the Parties to the NPT will be bound to
protect any injured Parties. This makes the idea of having a clandestine weapons develop-
ment program or using weapons in an offensive manner less palatable, even to non-
signatories of the NPT.

In addition, similar to the language contained in Article XII of the CWC, the language of
Article X should be strengthened by stating that withdrawal from the NPT will create a
presumption of a threat to international peace.175 Instead of simply requiring that with-
drawing countries file their reasons for withdrawal, it should be noted in the NPT that with-
drawal will automatically be referred to the UNSC as a "threat to the peace."176 Admit-
tedly, as stated above, this will not have any guaranteed effect (since the UNSC could
choose to take no action), but it would encourage the UNSC to publicly debate the issue,
and would increase the chance that serious actions—potentially military actions—would
be taken in response.177 This change would provide one more disincentive to countries
considering whether withdrawing from the treaty is in their national interests.

171. CWC, supra note 97, art. XVIII(3).
172. BWC, supra note 169, art. VI(1).
173. Id. art. VI(2).
174. Id. art. VII.
175. CWC, supra note 97, art. XII(4).
176. Article 39 of the U.N. Charter gives the UNSC the authority to determine whether there has been a
breach of the peace. U.N. Charter art. 39. Articles 41 and 42 give the UNSC the authority to take
actions to restore international peace and security. U.N. Charter arts. 41–42.
177. See generally Mohamed El-Baradei, Saving Ourselves From Self Destruction, N.Y. TIMES, Feb. 12, 2004,
destruction.html.
E. Develop Equitable Solutions to Solve Problems with Dual-Use Technology.

The NPT was initially designed to be a deal whereby countries agreed to forgo their sovereign right to develop nuclear weapons in exchange for the promise of assistance with nuclear energy projects. This promise has not been fulfilled, in part because of suspicions about countries using commercial nuclear energy research as a cover for a nuclear development program. Certainly this is the strategy taken by North Korea. In 1965, North Korea completed construction of an 8 MWe reactor at Yongbyon. After North Korea joined the NPT as a NNWS Party in 1985, they maintained that the Yongbyon reactor was being used for nuclear power generation and its operation was therefore allowed under Article IV of the NPT. However, by 1993, IAEA inspection teams had concluded that North Korean scientists were secretly using the reactor to generate weapons-grade plutonium, in violation of North Korea’s commitments under the NPT.

The situation in North Korea highlights one of the key deficiencies in the NPT. Countries such as North Korea can demand their sovereign right to possess nuclear technology pursuant to Article IV, yet secretly use that same technology as part of a nuclear weapons program. The Yongbyon reactor did indeed produce power, and was also useful in legitimate scientific research. However, it also generated weapons-grade plutonium, and North Korea used Yongbyon to produce forty kilograms of it—enough to create several nuclear weapons.

A similar situation is currently ongoing with Iran. Iran is a NNWS Party to the NPT, and as such claims a sovereign right to develop nuclear technology for peaceful purposes, a right affirmed by Article IV of the NPT. Iran is developing a domestic gas centrifuge technology capability to enrich uranium. Iran claims that this technology will only be used to enrich uranium to low levels for use as nuclear fuel. However, the same gas centrifuge technology can also be used to enrich uranium to high enrichment levels suitable for use in a nuclear weapon. Because of this danger, the United States and other countries have taken steps to deny this technology to Iran. In response, Iranian officials have widely and loudly complained that they have an “inalienable right” to produce nuclear fuel, and have continued their efforts. Since the technology is the same, Iran is able to assert the guarantees of Article IV to develop a commercial enrichment program. From there, it is only a
small leap to repurpose this program to nuclear weapons development.

The drafters of the NPT attempted to address this dual-use problem in Article III. Article III requires that all NNWS Parties accept safeguards negotiated with the IAEA. However, for several reasons this is inequitable and insufficient for addressing the dual-use problem. First, Article III is contradictory to the broad sovereign right to develop nuclear technology proclaimed in Article IV. Article III(3) requires that safeguards must be designed to comply with Article IV. However, since Article IV is vaguely and broadly worded, NNWS Parties are free to argue that almost any technologies are allowed. Second, because the specifics of safeguards are not spelled out in the treaty text, Parties are required to sign away some of the sovereign rights asserted in Article IV without being sure of what exactly they are agreeing to. This can create tension as Parties later find they are being criticized for developing technology they believed was allowable. Third, while a model safeguards agreement exists, each individual country must negotiate a separate safeguards agreement with the IAEA. This can lead to politicization of the safeguards process and inequity as some countries can end up with stricter safeguards than others.

A potential solution to this dilemma may be found in other arms control treaties, most notably the CWC. Unlike the NPT, the CWC recognizes the dual-use problem that the same chemicals and processing equipment used for producing chemical weapons can also be used for legitimate high-value commercial purposes. Unlike the NPT, which offers a blanket right of NNWS Parties to develop any nuclear technology, Article VI of the CWC expressly addresses which chemical activities are not prohibited under the convention. Article VI creates several categories ("schedules") of chemicals, based on that particular chemical's applicability to the production of chemical agents. Each schedule is subject to different restrictions, which are explained in great detail in the Verification Annex. Essentially, the CWC creates a transparent sliding scale whereby technologies and chemicals of highest proliferation concern are subject to significant restrictions and intrusive verification methods, while technologies and chemicals of lower proliferation concern are subject to lesser restrictions.

This issue has been addressed in at least one bilateral agreement. In 1994, the United States and North Korea signed a joint agreement with the goal of replacing the Yongbyon reactor with a new light-water reactor. Unlike the Yongbyon reactor, this new light-water reactor was not capable of producing weapons-grade plutonium, and thus did not present the same proliferation concerns. While the deal was never completed, it does

187. NPT, supra note 1, art. III.
188. Id. art. III § 3.
189. For example, Iran has argued that they have a sovereign right to uranium enrichment centrifuges under Article IV. Iran Demands Its Nuclear Rights, supra note 182.
190. See Model Safeguards Agreement, supra note 121.
191. CWC, supra note 97.
192. Id.
193. Id. at Verification Annex.
195. North Korea Claims to Have Weaponized Plutonium, supra note 181.
provide evidence that a sliding scale of nuclear technology can be an effective tool in merging the non-proliferation goals of the NPT with its technology sharing provisions.

The NPT should be modified to create a similar regime to the CWC. Based on scientific data, various technologies and materials that are dual-use should be arranged into categories. Technologies and materials most applicable to nuclear weapons development should be subjected to significant restrictions and intrusive inspections, while those technologies and materials less applicable to nuclear weapons development will be subject to fewer restrictions. Much of this data already exists in the IAEA Model Safeguards agreement. It would be a simple matter to adopt the Safeguards Agreement as a Protocol or Annex to the NPT. This would improve equity and transparency in the safeguards process.

This modification will lessen proliferation concerns because countries such as North Korea or Iran would be unable to legitimately claim a right to develop dual-use technology, or that the IAEA is treating them unfairly. Under this proposal, the old “atoms for peace” deal would be replaced with one that is more equitable, transparent, and effective. For example, under this new system, a Party would be free to legitimately develop its light-water reactor (such as Iran’s Bushehr facility) without interference, in exchange for accepting intrusive inspections at its uranium enrichment facility (such as Iran’s Natanz facility), and foregoing the right to develop plutonium production reactors (such as North Korea’s Yongbyon reactor). This system is better than the present system because it creates clear guidance to Parties on their rights and obligations. The present system relies on diplomatic negotiations and political in-fighting, and often results in disagreements between Parties over what technologies are and are not allowed.

X. Obstacles to Passage of an Updated Nuclear Non-Proliferation Treaty

As participants in the NPT’s Seventh Review Conference found, there are a number of obstacles standing in the way of amending the NPT. These obstacles must be overcome before meaningful change to the NPT can occur.

The main obstacle to the reform of the NPT is position of the five NWS Parties, who appear unwilling to negotiate an end to the two-tiered system of NWS and NNWS Parties. Nuclear weapons are a very powerful instrument of state power, and it is understandable that the NWS Parties are reluctant to lose them. This makes NWS Parties the most likely to block serious attempts to modify the NPT. These parties also happen to have all the UNSC vetoes and wield significant economic power that can be used to bully smaller countries. It is likely that attempts to significantly modify the NPT without the buy-in of the NWS Parties is not possible since Article VIII of the NPT gives all NWS Parties a veto over proposed amendments.

A second obstacle to reform of the NPT is the lobbying efforts of non-governmental groups. If the changes suggested in Article IX are made, there is the potential for an increase in nuclear energy production worldwide, including in countries with poor environ-
mental records and limited abilities to enforce domestic environmental laws. This could cause environmental groups to oppose reform.\textsuperscript{198} In addition, business interests that stand to lose market share as nuclear power generation increases (such as oil and gas companies), and those who stand to lose markets if sanctions become more stringent (such as nuclear reactor suppliers), could also lobby against reform. If non-governmental interests rally against the changes, it could place domestic political pressure on countries to not modify the NPT.

The mandatory sanctions regime suggested above may also cause some countries to balk. Countries may not want to be forced to press sanctions against large trading partners or allies, and would reject the idea of mandatory sanctions. For example, Russia would be unlikely to vote for a regime that would require mandatory sanctions against Iran, and the United States would be unlikely to vote for a regime that requires mandatory sanctions against Israel. If countries feel their economic or political interests could be threatened, they may choose to not back the NPT modifications.

The main purpose of the NPT is to prevent proliferation. But, like all treaties it is limited by the general tenets of international law. Some leaders have less than rational decision-making processes, and there may not be anything that can be done to dissuade them from developing weapons capability, so even a more robust NPT would not stop them. Arguments can be made that a tighter NPT would make it more politically and economically costly to countries that decided to develop a nuclear weapons program, but in the end countries may not see the value in updating the NPT if they feel it is unlikely to be more effective than the current version.

Similarly, non-state actors are not subject to treaty requirements, so even a more robust NPT might not be able to deter them. Non-state actors are unaffected by trade sanctions and so are unlikely to be dissuaded by a more robust NPT. An argument can be made that reducing the amount of special nuclear material in the world would make it more difficult for non-state actors to acquire materials. But again, countries may not see the value in updating the NPT if they feel it is unlikely to be more effective than the current version.

Finally, some countries feel that they need the option of developing nuclear weapons for defensive security purposes. Nuclear weapons are a significant force multiplier and a reasonably effective deterrent. It is possible that some countries, such as Pakistan or Israel, would continue to reject the NPT on the basis that they require nuclear weapons for their own security needs. It is unlikely that security guarantees will assuage their fears, and they may lobby against a more robust NPT that would make it more difficult for them to maintain their nuclear weapons programs.

\textsuperscript{198} Admittedly, in recent years concern over greenhouse gas emissions has caused some environmental groups to reconsider the benefits of nuclear power. See, e.g. Barringer, Felicity, \textit{Old Foes Soften to New Reactors}, \textit{N.Y. Times}, May 15, 2005, \url{http://www.nytimes.com/2005/05/15/national/15nuke.html} However, at present most environmental groups would still be opposed to encouraging the development of nuclear power. See, e.g., \textit{End the Nuclear Age}, \textsc{Greenpeace Int'l}, \url{http://www.greenpeace.org/international/campaigns/nuclear} (last accessed Apr. 15, 2011).
XI. Can it be Done?

The NPT has been in force for around forty years without significant modification. The changes suggested in this paper are radical, and the obstacles significant. However, it may still be possible to overcome these obstacles and accomplish the changes.

Article VIII of the NPT allows for amendments to be made. Any Party may propose an amendment to the Treaty. If one-third of the Parties agree, a conference is convened to consider the amendment. Amendments must be approved by a majority vote of all parties, but only if all five NWS Parties and all members with seats on the Board of Governors of the IAEA also agree to the amendment. This presents a high hurdle, but one that can be potentially overcome, even though to date the treaty text has never been amended.

The main driver behind the original passage of the NPT was the United States and the other NWS Parties. However, the modifications suggested in this paper would not have to originate in the same place. A grass roots effort started by smaller countries or even private citizens could be effective at getting the ball rolling. A good example how this could work would be the recent Ottawa Treaty. This treaty, banning the use of landmines, was initially a grass roots effort started by a non-governmental organization called the International Campaign to Ban Landmines (ICBL). The treaty was actively opposed by some of the biggest users of landmines including the United States. Despite this opposition, the Ottawa Treaty has entered into force and has now been ratified by 156 countries. The success of the Ottawa Treaty shows that a major arms control treaty can be enacted without the sponsorship of one or more of the major stockpilers of those arms. While the Ottawa treaty has not been ratified by China, Russia, or the United States (all of whom have a veto on the U.N. Security Council), the treaty is considered a major step in the end of landmine production and use.

The ultimate goal of the suggestions made in this paper is to strengthen the NPT and reduce or eliminate the stockpiles of all of the countries currently in possession of nuclear weapons. Admittedly, it is unlikely that, in the short term, this updated regime will have complete accession. The NWS Parties will likely balk at giving up their nuclear capability in the short term, and other non-parties will continue to refuse to accede for various reasons. However, this does not mean that the world community should not make an effort to improve the NPT. Sometimes a treaty is an important symbolic step, even without complete accession. A stronger NPT, with hard deadlines on NWS Parties to disarm, will send a mes-
sage that it is no longer acceptable for countries to possess nuclear weapons. As it presently stands, many nuclear aspirants such as Iran and North Korea look around and declare that if other countries are allowed to have weapons, they should be allowed to have them to. Similarly, the gravitas a country like the United States might have in dissuading an aspirant from nuclear weapons development is lessened by the fact that the United States maintains its own nuclear stockpile.

An updated NPT, even without complete accession, will have the effect of changing people's perceptions of the issue. For example, prior to the Ottawa Treaty, most countries and most people did not recognize the threat of landmines, nor saw them as a particularly insidious form of weapon. As the ICBL and other NGOs began to raise public awareness of the issue, and more and more countries signed on to the Ottawa Treaty, the use of landmines became less and less acceptable, even by those like the United States who have chosen to remain outside the treaty. While the United States still remains outside of the Ottawa Treaty, it has made efforts to reduce the number of landmines in its stockpile and to redesign its landmines to reduce the threat of civilian casualties. As mentioned above, even symbolic steps have the capability of creating customary international law, and as more countries come into compliance with the Ottawa Treaty, it becomes more difficult for those who do not comply to continue to assert a right to use weapons that the world community considers outside of jus in bello.

Similarly, the Kyoto Protocol has not achieved complete accession. In addition, many of the Parties are unlikely to meet the CO₂ reductions the Protocol holds them to. However, the Kyoto Protocol can be considered a success because it has changed public perception of the issue, and has made continued production of CO₂ emissions less politically palatable than it would otherwise be. A fundamental shift in the world's attitude towards CO₂ emissions has occurred, and it is becoming more difficult for a country to assert a right to emit unlimited CO₂. Similarly, an updating and strengthening of the NPT can result in a shift of public attitude towards the development of nuclear weapons, resulting in increased domestic political pressure on government to not pursue the technology, even if there is not complete accession to the treaty.

While it may not be possible to amend the NPT in the face of direct opposition of one or more of the NWS Parties (due to their Article VIII(2) veto), there is nothing stopping NNWS Parties from developing a completely separate treaty, based on the provisions of the NPT and with the modifications suggested above. This new treaty would bypass the NWS Parties' veto ability and allow for meaningful change to occur without the required unanimous approval of the five NWS Parties. As above, this new treaty would have the effect of focusing public debate and increasing public awareness of the nuclear weapon threat, even if its

practical effects are limited without the accession of the NWS Parties.

If it turns out to not be possible to achieve world consensus on a revised NPT, it might still be possible to achieve the goals in a piecemeal fashion. There are presently a number of regional nuclear treaties currently in effect. Through the use of these treaties, countries that do not possess the influence to enact a global treaty can effect change in their region of the world. By interlocking these treaties, it may be possible to create de facto change without having to overcome the obstacles of bringing a global treaty into force. For example, the Treaty of Rarotonga creates a nuclear-free zone in the South Pacific. Article V of that treaty prevents the stationing of foreign nuclear weapons on the territory of the Parties. Article V also contains a (voluntary) clause suggesting that Parties can prevent foreign naval vessels carrying nuclear weapons from transiting their territorial waters. If various regional nuclear treaties adopt similar provisions, there could be a de facto worldwide effect. Nuclear Weapons States would find their ability to use their naval forces diminished if they could not find countries willing to host nuclear-armed vessels. Similarly, for example, regional treaties could be amended to require sanctions on countries that are not Parties to the NPT. If enough regional organizations work together, they can have a significant effect, without requiring a global treaty that must be enacted through the United Nations.

Change can even occur via domestic legislation within individual counties. For example, in 1987, New Zealand passed a domestic law prohibiting nuclear-armed naval vessels from landing at New Zealand ports. Austria and Mongolia have gone further and declared themselves nuclear weapon-free countries. Domestic legislation can be used to mandate sanctions or take other actions against proliferators or non-Parties to the NPT. If enough domestic legislatures enact similar anti-nuclear weapon laws, they can have an aggregate international effect, even in the absence of any formal international agreements.

XII. Conclusions

For its time, the NPT was a landmark treaty, and most certainly contained the spread of nuclear weapons technology. However, the world has changed in the forty years since the treaty was negotiated, and its provisions are not ideal to contain proliferation in the twenties.
The NPT should therefore be amended in a number of ways. First, the NPT should be amended to set deadlines and intermediate milestones for NWS Parties to completely disarm and meet their pledge under Article VI. Second, the NPT should be amended to include a "no first use" provision. Third, the NPT should be amended to provide a stronger economic 'stick' to deter countries from remaining outside of the treaty. Fourth, the NPT should be amended to discourage countries from being non-compliant with their treaty obligations or from abrogating the treaty entirely. Finally, the NPT should be amended to create a sliding scale of technology to encourage the use of nuclear energy while discouraging the proliferation of dual-use technologies that can easily be repurposed to a nuclear weapons program.

By making these changes to the structure of the NPT, the treaty will be more in line with modern arms control agreements and will be more effective at its fundamental mission to reduce the worldwide threat of nuclear weapons.