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*The NPT & the sources of nuclear restraint*

The past decade has not been kind to the nuclear nonproliferation regime.<sup>1</sup> Indeed, since the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) was extended indefinitely in 1995, it has been subjected to a series of body blows, which have led many nonproliferation experts, policy-makers, and media pundits to prophesize an impending cascade or chain of nuclear weapons spread, as well as the possible demise of the NPT as we currently know it. Implicit in many of these forecasts are assumptions about proliferation dynamics that are poorly informed by empirical research on past nuclear renunciation decisions. This essay draws upon this literature to assess the role the NPT has played in promoting prior nuclear restraint. It also examines how evolving international developments may alter the future effectiveness of the NPT as a proliferation constraint.

A review of recent commentary about nuclear proliferation imparts little reason for optimism that the NPT will withstand a large and growing set of challenges that emanate both from outside and within the Treaty. A short list of external challenges includes:

- The rise of non-state actors as nuclear suppliers, middlemen, and end-users, and the tendency on the part of many states to assume that the threat of nuclear terrorism is someone else's problem;
- The inadequacy of fissile material protection, control, and accounting in many states, and corresponding deficiencies in nonproliferation export controls;
- A nuclear arms race in South Asia and the general disinclination by and/or inability of the international community to do anything to redress the situation;
- Defection from the NPT by North Korea;
- Iranian nuclear brinkmanship;
- Perceived rewards to states not party to the NPT and to nuclear weapons possessors;
- Continued reliance on nuclear weapons by all nuclear weapons possessors;
- Subordination of global nonproliferation objectives to other domestic and regional economic and political considerations by states party to the NPT;

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- An uncritical embrace of nuclear power by most states without adequate attention to the full range of economic, safety, terrorism, and opportunity costs; and
- Complacency and ignorance about issues of disarmament and nonproliferation on the part of otherwise well-educated citizens and their elected officials.

Internal challenges stemming from the nature of the NPT itself tend to be less well known, and include such dangers as:

- Inadequate adherence to and implementation of NPT provisions by states party to the Treaty, compounded by the absence of an effective enforcement mechanism;
- Treaty inattentiveness to non-state actors;
- The conflict between the inalienable right to peaceful nuclear use and the prudent exercise of that right;
- Failure by most nuclear-weapons states (NWS) to address the demand of many non-nuclear-weapons states (NNWS) for negative security assurances;
- The near impossibility of amending the Treaty to correct flaws or to take account of new conditions;
- The weakness of the strengthened review process, including the difficulty of policy innovation due to reliance on decision-making by consensus;
- Lack of Treaty universality;
- Disavowal of and/or disregard for key elements of the 1995 NPT Review and Extension Conference package of three decisions and one resolution and the Final Document of the 2000 NPT Review Conference by both NWS and NNWS; and

- Reevaluation by a number of NPT states-parties of the value of the NPT for their security, raising the prospect of additional NPT defections.

These challenges to the nonproliferation regime are real and merit serious attention and corrective action. To enumerate them without also taking note of countervailing positive nonproliferation developments, however, is to convey a sense of doom that is misplaced.

First, it is important to recognize that the pace of proliferation has been relatively slow since the United States first tested a nuclear explosive in 1945. The number of nuclear weapons possessors today also is far less than anticipated by many prognoses made in the 1950s through the 1970s.<sup>2</sup> The 1957 U.S. National Intelligence Estimate, for example, identified a list of 10 leading nuclear weapons candidates, including Canada, Japan, and Sweden, the latter of which was predicted as “likely to produce its first weapons in about 1961,” while Japan was estimated to “probably seek to develop weapons production programs with the next decade.”<sup>3</sup>

It also is the case that proliferation is neither inevitable nor irreversible. Many countries with the technical capability to acquire nuclear weapons and that previously were regarded by intelligence analysts and scholars as prime candidates for proliferation chose to forgo that option, and four countries that either indigenously developed nuclear weapons (South Africa) or inherited them (Belarus, Kazakhstan, and Ukraine) subsequently eliminated their nuclear arsenals and joined the NPT as non-nuclear-weapons states. Moreover, most countries that embarked on peaceful nuclear energy programs also, at one time or another, seriously contemplated mil-

itary programs, and a number actively engaged in nuclear weapons research and/or development.<sup>4</sup> The overwhelming majority of these states, however, chose to abandon these military pursuits well before they yielded a nuclear weapon.

Although the NPT can be faulted for not having universal membership, it remains the most widely subscribed-to international accord in existence, with only four outliers: India, Israel, Pakistan, and the Democratic People's Republic of Korea. To be sure, two of these states are very populous; but they also represent a distinct minority of the international community. Significantly, parties to the NPT agreed voluntarily in 1995 to extend the Treaty indefinitely – a clear indication at the time of the value states attached to the Treaty.

One could place a number of other developments in the positive column of a nonproliferation ledger. They include: the steady growth of nuclear-weapon-free zones (NWFZs), which now cover the entire Southern Hemisphere; deep reductions over the past 10 years in the size of the nuclear arsenals of the two largest NWS; adoption by many NPT members of strengthened International Atomic Energy Agency (IAEA) safeguards in the form of the Model Additional Protocol; adoption of United Nations Security Council Resolution 1540, which mandates all states to put in place and enforce effective physical protection and export control measures related to weapons of mass destruction proliferation and terrorism; and new momentum on nuclear disarmament as a consequence of the “Road to Zero” Initiative by George Shultz, William Perry, Henry Kissinger, and Sam Nunn.

These positive nonproliferation developments should not obscure the pressing proliferation challenges the world

faces today. They are a useful corrective, however, to the notion that the nonproliferation regime is on its last legs and that all that is required to topple it completely is a further NPT defection (read, Iran), which in fact would be only the second in the Treaty's history. They also direct attention to a significant aspect of the proliferation puzzle: what best accounts for the slow pace of nuclear weapons spread?

Much of the thinking about nuclear proliferation has been informed by the assumption that states seek nuclear weapons because their security in an anarchic world demands it. In its unadulterated form, this “realist” perspective discounts the impact of international institutions, norms, regime type, domestic politics, and personalities on nuclear decision-making; all that really matters is the balancing dynamic in which one state's pursuit of nuclear weapons begets another's. And yet this simple and elegant thesis is hard-pressed to account for the small number of nuclear weapons possessors, the slow pace of proliferation, and the abandonment of nuclear weapons activities by most states that initially chose to embark on them.

*The Role of Alliances.* In an effort to reconcile the discrepancy between realist assumptions and actual state behavior, it has been suggested that weak states may choose to rely temporarily on security guarantees from NWS in lieu of an indigenous nuclear weapons deterrent. This thesis is often cited to explain nuclear weapons abstinence on the part of many NATO members, as well as Japan, South Korea, and Taiwan. Secretary of State Clinton also has hinted that the United States might rely on this approach to dampen nuclear proliferation in the Middle East should

Iran move closer to a nuclear weapons capability.<sup>5</sup> Several recent studies, however, have cast doubt on the effect security guarantees have on nuclear restraint, even with respect to Japan, a NNWS usually cited as the model case. Etel Solingen, for example, argues persuasively that American guarantees do not adequately explain Japanese nuclear restraint. As she points out, during the post-World War II period there has been little correlation between the perceived reliability of the U.S. guarantee and the strength of Japanese interest in nuclear weapons. In addition, there were fears that the alliance might entangle Japan in U.S.-led initiatives that were not in its interest.<sup>6</sup> More generally, Solingen finds that “U.S. and Soviet commitments to client states (North Korea, Iraq, Israel, and Pakistan) did not lead these states to renounce nuclear weapons. Nor did the absence of security guarantees play any role in decisions by Egypt (1971), Libya (2003), South Africa, Argentina, or Brazil to reverse nuclear ambitions.”<sup>7</sup>

The evidence presented by Solingen is not conclusive and is at odds with both conventional wisdom and several possible counterexamples. It is intriguing, however, that the few relevant quantitative publications on (non)proliferation correlates yield findings generally consistent with Solingen’s thesis despite using different data sets and analytical techniques.<sup>8</sup>

*The Power of Institutions.* An alternative explanation of nuclear weapons restraint emphasizes the power of economics and institutions and is more optimistic about the prospects for accomplishing long-term cooperation among states. According to this view, the vast majority of states made a rational choice when they joined the NPT, surrendering their sovereign

right to build nuclear weapons in exchange for the promise of material benefits, including the eventual disarmament by the NWS and the foreswearing of nuclear weapons by other NNWS.

Although most analysts agree that the NPT has reinforced nonproliferation tendencies, they are divided on the proposition that the Treaty has caused states that otherwise would have acquired nuclear weapons to abandon their pursuit. Jacques Hymans, for example, suggests that if the regime were to have played such a significant role, one might have expected far more proliferation prior to the emergence of the NPT as a widely subscribed-to treaty.<sup>9</sup> Similarly, Solingen finds that for the nine states she examines most choices to remain non-nuclear were made prior to, rather than as a consequence of, the decision to ratify the NPT. This was the case, she argues, for Japan, South Korea, and Taiwan. In addition, she points out that the NPT did not prevent Iran, Iraq, Libya, and North Korea from pursuing nuclear weapons subsequent to their adherence to the NPT.<sup>10</sup>

The critiques by Hymans and Solingen are useful in calling attention to the surprisingly scant body of empirical research on the relationship between international institutions and nuclear restraint. Both also raise legitimate questions about the relative explanatory power of NPT membership as opposed to other potential sources of nuclear restraint. One problem with their critiques, however, is the small number of cases upon which their arguments rest and their suitability for testing the proposition that the NPT had a marginal restraining effect. Although the evidence they extract from 13 states is suggestive, their argument would be more compelling if it were based on a broader set of countries in the post-NPT period.

A review of the small body of quantitative research on the subject offers additional reason for caution in assessing the impact of the NPT on national nuclear weapons decisions. Dong-Joon Jo and Erik Gartzke, for example, find that NPT membership has a marginal impact on nuclear weapons choice. NPT parties, they argue, are only slightly less prone to pursue nuclear weapons programs; but the inhibiting effect of the Treaty, they conclude, is offset by the technological diffusion it encourages.<sup>11</sup> In his analysis, Philipp Bleek discovers that while signing the NPT has no effect on whether or not states will initiate weapons programs, NPT parties that have initiated programs “are less likely to see them through to completion and acquire nuclear weapons.”<sup>12</sup>

*The Influence of Non-Material Incentives.* Yet another way to view nuclear choice is to look beyond security considerations and to recognize that even “power politics” can be tempered by human practice. According to this perspective, under appropriate conditions the international social environment may foster the development of norms, institutions, and behavior conducive to states’ renunciation of nuclear weapons.<sup>13</sup> From this vantage point, the NPT represents the embodiment of the international nonproliferation norm and has important symbolic value in addition to its promise of material benefits.<sup>14</sup>

Maria Rost Rublee’s analyses of Japanese and Egyptian nuclear decision-making are very much in this tradition and suggest that the creation of the NPT not only had the effect of altering elite perceptions about the value of nuclear weapons, but also spawned commitments that “grew legs” in the form of supportive bureaucracies, budgets, and organizational power.<sup>15</sup> Although plausible, this interpretation is chal-

lenged by Etel Solingen, who examines a number of the same (and other) cases. According to Solingen’s research, the operation of pragmatic considerations of a political-economic nature typically takes precedence over normative ones. Most of the 13 case studies prepared for the Center for Nonproliferation Studies (CNS) project on Forecasting Nuclear Proliferation in the 21st Century similarly provide little evidence that normative factors by themselves account for much variation in national decisions to acquire or forgo nuclear weapons.

Jacques Hymans’s research on the demand side for the bomb also is relevant to an assessment of the power of non-material incentives. His approach is unusual, as it stresses neither the dampening effect that broad trends in international norms have on proliferation tendencies nor the corresponding constraints that may follow from societal pressures. Rather, his focus is on “deviant” oppositional nationalist leaders whose combination of fear and pride propels them down the nuclear weapons path. According to Hymans, the apparent success of the NPT in containing proliferation results primarily from the fact “that few state leaders have desired the things it prohibits.”<sup>16</sup>

Approaches that emphasize normative influences on nuclear decision-making often are criticized for their lack of clarity in explaining how, when, and why norms influenced nuclear weapons decisions. One of the few studies to tackle this issue directly is by Harald Müller and Andreas Schmidt. Their research points to a decline after 1960 in the number of states with nuclear weapons activities relative to the total number of states in the international system, a trend the authors attribute in part to a shift in the global norm regarding nucle-

ar nonproliferation. The authors attach particular importance to the unanimous adoption, in 1961, of a resolution introduced by Ireland to the United Nations General Assembly. The resolution called upon all members to conclude an international agreement prohibiting states not possessing nuclear weapons from acquiring them and states with nuclear weapons from assisting other members in their manufacture or acquisition by other means.<sup>17</sup> According to Müller and Schmidt:

For states that gained their independence late (after the Irish Resolution), being non-nuclear was seen as an appropriate status, the attribute of a “good citizen” of the world community of states. For the “old states,” the new norm competed with the old understanding that a state was entitled to acquire armament according to the standard of the time. This is an indication . . . that the debate and codification of a new, though yet weak international norm had an impact upon the way the new states viewed proper behavior and shaped their own understanding of security. For the old states, the impact was weaker, but the series of terminations of nuclear weapons activities started during that period. In 1968, a much stronger norm was created: the Nuclear Nonproliferation Treaty.<sup>18</sup>

An alternative interpretation of “when and why” that de-emphasizes the role of norms is provided by Christopher Way and Karthika Sasikumar in what is arguably the most carefully crafted aggregate data analysis of when and why states join the NPT.<sup>19</sup> Assuming that states rely on cost-benefit analysis when choosing whether or not to accede to the NPT, the authors employ event-history models and a variety of economic, security, and political indicators for the 1968 to 2000 time period to assess the power of alter-

native explanatory variables. They conclude, among other things, that those states that enjoy benign security environments or for whom developing nuclear weapons would be technological-ly or economically difficult sign on relatively quickly, while those paying higher opportunity costs in giving up the nuclear option are more likely to be NPT laggards.<sup>20</sup>

*The Force of Domestic Politics.* A growing body of research suggests that one cannot properly understand nuclear weapons restraint without reference to the domestic context in which nuclear decisions are made. Indeed, the interplay of bureaucratic politics, organizational processes, and individual personalities may be more consequential in shaping proliferation outcomes in a number of states than the threats emanating from the international security environment. As Scott Sagan points out, from this vantage point “[t]he NPT regime is not just a device to increase states’ confidence about the limits of their potential adversaries’ nuclear programs; it is a tool that can help to empower domestic actors who are opposed to nuclear weapons developments.”<sup>21</sup>

The most persuasive evidence about the force of sub-national dynamics in explaining nuclear outcomes is marshaled by Etel Solingen, who emphasizes the importance of the domestic ruling coalition’s orientation to the global political economy. Nuclear weapons programs, she argues, are less likely to emerge in countries when the domestic political landscape is sympathetic to economic openness, trade liberalization, foreign investment, and international economic integration. This thesis largely is borne out in her comparative analysis of nine states from East Asia and the Middle East, which also finds that NPT considerations were not central to the nuclear

renunciation decisions of these countries.

Findings from my own research on nuclear decision-making in Belarus, Kazakhstan, and Ukraine following the collapse of the Soviet Union offer qualified support for Solingen's thesis, and also suggest that the NPT was only a secondary factor influencing nuclear reversal decisions.<sup>22</sup> Solingen's model fits best with Ukraine, where the main threats to the country's territorial integrity were seen by the key political players as domestic rather than external. These acute dangers were in the form of economic collapse and Crimea's attempt to assert its independence from Ukraine – threats unlikely to be mitigated by nuclear weapons. Moreover, there was recognition in Kyiv, reinforced by U.S. policy, of the connection between Ukraine's nuclear policies and its access to foreign capital and technology. In Kazakhstan, the linkage was less direct and the perceived threats also were much less urgent. As a consequence, Kazakhstani policy-makers were in no hurry to denuclearize and were aware that the weapons on their territory might have practical value as bargaining chips related to a variety of economic, environmental, and security needs. The leadership, however, was very pragmatic and was receptive to the U.S. argument that the future of the country's peaceful nuclear energy program was dependent upon its non-nuclear-weapons status. Solingen's thesis works least well in the case of Belarus, whose president, Stanislav Shushkevich, saw little value in a Belarusian nuclear force even if it could be afforded. His attitude appears to have had little to do with international economic considerations, but instead reflected his professional training as a nuclear physicist and view of nuclear weapons as immoral and unnecessary.

As the preceding discussion indicates, the scholarly literature on nuclear weapons decision-making, including the small body of relevant quantitative studies, is divided on the importance one should attribute to the NPT in explaining past nuclear weapons renunciation decisions. Although a number of country analyses touch on the role played by the NPT in individual cases, surprisingly few studies focus specifically on the topic. Instead, NPT advocates and critics alike typically assert their preferred views about the merits of the Treaty and its (in)dispensable contribution in retarding the spread of nuclear weapons.

The period during which the NPT received the most sustained attention was the five-year run-up to the 1995 NPT Review and Extension Conference. At that time it was by no means assured that the Treaty would be extended indefinitely, and a number of analyses were undertaken to assess how the demise of the NPT might affect the international nonproliferation scene. Particularly noteworthy was a collection of essays on *Beyond 1995: The Future of the NPT Regime*.<sup>23</sup> In one of the book's most cogent contributions, Lawrence Scheinman sums up the prevailing view of scholarly thinking at the time, which does not differ markedly from the present: *the NPT alone cannot and does not prevent proliferation*. As he notes, "Studies of national decisions on acquiring nuclear weapons or acceding to the NPT . . . show that in virtually every case the decision made can be explained by reference to something other than the NPT – either to domestic considerations, the impact of acquiring nuclear weapons on bilateral relations, assessment of technological limitations, political costs, or security consequences."<sup>24</sup> To paraphrase Scheinman's conclusions: Does this

mean that the NPT doesn't matter? No. Would its demise negatively impact efforts to contain proliferation? Yes. Would the nonproliferation norm, international safeguards, and general nonproliferation restraint continue in the absence of the NPT? Perhaps. In short, according to Scheinman, "the NPT is a necessary but not sufficient condition for nonproliferation"; it may not prevent proliferation, but it significantly impacts the nuclear decision-making environments in many countries.<sup>25</sup>

Scheinman's essay also highlights the various nonproliferation roles played by the NPT and the logic of assessing the value of the Treaty in terms of the importance one attaches to these different functions. For example, it is useful to distinguish among the NPT's roles as a legal barrier, a normative standard, and a confidence-building measure. The latter function, which may be less obvious than the others, includes important international safeguards commitments that states party to the NPT are obliged to undertake. These commitments are legally binding and entail verification procedures designed to reassure other states about the peaceful uses of a country's nuclear activities. Although international safeguards and the confidence they instill are not dependent on the NPT, it is extremely doubtful if a global system of stringent safeguards approaching those currently in existence would have developed in the absence of the NPT.<sup>26</sup>

Many nonproliferation analysts maintain that the NPT, as a multilateral treaty, has some constraining effect on states party to the Treaty. As Scheinman argues, "Formalized commitments containing reciprocal obligations establish thresholds that are more difficult to cross."<sup>27</sup> This assessment is logical

in terms of the psychological, bureaucratic, and domestic political obstacles that treaties impose notwithstanding their withdrawal clauses. And indeed, most research on international treaties suggests that states generally comply with the accords they conclude. Less clear-cut, however, is the extent to which states comply because of any legal commitment to do so or because of the conditions that prompted them to sign the treaty in the first place.<sup>28</sup> Based on the aggregate data analysis of Way and Sasikumar and a number of country-specific case studies, especially those by Rublee, the NPT would appear both to constrain and screen.

One of the most unusual aspects of the 1995 NPT Review and Extension Conference was the near unanimity among more than a hundred national statements during the first week of general debate about the benefits of the NPT for the specific states in question. These statements were by no means uniform and made reference to a variety of arguments ranging from reduced regional arms racing, increased confidence in the peaceful intentions of potential adversaries, progress in promoting disarmament among the NWS, expansion of NWFZs, harnessing of the atom for peaceful use, and the promise of greater peace and stability in the international system. Although these statements emphasized different points and perspectives, what was striking to this observer was the general consistency of the message that the NPT was, net, a significant plus and should be extended (either indefinitely or for a long duration), as well as the apparent heartfelt manner in which many of the statements were delivered.<sup>29</sup>

Today the rhetoric about the value of the Treaty as reflected in national state-



ments in the NPT review process remains much the same. Nevertheless, one has the impression that many of the speakers are simply going through the motions, reiterating past declarations about the importance of the Treaty, but without much passion or conviction. This lackadaisical approach to the business of the NPT, aptly described by former UN Secretary General Kofi Annan as “sleep walking,” was most apparent at the 2005 NPT Review Conference, which finished early without any substantive result. It was almost as if the heads of delegations (mostly Conference on Disarmament ambassadors) were anxious to catch an early flight back to Geneva or otherwise beat the traffic home.

One probably should not attach much importance to this very unscientific and impressionistic observation of diplomatic sentiment regarding the state of the nonproliferation regime. Even a cursory comparison of today’s nonproliferation scene with that of 1995, however, suggests the need to view nonproliferation in dynamic terms and to examine, if only briefly, how the regime may have changed in recent years and how evolving international developments may alter the future effectiveness of the NPT as a means of nuclear restraint. Although one can identify many changes, three of the most important pertain to the growth of non-state actors as proliferation threats, the diminished benefits of NNWS status under the NPT in the aftermath of the U.S.-India nuclear deal, and the increased centrality of Article IV (peaceful use) provisions in many states’ assessments of the benefits and limitations of the NPT.

*Non-State Actors.* At the time the NPT was negotiated, little attention was given to the proliferation risks posed by non-

state actors, either as suppliers of sensitive nuclear material, technology, and know-how or as end-users (that is, parties who sought to acquire and use nuclear weapons). As a consequence, the NPT did not seek to address the potential risks of nuclear terrorism posed by non-state actors, and steps to remedy this oversight recently have been introduced in a variety of multilateral, bilateral, and unilateral initiatives, only some of which represent legally binding mechanisms.<sup>30</sup> Although it remains to be seen how effective these new initiatives will be in forestalling efforts by non-state actors to act as nuclear suppliers, middlemen, and end-users, it is apparent that the provisions of the NPT per se are not well suited to address either the supply or demand side of the nuclear terrorism equation. As such, one should not expect the NPT to serve as a major source of nuclear weapons restraint for non-state actors, even as such entities emerge as a growing proliferation risk.<sup>31</sup>

*The U.S.-India Nuclear Deal.* One of the major benefits of NPT membership for NNWS is the promise of access to equipment, materials, and scientific information for the peaceful use of nuclear energy. In return, NNWS pledge to place all of their nuclear facilities under IAEA safeguards and to refrain from pursuing nuclear weapons activities. It is this core bargain that has been used to good effect by advocates of nuclear restraint – typically “outward looking elites,” to use Solingen’s terminology – in a number of countries. Although the long-term effects of the U.S.-India nuclear deal and the associated exemption granted to India by the Nuclear Suppliers Group in 2008 remain to be seen, almost certainly they will include an erosion of the perceived value of NNWS membership in the NPT. Indeed, representatives from a number of relatively recent adherents

to the NPT have expressed the view privately that had their governments anticipated that a non-NPT state and nuclear weapons possessor would be so rewarded, they would have hesitated to join the Treaty.<sup>32</sup> The readiness on the part of NPT states-parties to willfully ignore politically binding pledges made at the 1995 NPT Review and Extension Conference to refrain from nuclear trade with states lacking comprehensive safeguards also can only undermine the nonproliferation norm and provide ammunition for institutional advocates of revisiting the value of the NPT for their country's economic, political, and security interests.<sup>33</sup>

*Article IV.* The most contentious article of the NPT during most of its existence has been Article VI, which commits parties to the Treaty to pursue disarmament negotiations in good faith. At most NPT Review Conferences, for example, the greatest division among states and the most difficult issue on which to forge consensus has involved progress – or the lack thereof – on nuclear disarmament. It is unlikely that the gulf separating NWS and NNWS over implementation of Article VI will disappear soon, although the readiness of the new U.S. administration to embrace the vision of nuclear disarmament can only be helpful in this regard. There are indications, however, that it may prove even more difficult in the future to build consensus on issues related to peaceful use than on disarmament, as many current nuclear exporting states insist upon more stringent safeguards on nuclear use (for example, adoption of the Additional Protocol to the IAEA as a condition of export) and limitations on the further spread of sensitive nuclear fuel-cycle activities. These proposed measures, designed to address misuse of peaceful-use provisions for military purposes, are regard-

ed by a number of key NNWS, and especially Non-Aligned Movement (NAM) members such as Egypt and South Africa, as a restriction on their “inalienable right” to peaceful nuclear use as expressed in Article IV. Although it is possible that meaningful progress on the disarmament front may yield more flexibility by NAM on peaceful-use measures related to export controls and safeguards, this development is by no means certain, and it is probably as likely that a number of states will continue to decry these nonproliferation efforts as an erosion of their NPT rights and as evidence of further backtracking on the NPT grand bargain. Should this development occur, it will contribute to the weakening of the perceived value of the NPT for many NNWS and the possible decision by some states under certain circumstances to reconsider their adherence to the Treaty, even if they have no nuclear weapons ambitions.

The tension between satisfying the demands of NNWS for peaceful nuclear use and the insistence by NWS, among others, on more prudent nonproliferation and counterterrorism behavior is apt to grow if the projected “nuclear renaissance” materializes. Under such circumstances, many more states with underdeveloped nuclear regulatory bodies and stunted nuclear security and safety cultures will gain access to nuclear material, technology, and technical know-how, with dual applications for military and peaceful purposes. This development has the potential both to undermine the NPT and also to make it and its associated IAEA nonproliferation safeguards regime more important.

The aforementioned trends may well hinder the future effectiveness of the NPT. Nevertheless, does it follow that the conventional wisdom is correct and

that we are on the cusp of a “tipping point” after which we should anticipate a new wave or chain of proliferation decisions?

One of the difficulties in making accurate prognoses about the future of nonproliferation is the underdeveloped state of research on foreign policy forecasting in general and nuclear decision-making in particular. Also contributing to the problem is the paucity of relevant theory with predictive value. In an effort to remedy this proliferation-knowledge deficit and to better gauge the prospects for nuclear weapons spread during the next decade, CNS undertook a study of the proliferation propensity of 13 countries from different regions of the world.<sup>34</sup> The project also sought to assess the impact of various trigger events, including defections from the NPT, on national nuclear decisions.

The project’s most significant and unanticipated finding with respect to proliferation propensity, and one that was evident across all of the case studies, is the relatively low expectation of proliferation during the next 10 years. This prognosis holds regardless of the theoretical approach and level of analyses favored by the analyst, and appears to be largely insensitive to the geographic location of the countries, their level of economic development, government type, and perceived external security environment. While surprising in terms of prevailing conventional wisdom about a pending proliferation pandemic, the results, in fact, are consistent with the historically slow pace of proliferation and the failure of most prior forecasts of proliferation doom to materialize. They also are compatible with the theories of nuclear choice espoused by Hymans and Solingen that point to the exceptional circumstances that must pertain in

order for states to abandon nuclear restraint.

In addition, the project found that there is little evidence of the operation of “reactive proliferation,” in which one state’s efforts to acquire nuclear weapons will prompt a reciprocal response by others. Case study authors, for example, were disinclined to regard weaponization by any single country itself as sufficient to reverse long-standing nonproliferation restraint on the part of most other countries, including Egypt, Japan, Saudi Arabia, Serbia, South Africa, South Korea, Syria, Turkey, Ukraine, and Venezuela.<sup>35</sup> Significantly, this finding applies even when the “trigger” is Iranian defection from the NPT.

Moreover, to the extent that one country’s proliferation decision has a near-term diffusion effect, it appears to be very context-dependent and requires a number of other circumstances to occur. Among the effects dampening the potential operation of a proliferation chain is the fact that nuclear decisions take place in a domestic political environment sensitive to considerations of a political-economic nature, as well as competing organizational interests and personalities.

Although one may interpret the general finding – that an Iranian defection from the NPT would have a limited impact on individual country futures – as an indication of the strength and vitality of the Treaty, an alternative interpretation is that the Treaty is less central to the nuclear orientation of some states than is often assumed to be the case. This perspective appears to be borne out in the case studies of Australia, Iran, Syria, Venezuela, and Yugoslavia (post-1974). Nevertheless, a number of the project’s other case studies, including those of Japan, South Africa, South Korea, Turkey, and Ukraine, highlight

the significant – if indirect – positive effect the NPT has on nuclear weapons restraint by reinforcing the position of institutional advocates for nuclear abstinence in domestic political debates. The Treaty also continues to have a symbolic normative value in many of the countries surveyed, and elites in states such as Australia, Japan, South Africa, South Korea, and Ukraine regard adherence to the NPT as an integral part of their credentials as members of the international community in good standing.

The findings from the forecasting project indicate that it is premature to anticipate a world of many nuclear weapons possessors, at least in the near term. It is also not constructive to dismiss the utility of the NPT even if it is difficult to demonstrate conclusively the existence of a cause and effect relationship between the Treaty and nuclear weapons restraint. In this regard, it was refreshing to hear President Obama declare in Prague in April 2009 that the spread of nuclear weapons is not inevitable and that states can and must undertake concrete steps to

strengthen the NPT, whose basic bargain remains sound.<sup>36</sup> This view is an important counterpoint to the fatalism inherent in a number of nuclear proliferation chain scenarios popular today, but also cautions against complacency.

A recent book by two former government officials with access to many nuclear secrets likens the current nonproliferation scene to a speeding express train driven by indifferent engineers and filled with fissile material, nuclear technology, and sleeping passengers.<sup>37</sup> The imagery is powerful and the metaphor may yet prove apt. On the other hand, the proliferation train has been slow to pick up steam, has made fewer stops than anticipated, and usually has arrived much later than expected. More likely than not, the NPT has helped to slow the engine of proliferation. Additional action will be needed, however, to wake up some of the passengers, inspire and inform the engineers of U.S. nonproliferation policy, and delay further the departure of the nuclear express.

#### ENDNOTES

<sup>1</sup> This essay benefits greatly from collaboration with Gaukhar Mukhatzhanova, who assisted me on a research project on Forecasting Nuclear Proliferation in the 21st Century. The author also is grateful for research assistance provided by Liviu Horowitz. The interpretations expressed below, however, are my own.

<sup>2</sup> See, for example, Howard Simons, "World-Wide Capabilities for Production and Control of Nuclear Weapons," *Dædalus* 88 (3) (Summer 1959): 385–340; Oskar Morgenstern, "The Nth Country Problem," *Fortune* (March 1961): 136; Lewis A. Dunn and Herman Kahn, *Trends in Nuclear Proliferation, 1975–1995*, Final Report to the U.S. Arms Control and Disarmament Agency (Washington, D.C.: Hudson Institute, May 15, 1976).

<sup>3</sup> "Weapons Production in Fourth Countries: Likelihood and Consequences," National Intelligence Estimate, No. 100-6-57 (Washington, D.C.: National Security Archive, June 18, 1957).

<sup>4</sup> Harald Müller and Andreas Schmidt calculate that 36 states have had "nuclear weapons activities since the beginning of the nuclear age." See Müller and Schmidt, "The Little Known Story of De-Proliferation: Why States Give Up Nuclear Weapon Activities," in *Forecasting Proliferation: The Role of Theory*, ed. William C. Potter (with Gaukhar Mukhatzhanova) (Stanford, Calif.: Stanford University Press, forthcoming, 2010).

- <sup>5</sup> See Mark Landler and David E. Sanger, "Clinton Speaks of Shielding Mideast From a Nuclear Iran," *The New York Times*, July 23, 2009.
- <sup>6</sup> Etel Solingen, *Nuclear Logics: Contrasting Paths in East Asia and the Middle East* (Princeton, N.J.: Princeton University Press, 2007).
- <sup>7</sup> *Ibid.*, 25.
- <sup>8</sup> See, for example, Dong-Joon Jo and Erik Gartzke, "Determinants of Nuclear Weapons Proliferation," *The Journal of Conflict Resolution* (February 2007): 167–194; Sonali Singh and Christopher R. Way, "The Correlates of Nuclear Proliferation: A Quantitative Test," *The Journal of Conflict Resolution* (December 2004): 859–885; and Philipp C. Bleek, "Why Do States Proliferate?" and Müller and Schmidt, "The Little Known Story of De-Proliferation," both in *Forecasting Proliferation*, ed. Potter.
- <sup>9</sup> See Jacques Hymans, *The Psychology of Nuclear Proliferation: Identity, Emotions, and Foreign Policy* (New York: Cambridge University Press, 2006), 6.
- <sup>10</sup> See Solingen, *Nuclear Logics*, 261–267.
- <sup>11</sup> Jo and Gartzke, "Determinants of Nuclear Weapons Proliferation," 185.
- <sup>12</sup> Bleek, "Why Do States Proliferate?" in *Forecasting Proliferation*, ed. Potter, 30.
- <sup>13</sup> In the international relations theory literature this orientation is referred to as "constructivism."
- <sup>14</sup> See, for example, Maria Rost Rublee, *Nonproliferation Norms: Why States Choose Nuclear Restraint* (Athens: University of Georgia Press, 2009).
- <sup>15</sup> *Ibid.*, 130–132.
- <sup>16</sup> Hymans, *The Psychology of Nuclear Proliferation*, 7.
- <sup>17</sup> Müller and Schmidt, "The Little Known Story of De-Proliferation," in *Forecasting Proliferation*, ed. Potter, 247. On the "Irish Resolution," see William Epstein, *The Last Chance: Nuclear Proliferation and Arms Control* (New York: Free Press, 1976), 62–63.
- <sup>18</sup> Müller and Schmidt, "The Little Known Story of De-Proliferation," in *Forecasting Proliferation*, ed. Potter, 249–250.
- <sup>19</sup> Christopher Way and Karthika Sasikumar, "Leaders and Laggards: When and Why Do Countries Sign the NPT," REGIS Working Paper No. 16 (Montreal: University of Montreal/McGill University, November 2004).
- <sup>20</sup> *Ibid.*, 28.
- <sup>21</sup> Scott D. Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," *International Security* (Winter 1997): 72.
- <sup>22</sup> William C. Potter, *The Politics of Nuclear Renunciation: The Cases of Belarus, Kazakhstan, and Ukraine*, Occasional Paper No. 22 (Henry L. Stimson Center, April 1995), and Potter, "Back to the Future: The Contemporary Relevance of the Nuclear Renunciation Decisions by Belarus, Kazakhstan, and Ukraine," Nobel Symposium, Oscarborg, Norway, June 25–27, 2009.
- <sup>23</sup> Joseph F. Pilat and Robert E. Pendley, eds., *Beyond 1995: The Future of the NPT Regime* (New York: Plenum Press, 1990).
- <sup>24</sup> Lawrence Scheinman, "Does the NPT Matter?" in *Beyond 1995*, ed. Pilat and Pendley, 61.
- <sup>25</sup> *Ibid.*, 54–55. For similar assessments, see the contributions by Lewis Dunn, "The Collapse of the NPT – What If?" and David Fischer, "What Happens if the NPT Goes?" in *Beyond 1995*, ed. Pilat and Pendley.
- <sup>26</sup> A number of NWFZs require parties to adhere to comprehensive safeguards without reference to the NPT.

- <sup>27</sup> Scheinman, "Does the NPT Matter?" in *Beyond 1995*, ed. Pilat and Pendley, 55.
- <sup>28</sup> A budding literature in political science has emerged that explores potential selection bias in treaty behavior and seeks to determine if treaties primarily "constrain" or "screen." Compare, for example, Jana von Stein, "Do Treaties Constrain or Screen? Selection Bias and Treaty Compliance?" *American Political Science Review* (November 2005): 611–622, and Beth Simmons and Daniel Hopkins, "The Constraining Power of International Treaties," *American Political Science Review* (November 2005): 623–631.
- <sup>29</sup> The author participated in the 1995 NPT Review and Extension Conference as a technical advisor to the delegation of Kyrgyzstan, and has participated in a similar capacity in every subsequent Review Conference and Preparatory Committee meeting.
- <sup>30</sup> For a discussion of some of these initiatives, see Charles D. Ferguson and William C. Potter (with the assistance of Amy Sands, Leonard S. Spector, and Fred Wehling), *The Four Faces of Nuclear Terrorism* (New York: Routledge, 2005), 318–335; Michael Levi, *On Nuclear Terrorism* (Cambridge, Mass.: Harvard University Press, 2007), 139–152; and Matthew Bunn, *Securing the Bomb 2008* (Cambridge, Mass.: Project on Managing the Atom, Harvard University, November 2008), 129–185.
- <sup>31</sup> One area in which the NPT might help to constrain nuclear terrorism is to discourage the use of highly enriched uranium in the civilian nuclear sector, a focal point for discussion in Main Committee III (on peaceful nuclear use) at the 2005 NPT Review Conference. Unfortunately, a number of NNWS perceive such action as restricting their "inalienable right" to peaceful nuclear use.
- <sup>32</sup> Communications to the author at meetings of the IAEA General Conference in 2007 and 2008.
- <sup>33</sup> This reassessment would be further encouraged should India be recognized as a *de jure* NWS. Japan, among other states party to the NPT, has indicated that it would need to reevaluate the role of the NPT in its national security policy should any country beyond the original NWS be so recognized by the international community.
- <sup>34</sup> Case studies were undertaken for Australia, Egypt, Iran, Japan, Saudi Arabia, Serbia, South Africa, South Korea, Syria, Taiwan, Turkey, Ukraine, and Venezuela.
- <sup>35</sup> The authors of the case study of Australia were less sanguine about the impact of militarization of Japan on the nuclear calculus in Canberra.
- <sup>36</sup> Remarks by President Barack Obama in Prague, April 5, 2009.
- <sup>37</sup> Thomas C. Reed and Danny B. Stillman, *The Nuclear Express: A Political History of the Bomb and Its Proliferation* (Minneapolis, Minn.: Zenith Press, 2009), 319.